A FRAMEWORK FOR ACCOUNTING INFORMATION QUALITY AND SHAREHOLDER VALUE IN LISTED CONSUMER GOODS COMPANIES IN NIGERIA

by

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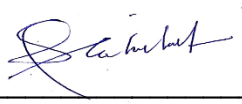
[A Framework for Accounting Information Quality and Shareholder Value in Listed Consumer Goods (CG) Companies in Nigeria]

I declare that the above thesis is my work and that all the sources I have used or quoted have been indicated and acknowledged using complete references.



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DEDICATION

I dedicate this work to the following people:

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ABSTRACT

The role of accounting information quality, in explaining variations in the determinants of shareholder value—share prices and stock returns—has long been a subject of discussion in accounting research. Researchers developed the value relevance model as a measure of accounting information quality, and it has remained the dominant measure in the literature. However, it has not been sufficient in operationalising the fundamental qualities of accounting information – relevance and reliability – as prescribed by the Conceptual Framework for Financial Reporting. This study examines the extent to which accounting information quality, proxied by accounting-based measures of earnings quality, impacts shareholder value as measured by stock returns**.** It also tests whether there is a causal relationship between earnings quality and shareholder value. The study employs a correlational and causal research design, using quantitative methods and secondary data from consumer goods companies listed on the Nigerian Stock Exchange (NSE). Given cross-sectional dependence in the panel data, the Arellano-Bond dynamic panel-data estimator was adopted to test the hypothesis. The study found that only earnings persistence significantly impacts stock returns, negatively. Other earnings quality measures, including accrual quality, have a negative but statistically insignificant impact on stock returns. Earnings predictability and earnings smoothness, on the other hand, have positive but also statistically insignificant impacts on stock returns. The results of the pairwise Granger-causality tests revealed that none of the earnings quality measures used in this study Granger-cause stock returns. However, the study's findings showed reverse causality, with stock returns Granger-causing earnings persistence and the return on assets. Analysing the interrelationships among the earnings quality measures indicates a strong one-way causality from accrual quality to earnings predictability. In either direction, no significant causal relationships were found between earnings persistence and accrual quality, earnings persistence and earnings predictability, or between earnings persistence and earnings smoothness. Likewise, no Granger causality was observed between earnings smoothness and earnings predictability, suggesting that these aspects of earnings quality tend to operate independently in the sampled firms. The study therefore demonstrates that, to fully understand the impact of earnings quality on stock returns, it is crucial to broaden the scope of explanatory variables to examine how external factors interact with fundamental accounting information to determine changes in stock returns. The study contributes to knowledge by developing a framework for the observed relationship between earnings quality and stock returns, grounded in the efficient market hypothesis and its interaction with information asymmetry and agency theory. Finally, the study recommends that investors look beyond earnings quality and consider macroeconomic trends, behavioural biases, and firm-specific financial strength, and suggests the need for further research to investigate whether behavioural biases or market anomalies might explain the counterintuitive results.

Key Words: Accounting Information Quality, Earnings Quality, Shareholder Value, Value Relevance, Accrual Quality, Earnings Persistence, Earnings Predictability, Earnings Smoothness, Efficient Market, Information Asymmetry.

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CHAPTER ONE

GENERAL INTRODUCTION TO THE STUDY

1.1. Introduction

This chapter provides a general introduction to the study. It starts with an overview of the background and motivation. The problem statement and the thesis statement follow the motivation. Section 1.5 outlines the aims and objectives, while Section 1.6 presents the research hypothesis. A brief overview of the research methodology, along with the scope, limitations, and significance of the study, is discussed in sections 1.7, 1.8, and 1.9. An overview of previous literature is provided in section 1.10, along with a summary of the study's contribution. Section 1.11 provides a contextual definition of key terms and concepts, and Section 1.12 addresses ethical considerations. The chapter concludes with an overview of all seven thesis chapters.

1.2. Background and Motivation of the Study

Nigeria's economy is among Africa's largest, with a diverse structure spanning oil and gas, agriculture, manufacturing, telecommunications, and services. While oil and gas have historically dominated GDP and government revenue, non-oil sectors have become increasingly important for growth and resilience. According to the National Bureau of Statistics (NBS), by Q4 2023, services contributed 56.6% of GDP, agriculture 25.2%, and industry 18.2% (NBS, 2023). Agriculture remains the largest employer, while manufacturing and services have expanded steadily, reflecting Nigeria's efforts to diversify away from dependence on crude oil. This diversification underscores the need to study sectors beyond oil and banking, which have traditionally attracted most academic attention.

Within this broader context, the consumer goods sector occupies a strategic position in manufacturing and household consumption. It includes firms producing food, beverages, household products, and personal care items—goods essential to daily life and directly linked to household demand, which itself accounts for a significant share of GDP. The sector's performance is closely tied to macroeconomic conditions such as inflation, exchange rate movements, and disposable income, making it a sensitive barometer of Nigeria's economic health. On the Nigerian Exchange (NGX), consumer goods firms are among the most visible and actively traded. As of December 2023, the sector's market capitalization stood at approximately ₦9.8 trillion, with leading

firms such as BUA Foods (₦6.7 trillion), Nigerian Breweries (₦950 billion), and Dangote Sugar (₦410 billion) attracting significant investor attention (Punch, 2024). Their prominence ensures that financial disclosures and accounting information are scrutinized by a wide investor base, amplifying the relevance of accounting quality to shareholder value.

Accounting information provides fundamental insights into the financial performance of companies listed on the capital market. Therefore, the information must be complete, accurate, and timely to directly influence investment decisions (IASB, 2018: 7). The firm-specific accounting information, which communicates the performance of the firm, is expected to be immediately incorporated into the equity stock pricing in the market, such that no single investor would expect to earn a superior return from their investment strategies over and above the market-expected return (Ball & Brown, 1968:3).

However, incidents of misrepresentation of accounting information, accounting errors, fraud, and other reported corporate scandals worldwide, caused by creative accounting practices, are seen as sources of friction in the efficient pricing of equity stocks. This practice has persisted, as documented in the literature (Camfferman & Wielhouwer, 2019; Enobong, 2017), casting doubt on accounting numbers and undermining the fundamental quality of accounting information. Consequently, this leads to issues of asymmetric information and market inefficiency, resulting in market failure (Abraham, 2019:6; Azar et al., 2019:6; Huynh et al., 2020:3). Since the early part of this century, cases of corporate failures such as the Enron saga (USA), CINAR (Canada), Fannie Mae (USA), One. Tel (Australia), Bristol-Myers Squibb (USA), WorldCom (USA), Lernout & Hauspie (Belgium), Peregrine Systems (USA), Parmalat (Italy), Banco Espirito Santo (Portugal), and more recently post-COVID, the reported cases of Wirecard (Germany), occasioned by misrepresentation of accounting information, which resulted in the loss of shareholder values have attracted criticisms towards the quality of accounting (Theophilus Aguguom & Ajayi, 2020:3).

Although most reported accounting scandals involving corporate performance measurement have occurred in developed countries, developing countries are not immune to such issues. Specifically in Nigeria, the change of board members at Cardbury Nigeria Plc due to false accounting, overstating the company's earnings,

and other related financial scandals –known as the “Cadbury Saga,” – as well as the corporate failure of most Nigerian banks and the subsequent arrests of banks CEOs by operatives of the Economic and Financial Crimes Commission were all results of misrepresentations in the financial reporting supply chain. The accounting information manipulative tendencies of corporate executives have created a problem that has continually sparked debates among researchers and analysts about the impacts of such practices on the quality of earnings, which provides a summary of corporate performance (Beyer et al., 2019; Cug & Cugova, 2021; Jeong & Choi, 2019).

The quality of accounting information primarily depends on its usefulness, which is the quality of direction it can provide for users’ decisions (Alasbahi & Ishwara, 2021:7). To maximize its usefulness, the Conceptual Framework for Financial Reporting expects accounting information to be decision-relevant and to faithfully represent the substance of the economic phenomena it purports to present. These two qualities – relevance and faithful representation (reliability) are regarded as the fundamental qualities of accounting information (IASB, 2018:13; Obaidat, 2007:4). While relevance provides the predictive and confirmatory value, faithful representation offers the quality of reliability or verifiability of the accounting information being communicated (Obaidat, 2007:4).

The central notion about accounting information quality is that some accounting information has a higher degree of quality than others in communicating the substance of economic phenomena of the companies it concerned (Sumiyana et al., 2021:2). As a result, they would have a different level of decision-making usefulness to the users especially the equity shareholders who rely on accounting information for predictive and confirmatory guidance in investment decisions. Therefore, to be relevant and reliable, such information must directly impact their decisions about corporate performance drives, measurements of corporate performance, monitoring of the managers, prediction of future earnings, and shareholder equity valuation (Azar et al., 2019:6).

Although researchers (Easton & Harris, 1991; Feltham & Ohlson, 1995; Ohlson, 1995) developed value relevance as a measure of accounting information quality, it has not fully resolved the operationalization and measurement of the term “quality,” as noted by Azar, Zakaria, and Sulaiman (2019:2). This study is therefore motivated by the

limitations of the value relevance construct. It seeks to examine the relationship between accounting information quality and shareholder value maximization from a different perspective. It will develop a framework based on the efficient market hypothesis, incorporating interactions with information asymmetry and agency theory, to conceptualize the relationship between accounting information quality and shareholder value.

Milton Friedman's (1970) shareholder primacy theory holds that the primary social responsibility of every business is to maximize profit, thereby increasing shareholder value. Therefore, modern corporate finance theory is based on the assumption that the primary objective of a business concern should be to maximize the market value of the share or shareholders' wealth, which is given by the relation: shareholder wealth equals the market price of the company's equity shares multiplied by the number of shares in issue (Khan & Hussanie, 2018:2). While this objective holds sway in the corporate world, there has been an ongoing debate over whose interests a company should ultimately serve. This discussion has been controversial, with ideas such as Edward Freeman's (1984) stakeholder theory, which characterizes corporations as public-interest servants whose responsibility is to protect the interests of many constituencies, such as creditors, employees, and customers. The stakeholder theory emphasizes that businesses should create value for all stakeholders, not just shareholders, balancing ethical, managerial, and operational considerations. There is also the enlightened shareholder value (ESV), which is codified in Section 172 of the UK Companies Act 2006. The ESV is a corporate governance principle that requires directors to promote the long-term success of a company for the benefit of its shareholders while taking into account the interests of stakeholders and broader societal impacts.

However, adherents of agency theory hold that the long-standing problem of corporate governance is the conflict of interest between managers and owners, creating an agency problem that every organization faces in one form or another. This raises the question of how to minimize agency costs that arise when share ownership is separated from control (Panda & Leepsa, 2017a: 2). If given too much discretion, corporate managers will use it to maximize private benefits at the expense of shareholder value. Therefore, the mandate to maximize shareholder wealth is the closest governance can come to constraining agency costs and maximizing corporate

value. Lund, (2020: 2), asking management to maximize shareholder value also facilitates the monitoring and enforcement of shareholder-centric controls, which further ensures fidelity to that goal. This accountability narrative is not the only defense of shareholder primacy, but critics have viewed it as its strongest defense. The advocates of shareholder primacy continue to invoke it in the face of growing calls for a shift toward a "stakeholder governance" model, which permits management to consider the interests of other constituents of the corporate establishment (Stout, 2002: 12). In response to this call for a governance shift to the stakeholder-centric model, defenders of shareholder primacy continue to argue that stakeholderism would insulate corporate leaders from shareholders, reduce their accountability, and hurt economic performance (Bebchuk & Tallarita, 2020), enabling managers to serve their private interests and harming corporate value and the overall public economic interests in the process.

Shareholder value maximization ranks ahead of all other corporate objectives because the economic sustainability of every company depends on its ability to continuously generate incremental value for shareholders (O'Connell & Ward, 2020:3; Theophilus Aguguom & Ajayi, 2020:2-4). Shareholder value theory assumes standard measurable metrics for shareholder value, i.e., dividends and share price. Hence, the managers' decisions must be directed toward maximizing the combined value of dividends and the increase in share price. For instance, in his closing address at the 2023 Annual General Meeting of the members of Neimeth International Pharmaceutical Plc, the Chairman of the Board of Directors assured the members that the managers would work towards increasing the value of their investment through dividends and capital gains (Neimeth, 2023:16; O'Connell & Ward, 2020:2).

Although there have been divergent views as to the factors that determine the fluctuations in the market prices of stock, which is a building block in the measurements and determination of the shareholder value, some of the empirical opinions are that earnings and their variability are determinants in the way their informational contents affect the change in stock price (Ibrahim et al., 2016:16; Innocent et al., 2020:12; H. Susanto et al., 2021:5). As earnings are considered the most important accounting information in the measurement and determination of shareholder value, earnings quality is also regarded as the most important quality of accounting information that has attracted the attention of practitioners, analysts,

regulators, and accounting researchers for decades (Azar et al., 2019:9; Ibrahim et al., 2016:16; Innocent et al., 2020:3).

1.3. Statement of Problem

Accounting is the science of measurement that provides the fundamental basis for measuring the value created for the shareholders while faithfully representing those values in the form of information needed for investment and other economic decisions (McCallig et al., 2019:9; Sadowska & Lulek, 2016a:3). The shareholder value, on the other hand, derives its intrinsic worth from the valuation of the firm's stock, with accounting information as the primary source of business valuation building blocks (Ausloos, 2020:2). The traditional assumption is that an efficient market will efficiently price the intrinsic valuation of the firm's stock using the available information to avoid mispricing that can lead to value loss (Fama, 1970:2; Gong & Diao, 2022:16). Managers, however, try to influence fundamental accounting information through different creative means due to earnings performance pressure (Wang et al., 2023: 3), which tends to impair the quality of reported earnings in an information-asymmetry setting. As accounting earnings are considered the most important accounting information and an essential determinant of stock pricing in the capital market, the quality of the earnings is also crucial to ensure efficient pricing of the firm's equity stock by investors (Azar et al., 2019: 9; Ball & Brown, 1968: 3).

Researchers (Easton & Harris, 1991; Feltham & Ohlson, 1995; Ohlson, 1995) developed the value relevance construct to measure the information content of earnings relative to market stock prices and stock returns. This makes it the dominant measure of accounting information quality in the literature, and prior studies have focused on the value relevance as the measure of accounting information quality (Apete et al., 2022; Mbekomize & Popo, 2020; Ogiriki & Tovie, 2022; Srivastava & Muharam, 2021; Weerawickrama & Tilakasiri, 2020) using either of the two prominent value relevance models of (Ohlson, 1995) and Easton and Harris (1991).

Although a dominant measure of accounting information quality in the literature, the value relevance construct has not fully resolved the problem of operationalizing the term "quality," which remains evident in the literature (Azar et al., 2019:14). Accounting information quality is a multidimensional concept. Therefore, this study aims to contribute to the existing literature by focusing on accounting-based measures of

earnings quality and by testing the causal relationship between the variables and shareholder value.

Previous studies have established the importance of accounting information quality. However, the evolving nature of accounting requires further research to address remaining gaps in understanding its impact on shareholder value in Nigeria's listed consumer goods companies.

1.4. Thesis Statement

Accounting information quality, as represented by earnings quality, should impact the variation in shareholder value among listed consumer goods companies in Nigeria.

1.5. Research Aims and Objectives

The primary aim of this study is to develop a framework for the relationship between accounting information quality and shareholder value. Accounting information quality will be represented by earnings quality, which will be measured by the four (4) accounting-based attributes – accrual quality, earnings persistence, earnings predictability, and earnings smoothness, motivated by the studies of (Fonou-Dombeu et al., 2022; Licerán Gutiérrez & Cano Rodríguez, 2019). The extent of the impact of earnings quality on the shareholder value proxied by stock returns is examined with evidence from 'Consumer Goods' companies listed on the Nigerian Stock Exchange (NSE).

The specific objectives of this study are:

1. To examine how accrual quality impacts the stock returns of listed consumer goods companies in Nigeria
2. To examine how earnings persistence impacts the stock returns of listed consumer goods companies in Nigeria.
3. To examine how earnings predictability impacts the stock returns of listed consumer goods companies in Nigeria.
4. To examine how earnings smoothness impacts the stock returns of listed consumer goods companies in Nigeria.
5. To examine whether a causal relationship exists between accrual quality, earnings persistence, earnings predictability, earnings smoothness, and the stock returns of listed consumer goods companies in Nigeria

6. To develop a framework for the relationship between accrual quality, earnings persistence, earnings predictability, earnings smoothness, and the stock returns of listed consumer goods companies in Nigeria.

1.6. Research Hypotheses

Based on the literature review and a priori expectations on the implications of earnings quality on stock returns, the following hypotheses are formulated:

H_{1a}: Accrual quality impacts the stock returns of listed consumer goods companies in Nigeria

H_{1b}: Earnings persistence impacts the stock returns of listed consumer goods companies in Nigeria

H_{1c}: Earnings predictability impacts the stock returns of listed consumer goods companies in Nigeria

H_{1d}: Earnings smoothness impacts the stock returns of listed consumer goods companies in Nigeria

H_{1e}: Accrual quality, earnings persistence, earnings predictability, and earnings smoothness cause the variation in stock returns of listed consumer goods companies in Nigeria

1.7. Research Design and Methodology

Every research project must involve a clear, systematic approach to answering research questions and solving a research problem. It will involve scientific methods encompassing concepts such as paradigms and techniques that can be quantitative or qualitative (Mohajan, 2018:1; Patel & Patel, 2019:2). Furthermore, research paradigms are the philosophical assumptions that underpin research. Such assumptions can be ontological (what is reality?), epistemological (how do we know the reality?), and methodology for answering the research questions (Alharahsheh & Pius, 2020a:2).

Research paradigms can be explained under the positivist and interpretivist philosophies. Positivist researchers with the ontological searchlight assume that reality exists independently of human influence. Once the reality is established, it can be predicted consistently with certainty in natural or social phenomena. The epistemological view of positivist philosophy is objectivism, in which researchers study phenomena as objective observers, forming opinions about a reality that exists independently of observation. There is a separation between the reality and the

observer of the reality (*"the knower and object to be known are different entities"*). A positivist researcher aims to explain what relationship exists using methodology such as causality to test the cause-and-effect relationship between independent and dependent variables using testable hypotheses (Dammak, 2015:4; Rehman & Alharthi, 2016:4-8). On the other hand, researchers with an interpretivist philosophy hold the opposite position to positivists. They believe there is no common reality that can be generalized. Instead, they believe that truth and reality are created, not discovered. The interpretivists assume that the human mind usually mediates realities and, therefore, it is impossible to know what reality is ab initio without creating it in the minds or senses (Alharahsheh & Pius, 2020a:4; Rehman & Alharthi, 2016:6).

This study fits the positivist paradigm, using testable hypotheses to examine the relationships between accounting information quality and shareholder value of listed consumer goods companies in Nigeria. Moreover, this study relies on existing theories (the efficient market hypothesis, information asymmetry, and agency theories) to develop a testable hypothesis whose results can be generalized. All this makes this study align with the positivist paradigm.

This study employs a correlational and causal research design, using quantitative methods and panel data from secondary sources to achieve the desired objectives. The study's target population comprises consumer goods companies listed on the Nigerian Stock Exchange (NSE) that operated between 2012 to 2023. Finally, to ensure an unbiased representation of the observations in the target population, the study employs a purposive sampling method, in which all entities in the population that meet the predetermined selection criteria have an equal chance of being selected as samples.

1.8. Scope and Limitations

The study focuses on accounting information quality and shareholder value. Its primary scope is to establish the relationship between the multidimensional attributes of earnings quality, which measure accounting information quality, and shareholder value, proxied by stock returns. A framework of the observed relationship, serving as a generalization of the findings, is also developed at the end of the study. The quantitative research study investigates the relationship between the explanatory and

observed variables using panel data from consumer goods companies listed on the Nigerian Stock Exchange (NSE) from 2012 to 2023.

In measuring the variables, the study focused only on accounting-based measures of earnings quality as explanatory variables for shareholder value. Accounting-based earnings quality measures are firm-specific variables influenced by firms' asymmetric information environments. Thus, ignoring external factors or market noise—such as investor sentiment, as explained by behavioral finance—and other sources of market inefficiency that could influence stock market performance and shareholder value is a limitation of this study. Excluding those market noises (anomalies) could cast doubt on the study's results.

Furthermore, the study uses data from a sample of only listed consumer goods companies in Nigeria. The sample selection criteria also constrain data collection, limiting the extent to which the research findings can be generalized to the Nigerian setting and to accounting information quality, as measured by earnings quality and shareholder value. The reliability of the data collected for this study is tested using the split-half method and Cronbach's alpha.

1.9. Significance of the Study

This study is significant in that it contributes to the existing literature on accounting information quality and shareholder value by directly establishing the extent to which the multidimensional attributes of earnings quality as measures of accounting information quality would have an impact on shareholder value measured by stock returns of consumer goods companies listed on the Nigerian Stock Exchange (NSE). Prior studies, especially those from Nigerian settings, have focused on measuring accounting information quality using the value relevance model to test the explanatory power of reported earnings and other accounting measures in explaining changes in shareholder value, as measured by variables such as stock price and stock returns.

The present study is also significant because it explores a more in-depth approach to explaining the relationship between accounting information quality and shareholder value, as it is thought that earnings and other accounting numbers that are input variables into the value relevance models are themselves impacted by relevance and faithful representation – two fundamental qualities of accounting information as contained in the conceptual framework of financial reporting. Azar et al. (2019:14)

noted that achieving a good value relevance result could indicate relevance and faithful representation (reliability) of accounting numbers. However, when the model shows no value relevance, it will be difficult to attribute the cause to the accounting numbers' lack of relevance and faithful representation (reliability). Thus, indicating the weakness of the value relevance model as a measure of accounting information quality. The four (4) accounting-based attributes of earnings quality used in this study as measures of accounting information quality encompass the two (2) fundamental qualities of accounting information (relevance and faithful representation) as contained in the conceptual framework of financial reporting. It will also contribute to the existing literature on the subject by analyzing whether causal relationships exist among the variables.

1.10. Literature Review

The review of the extant literature is approached to provide an in-depth understanding of past scholarly research, from the groundbreaking theoretical contributions of historical scholars to the current debates in and around the study topic. Existing scholarly articles, journals, past theses, and dissertations are drawn from databases such as Google Scholar, ResearchGate, ScienceDirect, UnisaIR, OATD, IBSS, DOAJ, SABINET, etc.

The literature review is structured to align with the proposed research objectives as follows:

a. Conceptual literature review is done to provide a detailed account of all the terms and concepts in the study and their contextual meanings as used in this study.
b. A review of the empirical literature is presented to show the depth of existing related studies, showing the global perspective, and from the Nigerian context, which is the location of this study.

1.11. Contribution

The study contributes to the existing literature on accounting information quality by examining the extent to which accounting-based earnings quality measures affect shareholder value. It also tests the causal relationship between the variables. Besides, according to (Ogbaisi, 2021), the fundamental disconnect between studies in Nigeria is that they did not show how earnings quality measures affect the relationship

between accounting information and firm value. The study further observed that studies in Nigeria did not present a theoretical framework linking earnings quality to share price. The present research would therefore develop a framework that conceptualizes the relationship between accounting information quality and shareholder value, grounded in the interaction between the Efficient Market Hypothesis (EMH), Information Asymmetry, and Agency theory, using evidence from listed consumer goods companies in Nigeria—an area that previous studies have largely overlooked.

1.12. Definition of Terms and Concepts

Accounting Information: According to Innocent et al. (2020:2), accounting information is the output from accounting systems used to measure and report the financial performance of a company within a defined period and presented through the audited financial statements.

Accounting Information Quality: It is the degree of influence accounting information has on the users' investment decisions, predictions, and enhancement of market efficiency (Alasbahi & Ishwara, 2021:2).

Relevance: Refers to how much difference in terms of predictive value, confirmatory value, or both accounting information can make to the users' decisions (IASB, 2018: 13).

Reliability: This is the quality of faithful representation of economic phenomena. Faithful representation means representing the substance of every economic phenomenon over its legal form (IASB, 2018: 14).

Value Relevance: Value relevance is the statistical association between accounting information and firm value or stock returns. It is accounting information's ability to capture, summarize, or explain the information affecting equity stock price or stock returns (Mirza et al., 2019: 4)**.**

Accrual Quality: This is a measure of how well accruals reflect a firm's underlying economic performance by measuring the accrual and cash flow component of reported earnings, variation in sales, and tangible assets (Fonou-Dombeu et al., 2022: 6).

Persistence: It shows the ability of the firm to continue to generate earnings over time instead of being driven by just single-period events (Fatma & Hidayat, 2019: 3). The

persistence of earnings is defined here as the degree of serial correlation in earnings across two successive time intervals.

Predictability: According to Shaban, Alqtish & Qatawnh (2020: 2), the predictive quality assumes that earnings are of higher quality if the current period's earnings are beneficial for predicting the firm's future earnings.

Smoothing: Earnings smoothing is a form of earnings management that improves the appearance of a company's performance (Y. K. Susanto & Pradipta, 2019: 2).

Shareholder Value: Shareholder value is the total financial benefits created for and delivered to equity shareholders through corporate management's ability to generate excess earnings and free cash flow, leading to dividend payouts and capital gains on equity shares.

1.13. Ethical Considerations

Ethics in research refers to the moral principles and legal obligations that guide it. They are the morally and legally acceptable norms for good research conduct that distinguish right from wrong and acceptable from unacceptable (Parveen & Showkat, 2017:3; Rana et al., 2021:3; Showkat et al., 2017:3). It is, therefore, the researcher's sole responsibility to uphold ethical conduct and to ensure due consideration of all ethical issues in their research. Commenting on ethical issues in educational research, Bassey & Owan (2019: 5) refer to them as those problems that result from the breach of the prescribed ethics that should have been followed in conducting educational research. The study is conducted in line with the UNISA ethical guidelines and takes due consideration for the following ethical issues, among others, in the conduct of the proposed research:

a) **Permission to conduct research**: According to the UNISA Policy on Research Ethics, the researcher is responsible for ensuring that research is not undertaken without ethical clearance. Only when an appropriate Ethics Review Committee has granted such approval can the researcher undertake to commence the research work (UNISA, 2016: 5). Therefore, the necessary permission from the college and the university's Ethics Review Committee is required to conduct the research.
b) **Informed and Non-coerced Consent**: In research involving human participation in data gathering and analysis, participants need to consent to

participate freely based on informed consent without any form of coercion or undue inducement of people (UNISA, 2016: 13). The study uses freely available secondary data that does not require informed consent during data collection and analysis**.**

c) **Privacy, Anonymity, and Confidentiality**: According to the UNISA Policy on Research Ethics, privacy includes autonomy over personal information, anonymity, and confidentiality of personal information and identity. This is particularly essential if the research deals with stigmatizing, sensitive, or potentially damaging information, in which case, the participants reserve the right to such issues that can be deemed private and confidential (UNISA, 2016: 16). The proposed research will use freely available information from the published audited financial statements of the sampled companies and from the Nigerian Stock Exchange's publication on the stock price performance of listed companies. The ethical issues of privacy, anonymity, and confidentiality do not apply to this study, as it does not involve human subjects or animals.

d) **Usefulness and Contribution to Society:** The primary purpose of research is to add valuable contributions to knowledge and benefit society. It will be worthless to undertake research that is not worth this purpose. This research, therefore, makes an important contribution to the literature on accounting information quality and shareholder value. Thus, useful in advancing the frontier of knowledge on the subject.

e) **Trustworthiness**: The trustworthiness of research is concerned with the degree of confidence in data gathering, the quality of analysis methods, and the reliability of findings and their generalizability. Robust validity and reliability test procedures address this ethical consideration in the research.

f) **Integrity**: All forms of scientific research are anchored in two fundamental core values – that is, the researcher will be “truthful” and demonstrate “honesty” in the conduct of their research (UNISA, 2016: 3). Plagiarism, falsification, and fabrication of research results are misconducts that compromise the integrity of research (Drolet et al., 2023: 7). By accurately and truthfully reporting the research findings, the originality is protected. The study progress report in chapters is submitted to the Turnitin originality test, and the final Turnitin result, along with the research copy, is submitted to the relevant Ethics Review Committee.

g) **Research Supervision**: The UNISA Policy on Research Ethics charges the principal researchers and academic supervisors to take responsibility for the ethical conduct of the research (UNISA, 2016: 6). The researcher ensures the symmetry of the information and conducts the research in accordance with my supervisors' guidance.

1.14. Chapter Overview

This study is structured into seven chapters, as follows:

Chapter One

This chapter provides a general introduction, background, and motivation for the research work.

Chapter Two

The chapter offers a comprehensive review of both conceptual and empirical literature. The conceptual literature review is divided into two subsections. The first subsection explains accounting information quality as a key concept in the study and the firm-specific factors that influence it. The second subsection discusses the shareholder value concept, including an overview of firm-specific value-creation strategies.

The second part of this chapter provides a detailed overview of the empirical literature across developed and developing countries, as well as in the Nigerian context where the study was carried out.

Chapter Three

This chapter presents the theoretical and conceptual framework of the study. The first section offers the theoretical perspective guiding the research. It explains the relationships among agency theory, information asymmetry theory, and the efficient market hypothesis, which serve as the study's foundational theories. The chapter concludes with an a priori conceptual framework that illustrates graphical connections among these theories, the study concepts, and variables.

Chapter Four

This chapter covers how the study variables are operationalized and measured. It explains the derivation of measures for both dependent and independent variables.

Chapter Five

This chapter covers the study's methodology, including the research paradigm, design, data collection sources, and methods. It describes the target population and the sampling criteria. The regression model specifications, such as Granger Causality analysis, are explained and justified. Finally, the chapter discusses the data collection methods, measurements, analysis, validation, and reliability testing process.

Chapter Six

The sixth chapter presents the empirical analysis of the collected data, tests the study's hypothesis, shares the findings, and examines the individual hypotheses, with a specific focus on the study's main objectives.

Chapter Seven

This chapter summarizes the research findings, presents generalized conclusions, and offers recommendations. It highlights this thesis's contributions, presents recommendations and directions for future studies, and concludes with a final remark.

1.15. Chapter Summary

This chapter provided the background, motivations, and significance of this doctoral thesis. It introduces the thesis statement and research problem and outlines the research objectives and hypotheses. It provides a summary of the research design and methodology, including the study's scope and limitations. It also includes defining key terms and concepts used in this research and discusses ethical considerations aligned with UNIISA guidelines. The chapter concludes with a detailed outline of the overall thesis structure. Chapter 2 will present a conceptual literature review and a comprehensive review of existing empirical studies from global and national perspectives, highlighting gaps in the Nigerian literature.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

The chapter aims to provide a conceptual background for the study and to give a detailed account of the extant empirical literature. The conceptual literature review is divided into eight sub-sections (2.2.1 – 2.2.8) to discuss the contextual meanings of – the accounting information system, accounting information quality, factors influencing accounting information quality, measures of accounting information quality, measures of earnings quality; shareholder value concept; determinants of shareholder value; and the Nigerian context of the interaction between accounting information quality and shareholder value. The second section of the chapter presents an empirical review of the literature that addresses each of the study's objectives. It is arranged by geographic location to examine previous researchers' global perspectives and the study's location in Nigeria.

2.2. Conceptual Literature Review

Accounting information quality is essential to investors' decision-making and corporate governance processes, helping allocate resources efficiently and create shareholder value. The two variables at the extreme ends – the dependent and independent- do not operate in isolation. There is evidence in the literature of several mediating factors that influence the interactions between the observed and explanatory variables (Al-Attar, 2021; Sobhy et al., 2023; Zhai & Wang, 2016). Some factors interplaying between the study variables are the study concepts discussed in the following subsections.

2.2.1. Accounting Information System (AIS)

The accounting information system is integral to the corporate governance mechanism, which aids the company's decision-making process through its board of directors (Sobhy et al., 2023:6). AIS literature typically views it as a computer-based information system, which is a subset of an organization's Management Information System (MIS). Manchilot (2019: 2) defined an accounting information system as a computer-based system that aids the collection, processing, storing, and communication of financial data for organizational decision-making. According to

Radu and Tabirca (2019: 3), an accounting information system is an integrated system of collection, storage, and processing of financial and accounting information using computer-based information technology to track historical financial activities and communicate them to both internal decision-makers and corporate investors.

However, since accounting information systems are designed to support accounting functions and serve as the crossroads between two management functions – "accounting" and "information system," which support the functions of providing financial information for the decision-making of internal and external stakeholders, accounting information system is better viewed from the perspective of the integrated homogeneous resources that interact simultaneously within a specified framework to achieve a desired corporate objective (Elsharif, 2019:3; Ganyam & Ayoor Ivungu, 2019:2). Accounting information systems help to collate past and present economic activities in quantitative terms and attribute monetary values to future economic events Horngren, Datar, and Rajan, 2015:5). Given its functional importance, the accounting information system is considered the lifeline and bloodline of any economic agent, as it connects management's strategic actions to the corporate objective of maximizing shareholder value.

To help enhance understanding of the concept, this study decomposed the three words that constitute the accounting information system: accounting, information, and system. Firstly, the "*accounting"* concept originates from the word "account," which means to "explain." In other words, it informs about the occurrence of historical events. Accounting is synonymous with stewardship reporting, a crucial element of the agency contract and a fundamental requirement of a principal-agent relationship. The literature has documented multiple definitions of accounting. Borrowing the meaning given by the American Institute of Certified Public Accountants (AICPA), accounting is the *"art of recording, classifying, and summarizing in a significant manner, and monetary terms, transactions and events, and interpreting and communicating the results thereof."* Accounting has been established over the centuries as the common business language. It is the only vehicle through which the managers in a business unit communicate performance results to the owners (Fülbier & Sellhorn, 2023:2).

The Second word in this concept is *"information."* Accounting provides financial information to support decision-making. It provides information to aid the value

creation decisions of the managers, provides feedback on the results of the value creation strategies, ensures the business owners have a reliable basis for measuring the extent to which their primary objective of wealth creation has been met, and also supports the external investment decisions by potential investors in the capital market. Thus, it underscores the traditional relevance of accounting information as the primary source of decision-useful information to assist existing equity shareholders and capital market investors.

Finally, the last word in the conceptual definition is *"system."* The Merriam-Webster Dictionary defines a system as *"an organized or established procedure."* This definition, along with the earlier understanding of the usefulness of accounting information, views the accounting information system in this study as an organized procedure for producing accounting information to aid decisions that affect the creation of shareholder value.

The accounting information system, like any other system, consists of interacting elements that work simultaneously to achieve its desired goal. Elsharif (2019: 4–5) identified six common accounting information systems elements: people, instructions and procedures, software, data, information technology infrastructure, and internal controls. However, this study identifies the following five (5) elements of accounting information systems:

2.2.1.1. People (The Human Element)

The people as elements in the systems of accounting information are the finance and accounting professionals who perform the accounting functions within the system, the governance structure who sets risk management and control frameworks to have a quality system, the senior management team within the business unit who constantly interact with the system, and the external auditors who perform independent quality assurance functions on the system. The quality of the human element within the system determines the quality and usefulness of the output at the end of the process.

2.2.1.2. Internal Control Procedures (the Risk Control Element)

Internal control procedures in accounting information systems are sometimes referred to as controls over financial reporting (COFR) or internal controls over financial reporting (ICOFR). Controls over financial reporting, or internal controls over financial

reporting, are policies and procedures within the accounting information system designed to mitigate financial reporting risk. They are a set of controls that a company puts in place to ensure that accounting information released through its financial statements is accurate and faithfully represents the substance of the events that occurred during the reporting period (Centre for Audit Quality, 2019:4).

The ICFR is a vital risk control element within the accounting information system. It is a system component that helps foster users' confidence in the quality of accounting information produced and communicated by the companies and, ultimately, trust in the capital markets. To assist in instituting these controls, the Centre for Audit Quality (CAQ), in 2019, updated and re-released its popular Guide to Internal Control over Financial Reporting to assist stakeholders in understanding key ICFR concepts, which include five integrated components (Centre for Audit Quality, 2019:4-6) :

1. control environment
2. risk assessment
3. control activities
4. information and communication
5. monitoring activities

Furthermore, the updated Guide to ICFR also helps to understand the roles and responsibilities of the company's management, independent auditors, and the board's audit committee in ensuring adequate controls over financial reporting, as well as what the ICFR means for companies, investors, and the capital markets (Centre for Audit Quality, 2019:12-15).

2.2.1.3. Data – Transaction-to-Report (T2R)

The data element in the accounting information system includes all transactions that occur in the business's daily operations and are recorded in monetary terms. The collection and processing of financial data into decision-useful information is the essence of an accounting information system. So, any business data that affects the company's finances must be processed through the accounting information system to be included in the global performance figures reported at the end of the period (Elsharif, 2019:4). Accounting data are generally classified into expenses, income, assets, and liabilities. They are then summarized in a trial balance to prepare financial statements, such as the income statement, balance sheet, and statement of cash

flows, in accordance with IAS 1 (Presentation of Financial Statements). For the data in the accounting information system to be useful, the processing of transactions to reporting (T2R) must be complete, accurate, and timely.

2.2.1.4. Information Technology Infrastructure

Information Technology (IT) is the field of technology that uses various infrastructures, such as computer hardware, software applications, programming languages, and data constructs, to process raw data into useful information (Ghasemi et al., 2011:2). This element is just a compound name for the electronic tools used to ensure the efficiency of operation of the accounting information system (Elsharif, 2019:5). To ensure operating efficiency, data security, and improved information quality, organizations have been making significant investments in information technology infrastructure as part of their information system management strategy to achieve their goals. Such strategies have led to the introduction of Enterprise Resource Planning (ERP) into information systems management, and ERP-based accounting information systems have been adopted across accounting functions in most companies (small or large) today. The ERP is an automated and integrated system of collecting and processing financial transactions between functional areas within the organization through integrated software modules to support the internal business process (Nur & Irfan, 2020:2). Implementing an ERP-based accounting information system impacts organizational productivity. It will enhance the functionality of the accounting information system, improve the quality of output, and provide timely, accurate information for informed decision-making.

2.2.1.5. Rules and Principles (the Guidance element)

Accounting rules and principles refer to the “brought basic assumptions” generally accepted as concepts and conventions that guide the accounting practice and underline the preparation of financial statements through which accounting information is communicated to the users. Accounting practices are based on a set of rules and principles that form part of the accounting information system and guide the accounting function. These rules and principles form the basis for the development of international accounting standards by global accounting standard-setting bodies, such as the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB). The global accounting standard replaces local standards

and harmonizes the variations in financial reporting resulting from the diversity of legal systems, business structures, and tax systems. It also encourages cross-border transactions, thereby improving the uniformity and comparability of accounting information (Macharia & Ronald, 2023:2). The accounting standards developed by these bodies are either rule-based or principle-based. An accounting standard is a body of principles and rules that govern the recognition and reporting of a given accounting issue (Sundvik, 2019:6).

The principles-based standards give reporting companies greater freedom to exercise discretion in interpreting and applying them. Thus, it increases reporting quality and creates higher-quality information. On the contrary, rule-based accounting standards require companies to follow strict rules, which may introduce noise into accounting information due to a poor fit between the rules and economic substance. Thereby, diluting the quality of accounting information (Sundvik, 2019:6).

2.2.1.6. Accounting Information (AI, the Output element)

Accounting information can be seen as the output of accounting systems that measure and routinely disclose audited, quantitative data about a business enterprise's performance and financial position (Innocent et al., 2020:2). Here, accounting information is defined as the output of an accounting information system that measures and qualitatively discloses a company's performance and financial position in quantitative monetary terms, and is periodically communicated through the entity's audited annual reports.

2.2.2. Accounting Information Quality (AIQ)

Accounting information is the output of the accounting process, resulting from the interactions between the elements of accounting information systems. The quality of accounting information is determined mainly by its value (Sumiyana et al., 2021;2). Although accounting information quality has been a subject of academic discussions for decades, there is no single, widely accepted, or specific definition of “accounting information quality.” The quality cannot be easily quantified, as it is not readily observable by users. The expectations and perceptions of each category of users about what constitutes the usefulness and quality of the information are different (Achim, 2014:2). According to Azar et al. (2019: 3), many stakeholders and investors in the capital market depend on the accounting information about a firm's performance

and financial health, which is provided in the annual financial statements when making decisions. Accounting information plays a vital role in facilitating the efficient allocation of capital, which is one of its main objectives (Khoufi, 2020:2). The value of accounting information is therefore measured by its decision usefulness, which is determined by how well it directly impacts users' decision-making, particularly equity shareholders and potential investors in capital markets.

The central concept is that some accounting information is better than others at communicating what it purports to present. Hence, some accounting information is of higher quality than other accounting information. The higher the quality of accounting information, the higher its decision usefulness. However, there is no single widely accepted definition of the concept. Many scholars have looked at defining accounting information quality with a specific focus on the relationship between accounting numbers and stock market response to the informational content of those numbers, like stock returns and stock price, which do not sufficiently address the fundamental qualities of accounting information as prescribed by both FASB/IASB Conceptual Framework for Financial Reporting (2010). For instance, according to Hamed, Mohammadi, Heyrani, and Golestani (2013: 2), accounting information quality examines the extent to which the real and expected performance levels and the related factors are measured by accounting information and how a firm's value responds to those measures. On their part, Alasbahi and Ishwara (2021: 2) defined accounting information quality as a broad concept that refers to the financial information included in financial reports that is useful for decision-making.

However, the Financial Accounting Standards Board (FASB) and International Accounting Standards Board (IASB) focus on high-quality accounting information that is decision-useful, measured primarily by two fundamental qualities. The IASB Conceptual Framework for Financial Reporting states, "*For financial information to be useful, it must be relevant and faithfully represent what it purports to represent."* Therefore, according to this framework, the usefulness of accounting information is measured by two fundamental qualities – relevance and faithful representation. The secondary qualities of comparability, verifiability, timeliness, and understandability further enhance these two fundamental qualities (IASB, 2018:18). Therefore, following the IASB Conceptual Framework for Financial Reporting, accounting information quality is defined here as the relevance and faithful representation of accounting

information presented to support decision-making about the efficient allocation of resources and to provide feedback on the results of previous strategic decisions, with the aim of maximizing stakeholders' objectives.

2.2.2.1. Fundamental (Primary) Qualities of Accounting Information

Participants in the capital markets use accounting information as the basis of investment decisions (Azar et al., 2019:4). Quality accounting information is, therefore, a critical input that facilitates efficient resource allocation, thereby contributing to the efficiency of capital markets (Khoufi, 2020:2). The accounting information must exhibit certain fundamental qualitative features to aid decision-making. In other words, the qualities of the information should have been determined by its qualitative characteristics. The fundamental qualities of accounting information are relevance and faithful representation (IASB, 2018:13).

2.2.2.1.1. Relevance of Accounting Information

Accounting information is relevant when it can influence users' decisions. Accounting information can influence users' decisions if it has predictive value, confirmatory value, or both. The predictive value of accounting information is determined by its use as input to a model that predicts the future outcomes of economic events. Thus, it helps users predict future events. The confirmatory value of accounting information is measured by its ability to provide feedback about previous predictions or evaluations, or to confirm the accuracy or otherwise of previous predictions or evaluations (IASB, 2018:13).

Furthermore, (Tsoncheva, 2014:4) described the relevance of accounting information as containing three (3) elements. The first element is the ability of financial statements, which serve as the vehicle for communicating accounting information, to provide visionary statements. The visionary statement usually describes the management's expectations about the company's future. This information holds significant predictive value for users, as management has access to private information that other stakeholders do not. The second element is the disclosure of opportunities and risks. Lastly, feedback about previous transactions and events is provided. These three elements explain the predictive and confirmatory value of accounting information, which are qualitative characteristics of relevance as prescribed by the IASB's Conceptual Framework for Financial Reporting.

Closely related to relevance is the quality of materiality. According to the IASB's Conceptual Framework for Financial Reporting, information is material if omitting, misstating, or obscuring it could reasonably be expected to influence users' decisions based on accounting information about a specific reporting entity. Consequently, materiality is an entity-specific aspect of relevance based on the nature or magnitude, or both, of the items to which the information relates in the context of an individual entity's financial report. Since materiality is firm-specific, the Board cannot specify a uniform quantitative threshold for materiality or predetermine what could be material in a particular situation (Achim, 2014:3; IASB, 2018:14).

2.2.2.1.2. Faithful Representation of Accounting Information

Faithful representation is synonymous with reliability. Faithful representation is also a term used to explain the reliability of accounting information. In the past, the IASB used the term reliability to describe what is now called faithful representation. The Framework (1989) states that for information to be reliable, it must be free from material error and bias and should be dependable for users as a faithful representation of what it purports to represent or could reasonably be expected to represent. It also discusses substance over form, neutrality, prudence, and completeness as essential to faithful representation (Achim, 2014:3).

The IASB Conceptual Framework for Financial Reporting states that financial reports represent an entity's economic phenomena in words and numbers. To be useful, the information in the financial reports must not only represent relevant phenomena but also faithfully represent the substance of the phenomena it purports to represent. In many circumstances, the substance and legal form of an economic phenomenon are the same. If they differ, providing information only about the legal form would not faithfully represent the economic phenomenon. Therefore, the substance of the economic phenomena is given preference in reporting over legal form. To have a perfectly faithful representation, a depiction of accounting information would be complete, neutral, and free from error. While perfection is seldom achievable in reality, if ever achievable, the objective of the Board is to maximize the faithful representation qualities as much as possible (IASB, 2018:14).

Although faithful representation means freedom from all errors, omissions, and material misstatements of the accounting information in the financial reports, it does

not mean accuracy in all respects. For instance, ‘free from error’ means there are no errors, omissions, or material misstatements in the representation of the phenomenon, and the processes leading to the production of the reported information are without errors. This context does not imply absolute perfection in all respects. Because some observed phenomena may not be known with reasonable certainty when preparing a financial report, the reporting entity, through its managers, must rely on best-judgment estimates of value that cannot be definitively determined to be accurate or inaccurate. However, faithful representation, in this case, would mean that the estimates are clearly and accurately described as estimates, and that no errors have been made in selecting and applying an appropriate process to develop them. The IASB’s Conceptual Framework of Financial Reporting states that using reasonable estimates is an essential part of preparing financial information and does not undermine the usefulness of the information if the estimates are clearly and accurately described and explained.

2.2.2.2. Enhancing (Secondary) Qualities of Accounting Information

In addition to the fundamental qualities of accounting information, the IASB’s conceptual framework also prescribes the enhancing qualities. Comparability, verifiability, timeliness, and understandability enhance the decision-usefulness of relevant accounting information that faithfully represents the information it purports to present.

2.2.2.2.1. Comparability with Other Similar Information

Users’ decisions involve choosing between alternatives. Thus, comparable information about various decision alternatives enhances the users' decision-making quality. Consequently, information about a reporting entity is more useful if it can be easily compared with similar information about other entities. Comparability is a quality that enables users to identify and understand similarities and differences among items. According to Gergana Tsoncheva (2014: 7), comparability is the quality that allows users to identify the similarities and differences between two or more economic phenomena. Comparability is not uniformity. For information to be comparable, things must look alike, and different things must look different. Accounting information that possesses the fundamental qualities is most likely to have some degree of comparability. In other words, a faithful representation of a relevant economic

phenomenon should naturally possess some degree of comparability with a faithful representation of a similar relevant economic phenomenon by another reporting entity (IASB, 2018:17). Comparability is useless if relevant accounting information is not faithfully represented or if a faithfully represented economic phenomenon is irrelevant to the user's decision-making. Hence, comparability is considered an enhancement of the quality of accounting information, which is valid only if the fundamentals exist in the information being presented (Achim, 2014:4).

2.2.2.2.2. Verifiability of Accounting Information

Accounting information is verifiable if two independent accountants can reasonably conclude that, based on their verification, the substance presented in the financial statements fairly represents the underlying transactions and events that occurred during the reporting period. Thus, verifiability means that independent accountants or auditors can verify the economic substance presented in accounting information. The quality of verifiability helps assure users that accounting information faithfully represents the economic phenomena it purports to represent. Since verifiability refers to the direct assessment of the reliability of the representation of accounting information, verifiability is an element of faithful representation (Osasere & Ilaboya, 2018:8).

2.2.2.2.3. Timeliness and Usefulness of Accounting Information

Timeliness, according to the IASB's Conceptual Framework for Financial Reporting, means having information available to the users on time to influence their decisions (IASB, 2018:18). Generally, information is useful if the users can access it on time to influence their decision-making. Therefore, timeliness is an essential element of the relevant quality of accounting information. The more promptly the information is available, the higher its predictive and confirmatory value for users. Consequently, timeliness means having the information available before it loses its capacity to influence decisions. However, for trend analysis, some information may remain timely long after a reporting period.

2.2.2.2.4. Understandability of Accounting Information

Clarity, conciseness, and unambiguous presentation of information would generally aid understandability. Although some phenomena are inherently complex and difficult

to understand, excluding them from financial statements may render the statements incomplete and misleading. Therefore, to facilitate understandability, the reporting entity must include explanatory notes in the financial reports to help users without technical knowledge of complex phenomena. However, users of financial statements are assumed to have at least a basic understanding of business and economics and are willing to study the information with reasonable diligence. Regarding understandability, some believe that adopting new accounting methods that may be difficult for users to understand should be avoided unless it is certain that users understand them (Achim, 2014:4). For instance, while highlighting the importance of understandability, the FASB Conceptual Framework for Financial Reporting states that financial information is understandable if users can comprehend its meaning. Therefore, understandability is enhanced when information is classified, characterized, and presented clearly and concisely (FASB, 2010). While some information may be understandable, it may be too complex for some users and not useful, despite the consistent value-add the new method will bring to the representation and presentation of accounting information. This means that the new method should not be implemented if users lack the necessary knowledge to understand it. According to this opinion, understandability is more important than relevance. Even though relevance is a fundamental quality of financial information, understandability is an enhancing quality. As clearly stated in the Conceptual Framework, classifying understandability as an enhancing qualitative characteristic indicates that information with complex understanding should be presented and explained as clearly as possible. Users are expected to seek help from financial analysts and experts to fully understand the information in financial statements if they lack the knowledge to comprehend complex transactions and processes (Achim, 2014:4-5; IASB, 2018:18).

2.2.3. Factors Influencing Accounting Information Quality

Accounting information quality is a subject of interest to participants in the capital market and other users in the financial reporting supply chain. Although the presentation of the accounting information in the financial statements follows a set of prescribed standard principles and rules that are aimed to ensure its quality, the expected quality is influenced by certain factors, such as the accounting information system infrastructure, which includes the knowledge and behavior of the people within

the accounting system (e.g., accountants and managers) as well as support from the leadership team (Thoa & Nhi, 2022:2). Another factor influencing the quality of accounting information is pressure from shareholders and analysts to protect earnings and deliver capital gains through share price appreciation in the capital market. This is because the ordinary nature of agency contracts poses agency problems, which arise when the principals (the 'shareholders') contract the agents (the 'managers') to make decisions on their behalf; there is a natural tendency for pressure to set in on the managers to report impressive results that would satisfy the interests of the shareholders and other stakeholders.

2.2.3.1. The Robustness of Accounting Information System (AIS)

Accounting information systems are essential in transforming economic data into decision-useful information for all interested stakeholders in the financial reporting supply chain (Wisna, 2018:1). The accounting system is one of the company's most important information systems. Its primary objective is to provide organisation managers with the information needed to make internal value-creation business decisions and to produce information that helps capital market participants with their investment decisions. The success of the information system that produced the accounting information determines its usefulness, which is the ultimate value of accounting information. Furthermore, the elements that make up the accounting information system also help ensure that the accounting information produced by the process meets fundamental and enhancing qualities as prescribed by the IASB's Conceptual Framework.

Firstly, accounting professionals responsible for accounting functions are central to the effectiveness and efficiency of the accounting information system. They interpret and apply the relevant standards, principles, and rules designed to safeguard the quality of the process's output. In most cases, the failure of accounting information systems in organizations will lead to corporate failure. According to Okon, Otuza & Dada (2021: 2), when financial inappropriateness or corporate failures occur, accounting professionals such as auditors and accountants who participated in the reporting process are accused of professional negligence in due care, unethical practice, compromise, or collusion. This has been seen in many cases, including Enron, WorldCom, Lever Brothers Nigeria, and Cadbury. Independent external

auditors and resident internal auditors are responsible for ensuring the quality of AIS. They ensure that all transactions passing through the system are substantiated and documented. Where documentation is not possible, they follow standard processes. The AIS's quality assurance functions include IT Risk Management or Information Risk Management audits (Saeidi et al., 2014:6).

Secondly, accounting standards, as defined by US GAAP or IFRS requirements, determine the quality of accounting (Sumiyana et al., 2021:3). Ideally, the rigorous enforcement of relevant standards enhances the quality of accounting information. Thus, accounting values can be predicted by adopting the best global accounting practices for processing financial transactions within an accounting information system. Accounting standards are also expected to act as a mediator of conflicts of interest between investors and managers. In playing the mediation role, reconciling financial reports is necessary to ensure the faithful representation of accounting information in the agency contract (Sumiyana et al., 2021:14).

2.2.3.2. The Instituted Corporate Governance Structure

Accounting information results from a process involving many parties, including preparers (accountants and managers) and those who can influence or guarantee the quality of the information presented (the Board and independent auditors). The company's Board of Directors constitutes the highest leadership team. It serves as the custodian of the corporate governance mechanism, including the audit committee, which can influence or guarantee the quality of accounting information. According to Wisna (2016: 4), one of the primary goals of the leadership team is to institute and implement an efficient and effective information system. Efficiency means transforming input transaction data into a desired output at a minimum cost. Conversely, effectiveness refers to the information system's ability to produce high-quality information for decision-making. The leadership team's ability to achieve this goal will impact the quality of accounting information. Thus, a good corporate governance framework is the starting point for any discussion about accounting information quality (Alsalim et al., 2018:11).

Transparency in the disclosure and communication of accounting information is part of the larger corporate governance framework. Therefore, reliable mechanisms are needed to ensure the quality of accounting information (Alsalim et al., 2018:11). The

corporate governance mechanisms are tools used to align the interests of shareholders and managers (Urban, 2019:2). According to Alsalim et al. (2018: 11), the governance tools used to enhance the quality of accounting information include external audits and audit committees. These are monitoring tools that add confidence and credibility to accounting information by providing an independent technical opinion on the truth and fairness of the representation in the financial statements of economic units. They also establish quality checks within companies to improve the quality of accounting information, including an independent Board committee (audit committee) to oversee the preparation of financial reports, to strengthen the independent role of the external auditor, and to ensure compliance with all applicable standards. A good corporate governance framework within a firm will improve the quality of accounting information and enhance stakeholders' decision-making, thereby boosting investors' confidence in the firm's financial performance (Alsalim et al., 2018:11; Deumes et al., 2019:5).

2.2.3.3. Earnings Pressures on the Corporate Managers

The capital market plays an essential role in economic growth by allocating capital resources. However, this role has some adverse effects, such as encouraging short-termism in corporate objectives. Short-termism is the excessive focus of corporate managers, asset managers, investors, and analysts on short-term results, such as short-term earnings and short-term portfolio returns, at the expense of long-term value creation, focusing on firms' fundamental value (Dallas, 2012:5). The impact of short-termism, as documented in the literature, is the pressure on firms to meet and beat earnings expectations (earnings pressure), which often results in opportunistic management behavior. The more managers care about short-termism to meet earnings expectations and grow current stock prices, the more incentive they will have to engage in myopic behavior (Dallas, 2012:10; Liu et al., 2021:2). Studies provided evidence of managers' manipulating earnings to achieve the expectations of external stakeholders, which shows that managers regard external earnings expectations as the basic requirements of external stakeholders regarding the company's operating results, which will cause earnings pressure on managers (Wang et al., 2023:2).

Therefore, earnings pressure motivates earnings management to maintain increasing earnings and beat analyst targets. It will put managers who find it challenging to meet

external stakeholders' earnings expectations based on fundamental operations in a myopic position. This will lead them to engage in opportunistic earnings management behavior to achieve the expected earnings. Thus, it interferes with earnings reporting when faced with earnings pressure (Okafor & Ezeagba, 2018:4; Wang et al., 2023:3).

2.2.4. Measures of Accounting Information Quality

The role of accounting information in influencing decision-making cannot be overemphasized. The quality of accounting information is determined by its usefulness in decision-making. Therefore, measuring the quality of accounting information communicated by a reporting entity is particularly important to capital market participants. The assurance of high-quality accounting information, measured by specific proxies, will enhance the quality of economic decision-making for users and the overall market efficiency.

Measuring the quality of accounting is an enduring topic that will continue to elicit discussion, as accounting information will always be investigated. Proxies such as earnings quality, audit quality, or earnings management serve as measures of accounting information quality. Although accounting information quality has featured prominently in the literature, there is no single, widely accepted, or specific definition of “accounting quality.” The concept has also been subjected to diverse measurable attributes (Sumiyana et al., 2021:1-3). Previous researchers (Easton & Harris, 1991; Feltham & Ohlson, 1995; Ohlson, 1995) have also developed the value relevance model as a contribution to measures of accounting information quality. Furthermore, to clarify the misconceptions about the value relevance construct and relevance attributes as conceptualized by the IASB and FASB Conceptual Frameworks (2010), Azar et al. (2019: 13) attempted to differentiate between the value relevance models and the relevance quality of accounting information as prescribed by the IASB/FASB Conceptual Frameworks.

2.2.4.1. The Value Relevance of Accounting Information

One of the most persistent problems in the accounting and financial reporting supply chain is the extent to which accounting information represents a reporting entity's underlying fundamental performance. Additionally, there is concern about how well the information content of accounting numbers is reflected in stock prices and stock returns. Ball and Brown (1968) They laid the foundation for investigating the quality of

accounting information by empirically evaluating the association between accounting numbers representing unexpected earnings and abnormal stock returns. Many researchers have made significant contributions to this aspect of accounting and finance research.

Value relevance, a concept central to understanding the usefulness of accounting information, has been defined in various ways by researchers. At its core, it measures the association between accounting numbers and market value or stock price/returns (Karunarathne & Rajapakse, 2010: 2; Oyerinde, 2011: 44; Uareme, Yusuf & Sani, 2021: 2). Specifically, accounting measures are considered value-relevant if they explain the market price-to-book value ratio of equity (Amir, Harris & Venuti, 1993: 3) or if they capture value-relevant events, such as abnormal earnings, that determine a firm's value (Ohlson, 1995: 3-5). In essence, value relevance reflects the degree to which accounting numbers summarize information contained in market value or share price (Uareme, Yusuf & Sani, 2021: 2), highlighting the statistical link between financial statement information and stock market outcomes. By capturing this association, value relevance provides insight into how well accounting data informs market valuation.

Value relevance refers to the extent to which accounting information is associated with market value or share prices. It measures the degree of association between accounting data and market outcomes (Chang et al., 2008: 2), capturing the ability of earnings to explain variations in stock returns or share prices (Azar et al., 2019:12 Sixpence & Adeyeye, 2018: 3). In essence, value relevance assesses how well published financial statements explain share price movements (Sixpence & Adeyeye, 2018), reflecting the degree to which accounting information influences share prices (Baffa & Yero, 2017: 1). For accounting information to be considered value-relevant, it must have a significant predicted relationship with share prices, indicating that it provides relevant information to investors for valuing a firm's equity shares (Acaranupong, 2017: 5).

However, Lo et al. (2000: 5–8) attempted to provide distinctive definitions of information content, valuation relevance, and value relevance. Using these three approaches, they clarified concepts that are often used interchangeably in the literature when defining value relevance. According to Lo et al. (2000), a set of accounting information and disclosures has information content if it leads to price

changes that yield returns in excess of expected returns. For instance, if the assessment of available information indicates increased risk, the stock price is expected to decline, thereby generating higher expected returns. Valuation relevance, on the other hand, refers to the valuation approach used to analyze the relationship between stock prices and accounting numbers. Valuation is the process of attributing value to stock price (meaning the “evolution of stock price”) – while value denotes the quantity or the amount of value equity stock has attained over time. This approach focuses on how accounting measures, such as earnings, relate to price changes or expected returns, as in Ball and Brown (1968). Finally, in assessing the valuation relevance of accounting numbers, a specific measure of accounting performance—such as earnings—whose value relevance is to be investigated must be identified. Therefore, the value relevance approach examines the association between accounting measures, such as earnings, book value, and market value.

Value relevance research is part of market-based accounting research, which aims to explain the impact of accounting information on stock prices or stock returns (Mulenga & Bhatia, 2020:2). In this study, value relevance is defined as the degree to which variations in stock prices or returns are associated with the informational content of accounting measures. It describes how much variation in stock prices or returns is explained by accounting performance measures that interest equity shareholders. This will be measured by the degree of association between accounting information, such as earnings and stock price, or stock returns. Hence, accounting information is value-relevant if it can influence changes in stock prices or returns. Thus, making a difference in the users' investment decisions.

The value relevance of accounting information has been measured primarily by the association between accounting earnings and stock prices, using the Stock Price Model (SPM) of Ohlson (1995), or between accounting earnings and stock returns, using the Stock Return Model (SRM) of Easton and Harris (1991). The higher the explanatory power of accounting earnings, the higher the value relevance of the accounting information. Figure 1 below shows the different types of value relevance models used to measure the quality of earnings in explaining stock prices or returns.

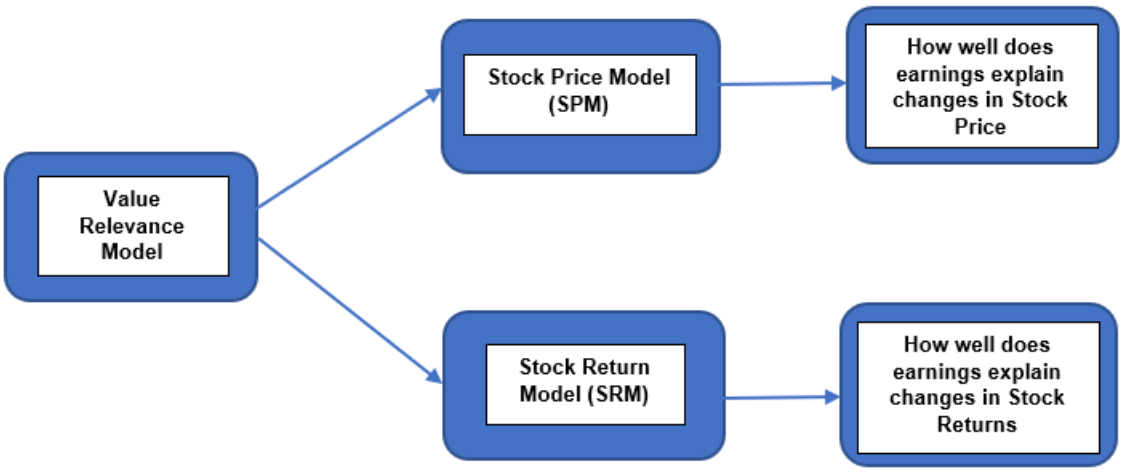

Figure 1: Types of Value Relevance Models (Azar et al., 2019:12).

The landmark contributions of Ohlson (1995) and Feltham and Ohlson (1995) gave rise to the Stock Price Model (SPM), a value relevance model designed to examine the relationship between earnings, book value, and stock price as a measure of accounting information quality. The core of the valuation function in this model is a function that relates a firm's market value to contemporaneous accounting variables. Three (3) analytical assumptions were put forward to formulate the valuation model of Ohlson (1995) as follows:

(i) The first assumption follows the neoclassical security valuation model, which states that the present value of the expected dividend (PVED) determines a firm's value.

(ii) The second assumption is the clean surplus relation, which is the regular owners' equity computation in accounting: that dividend reduces the book value of equity without affecting the current earnings. This relation implies that the ending book value of equity equals the beginning book value plus current-period earnings minus dividends, net of other value-relevant events. This assumption posits an efficient market in which the market value reflects all available information, equating the book value of equity with its market value. If the book value increases by the amount of retained earnings, then we have a clean surplus relation. Otherwise, we will have a clean surplus violation. The clean surplus relation may not hold when items are charged directly to the

shareholders' equity account without passing through the income statement. Hence, it presents a dirty surplus accounting flow, which needs to be adjusted, provided it will not reverse in the subsequent period.

(iii) The third and final assumption is that of a stochastic time-series behaviour of abnormal earnings. Abnormal earnings are a performance measure defined as current earnings minus the capital use charge, which is the risk-free rate multiplied by the beginning book value of equity.

Therefore, since the PVED and the clean surplus relation imply that the market value equals the book value plus the present value of future expected abnormal earnings, the valuation model can then focus on predicting future abnormal earnings rather than dividends (Ohlson, 1995:4). Thus, the value analysis can shift away from PVED to book value plus the present value of expected abnormal earnings (Ohlson, 1995:21).

The contribution of Easton and Harris (1991) to the value relevance model explores the earnings-return association by combining the book value valuation model and the earnings valuation model. The clean surplus relation, which implies that book value and market value are equal and are both variable sources, indicating shareholders' wealth in stock (Easton & Harris, 1991:2), after making adjustments for scaler variables that may result from many factors, including the choice of conservative accounting practices and other information incorporated in stock prices but not yet reflected in the accounting value (Easton & Harris, 1991:4), is the starting point for the earnings-return relation. Suppose the book value of equity per share and the stock price are related. In that case, earnings divided by the stock price at the beginning of the period should be an appropriate variable in explaining the stock returns (Easton & Harris, 1991:5). Hence, the clean surplus relation serves as the theoretical foundation for the Stock Return Model (SRM).

Furthermore, considering the earnings-return relation from the perspective of the earnings valuation model, an association will exist between earnings divided by the price at the beginning of the period (earnings/Yield at the beginning) and stock returns during the period (Easton & Harris, 1991:5-6).

2.2.4.2. Earnings Management (EM) Traits in Earnings Reporting

Earnings have been established as the summary of a company's financial performance. The earnings announcement is the most important information shareholders look for in a company's financial statements, especially for publicly listed companies. This is why scholars consider earnings the most important accounting information (Azar et al., 2019:9; Y. K. Susanto, 2017:1). Given the importance of earnings in corporate performance measurement and stakeholder pressure on management to meet expected earnings targets, management is often compelled to employ creative accounting practices to influence or manipulate earnings reporting. This process of attempting to intervene in, manipulate, and tamper with earnings fundamentals through accounting practices and choices is called earnings management.

The Positive Accounting Theory (PAT) assumes that the choices of specific accounting methods and practices are explainable. The results of those choices on the present and future phenomena can be predicted (Wiratama & Asri, 2020:3). However, managerial intent is vital in explaining the reasons behind those accounting choices (Fields et al., 2001:2). That is, is the motive behind the choice of accounting methods driven by the management's objective assessment of the underlying fundamentals of performance measures, or is it born out of managerial opportunism to influence the output of the accounting system for self-gains? In practice, it is not easy to distinguish between an objective accounting choice aimed at optimizing performance measures and a choice motivated by self-interest to make private gains. Such mixed motives make earnings management a topic of interest in the financial reporting supply chain. The incentives for opportunistic earnings management may include managers' drive to meet or beat earnings targets, earn more compensation from increased reported earnings, inflate the market price of the company's stock, or attract higher consideration in mergers & acquisitions (Mohanram, 2003:3; Potharla et al., 2021:2).

Gloria and Emenike (2018: 2) define earnings management as an attempt by the management to influence or manipulate reported earnings using specific accounting methods to either reduce expenses or increase revenue to post short-term earnings. It is a form of financial engineering that involves manipulating accounting information

through opportunistic actions to report earnings that reflect good company performance (Susanto, 2017:2). Earnings management capitalizes on accounting professionals' knowledge of the accounting information system to influence reported earnings while adhering to accounting principles. This creative process allows management to present manipulated figures that portray a favourable performance position to shareholders, rather than reflecting the firm's actual performance. In other words, earnings management transforms accounting information to show a performance outlook that management wants the shareholders and other stakeholders to see, taking advantage of legal loopholes in accounting principles (Remenarić et al., 2019:3).

However, when management resorts to creative accounting in their financial reporting process, it usually results in manipulated accounting information, creating a particular image that will no longer faithfully represent the substance of economic phenomena underlying the entity's financial performance and position (Akpanuko & Umoren, 2018:11; Safta et al., 2020:2). As a result, misleading the users of accounting information, specifically the shareholders who may suffer economic damage due to wealth losses to erroneous investment decisions relying on misleading information from the company, and by implication, creates doubts on accounting practices and loss of public confidence in the financial reporting supply chain (Chhillar & Lellapalli, 2022:2; McNichols & Stubben, 2008:3; Moses et al., 2020:4; Y. K. Susanto, 2017:1; Ubesie et al., 2022:11).

One incentive for earnings management is the desire to meet or beat analysts' earnings forecasts by manipulating the earnings reporting process, driven by capital market pressure (Ali & Bansal, 2021:2; Bankole et al., 2018:4). Typical of earnings management practice is the firms' misuse of allowable judgments and discretion in accounting rules regarding the recognition and measurement of assets, liabilities, and expenses (Ajekwe & Ibiamke, 2017a:2). This practice involves arranging the accrual component of earnings and directly manipulating earnings by structuring the timing and scale of fundamental business transactions. Consequently, managers often use these discretionary flexibilities in accounting principles to distort purported accounting information to satisfy various motives, including manipulating earnings to influence stock market decisions (Draief, 2019:2). For instance, firms can engage in reporting inflated (deflated) earnings by making less (more) provisions for doubtful debts, early

(deferred) recognition of the revenue, or increasing (decreasing) the period of asset depreciation (amortization), which would result in a higher (lower) level of discretionary accruals (Ali & Bansal, 2021:2).

The earnings management activities in companies that resort to creative accounting in their earnings reporting occur through two alternative methods as recognized in accounting literature: accrual-based earnings management (AEM), which involves changing accounting policies and estimates to achieve a particular earnings management strategy, and real earnings management (REM) that structure the scale and timing of actual business transactions with targeted earnings performance in sight. It is a departure from normal operational practices motivated by the management's desire to mislead some stakeholders into believing that specific performance metrics have been met. Usually, management would trade off between the two alternative earnings management strategies with recourse to the related costs (Cohen & Lys, 2022:4; Kimouche & Ilyes, 2021:2; Mohanram, 2003:4-5; Roychowdhury, 2006:3; Schipper, 1989:1).

In accrual-based earnings management, discretionary accruals are intentionally incorporated into the company's total accruals to influence earnings reporting. Total accruals represent the difference between the net income and cash flow from operations (Mohanram, 2003:7; Susanto, 2017:4). Discretionary accruals are an element of the total accrual that makes up the accruals' income, which was separated from the cash flow earnings (Maranjory et al., 2013:1). Measuring accrual-based earnings management involves decomposing total accruals into discretionary and non-discretionary components. Five discretionary accrual models: the Healy model, the DeAngelo model, the Jones model, the modified Jones model, and the industry model, are frequently used in the literature (Bartov et al., 2000:5-7; Chen, 2010:3-4; Chiu et al., n.d.:3; Guay et al., 1996:13).

1. Healy Model of Earnings Management

Healy (1985) postulated that non-discretionary accruals follow a white-noise process. This 'white noise' refers to statistical variation that is unexplained by any regression model and has an average of zero. Therefore, the expected value of non-discretionary accruals is zero. Any non-zero value of total accruals (TA), which is the sum of

discretionary accruals (DA) and non-discretionary accruals (NDA), indicates earnings management related to discretionary accruals.

$$Dait = TA_{it}/A_{it-1} \quad (1)$$

Where TA is the total accruals, and A is the total assets

2. DeAngelo Model of Earnings Management

DeAngelo (1986) assumed that non-discretionary accruals follow a random walk. For a company in a stationary condition, the non-discretionary accrual in period t is equal to the non-discretionary accrual in period t-1. As a result, the discretionary accrual related to earnings management is the difference between the non-discretionary accruals in period t and t-1 deflated by total assets.

$$DA_{it} = (TA_{it} - TA_{it-1})/A_{it} \quad (2)$$

3. Jones Model of Earnings Management

Jones (1991) believes that variations in revenue would lead to changes in operating capital, which would, in turn, cause changes in accruals, while depreciation on fixed assets would decrease accruals. Because of this, Jones uses the variance of revenue (△ REV) and fixed assets (PPT) as independent variables to predict the discretionary accruals.

First, equation (3) is used to estimate the coefficients, and then the expected DA is calculated using the data from period t.

That is:

$$TA_{it}/A_{it-1} = \beta_1 (1/A_{it-1}) + \beta_2 (\triangle REV_{it}/A_{it-1}) + \beta_3 (PPT_{it}/A_{it-1}) + \varepsilon_{it} \quad (3)$$

$$DA = TA_{it}/A_{it-1} - \alpha_1 (1/A_{it-1}) + \alpha_2 (\triangle REV_{it}/A_{it-1}) + \alpha_3 (PPT_{it}/A_{it-1}) \quad (4)$$

4. Modified Jones Model of Earnings Management

In Jones's model, it was assumed that all variances in sales revenue are non-discretionary. The modified Jones model was used to adjust for all non-discretionary variations in sales revenue, including those driven by managers' use of credit sales to manage earnings. The modified Jones model, which represents the change in net between year t and year t-1, was introduced into the Jones model.

$$DA = TA_{it}/A_{it-1} - \alpha_1 (1/A_{it-1}) + \alpha_2 (\triangle REV_{it}/A_{it-1} - \triangle REC_{it}/A_{it-1}).) + \alpha_3 (PPT_{it}/A_{it-1}) \quad (5)$$

5. The Industry Model of Earnings Management

The industry model assumes that firms in the same industry face similar economic conditions and business environments, and that the determinants of non-discretionary accruals are common across firms in the industry. The expected accruals for the industry are calculated using industry-specific data. The discretionary accruals represent the difference between actual accruals and expected accruals. If a firm's accruals exceed the industry benchmark, the difference is due to earnings management in accruals.

Real earnings management (REM) is another strategy management adopts to manipulate earnings. Despite the costs associated with this method, managers are likely to mix real activity manipulation and accrual manipulation in their earnings management practice, which may not necessarily translate into shareholder value creation. To detect real activity manipulation that could cause capital losses for shareholders, Roychowdhury (2006: 5) investigated the movement patterns of operating cash flows, discretionary expenses, and production costs near the zero-earnings or last-year-earnings benchmark. Discretionary expenses include advertising, R&D, sales, and general and administrative (SG&A). On the other hand, production costs are defined as the sum of COGS and changes in inventory during the period. This definition helps checkmate all possible accrual manipulations that can lower the cost of goods sold and thereby increase net income. The focus will be on the following three variables.

(i) Manipulation of sales revenue by accelerating the timing of sales and/or generating additional unsustainable sales through increased price discounts or relaxing credit terms to customers;
(ii) Rearranging discretionary expenditures to reduce their impact on net income; and
(iii) Overproduction to spread manufacturing overheads across production volumes and/or manipulating production to report lower COGS

Managers adopt REM intending to inflate current-period earnings, which may not be sustainable in subsequent periods. Such inflated earnings will be less persistent over time and impact the firm's market value. Inflated earnings may also attract positive

market sentiments in the short run, unless the market detects them (Potharla et al., 2021: 2).

2.2.4.3. The Attributes of Earnings Quality (EQ)

Accounting earnings are central to corporate performance measures as they summarize a firm's performance. Share valuation, debt contract evaluation, and management performance evaluation use accounting earnings. As pivotal as earnings are to corporate performance measurement, so are the qualities of earnings. Earnings quality is, therefore, an essential measure of accounting information quality. The constructs "earnings quality" and "earnings management" are related, and higher earnings management leads to poorer earnings quality (Chhillar & Lellapalli, 2022:4)**.** Earnings quality is a measure of the extent to which the reported earnings faithfully represent the fundamental earnings performance of the company.

Earnings quality has been defined differently in the academic and professional literature, with varying attributes and proxies. For instance, high-quality earnings are expected to be *(1) sustainable, (2) free of error and manipulation, (3) informative, (4) accurate in the measure of value creation, and (5) conservative* (Nissim, 2024:17).

1. The Sustainability of Reported Earnings

Sustainability is an essential attribute of high-quality earnings. High-quality earnings are expected to persist over time and recur, suggesting strong earning power for the company. Sustainability, or persistence, is a popular definition of earnings quality among analysts and practitioners because it demonstrates a company's ability to generate earnings continuously from core business operations, free from volatility. There is a general notion that consistency of accounting methods would produce sustainable earnings reports deemed high quality, which will ensure the predictability of future earnings (Lyimo, 2014:2).

2. Reported Earnings must be Free of error and manipulation

High-quality earnings should faithfully represent the underlying substance of business performance, accurately presented with no material error, misstatement, or manipulation. High-quality earnings will be free from opportunistic discretionary accruals and manipulation of real business activities that smooth the shocks of the

underlying earnings process during the year to meet earnings targets (Guay et al., 1996:8; Roychowdhury, 2006:2).

3. The Informativeness of Reported Earnings

Informativeness refers to the usefulness of earnings as the accounting measure summarizing a company's performance. As noted earlier, its usefulness impacts the decision-making of the users of accounting information. High-quality earnings provide more information about a firm's underlying performance that is relevant to users' specific decisions. Informativeness of earnings can be measured by market reaction, the quality and quantity of disclosures, cross-sectional comparability of the reported earnings, and cash flow predictability (Nissim, 2024:18-19).

4. Reported Earnings as an Accurate measure of value creation

As the science of measuring a company's economic value, accounting information provides the framework for measuring shareholder value creation. To fulfil this purpose, high-quality earnings promise predictive and confirmatory values relevant to measuring economic value created by a company from its sustainable operations (Azar et al., 2019: 6). Measurement and valuation are integral to accounting information and are usually inseparable at every stage. Therefore, the confirmatory value of accounting information provides the basis for measuring the value created for shareholders from various value-creation strategies. The predictive value includes information about the firm's valuation and shareholder wealth (Azar et al., 2019: 6; Sadowska & Lulek, 2016b: 4).

5. Conservativeness in Earnings Reporting Procedure

Conservatism is a principle enshrined in accounting and the preparation of financial statements. It requires accounting professionals in the financial reporting supply chain to exercise reasonable caution in assessing and recognizing uncertain events to ensure that assets or profits are not inflated, and lower liability or costs are not reported (Krismiaji & Sururi, 2021:4). The principle of conservatism is based on prudence, considering the worst-case scenario in financial reporting. The prudency concept, as it is termed, is a controversial accounting concept seen as an accounting convention, rule, or constraint, and is now considered an attribute of reliability (faithful representation) of accounting information (Kimouche, 2021a:3).

In accounting conservatism, income recognition for earnings measurement and reporting requires pessimistic judgments, especially in the context of risky and uncertain events. Hence, a more conservative firm will likely have less earnings management in the reporting process. As an essential element of faithful representation, prudence requires that assets and income are not overstated and that liabilities and expenses are not understated. Equally, it does not allow for the understatement of assets or income, or the overstatement of liabilities or expenses (IASB, 2018:15). Such misstatements, which would affect the reliability of reported earnings, are assessed using the conservatism principle. Hence, improving earnings quality. The IASB conceptual framework emphasizes that exercising prudence (conservatism) does not imply an asymmetry in accounting information (Framework, 2018:15). Instead, it involves exercising restraint or caution in recognizing income and assets, or taking extreme care in ignoring probable expenses and liabilities under uncertain conditions.

Accounting literature documented two measures of conservatism in accounting practices: conditional and unconditional conservatism.

(i) Conditional conservatism: It is a pessimistic judgment that immediately recognizes bad news but delays good news. It is also referred to as news-dependent, or ex post, conservatism, in which a firm writes down the book value of net assets immediately upon receiving bad news but delays writing up the book value of net assets upon receiving good news. Therefore, high-quality earnings reflect bad news (losses) more quickly than good news (gains) (Basu, 1997:2; Beaver & Ryan, 2005:1; Ryan, 2006:4).

(ii) Unconditional conservatism: It is an optimistic approach to accounting conservatism, which deliberately expenses all costs or writes down the value of assets for losses that have become known. It is referred to as news-independent or *ex-ante* conservatism, a practice that involves a predetermined understatement of the book value of net assets, similar to the immediate expensing of most intangible costs. This practice demonstrates accounting bias towards reporting low book values of shareholders' equity. Hence, if clean surplus accounting is followed, it results in low average-income reporting (Ball & Shivakumar, 2004:10; Beaver & Ryan, 2005:1; Ryan, 2006:2).

2.2.5. Measures of Earnings Quality

The quality of earnings has been the subject of robust debate among accounting and finance researchers and practitioners. As such, the literature has documented alternative proxies for measuring these attributes, although no single tool has been confirmed as the most suitable measure of earnings quality. Francis, Lafond, Olsson and Schipper (2004a: 7) identified seven attributes of earnings: accrual quality, persistence, predictability, smoothness, value relevance, timeliness, and conservatism. The first four attributes are classified as accounting-based. They are typically measured solely using accounting information. In contrast, the last three attributes are termed market-based measures because their proxies are typically based on relationships between market and accounting data.

2.2.5.1. Accounting-based Measures of Earnings Quality

The following measures of earnings quality are constructed primarily from the accounting data:

2.2.5.1.1. The Quality of Accounting Accruals (Accrual Quality)

Accruals are the noncash component of earnings calculated as net income minus net cash flow from operations (Lewellen & Resutek, 2019:3; Nissim, 2024:32; Susanto, 2017:2). They are primarily temporary accounting adjustments that shift cash flow realization across different periods to show a more accurate picture of firm performance (Dechow & Dichev, 2001:3). Usually, revenue and expenses are matched in a particular accounting period based on the value of goods and services delivered and the cost of resources consumed to earn the recognized revenue, irrespective of timing differences in cash flow realization. This process is referred to as “accrual accounting.” The timing difference in cash flow realization results in a shock, a source of variance between accounting earnings and cash flow from operations reported in a fiscal year.

Although accrual accounting forms the basis for the preparation of financial statements, and the output of the accounting information system is dependent on the accrual process, its benefits come at the cost of making erroneous estimates and assumptions, resulting in meaningless noise that will impact future realizations of cash when the accruals are reversed, and reduce the beneficial role of accruals (Dechow &

Dichev, 2001:3; Lewellen & Resutek, 2019:3). Hence, the magnitude of the estimation errors will drive the quality of accruals and earnings. Therefore, accrual quality is defined as the extent to which accruals are mapped into future cash flow realizations, whereas a poor match suggests low accrual quality (Dechow & Dichev, 2001:3). Since accrual quality provides information about mapping accounting earnings to cash flows, it is a risk factor that weakens this mapping. Thus, low-quality accruals increase the risk of cash flow realization (Cho et al., 2017:3; Francis et al., 2005:2).

Furthermore, the risk factor, which is driven by measurement errors and noise in accounting estimates, is more likely to disturb the mapping of accruals into cash flows during volatile periods, reducing the quality of accruals relative to less volatile periods (Christensen et al., 2023:1). The literature documents evidence of this association between periodic cash flow volatility and the quality of accruals, indicating that accrual quality and cash flow volatility are inversely related over time (Christensen et al., 2023: 2).

Accrual quality is decomposed into two primary sources - accruals that reflect economic fundamentals driven by the firm's business model (innate factors – innate accrual quality) and accruals that represent the choices of management estimates (discretionary factors – discretionary accrual quality) (Cho et al., 2017:3; Francis et al., 2005:2). Moreover, Dechow and Dichev (2002: 3) argued that accrual quality is systematically related to the firm and industry-specific characteristics. Meaning that accrual quality will be related to the firm or industry-specific characteristics even without intentional earnings management. For instance, operational volatility is systematically associated with a propensity to make estimation errors, whereas managerial opportunism is often unobservable and/or recurring. Therefore, the distinction between intentional estimation error through discretionary accruals and that driven by innate business characteristics lies in identifying the sources of accrual quality, as both imply low accrual quality and, consequently, low earnings quality.

As stated, the distinction between the source of estimation errors (innate or intentional) is irrelevant in measuring the impacts of the accrual noise on the quality of accruals and earnings quality. Understanding the conceptualization of the proxies used to measure accrual quality matters. Although the literature contains several measures of accrual quality, Dechow & Dichev (2002) (hereafter DD) provide the best conceptual

explanation of the accrual model and develop a measure of accrual quality that best captures the uncertainties in accruals. DD's accrual quality model was proposed. DD's model for accrual quality measures the extent to which operating capital with a one-year revolving cycle is mapped into operating cash-flow realizations, based on the intuition that estimation errors affect accrual quality regardless of management intent. DD's measure of working capital accrual quality is the unexplained portion of the variation in working capital accruals that is not explained by regressing them on cash flow from operations in the current, prior, and future periods. The unexplained variation in working capital comprises regression residuals, reflecting accruals unrelated to cash-flow realization. A higher magnitude of this unexplained portion implies poorer quality (Dechow & Dichev, 2002:7).

The foundation of DD's approach to building an accrual framework revolves around the observation that accounting earnings can be decomposed into two components: cash flow from operations and accruals (Dechow & Dichev, 2002:4). The cash flow part of the earnings realized in any period is a result of three (3) transactional effects:

(i) The net cash collection and or payments in respect of transactions that accrued in the prior period (t-1), herein represented by the symbol CF_t^{t-1}

(ii) The net cash collections and or payments in respect of transactions that accrue in the current period (t), herein represented by the symbol CF_t^t

(iii) The net cash collections and/or payments for revenue and expenses whose earnings effect differs from the future period. Cash received or payment made before revenue and expenses are matched for earnings recognition. This net deferred cash flow is represented by the symbol CF_t^{t+1}

In summary, the total cash flow for period t is:

$$CF_t = CF_t^{t-1} + CF_t^t + CF_t^{t+1} \qquad (1)$$

On the other hand, the accrual component of earnings shifts cash flow realization across periods. The realization of cash flow in any period involves adjusting two accounting accruals (opening and closing) created at different periods, resulting in the net amount that translates into realized cash in the current period. The creation of the two accrual entries and their cash flow implications are explained below:

(i) When revenue and expenses are recognized in earnings reporting before cash is received or paid, the accounting system estimates the expected cash to be received in the future, in respect of the accrued revenue and expenses:

a. Accrual estimates made in the prior period for cash to be received or paid in the current period (t+1) are referred to as the opening accruals and will have the same sign as the related cash flow. The estimated accrual is denoted by the symbol $A^{o}_{CFt/t+1}$, where A^{o} represents the opening accrual, and the subscript CFt/t+1 (CF_t^{t+1}) is the corresponding cash flow equivalent of the accrual

b. The accrual estimates in the current period for cash to be received or paid in the future period are referred to as closing accruals and denoted by the symbol $A^{c}_{CFt/t-1}$. Where A^{c} represents the closing accrual, and the subscript CFt/t-1 (CF_t^{t-1}) is the corresponding cash flow equivalent of the accrual bearing a negative adjusting sign.

c. However, because accounting accruals are subject to estimation errors to the extent to which cash flow realization would differ from their accrual estimates, the opening accrual will contain an estimation error that is corrected by the closing accrual. Such errors are incorporated into DD's accrual quality framework as positive or negative adjustments to the opening and closing accrual models. The estimation errors are denoted by + ε_t^{t+1} (opening accrual estimation error) and – ε_t^{t+1} (closing accrual estimation error).

d. The opening accrual represents the expected net cash flow to be realized in period t+1, which is the actual t+1 cash flow received plus the error term ε_t^{t+1}, i.e., ($CF_t^{t+1} + \varepsilon_t^{t+1}$). The closing accrual equals the actual cash flow collected or paid in t plus an error term – ε_t^{t-1}, i.e., (– CF_t^{t-1} – ε_t^{t-1}), which equals the difference between the last period's expectation and this period's cash flow realization. Thus, closing the accrual for cash collections and payments at time t offsets the opening accrual from t-1, since every accrual has a one-year revolving period.

(ii) DD's accrual framework also incorporates a situation where cash is received before revenue is recognized in earnings or cash is paid for a deferred expense item that would be recognized in earnings of future periods. The net corresponding cash flows in respect of such deferred earnings would attract:

a. Negative sign for the opening accruals; hence, the corresponding cash flow for the opening accrual ($A^{o}_{CFt/t+1}$) is denoted by $– CF_t^{t+1}$, and
b. Positive sign for the closing adjusting accrual ($A^{c}_{CFt/t+1}$) with a related cash flow denoted by CF_t^{t-1}
c. However, since cash has already been received or paid before revenue and expenses are recognized in earnings, no estimation errors are contained in the accruals.

Using the expression of earnings equal cash flow plus accruals from the decomposition of accounting earnings in equation (1)

$E_t = CF_t + \text{Accruals}$

Substitute the related cash flows and estimation errors of the accruals; we have the following relation for the earnings:

$$E_t = (CF_t^{t-1} + CF_t^{t} + CF_t t^{+1}) + (CF_t^{t+1} + \varepsilon_t^{t+1} – CF_t^{t-1} – \varepsilon_t^{t-1} – CF_t^{t+1} + CF_t^{t-1}) \quad (2)$$

Rearranging the expanded earnings relation above, we have:

$$E_t = CF_t^{t-1} + CF_t^{t} + CF_t t^{+1} + \varepsilon_t^{t+1} – \varepsilon_t^{t-1} \quad (3)$$

Equation (3), which presents earnings as the sum of past, present, and future cash flows plus an adjustment for estimation errors and their correction, expresses the primary intention of DD's framework of accrual quality as a measure of earnings quality. Both estimation errors and error corrections reduce the quality of earnings as a measure of performance (Dechow & Dichev, 2002:6).

Furthermore, it is crucial to distinguish between accrual-based earnings management and accrual quality. Accrual-based earnings management and accrual quality measures differ conceptually. While the measure of accrual-based earnings management captures the sign and magnitude of accrual estimation error in a specific period, accrual quality measures the variation in accrual quality across multiple periods. Secondly, while accrual-based earnings management attempts to distinguish between innate and intentional accrual errors, the separation between these two sources of estimation errors is irrelevant in the accrual quality measure, as they both reduce the quality of accruals and diminish earnings quality (Nezlobin et al., 2019:2).

2.2.5.1.2. The Persistence of Reported Earnings

Earnings persistence generally refers to the likelihood that a company's accounting profits will recur. This earnings attribute indicates earnings sustainability, measuring the business's ability to continue generating earnings in the future, assuming current operating conditions remain constant. Earnings persistence, or sustainability, is the most common attribute investors use to interpret earnings quality. It is the center of attention because stock prices reflect market expectations of the firm's future earnings power. Multiple pricing or valuation models, in practice, adopt equity pricing constructs to link the stock price to earnings ingredients through the earnings multiplier (Adityanur & Mardijuwono, 2020:3; Nissim, 2024:21; Wu et al., 2019:1). For instance, in EBITDA multiple models, high earnings persistence implies strong earnings power, meaning that valuations based on this model are likely to yield a precise estimate of the firm's future value. Current earnings with these predictability properties are a good proxy for future earnings and are viewed by investors as more sustainable (Li, 2019:4).

Persistence, or sustainability, is an essential attribute of accounting earnings, as it facilitates both the predictive and confirmatory value of accounting information, which are closely related to the relevance quality prescribed by the IASB Conceptual Framework of Financial Reporting. Relevance is a fundamental quality of accounting information that qualifies accounting information as capable of making a difference in users' decisions, and thus helping them to make new predictions (Predictive value), confirm or correct prior predictions (Confirmatory value), or both (Kimouche, 2021b:7). Earnings persistence can be understood from two perspectives. The first relates to the company's overall performance, as reflected in its earnings and its ability to sustain them over the long term. Persistent earnings will serve as a good indicator of the company's future earning power. The second perspective is the strong relationship between earnings and stock performance, which translates into stock returns (Adityanur & Mardijuwono, 2020:3).

Earnings persistence measures the enduring nature of accounting earnings and is defined as the degree of first-order autocorrelation in a time series of earnings. That is the estimated coefficient of the current period's earnings regressed on the next period's earnings (Canina & Potter, 2019:1; Kimouche, 2021b:7; Nezlobin et al., 2019:4), with a higher coefficient signifying a stronger persistence attribute of

accounting earnings, hence higher earnings quality. Persistent earnings tend not to fluctuate from period to period and are more stable. In this case, earnings persistence, used to measure earnings quality, will demonstrate the sustainability of accounting earnings (Adityanur & Mardijuwono, 2020:3). The following relation is used to measure the persistence of accounting earnings (Canina & Potter, 2019:4; Nezlobin et al., 2019:4; Sloan, 1996a:10):

$$\text{Eanings}_{t+1} = \beta_0 + \beta_1 \text{ Earnings}_t + \text{error term}_{t+1}$$

The coefficient of the current period's earnings (β_1) is the persistence of earnings.

Generally, earnings persistence implies earnings predictability, which helps the usefulness of accounting information. Also, high earnings persistence or sustainability implies low information risk levels and value uncertainty (Nissim, 2024:21).

2.2.5.1.3. The Predictability of Corporate Earnings

Among the measures of earnings quality, persistence, and predictability, they help to understand the stability and sustainability of a company's financial performance. While persistence measures a company's earning power or sustainability of accounting earnings, predictability refers to the ability of current-period earnings to predict future earnings. According to Canina and Potter (2019: 1), earnings predictability measures the ability of earnings to predict themselves with reasonable precision. Earnings predictability is crucial to meeting the investors' forward-looking decisions as posited by the neoclassical consumption theory, which suggests that investors' decision-making process is not driven by a single period's earnings but rather by a series of earnings that hint at a potential stream of permanent earnings in the foreseeable future (Pimentel & Lima, 2010:2). Predictability is therefore a desirable attribute of accounting earnings, as it helps investors forecast future earnings.

Predictability, like earnings persistence, is a time-series measure of earnings quality (Fonou-Dombeu, et al. 2022: 7). It is "the ability of past earnings to predict future earnings, and it is reflected in the variance of the shock in the univariate earnings process (as variance decreases, the predictability of earnings increases)" (Lipe, 1990a:3). This definition shows that the variance of the error term measures earnings predictability in a model in which the current-year earnings of firm J are regressed on its one-year lagged earnings. Therefore, predictability, as a proxy for earnings quality,

measures the extent to which investors can predict a firm's future earnings and/or cash flows using its past and present earnings (David Johnson et al., 2023a:4; Olaniyi et al., 2020:2).

Several reasons underscore the importance of understanding the time-series properties of earnings information—such as persistence and predictability—in accounting research. One reason is the role of current earnings in the firm's valuation process (Canina & Potter, 2019:1; Pirveli, 2020:5). This is because the properties of earnings are either directly or indirectly linked to almost all valuation models (Feltham & Ohlson, 1995; Ohlson, 1995). Investors use the present value of future cash flow to value a firm. Strong earnings predictability indicates a relationship between current earnings and future cash flow, which can help investors assess a firm's valuation (Ye et al., 2010:3). Another reason is that market-based accounting research has provided consistent evidence that stock returns are predictable and that the power of predictability is a function of time-series properties of earnings (Pirveli, 2020:5).

The measurement of earnings predictability is derived from the variance of earnings-shock measures in a univariate time-series relation between current and future earnings. Thus, the baseline earnings predictability model was presented as follows (Canina & Potter, 2019:4; David Johnson et al., 2023a:5; Lipe, 1990b:4; Nezlobin et al., 2019:4; Sloan, 1996a:10):

$$\text{Eanings}_{t+1} = \beta_0 + \beta_1 \text{ Earnings}_t + \varepsilon_{t+1} \qquad (1)$$

The model above describes the univariate characteristics of earnings. Eanings_{t+1} is the future earnings, Earnings_t is the current period earnings, β_1 is the autoregressive coefficient of the current period earnings, and ε_{t+1} is the serially uncorrelated earnings shock in period t+1. The variance of earnings shock (ε_{t+1}) captures the predictability of the earnings. If $\varepsilon_{t+1} = 0$, then past earnings predict future earnings perfectly. The ability of past earnings to predict future earnings decreases as the variance of the earnings shocks (ε_{t+1}) increases. However, as earnings predictability increases, the quality of current accounting earnings improves, making the information more useful for predicting future earnings.

Although earnings predictability and earnings persistence are two essential attributes that define the predictive and confirmatory value of earnings information, they are distinct concepts in the context of time-series characteristics of accounting earnings.

Whereas earnings predictability is the absolute magnitude of information risk associated with future earnings measured by the variance of earnings shocks, the time-series persistence of earnings reflects the autocorrelation in earnings information.

2.2.5.1.4. The Smoothness of Reported Earnings (Earnings Smoothing)

Earnings smoothing is the process of using accounting techniques to smooth fluctuations in earnings. It often involves shifting underlying financial transactions affecting earnings reporting from one period end to another to meet targeted earnings or for tax planning purposes. By smoothing their earnings, the firms borrow earnings from the future or save earnings from the current period for the future (Ajekwe & Ibiamke, 2017b:4). Although earnings smoothing might seem legal because it exploits loopholes in generally accepted accounting principles, the motive behind it cannot pass the acid test for credibility and faithful representation of accounting information. Ogundajo, Asaolu, Ajayi, Otitolaiye, and Ogunfowora (2021: 3) argue that earnings smoothing is motivated by fraud and tax evasion and attracts ignorant investors with creative business strategies devoid of fairness and faithful representation of the accounting information.

Earnings smoothing is a form of earnings manipulation that is a product of the discretionary actions of the managers to obscure real underlying accounting information in a manner that hides the unwanted bad performance of the firm (Chen et al., 2017:6; Ogundajo et al., 2021:3; Susanto & Pradipta, 2019:2). Managers use their discretion to deliberately alter earnings by different accounting choices to reduce abnormal variations in earnings to the extent allowed under sound accounting and management principles, to maintain earnings targets (Kasim et al., 2022:4). Firms that consistently meet or beat earnings targets or that report smooth earnings have strong incentives to manipulate earnings. Hence, earnings smoothness or consistency in meeting earnings targets indicates the likelihood of earnings management (Nissim, 2024:159).

According to (Kim, Wang, & Xia Zhang, (2021:3), there are two types of earnings smoothing: naturally smoothed earnings (fundamental earnings smoothing) and intentionally smoothed earnings (real earnings smoothing) by the management. Smoothed earnings occur naturally when inherent economic fundamentals

consistently produce smooth income streams. On the other hand, management can use real economic transactions or events as a means to artificially smooth reported earnings (Firmansyah & Herawaty, 2019:2). Artificial earnings smoothing occurs when management takes discretionary actions in response to fluctuations in income streams driven by economic conditions. This manipulation of the earnings reporting process through management accounting timing generates income smoothing. Earnings smoothing smooths earnings numbers under favorable circumstances. If accounting profit is artificially smoothed, earnings information will no longer faithfully represent the company's inherent performance, thereby lowering reported earnings information and leading to low-quality earnings (Khaddaf et al., 2014:3).

As noted earlier, the most common interpretations of earnings quality are earnings persistence, sustainability, and predictability. One reason is that investors tend to appreciate companies with highly stable earnings, as this makes it easier to forecast their future earnings. Unstable earnings, with high variability, also indicate the overall riskiness of the firm’s earnings. Another reason is that earnings sustainability and predictability as a result of smoothness are key factors in firm valuation, with stock prices reflecting the expectations about earnings over many future years (Abogun et al., 2021:2; Nissim, 2024:21). Even though managers' opportunistic behavior to smooth earnings can be penalized by the natural mechanisms of an efficient market, monitoring such self-motivated earnings smoothing remains important. Such that the capital market can price the stock of such firms engaged in self-motivated earnings smoothing, low (Mainoma et al., 2022:7). This distinguishes between natural earnings smoothing and artificially manipulated earnings smoothing for managers' personal gain.

The motivation for management to pursue earnings smoothing may be to address investors’ perceptions of unstable reported earnings. Therefore, when managers intentionally smooth earnings over time—a widespread form of managerial opportunism in earnings management—they increase earnings' persistence, stability, and predictability, making reported earnings appear smooth over time but weaken the relationship between earnings and cash flows with a possibility of causing long term damage to shareholder value with a sudden crash in stock prices when managers are forced to release accumulated bad news all at once into the market (Chen et al., 2017:6; Kim, Wang, & Xia Zhang, 2021:3; Nissim, 2024:23).

Another perspective on earnings smoothing is that it can more accurately predict future earnings and enhance shareholder value by reducing earnings volatility. This suggests that firms with smooth historical earnings are likely to attract premium valuations, while those with volatile earnings are more likely to have discounted price valuations (Firmansyah & Herawaty, 2019:2; Welc, 2014:2). A smooth earnings trend makes the company appear less risky, enabling analysts to predict future earnings more accurately (Nissim, 2024:158).

Ajekwe and Ibiamke (2017b: 4) identify three earnings smoothing measures employed in earnings quality research. The first earnings-smoothing measure tests the relationship between earnings volatility and cash flow volatility. The second measures the correlation between changes in discretionary accruals and changes in cash flows from operations, and the third is the standard deviation of earnings.

a) ***Smoothing Measure No.1***: This is the ratio of the firm-level standard deviation of earnings divided by the standard deviation of cash flow from operations. Low values from this measure indicate lower variability and managerial discretion to smooth reported earnings (i.e., lower values indicate a smooth earnings stream) (Ajekwe & Ibiamke, 2017b:4; Leuz et al., 2002:8).

   Smoothing = Std Dev of Earnings/Std Dev of Cash Flow from Operations

   Smoothing = σEarnings/ σCFO

b) ***Smoothing Measure No.2:*** This measures the earnings smoothing effect of discretionary accruals. Because accruals reverse over time, accruals and cash flows tend to be negatively correlated. Hence, the expected cash flows are also impacted negatively. The earnings-smoothing effect of accounting discretion in accruals is thus tested by the correlation between changes in discretionary accruals and changes in cash flow from operations.

   I.e., ρ (ΔAccruals, ΔCFO)

   ρ is the earnings smoothing impact of discretionary accruals on cash flow from operations. Hence, the more negative the correlation (ρ), the stronger the assumption that earnings smoothing has occurred and reported earnings have substantially not translated into cash flows. The negative correlation implies that

the firm is only profitable because of high accruals, but is less profitable in cash-based earnings (Ball et al., 2016:4).

c) **Smoothing Measure No.3:** This variant of the smoothing measure tests the volatility of earnings through the absolute value of the standard deviation of the reported earnings (σEarnings) as earnings smoothing is understood to be the reduction of the volatility of reported earnings, which occurs by the interference of the management (Ajekwe & Ibiamke, 2017a:5; Allayannis & Simko, 2022:1).

2.2.5.2. Market-based Measures of Earnings Quality

The following three attributes are considered market-based proxies for earnings quality because they typically rely on relationships between market and accounting data.

2.2.5.2.1. Timeliness of Earnings Information

Timeliness is an attribute that the IASB's Conceptual Framework for Financial Reporting classifies as enhancing the quality of accounting information. It is a principle in accounting that assesses the usefulness of accounting information available to users in time to fulfil their decision-making needs. According to the IASB's Conceptual Framework, timeliness means having information available to decision-makers in time to influence their decisions (IASB, 2018:18). Generally, information is considered relevant for influencing decision-making if it is available when needed. Therefore, the older the information, the less useful it is to users. However, some information may remain relevant over time long after the end of a reporting period, so users may need to identify and assess trends. As stated earlier, the IASB Conceptual Framework assumes an enhancing interrelationship between timeliness and relevance of accounting information, and users who understand the importance of relevance and timeliness with respect to accounting information will be more equipped to make quality decisions (Kythreotis & Constantinou, 2016:3).

Timeliness of accounting information is an essential characteristic that enhances its decision-usefulness and boosts investors' confidence (Ismail et al., 2022:2). The accounting profession, regulatory bodies (such as the Securities and Exchange Commission), and all stakeholders in the financial reporting supply chain recognize the importance of timeliness in the disclosure of accounting information. Hence, it is regarded as one of the attributes of good corporate governance (Beekes & Brown,

2006:2; Wahyuni, 2020:3). Timeliness is a measure of transparency, and the usefulness of accounting information depends upon the timeliness of its reporting. The lag between a company's year-end and the date when financial information is released to the public relates to the quality of the information reported (Mcgee, 2008:4).

Timeliness has two important elements: *"reporting delay or reporting lag"* and *"recognition speed*." While reporting delay refers to the lag or time interval between the accounting year-end close and the release of audited financial reports, recognition speed is the asymmetry between the recognition of "good news" and "bad news" in the financial statement (Basu, 1997:2; Dyer & Mchugh, 1975:3). Just as conservative accounting practice in recognition of accounting information results in asymmetric timeliness and manifests as asymmetric persistence in earnings, a delay in releasing the information would also most likely cause increased uncertainty around the decisions for which the information in the reports is provided, giving a negative signal to the market and raising suspicion among capital market participants (Akeem et al., 2020:3; Basu, 1997:4; Givoly & Palmon, 1982:2). The value of accounting information decreases as the timeliness of its release to users decreases. The higher the degree of timeliness, the higher the value of the information.

The degree of timeliness is defined as either the time lag or the speed at which value-relevant accounting information is incorporated into stock market pricing. Dyer and Mchugh (1975: 4) defined the degree of timeliness as the time interval between the accounting year-end and the release of audited financial statements to the stock market. The logic behind this definition is that the longer it takes for financial statements to be published, the more information users will obtain from other sources, thereby making the information in the annual financial reports less valuable. Hence, the degree of timeliness is low. Ball and Brown (1968: 19) describe the timeliness of earnings information as low when stock prices at the time of earnings publication already reflect a significant portion of the information from other sources promptly released during the year. Only a small fraction is captured from the final earnings reports. The degree of timeliness is, to this extent, low because, by the time the results are published, stock prices have already incorporated (via other sources) most of the information in the earnings. Thus, the ability of current earnings information to reflect the firm-specific financial information incorporated into stock returns during that period is a test of timeliness (Kythreotis & Constantinou, 2016:5).

It can be inferred from the above that the timeliness of earnings information refers to the maximum allowable time lag between the year-end and the time earnings are announced to users, before they lose their value and ability to influence decision-making. Investors' decisions to buy, hold, or sell a specific firm's stocks depend on earnings performance, which is communicated through earnings announcements. When earnings announcements are delayed, investors may interpret the delay as a negative earnings surprise, leading to a sell-off and negatively impacting stock returns. Investors pay attention to historical announcements and earnings; it's a buy if announcements come in much earlier than expected. Otherwise, if it is delayed, it's a sell. The timeliness of earnings announcements is crucial for maintaining investors' confidence and avoiding adverse market reactions. Since accounting earnings are of particular interest to the investors as they are used as a predictive criterion in investment decisions, both the content and timing of annual accounting will impact their usefulness, since the deficiency of either could impair the quality of investment decisions (Ball & Brown, 1968:3).

Different researchers have measured the timeliness of earnings information in different ways, depending on how they define the relationship between timeliness and stock returns. Ball and Brown (1968), being early researchers who tested the impact of earnings information on stock returns, they attributed importance to the content and timeliness of earnings information, as well as the measures of the usefulness of earnings information in terms of how rapidly stock prices can reflect new information as it becomes available in an efficient market. Thus, an observed change in stock prices in response to released earnings information indicates the usefulness of earnings information (Ball & Brown, 1968:3-4). Hence, the timeliness measure is set as the ratio of the abnormal stock return in the event (reporting) month relative to the abnormal return over the whole year (Brown et al., 2011:3).

Furthermore, in measuring the usefulness of earnings information, a highly impacting rating may be observed in the content but may be weak in timeliness as most of the content of the annual accounting earnings (about 85 to 90 percent) could be captured by more prompt sources of earnings information, such as interim reports since the efficiency of the capital market is primarily determined by its data source (Ball & Brown, 1968:19-20). Another measure of timeliness that is prominent in the literature is "reporting lag," which was first examined by (Dyer & Mchugh, 1975). They measure

timeliness by referring to three primary lags: (i) preliminary lag, (ii) auditor's signature lag, and (iii) total lag, with total reporting lag defined as the time interval of days from the financial year-end until the published annual audited reports are released to the stock market. The third measure is based on the intra-year "timeliness" metrics of Ball and Brown (1968), as used by Beekes and Brown (2006), to capture the average speed of price discovery over the year preceding the firm's results release.

The speed of price discovery is a measure of timeliness that tests the speed with which a firm's share price reflects the net effect of all value-relevant information impounded in the share price over the year (Beekes & Brown, 2006:16). The fourth measure of timeliness captures how quickly market-priced earnings information is recognized in a firm's financial statements. As Basu (1997: 3-4) puts it that earnings are more timely or concurrently sensitive in reflecting publicly available 'bad news' than 'good news. To test this prediction of asymmetric timeliness, negative and positive unexpected annual stock returns were used to proxy bad news and 'good news,' respectively, in a regression with annual earnings. Good news earnings are less timely because accountants require more verifiable information before recognizing good news (Basu, 1997:2).

Although each of these measures has been labeled in the literature as 'timeliness,' they have different constructs, influencing how closely they are related empirically in measuring the timeliness attribute (Brown et al., 2011:22).

2.2.5.2.2. Accounting Conservatism in Earnings Reporting

Conservatism is an underlying principle in accounting practice that forms the basis for recognizing the economic substance of a financial transaction in the financial statement. The underlying assumption of conservatism in accounting is premised upon prudence or realization. Hence, it is also known as the prudency or realization concept in accounting. It emphasizes the practice of extreme restraint by accountants in recognizing good news (gains/assets) until you are reasonably certain that the cash flow implication of that good news would be realized. And be certain you don't miss out on the recognition of bad news (losses/liabilities) as soon as you have the minimum information of the possibility of its occurrence. Basu (1997: 2) defines Conservatism as "the accountant's tendency to require a higher degree of verification for recognizing good news (gains) than bad news (losses) in the financial statement." Thus, under

highly conservative accounting practices, unrealized losses are typically recognized earlier than unrealized gains.

A conservative accounting approach would report lower earnings than a more liberal one. These lower earnings, however, create unrecognized gains that allow managers to report more earnings in the future. Conservatism leads to an average understatement of the book value of net assets relative to their market value, thereby introducing the existence of expected unrecorded goodwill (Beaver & Ryan, 2005:1; Penman & Zhang, 2002:3).

The recognition of good earnings news is less timely because accountants require more verifiable information for their recognition to happen in the financial statement. Good news earnings are, therefore, more persistent than bad news earnings because the capitalized value of the good news is only partially reflected in current earnings information and fully reflected in the subsequent earnings period after verification (Basu, 1997:4). Accounting conservatism is viewed as an important determinant of earnings quality, partly because earnings are less likely to be overstated when reported under conservative accounting practices. (Nissim, 2024:20). Accounting conservatism is described in the adage ‘anticipate no profits (‘pessimism’) but losses' (‘optimism’) and the phrase ‘don’t count your chickens before they hatch,’ a common reminder not to base earnings recognition on prediction because the future holds many surprises. Hence, accountants naturally tend to require a good amount of verifiable information to confirm the certainty of the occurrence of ‘good news’ in reported earnings, but not with ‘bad news.’

In principle, accounting conservatism is synonymous with prudence, meaning being careful and avoiding risks in earnings recognition judgments that could result in overstated earnings. For example, a firm that made substantial R&D investments in past years and currently focuses on producing and marketing the products resulting from those efforts will report overstated earnings. This is because the R&D investments were expensed in prior years rather than deferred and matched against current revenue for current earnings recognition. This asymmetric recognition leads to systematic bad-news and good-news earnings (Basu, 1997:2). Accounting conservatism is a fundamental principle that is applied across various alternative accounting standards that are imposed by standard-setting boards that are exogenous

to the firm and are expected to be applied endogenously for the prudent reporting of earnings information (Mashoka & Abu-hommous, 2018:1). However, because managers at firm-specific levels are allowed to make decisions on their choices of accounting methods, they can decide to apply less conservative methods to report higher earnings (Nissim, 2024:177; Zadeh et al., 2022:4).

The literature documents two distinct forms of conservatism in accounting. The first is unconditional (ex-ante or news independent) conservatism, and the second form is conditional (ex-post or news dependent) conservatism, with each having different effects on earnings information in the financial statements (Beaver & Ryan, 2005:1; Kimouche, 2021a:4; Ryan, 2006:2). In a conditional (news-dependent or ex-post) conservative environment, firms would write down the book value of their net assets in a timely manner as soon as bad news earnings information is received, but would be slow to value the net assets upwards when good news is received (Beaver & Ryan, 2005:1; Ryan, 2006:4). Conditional conservatism is the asymmetric timeliness in the accounting process, using accounting methods that prioritize late recognition of unrealized gains over losses in earnings reporting (Gotti, 2007:7; Krismiaji & Sururi, 2021:2). It is an inherent characteristic of accounting practice to recognize bad news in earnings more quickly than good news. This often results in an understatement of the book value of the net assets relative to their fair market value.

Da Silva, Ganz, Rohenkohl, and Klann (2019: 4), conditional conservatism in the accounting system limits excessively optimistic earnings recognition. It can serve as a control mechanism to address information asymmetry and ensure fair representation of earnings information, thereby improving quality. Manuel, Lara, Osma, and Khalilov 2019: 3–4) argued that conditional conservatism improves overall market efficiency by timely assessing the underlying value of net assets. This prevents overvaluation and facilitates a quick reversal when stocks are priced above their underlying value, limiting the duration of sustained overvaluation.

Examples of conditional conservatism can be found in inventory accounting, which requires inventory to be valued at the lower of cost or net realizable value. Impairment of tangible and intangible assets whose carrying amounts exceed their fair market values is another example of accounting conservatism. A potentially negative impact of conservatism on earnings quality is the recognition of impairment losses, which

introduce volatility into earnings reporting and reduce earnings sustainability. Moreover, overstated impairment losses (e.g., due to “big bath” charges) increase subsequent earnings by reducing depreciation on impaired assets. The increased earnings during the period of this reduced depreciation expenses will be reversed when the impaired assets are replaced (Nissim, 2024:20)

Unconditional (ex-ante or news independent) conservatism is different from conditional conservatism in that it involves the predetermined understatement of the book value of net assets (Ryan, 2006:5). Unconditional conservatism implements accounting methods and policies that deliberately decrease the underlying value of net assets by reducing the net income without recourse to future economic events that could impact the influence of the fair market value above the predetermined book value (Krismiaji & Sururi, 2021:2). Unconditional conservatism means an accounting process in which the values of assets and liabilities at the recognition's inception are determined to produce unrecorded goodwill (Beaver & Ryan, 2005:1).

Unconditional conservatism is a commitment at the inception to undervalue net assets below their expected market values through accounting choices that include immediate expensing of costs such as the cost of internally developed intangible assets (an example is R&D) that should be amortized or deferred multiple years into the future or more accelerated depreciation of the historical cost of items of property, plant, and equipment.

A robust body of theory supports the assumption that an efficient market reflects all newly public information in stock returns and thus is a valid proxy for measuring economic shocks to shareholder value. If security prices will, in fact, rapidly adjust to new information as it becomes available. A negative shock to stock returns is a valid measure of “bad news” arising from the asymmetric timeliness of loss recognition. A positive shock to stock returns is a good measure of “good news.” (Ball et al., 2013:1; Ball & Brown, 1968:3; Basu, 1997:3-4).

Different models have been used in empirical research to measure accounting conservatism. While there has been an apparent lack of consistency across measures of accounting conservatism, the most widely recognized is Basu's (1997) measure. In a review of the accounting conservatism literature done by Wang, Hógartaigh & Van

Zijl (2008), five key measures of accounting conservatism were identified. The measures include (Wang et al., 2008:5):

(i) Asymmetric timeliness of earnings measure (AT) by Basu (1997);
(ii) Asymmetric-accruals-to-cash-flow measure (AACF) by Ball and Shivakumar (2005);
(iii) Market-to-Book ratio measure (MTB); Roychowdhury and Watts (2007)
(iv) Hidden Reserves Measure (HR) by Penman and Zhang (2002), and
(v) Negative Accruals Measure (NA) by Givoly and Hayn (2002)

Although there are several other measures of conservatism, these five are the most widely used. They have been used in most empirical research to assess the degree of accounting conservatism and/or test theories and hypotheses about it.

2.2.5.2.3. The Value Relevance of Earnings

A persistent problem in accounting and finance research is the extent to which the information content of accounting numbers explains observed changes in stock prices and returns. If accounting information has a predictive relationship with the market values of equity (share prices and stock returns), it is considered value-relevant information (Azar et al., 2019:12). The most important use of accounting information is to assist users, especially investors, in assessing a company's performance by evaluating accounting numbers and predicting future performance. So, suppose there is no relationship between the information content of a company's accounting numbers in its financial statements and the firm's value. In that case, the value relevance cannot be described for the accounting numbers (Chandrapala, 2013:2). Hence, it will be difficult to predict and explain changes in stock prices and returns using such numbers, rendering them useless and unreliable.

Moreover, earnings are the most important accounting information because they summarize the company’s performance, making value relevance a prominent measure of earnings quality. The construct of value relevance accounting earnings is also an important measure of earnings quality because of earnings' role in equity valuation. The relationship between the firm's earnings and its equity market value determines the value relevance of the earnings information. Clout and Willett (2016: 1) Defined value relevance as the existence of a statistically significant elasticity between the market value of a firm’s equity and the information content of accounting

variables. This definition means that the market value elasticity of earnings (i.e., the value relevance of earnings) is the proportionate change in market value associated with a proportionate change in earnings. The strength of the value relevance is therefore determined by the closeness of the elasticity to 1.

Although a point is made about the role earnings play in equity valuation, it underscores their importance in investment decisions. It is important to distinguish between “valuation relevance” and “value relevance.” While the wording is similar, the valuation relevance of accounting numbers is distinct from their value relevance. Semantically, equity valuation refers to the process of determining the value attributable to a firm's equity, whereas value denotes the amount of that value. So, the valuation relevance of accounting information is the relationship between accounting information and the evolution of the stock price over time (Lo et al., 2000:6), which thus shows that the reported accounting numbers contain information relevant to equity valuation (Hail, 2013:8). Value relevance of accounting information, on the other hand, refers to the relationship between accounting information and changes in equity value over time.

Generally measured as the ability of earnings to explain the variation in returns (Stock Return Model) or share price (Share Price Model) (Azar et al., 2019:13), value relevance is a test of the fundamental quality of earnings (relevance) that helps investors predict firm stock value (stock price/returns). The greater the explanatory power, the more desirable the informational content of reported earnings is viewed to be.

Conclusively, earnings quality is a multidimensional concept with multiple proxies, making it a challenging and controversial measure of accounting information quality. Researchers conducting studies on earnings quality have had to choose proxies based on their research focus, research questions, and data availability.

2.2.6. Shareholder Value Concept

Shareholder value is a concept used to measure the financial value of a business to its owners. It measures the net worth that the owners receive for owning shares in the company. Shareholder value can be viewed as either the total capitalized market value of their investment in the shares (number of shares multiplied by the market price per share) or the returns on capital investment (changes in stock price over time).

According to Vinayagamoorthy and Sankar (2013: 4), shareholder value is the equity portion of an entity's total economic value, equal to the market value of debt plus the market value of equity.

As agents, the firm's managers are deemed to have a value-maximizing function in the name of their principals —the shareholders. The more shareholder value they create, the better for the shareholders (Robé, 2020:3). This is the shareholder primacy doctrine of agency theory, which has translated into a specific corporate governance framework focused on shareholder value management. The shareholder primacy doctrine, developed by Milton Friedman, is a governance model that incentivizes the pursuit of shareholder value maximization as the firm's sole social responsibility, by aligning managerial interests and executive compensation with share prices to prioritize immediate returns (Jensen & Meckling, 1976:19).

2.2.6.1. Shareholder Value Creation

Value creation is a strategic process of applying a business's resources to achieve its primary objective: maximizing shareholder wealth. Value creation in corporate governance is a strategic concept of how value is created through the organization’s purpose, strategy, and business model by applying all resources, capital, and relationships as integrated input for the benefit of the stakeholders (IFAC, 2020:7) the ultimate objective is to improve owners' well-being through corporate value enhancement. Since equity shareholders always receive the residual value created for stakeholders as the last group to be paid, it follows that a firm that creates wealth for shareholders ultimately satisfies the interests of all other stakeholders (Korankye, 2013:3). Thus, incremental changes in shareholders' wealth on a periodic basis (e.g., annually) indicate that value is being created (Vinayagamoorthy & Sankar, 2013:4).

A company creates value for its shareholders when it earns a return on shareholders’ investment that exceeds the weighted average cost of capital (WACC). In other words, creating wealth for shareholders requires the firm to invest in projects with positive net present values (NPVs). Simply put, value is created for shareholders when a company reports net income (profit) in any financial year and ensures that profit is sustainable in the future. From the economist’s viewpoint, value is created when management generates revenues over and above the economic costs of generating the revenues (Vinayagamoorthy & Sankar, 2013:4). The costs of generating the revenues come

from four input resources referred to as the 4Ms of management: (i) money, (ii) material, (iii) machine, and (iv) man. The cost of these four inputs includes the opportunity cost of using the capital (money) employed in the business, the cost of the throughput materials, the economic depreciation of the machines used to process them, and the wages and other benefits of the employees who generate revenue.

Creating shareholder value has become a key indicator of success in today's marketplace. Investors assess the performance of corporate managers by the value they add to shareholders' wealth. This has therefore put increased pressure on corporate executives to continually measure, manage, and report on the creation of shareholder value. As a science of measurement, accounting provides the framework for measuring and reporting shareholder value creation. Defined by Office (1887) and quoted by Mcmillan (1998: 2) As "the mathematical science of value," management accounting, a branch of accounting ("accountics"), has been thought over the decades to actively contribute to the implementation of value-creation strategies. Hence, the term value creation has been used frequently in connection with management accounting and its subject areas (Bourguignon, 2005:2).

Although shareholder value creation and wealth creation have been used interchangeably, there is a subtle difference between the two concepts. The value perspective measures value directly from accounting-based information with some adjustments, while the wealth perspective relies mainly on stock market information (Vinayagamoorthy & Sankar, 2013:5). These concepts are identical for listed firms in an efficient market without information asymmetry, wherein management provides all pertinent information to capital markets. The markets believe in and have confidence in management. The search for the most efficient shareholder value-creation measures has persisted over the years, perhaps due to increased pressure on firms' management to deliver on their shareholder value-primacy obligations in return for the executive compensation they receive.

Traditional accounting-based performance measures have been used to assess shareholder value creation – return on equity (ROE), return on assets (ROA), earnings per share (EPS), dividends per share (DPS), and so on. However, value-based performance measures, developed by researchers, management consultants, and practitioners, are grounded in value-based management theory to address the

limitations of traditional performance measures, which rely too heavily on accounting values. (Burcovich, 2021:59; Hall, 2024:3). Value-Based Management (VBM) is a modern approach to corporate governance that focuses on value creation. CIMA (2004), quoted by Munteanu, Danaiata, Hurbean and Bergler (2012: 1) defined the concept as “a managerial process which effectively links strategy, measurement and operational processes to the end of creating shareholder value.” The VBM aligns the organizational mission, strategy, culture, communication, structures, decision-making processes, performance measurement framework, and reward system with the primary objective of shareholder value creation (Munteanu et al., 2012:2). Therefore, it enables governance to concentrate on the four main components of shareholder value creation: creating value, managing for value, measuring value, and sustaining value.

The McKinsey perspective on shareholder value creation is that of a properly executed value-based management, whereby the executive approach to management is that which aligns the company’s overall aspirations, analytical techniques, and management processes to help the company maximize its value by focusing decision-making on the key drivers of value (Koller, 1994:1). The value creation indicators in value-based management prioritize economic profit over accounting measures to assess and report the value created for shareholders (Burcovich, 2021:59). The economic profit, described as the difference between accounting profit and implicit costs, is an essential concept for measuring value that lays the foundation for the value-based management approach (Burcovich, 2021:65). “Implicit costs” refer to the opportunity cost of a specific investment choice, or the alternative return a manager or investor is forgoing by allocating resources in one way rather than another.

The basic indicator of value-based management (VBM) is Economic Value Added (EVA), based on the principle of economic profit developed by Joel M. Stern and G. Bennet Stewart III at Stern Stewart & Co. Both maintain that money is linked to two elements: risk and benefit. They also believe that these elements should be included in the financial statements as a balancing item (Berzakova et al., 2015:4). The VBM approach to measuring shareholder value creation uses economic value added (EVA), which was based on the residual income (RI) model and computed as (Berzakova et al., 2015:4; Vinayagamoorthy & Sankar, 2013:7):

EVA = NOPAT – (Capital x Capital Charge)

NOPAT is net operating profit after tax; capital is the owner's investment in the business's assets and operations; and the capital charge is the WACC.

The Economic Value Added (EVA) is an indicator of shareholder value creation that gained popularity after the publication of Stewart's 1991 book, "The Quest for Value." EVA measures the firm's shareholder value creation success based on the concept of Residual Income (Venugopal & Reddy, 2016: 3).

The residual income (RI), which lays the foundations of today's value-based measures, is defined as (Lukas, 2022:2):

RI = Net Income – Opportunity cost of capital invested

Opportunity cost = Cost of capital % x Capital Employed.

The VBM approach to performance measurement shows that shareholder value is created only when companies invest capital at returns that exceed the cost of that capital. Other variables that have featured prominently in the literature as proxies for the measurement of shareholder value creation using the VBM approach are cash value added (CVA), market value added (MVA), shareholder value analysis (SVA), and cash flow return on investment (CFROI) (Babatunde & Evuebie, 2017; Ndulue et al., 2021; Theophilus Aguguom & Ajayi, 2020).

2.2.6.2. Shareholder Value Creation Framework

Before deciding on the best strategies to achieve sustainable shareholder value creation and the best way to measure and track outcomes, it is important to understand the structure of the value-creation process and enable a value-creating business model. Adapted from IFAC (2020), shareholder value creation can be achieved through a management process of defining, creating, delivering, and sustaining the value created. So, ultimately, value is:

(i) Defined by customers, investors, and other stakeholders
(ii) Created through the organization's purpose, strategy, and business model, taking into account all resources, capital, and relationships in an integrated way
(iii) Delivered to ever-more demanding and sophisticated stakeholders through responsible products and services and new channels at an appropriate price

(iv) Sustained by retaining and protecting value drivers internally and by appropriate reinvestment and distribution to shareholders and wider society.

2.2.6.3. Shareholder Value Creation Strategies

Sustaining profitability and growth is considered a major determinant of firm value. Corporate managers, therefore, direct management strategies to deliver the expected effect on profitability, growth, and firm value. The value-based management approach suggests that a firm's management aims to create shareholder wealth by maximizing the market value of the equity that exceeds the firm's book value (Kumar, 2015:1). This objective can be achieved by generating future returns on equity that exceed the returns that would ordinarily be expected from alternative investments (Marvadi, 2015:2).

Identifying and selecting strategies to create shareholder value is a significant challenge for management, given the numerous alternatives available to achieve this goal. Companies can choose operational efficiencies that maximize the best use of operating assets, improving asset turnover. They can also create value through targeted earnings growth, price maximization, and operating cost minimization, which are directly related to profitability margins and are fundamental value drivers. They can also choose the optimal capital mix to minimize their weighted-average cost of capital, bringing them closer to the optimal capital structure for maximizing corporate growth. These and many other ways are in place to create shareholder value.

To maximize shareholder value by driving and sustaining earnings, the strategies can be discussed in the following three (3) ways:

(i) Revenue Growth
    a. Optimize product pricing
    b. Maximize sales volume

(ii) Operating Margin Growth
    a. Minimize cost of sales (COGS)
    b. Minimize selling, general, and administration (SG&A) expenses

(iii) Capital Efficiency
    a. Seek higher return on assets (ROA)
    b. Optimize working capital turnover

2.3. Empirical Literature Review

2.3.1. Overview of Empirical Literature on Accounting Information Quality and Shareholder Value

Discussions about whether accounting information, particularly earnings, and other performance variables, can explain changes in shareholder value or shareholder wealth maximization have been a subject of accounting research dating back to the '60s and '90s. Ball and Brown (1968), were renowned for their contribution to what is now known as market-based accounting research, providing an empirical evaluation of the informational content of accounting earnings and their timeliness in influencing a quick adjustment in market stock prices. The authors demonstrated that, under an efficient market, the security market can quickly adjust stock prices to reflect new information from the firm, highlighting the importance of accounting earnings in informing market prices.

The groundbreaking research of Ball and Brown (1968) and other notable contributions of Scholars (Easton & Harris, 1991; Feltham & Ohlson, 1995; Ohlson, 1995; Stern et al., 1995) developed the value relevance model and the economic value added (EVA) concepts, which assess the explanatory power of accounting information and measure shareholder value creation, emphasizing the residual wealth generated after accounting for the cost of capital. These works laid the theoretical foundation for what is now known as market-based accounting research, which examines the relationship between accounting information disclosed by publicly listed companies and the consequences of equity investors' use of this information.

Furthermore, recent research in Nigeria (Angahar & Malizu, 2015; Apete et al., 2022; Mbekomize & Popo, 2020), among other large bodies of literature, has contributed to the debates by using the value relevance models: Ohlson's stock price model (SPM) (1995) and Easton and Harris's stock returns model (SRM) (1991) to examine the relationship between accounting information and share price/stock returns. Studies such as Uareme et al. (2021) explored the mediating role of corporate governance practices in the value relevance of accounting information using Ohlson’s model. Ikechukwu, Nyereugwu, and Modum (2020) examined the effect of corporate governance on income persistence and value relevance of quoted Nigerian firms. Ogbodo and Osisioma (2020) assessed the relationship between the value relevance

of accounting information and the share prices of manufacturing companies listed on the Nigerian Stock Exchange (NSE) using an Ex post facto research design. The Ordinary Least Squares (OLS) regression analysis and the Granger Causality test for the stated hypothesis revealed a significant positive relationship between Dividend per Share and Share Price.

The existing literature on accounting information quality has extensively examined the informational content of fundamental accounting performance measures to explain changes in a firm's stock price and returns. The dominant variables used to test this quality of explanatory power of accounting information have been accounting earnings, return on equity, operating cash flows, and dividends (Widiastuti & Rahmawati, 2022; Innocent et al. 2020). However, there are more pronounced studies on accounting information quality with an empirical examination of value relevance as the measure of the quality of accounting information (Chukwu et al., 2019; Egiyi, 2021; Mirza et al., 2019). The authors' works on this paradigm have their theoretical foundation in the value relevance models of Ohlson's (1995) Price Regression Model (PRM) and the Return Regression Model (RRM) of Easton and Harris (1991).

The value relevance of accounting information is the quality that measures the rate at which the informational content of accounting information is represented in stock price or stock returns, and how the values of these market-based variables relate to three (3) accounting variables of earnings, book value, and dividends, using what is referred to as the value relevance model (Azar et al., 2019: 10; Easton & Harris, 1991: 4; Ohlson, 1995: 3).

Even though value relevance arguments have dominated the discussions of the authors on accounting information quality, the incidences of accounting scandals as a result of interference with the accounting earnings reporting process (earnings management), which has cast doubts on the quality of reported earnings, studies have also been done to examine the impact of earnings management and earnings quality on the value relevance of accounting information (Hutagaol-Martowidjojo et al., 2019; Ndulue et al., 2021; Nelwan et al., 2020). There has been recent deserved attention to examining the impact of earnings quality on value relevance due to earnings management, otherwise referred to as the value relevance of accounting information

in the presence of earnings management (Al-Shattarat, 2021; Malahim et al., 2022; Ratnaningrum et al., 2021).

The term earnings management is closely related to earnings quality. They are like conjoined twins, usually inseparable and often referred to as two sides of a coin. When earnings management is high, earnings quality is often low, primarily due to accounting choices. However, the absence of earnings management does not guarantee high earnings quality (Cug & Cugova, 2021: 2; Lo, 2008: 2; Mostafa, 2020: 1). This necessitates considering the impact of earnings quality and shareholder value.

2.3.2. Effect of Accrual Quality on Shareholder Value

Earnings quality refers to the extent to which management interference affects earnings fundamentals, driven by performance pressure and other incentives that influence the earnings reporting process through creative accounting. Thus, lowering the reliability of the reported earnings impairs the quality and value relevance of the informational content (Al-Shattarat, 2021: 3). While earnings management takes different forms across companies, accrual-based management, particularly through discretionary accruals, has attracted the attention of most authors.

Accrual quality, therefore, became a prominent measure of earnings quality by authors examining the moderating influence of earnings management on the effect of accounting information in explaining the variations in stock price, stock returns, or firm value (ALTINTAŞ et al., 2017; Liemmuel & Eriandani, 2022; Nelwan et al., 2020; Temile et al., 2018). Accrual quality as an explanatory variable of changes in stock returns and stock prices has also been examined robustly from different perspectives in the literature (Ayuba, 2022; Fonou-Dombeu et al., 2022).

2.3.2.1. Global Perspective – Review of international literature

Following Ball and Brown (1968), many studies have documented a positive contemporaneous association between stock returns and earnings, generally attributed to earnings' ability to summarize value-relevant information. The seminal paper by Sloan (1996a) investigated whether the stock prices of NYSE and AMEX firms fully reflect the information in accrual and cash components of current earnings. Or that the association between earnings and stock returns may partly be attributed to the investors' "naive" fixation on earnings rather than the earnings' ability to summarize

value-relevant information. The result found that while future earnings predictably depend on the magnitude of cash and accrual components of the current earnings, the stock price acts as if the investors are unable to differentiate between the two components of earnings (Sloan, 1996b: 27). Although stock prices anticipate future persistence of earnings, this relation is not able to differentiate the more (less) persistence of earnings that is attributable to either accrual or cash flow components of earnings (Sloan, 1996b: 16). Thus, suggesting that investors are capable of earning abnormal returns by exploiting strategies that can correctly distinguish between the accrual and cash flow components of earnings (Sloan, 1996b: 19). This finding is a reversal of the traditional efficient market hypothesis, which holds that no investor can earn a superior return in a position of information advantage, given that the market price fully reflects all publicly available information.

Extending Sloan's (1996) work by linking accrual reliability to earnings persistence, Richardson, Sloan, Soliman, and Tuna (2005) developed a model showing that less reliable accruals lead to lower earnings persistence. Empirically testing the comprehensive balance sheet categorization and rating of accruals according to the reliability of their underlying accruals confirm the hypothesis that less reliable accruals lead to lower earnings persistence, which significantly leads to stock mispricing because investors do not fully anticipate the lower earnings persistence. These results suggest significant costs associated with incorporating less reliable accrual information in financial statements.

In another study about stock market pricing of accrual quality using the Jones Model in a cross-sectional analysis for each two-digit SIC code and year combination formed separately for NYSE/AMEX and NASDAQ firms, Xie (2001) the market overestimates the persistence of the earnings implications of abnormal accruals and consequently overprices them. The result of this finding suggests that the overpricing of total accruals that were reported in Sloan (1996b) primarily resulted from abnormal accruals. In contracts, other studies that investigated accrual mispricing Gonçalves, Gaio, and Lélis (2020) found no statistical evidence that a strategy that seeks to exploit the negative relationship between accounting accruals and stock returns by isolating portfolios of stocks based on the magnitude of accruals can earn a return higher than an expected market stock return. This finding aligns with the efficient market

hypothesis, which assumes that any asymmetric investment strategy in an efficient market will earn an average alpha close to zero.

Sun (2020) investigated the existence of accrual anomalies in Australia, whether they are attributed to discretionary accruals, and the role of corporate governance in accrual mispricing. Their results found that investors overprice the accrual component of earnings and underprice the cash component, due to overestimating accrual persistence and underestimating cash flows. However, the association between discretionary accruals and corporate governance reform in the Australian market has weakened. The accrual mispricing was tested using the Mishkin (1983) test, which assesses market efficiency by assuming that the expected abnormal return is zero given the available market information.

Examining the usefulness of accounting information for decision-making, Perotti and Wagenhofer (2014) assessed the relationship between earnings quality and stock mispricing. Their a priori expectation is that firms with higher earnings quality are less likely to experience stock mispricing, as measured by the difference in the mean absolute excess returns of formed portfolios. Their result showed that accrual quality and other earnings quality proxies are negatively associated with excess returns, except for smoothness. Accruals measures exhibit the largest spread in excess returns, justifying their higher ranking among other measures of earnings quality in the literature, followed by smoothness and market-based measures.

Investigating the pricing of accrual quality further, other studies (Artikis & Papanastasopoulos, 2016; Vivattanachang & Supattarakul, 2013), also documented yet inconsistent findings about the persistence and pricing of the cash and accrual components of earnings. While Artikis and Papanastasopoulos (2016) present evidence of a more persistent cash component of earnings, with the strongest positive correlation with future stock returns, the findings of Vivattanachang et al. (2013), show that Thai stock markets perceive the accrual component of earnings as more persistent and thus price it differently. The results from the studies' pricing models support the naïve investor hypothesis and the inefficient market hypothesis; Thai stock markets underprice the persistence of cash and accrual components of earnings.

In their investigation of the impact level of earnings quality on firm value using data drawn from listed firms on the Vietnam Stock Exchange employing GLS regression

analysis, Dang, Nguyen, and Tran (2020) showed that earnings quality, measured by accrual quality as a test for earnings management, positively correlated with firm value with statistical significance. Hung and Van (2020) tested the impact of earnings quality on stock returns using a panel data experiment with 3910 observations in Vietnam. Earnings quality was measured using earnings management (abnormal accruals to earnings), accrual quality, persistence, smoothness, timeliness, and earnings variability. While all other measures of earnings quality, tested using the GLS regression method, show a positive relationship with stock returns, accrual quality is the only measure that shows a negative correlation with stock returns.

Wijesinghe and Kehelwalatenna (2017) examined the impact of earnings quality, measured by accrual quality, on the stock returns of listed manufacturing companies in Sri Lanka between 2010 and 2015, and found no significant positive effect of accrual quality on stock returns. This suggests that the earnings quality information does not gain the trust of the investors in Sri Lanka and is not considered in their contemporaneous or future investment decisions (Wijesinghe & Kehelwalatenna, 2017: 19). However, evidence from other empirical studies (Dang & Tran, 2019), provides evidence that accounting distortions contribute to low sustainability of accounting earnings, and found a significantly positive effect of accrual anomaly on stock returns (Dang & Tran, 2019: 7).

Wijesinghe and Kehelwalatenna (2017) tested the impact of earnings quality using accrual-based and real earnings on the stock returns of listed manufacturing companies in the Colombo Stock Exchange. The empirical results indicated that the earnings quality of the selected firms was not a determinant of their stock returns. This result implies that investors in the selected firms do not consider the quality of reported earnings when making pricing decisions, suggesting a lack of trust in the earnings information they receive. In contrast, Hung Dang, Van Vu, and Le Dao (2022) found that accounting information, including operating income growth, stock earnings volatility, dividend yield, earnings before tax-to-equity ratio, cash holding ratio, and accrual quality, has a great impact on stock returns in the Vietnam securities market.

Fonou-Dombeu et al. (2022) examined the association between various measures of earnings quality and stock return volatility of companies listed on the Johannesburg Stock Exchange (JSE) from 2009 to 2018. They measured the stock return volatility

using idiosyncratic volatility. Earnings quality was measured using accrual quality, conservatism, earnings persistence, predictability, and smoothness. A multilevel linear regression found that accrual quality and earnings persistence are negatively related to idiosyncratic volatility. This result indicates that firms with higher accrual quality and more persistent earnings exhibit lower stock return volatility. Conservatism and predictability are not significantly related to stock return volatility, whereas smoothness is positively related to the observed variable. This means that less-smoothed earnings are more prone to increased return volatility for shareholders. The mixed results of this study supported the noise and information perspectives in explaining the stock return volatility of JSE-listed companies.

As a multidimensional construct, earnings quality has been shown to affect shareholder value-relevant variables, such as dividends. Deng, Li, and Liao (2017) investigated the association between dividend payouts and earnings quality for Chinese listed firms. Their results showed that dividend payouts are associated with higher accrual quality and greater earnings informativeness, confirming the hypothesis that dividends convey information for Chinese firms. This affirms the argument that Dividend-paying firms have higher earnings quality than non-dividend-paying firms. Similarly, Siladjaja, Anwar, and Djan (2022) provided empirical evidence of the positive impact of accrual quality on the prediction of future returns through a qualitative study that employed a causal method and purposive sampling of companies listed on the Indonesian capital Market. The dividend policy acted as a moderating variable in a multiple regression. The study tested the causal impact of accrual quality and tax management on future market value, with dividend policy acting as a moderating variable.

2.3.2.2. National Perspective – Review of studies specific to the Nigerian context

In response to the global financial crisis and the devastating effects of accounting scandals on economies, researchers and practitioners across nations have conducted extensive research into earnings quality, its measures, and its relationship with stock prices and stock returns. To that end, the topic has received considerable attention among Nigerian scholars, as among their counterparts across the globe.

Ayuba (2022) investigated the impact of earnings quality on market values of listed quoted companies in Nigeria using generalized least squares fixed effect multiple regression techniques to analyze the secondary data obtained from the financial statements of listed companies from 2009 to 2019. Earnings quality was assessed using accrual quality, earnings persistence, predictability, and smoothness. The study's findings show that accrual quality and earnings smoothness significantly negatively affect the market value of listed firms in Nigeria, as measured by share price. Other measures significantly and positively impact the share price. (Mutalib et al., 2020) also documented a significant inverse relationship between accrual quality and the share price of listed consumer goods firms on the Nigerian Stock Exchange. The research by Ogbaisi and Aronmwan (2022), which examined the impact of accruals quality and firms' share prices in Nigeria, found that accruals quality has a positive and significant effect on share price. The study further revealed that the interaction between accruals quality and book value per share and earnings per share also has a significant positive impact on firms' share prices.

Similarly, focusing on the usefulness of accounting information, Akintoye and Salawu (2018) examined the impact of earnings quality on the performance of listed firms in Nigeria. Measuring firms' performance with Tobin's Q in association with accounting-based measures of earnings quality using panel data extracted from the audited financial statements of 51 firms purposively selected from firms listed on the Nigerian Stock Exchange between 2000 and 2016, the study revealed that a joint coefficient of earnings quality has a positive relationship with firm performance. The individual coefficients for accrual quality, earnings predictability, and smoothness are negatively related. In contrast, earnings persistence positively affected Tobin's Q. This result is similar to that of a study conducted by Theophilus and Salawu (2018), which tested the relationship between earnings quality and book value with evidence from listed firms in Nigeria and found a significantly positive effect of accrual quality, earnings persistence, and smoothness on book value. At the same time, earnings predictability negatively impacted book value.

Ahmed and Ibrahim Ali (2022) provided empirical evidence on the effect of discretionary accruals, as a measure of earnings management, on the firm value of listed Oil and Gas companies in Nigeria, using a panel data approach with random- and fixed-effects regression models. Their study shows that earnings management

has a significantly adverse effect on firm value. This result suggests that investors are aware of the effect of accrual manipulation on earnings quality, thereby negatively impacting firms' values. Similar research by Ndulue et al. (2021) assessed the relationship between earnings management through discretionary accruals and shareholder wealth creation of quoted conglomerates in Nigeria, measured by cash value added and cash flow return on investment. Panel data were collected from the sampled company using an ex post facto research design. The Panel Least Squares (PLS) regression analysis and the Hausman test, applied to test the study's hypotheses, revealed a non-significant negative relationship between discretionary accruals and cash value added. The result, however, shows a significant positive relationship between discretionary accruals and cash flow return on investment for quoted conglomerates in Nigeria at the 5% significance level.

2.3.3. Impact of Earnings Persistence on Shareholder Value

The sustainability of accounting profit, as measured by earnings persistence, is an essential variable in the estimation of a firm's future value (Fatma & Hidayat, 2019). The literature provides mixed evidence on the impact of earnings persistence on a firm's value (Fatma & Hidayat, 2019; Indrayati et al., 2021). These studies empirically demonstrate the positive effect of earnings persistence on firm value, with varying levels of significance.

2.3.3.1. Global Perspective – Review of international literature

Early studies of the effect of earnings persistence on shareholder value have documented general mispricing of firm stocks due to lower earnings persistence, mainly due to unreliable accrual components of reported earnings, and due to a greater amount of subjectivity (Richardson et al., 2005; Sloan, 1996a). Also, examining the pricing of earnings persistence and implications on stock returns, other studies (Artikis & Papanastasopoulos, 2016; Vivattanachang & Supattarakul, 2013), decomposed accounting earnings into the cash and accrual components. Artikis and Papanastasopoulos (2016) reported a systematic difference in the persistence of the earnings subcomponents, with the cash flow component showing the most persistence and a more significant positive correlation with future returns.

The result from the investigation of market pricing of the persistence of accrual and cash flow components of earnings by Vivattanachang and Supattarakul (2013), which

used the Mishkin (1983) test, revealed that Thai stock markets perceive the accrual component of earnings as more persistent than the cash flow component. The stock market underpriced both the cash-flow and accrual components of earnings. This result contradicts Sloan (1996), who argues that investors are fixated on earnings and cannot distinguish between accruals and cash flow earnings.

In a similar study that examined the market pricing of earnings persistence Wu et al., (2019) findings reported the mispricing of earnings persistence in the stock. The evidence from these studies does not show mispricing of earnings persistence at the industry level. Instead, a firm-specific mispricing of earnings persistence was evident in the market. This indicates that the mispricing of firm-specific earnings is more pronounced in firms with low firm-level information disclosure quality. However, there was no evidence of “investor fixation” as a primary driver of earnings persistence mispricing, as Sloan (1996) reported. The firm-specific disclosure quality and inefficiency in emerging markets primarily drive the observed mispricing in the population studied.

A fundamental factor influencing investment decisions in the capital market is the firm-specific economic facts disclosed in the company’s financial reports. The underlying information that summarizes these economic facts is the company's earnings, which, year-on-year, translate into growth in net assets (book value of equity) and suggest the persistence of earnings. When efficiently priced, the persistence of the firm’s earnings can give a reliable market value of the firm’s stock. Hence, the persistence of earnings has been found to influence stock prices (Do & Pham, 2020; Fatma & Hidayat, 2019; Rokhmania & Puspitaningrum Dewi Kartika, 2021). These studies empirically demonstrated that earnings sustainability impacts stock pricing, thereby influencing the P/E ratio. However, investors sometimes underreact to sustainable earnings and overreact to unsustainable earnings. Earnings persistence, as a measure of earnings quality, has also been found to correlate positively with firm market value by significantly influencing stock prices (Dang et al., 2020).

Examining the impact of earnings quality on stock returns, prior studies that used earnings persistence as an explanatory variable found a statistically significant positive association between earnings persistence and stock returns. (Adityanur & Mardijuwono, 2020; Al-Zarqi & Bedoui, 2023; Hung & Van, 2020). These studies

document that a corresponding increase in stock returns was evident for each additional unit of earnings persistence. The positive correlation between earnings persistence and stock returns can be attributed to investors' favorable expectations stemming from reduced uncertainty, increased confidence in future earnings sustainability, positive perceptions of the performance outlook, and expectations of reduced risk. Control variables, such as return on assets and the dividend payout ratio, are positively related to stock returns. In contrast, the company's size has a negative effect on stock returns, but it is not statistically significant (Adityanur & Mardijuwono, 2020; Hung & Van, 2020). In contrast, earnings persistence was negatively correlated with idiosyncratic stock return volatility (Fonou-Dombeu et al., 2022).

Earnings persistence is an important consideration variable in firm valuation and a prerequisite for the predictability of earnings used in equity valuation models. Based on this assumption, earnings persistence is considered to have implications for financial analysis, corporate valuation models, and executive compensation contracts. Fatma and Hidayat (2019) found that earnings power positively affects the equity of Indonesian firms, while earnings persistence negatively affects equity valuation. The result of the investigation conducted by Pimentel and De Aguiar (2016) on the role of earnings persistence in firm valuation accuracy on the assumption that firms with more persistent earnings are likely to have better earnings input into their valuation models, and more persistent earnings are likely to serve as a proxy for long-term market value orientation for the managerial, using data from Brazilian listed firms, also documents strong support for the valuation relevance of earnings persistence. In contrast, no evidence was reported to support a significant relationship between earnings persistence and long-term value orientation.

The key objective of accounting information—the decision usefulness—has been tested by various researchers. These have been explored in numerous studies by examining how key earnings quality measures, such as earnings persistence, influence investors' decisions, which can sometimes lead to over- or underpricing of listed stocks, creating opportunities for excess returns in the market. Perotti & Wagenhofer (2014) found that earnings persistence and other measures, except for earnings smoothness, were negatively correlated with the absolute mean excess returns of US non-financial firms. This goes to say that the earnings quality that is perceived to be directly related to information risk due to the impact of the subjective

judgments of managers on their outcome would cause information uncertainty in the market due to asymmetric tendencies, and is capable of causing stock mispricing and stock return volatility (Fonou-Dombeu et al., 2022, p. 5). Using the information-augmented Fama and French three-factor as asset pricing models in explaining cross-sectional variation in portfolio stock returns, Goel, Tripathi, and Agarwal (2021) provided empirical evidence to indicate that as information asymmetry associated with portfolio increases, returns also expand to compensate investors for bearing information risk, validating the existence of a significant positive relationship between information asymmetry and expected stock returns in the Indian National Stock Exchange (NSE).

Validating the persistence of earnings among Algerian listed firms, Kimouche (2020, 2021b) tested the persistence of earnings components (cash flow and accrual earnings) using Sloan's (1996) approach and panel data from 20 Algerian companies during 2006-2018. The two studies found that accounting earnings, both in cash flows and accrual components, are persistent in Algerian companies. However, the recorded persistence levels are substantially lower than those of studies in developed countries.

2.3.3.2. National Perspective – Review of studies specific to the Nigerian context

In a multivariate and multiple regression analysis of the sample of 148 audited financial statements of firms listed on the Nigerian Stock Exchange between 2014 and 2018, Ikechukwu, Nyereugwu, and Modum (2020) examined the effect of corporate governance structures on earnings persistence and its value relevance. The study's results showed that the CEO’s duality had a positive but insignificant impact on earnings persistence. However, it had a positive and significant effect on earnings' value relevance. The findings also show that Board size significantly and negatively affected earnings value relevance and earnings persistence. On the other hand, the audit committee had a significant positive impact on earnings persistence and the value relevance of earnings. This means that the audit committee plays a vital role in improving earnings quality and value relevance.

Examining the effect of earnings quality on the firm value of the listed insurance companies in Nigeria in ex-post facto research employing a multiple regression analysis, Ogiriki and Asemota (2024) indicated that earnings quality proxies, accrual

quality, and earnings persistence statistically impact Tobin's Q at a 5% significance level. Also, in Akintoye & Salawu (2018b), earnings persistence was found to have a significantly positive effect on Tobin's Q, which is used to proxy the financial performance of listed firms in Nigeria.

The persistence of earnings enhances its predictability, which reasonably assures the accuracy of earnings forecasts relied upon by investors for their investment decisions, without fear of volatility or surprises. Ogbaisi, Dabor, and Omokhudu (2022) evaluated the impact of earnings surprise on the share prices of firms in Nigeria using the Ohlson valuation model and its variants to determine the effect of earnings surprise on share prices. A correlational design was employed to investigate relationships and examine the impact of earnings surprises on share price, revealing a negative but insignificant effect. The study also showed a negative, insignificant impact of earnings surprises on share price when earnings surprises interacted with bottom-line metrics, including book value per share and earnings per share. This indicates that, despite the magnitude of book value per share and earnings per share, investors are also concerned with the quality of earnings—specifically, its persistence and the difference between expected and reported earnings.

Furthermore, Ekpe, Obasi, Abdullahi, Mustapha, and Rashid (2020) examined the stock price reactions to earnings surprises in quoted companies in Nigeria in a longitudinal research design applied to studying the relationship between earnings surprises and stock prices using panel data. The residual, or unexplained, component of the earnings persistence model was used to measure earnings surprise in a first-order autoregressive (AR1) regression of reported earnings. The generalized least squares regression technique results show that the share price reacts negatively to positive earnings surprises, while the stock price reacts positively to negative earnings surprises.

2.3.4. Impact of Earnings Predictability on Shareholder Value

Extant literature has linked earnings predictability to the persistence of current-period earnings (Pirveli, 2020), and this persistence has been shown to affect shareholder value differently. Similarly, the literature has documented a strong relationship between earnings predictability and stock prices.

2.3.4.1. Global Perspective – Review of international literature

In light of the effect of earnings predictability on stock returns, the study of the impact of earnings quality on the stock returns of companies in the Arab financial market was carried out by Al-Zarqi and Bedoui (2023), which adopted six (6) measures of earnings quality, namely accrual quality, earnings continuity, earnings predictability, earnings smoothness, value relevance, and earnings conservatism, found a significant positive impact of earnings predictability on stock returns. This is primarily due to the substantial confidence that earnings stability instills in investors about future financial performance. Kundu and Banerjee (2021) also examined the impact of earnings predictability on stock returns, using a sample of 67 large-cap Indian stocks. The results of the study show that investors can anticipate whether a firm will report better earnings than in the prior period; thus, all stocks earn premium returns in the pre-announcement period. It adds to the existing literature, which finds that firms with year-on-year improved earnings can generate significantly higher returns for investors. However, Fonou-Dombeu et al. (2022) reported that earnings predictability does not significantly impact stock return volatility among firms listed on the Johannesburg Stock Exchange.

Earnings predictability was also found to have a significant effect on the value of firms on the Indonesian stock exchange, as managerial ownership directly influences the predictability of earnings as a measure of earnings quality (Indrarini et al., 2019).

2.3.4.2. National Perspective – Review of studies specific to the Nigerian context

While investigating the impact of earnings quality and market value of listed companies in Nigeria, (Ayuba, 2022) Observed that earnings predictability, as one of the proxies of earnings quality, has a significant positive impact on the market share price. The study revealed that earnings predictability has a strong, significant positive effect on the market share prices of listed companies in Nigeria. As the earnings predictability increases, the market prices of listed companies in Nigeria also increase.

Azeez Olaniyi et al. (2020) Evaluated the predictability of earnings of quoted companies in Nigeria to establish whether the firms' contemporaneous earnings can predict their future earnings. Also, what is the impact of the volatility on the predictability of earnings? A causal research design was adopted to answer this

question, and the generalized method of moments (GMM) system was used to estimate the dynamic panel regression models. The study found that firms' earnings are predictable. The study also found that volatility adversely affects earnings predictability.

David Johnson et al. (2023b), in an ex-post factor research, established the relationship between firm attributes and the earnings predictability of quoted manufacturing firms in Nigeria. The panel data regression model that employed pooled ordinary least squares estimates revealed that firm size, firm age, firm leverage, and firm liquidity have weak but positive effects on the earnings predictability of firms quoted on the floor of the Nigeria Stock Exchange. In a similar study, Akintoye et al. (2019) examined the growth of 26 listed firms in Nigeria, measured by Turnover Growth, and investigated how earnings quality measures—proxied by earnings predictability, value relevance, accounting conservatism, and accrual quality—affect the firms' growth. Their study found that earnings predictability and accrual quality have significant negative effects on growth, whereas others have insignificant positive effects.

Aguguom and Salawu, 2018) Examined the effect of earnings quality measured by accrual quality, earnings persistence, earnings predictability, and earnings smoothness on the book value of quoted companies in Nigeria. The study, which adopted an ex-post factor research design, analyzed the data extracted from the audited financial statements of 51 sampled firms listed on the Nigerian Stock Exchange between 2000 and 2016, using the Pooled OLS technique, revealed that earnings predictability had a negative effect on book value, while other measures of earnings quality affected the book value positively.

2.3.5. Effect of Earnings Smoothness on Shareholder Value

Earnings smoothing has been found to benefit investors in the Nigerian stock market by providing stable earnings over time. This practice may, however, be disadvantageous to the shareholders because managers of firms whose stocks are traded on the stock market will take even “desperate” measures to report smoothed earnings to boost their firm's valuations (Ajekwe & Ibiamke, 2017b). Evidence from the extant literature shows the deterioration of earnings informativeness resulting from smoothing practices undertaken out of desperation by managers (Borisov, 2017).

Prior studies of earnings smoothness were inconclusive, as most corporate organizations consider earnings smoothing irresistible for several reasons, such as the desire to report artificial stability in earnings or cover managerial incompetence, which conceals earnings volatility (Theophilus & Salawu, 2022: 3).

2.3.5.1. Global Perspective – Review of international literature

Regarding the impact on stock returns, Al-Zarqi and Bedoui (2023) observed a negative association between earnings smoothness and returns, while testing the effect of earnings quality on returns using evidence from the Arab financial markets. The observed negative link between earnings smoothness and stock returns suggests that higher earnings smoothness can mask the substantial operational risks inherent in the business. As reported in this study, the inverse relationship between smoothness and stock returns could be attributed to investor reactions, who might interpret consistent earnings as an indication of limited transparency into the company's fundamental performance. Thus, the company's accounting information becomes less reliable, and information risk increases. Hence, diminished stock returns. Like stock mispricing and decreasing stock returns due to adverse earnings smoothing, Khurana, Xia, and Zhang (2017) found a significant positive association between real earnings smoothing and firm-specific stock price crash risk. This means that perceptions of the risk associated with real earnings management could trigger firm-specific stock price crashes by leading investors to price the firm's stock downward. Hence, loss of shareholders' value.

Allayannis and Simko (2022) examined the conditional association between earnings smoothing done through discretionary accruals and firm value, with the firm's credit quality as the other explanatory variable. The study focuses on the information environment as an important factor in how the market assesses earnings smoothing and its impact on share volatility, using a discretionary smoothing index based on accounting discretion. The result confirmed a stronger association between discretionary earnings smoothing and firms.

Munjal, Singh, and Tijjani (2021) examined the impact of earnings smoothness on the operational and market performance of the Indian National Stock Exchange (NSE) using panel data and the dynamic generalized method of moments (GMM). The study found a significant effect of earnings smoothness on operational and market

performance, as measured by return on assets (ROA) and Tobin's Q, respectively. Similarly, Lynette (2016) tested the effect of earnings smoothness on the segmental market performance of companies listed across the various segments of the Nairobi Securities Exchange using a longitudinal design. The regression analysis results show that earnings smoothness has a positive effect on the market performance of listed companies in the manufacturing segment and a negative impact on those in the commercial and energy segments. However, the study fails to establish any effect of earnings smoothness on the performance of companies in the construction segment.

Other studies (Chen et al., 2017; Kasim et al., 2022; Khurana et al., 2018; Kim, Wang, & Zhang, 2021) examined the relationship between earnings smoothing and equity value risks associated with stock price crashes or stock price volatility. Chen et al. (2017), in examining the relation between earnings smoothing and stock price crash risk to evaluate the role of earnings smoothing on the risk of losing equity value, they found that a higher degree of earnings smoothing within a firm is associated with greater crash risk. Similarly, Khurana et al. (2018) found a robust positive relationship between real earnings smoothing and firm-specific stock price crash risk. These results suggest that investors must exercise caution regarding the risk of losing their investment in equity stocks due to earnings smoothing. This contrasts with the traditional belief that firms with earnings smoothing are low in equity risk, as documented in the study of Kim et al. (2019), examined whether real earnings smoothing can reduce investors perceived risk using a large sample of US public firms, and found a negative relationship between earnings smoothing and option-implied stock volatility, suggesting that real earnings smoothing lowers equity investors perceived risk. Furthermore, Kasim et al. (2022) also found that the average equity risk level of companies listed on the Indonesian Stock Exchange with smoothing in their reported earnings is lower than that of companies without smoothed earnings, which further buttresses the traditional view of the positive role of earnings smoothing in reducing stock price and return volatility.

In another study, (Kerekes & Cvetanovska, 2015) empirically investigated whether earnings smoothing creates or destroys shareholder value, comparing the legal environment of earnings smoothing pre- and post-enactment of the Sarbanes-Oxley Act. Their results revealed that earnings smoothing creates value, contrary to pre-SOX research. The primary explanation for this relationship is that managers are less

motivated to engage in opportunistic behavior post-SOX, thereby fostering greater investor trust in financial reporting. The discontinuation of real earnings smoothing and the return to accrual-based earnings smoothing, which are influenced by the level of market uncertainty, are additional explanations adduced for the positive relationship between earnings smoothing and shareholder value creation. Under high market uncertainty, accrual-based earnings smoothing garbles information and thus destroys firm value, whereas under low market uncertainty, it boosts firm value.

2.3.5.2. National Perspective – Review of studies specific to the Nigerian context

Salawu and Aguguom (2022) investigated the impact of earnings smoothing on the share price of listed companies in Nigeria. In doing so, panel data from 51 companies, purposively sampled from 173 listed companies, covering the period 2009 – 2020, were analyzed using an ex post facto research design. The study's results showed a positive, significant impact on market share prices. However, when firm size, leverage, and board independence are included as control variables, earnings smoothing and leverage negatively affect market share price. At the same time, firm size and board independence have no significant impact on the market share price. In similar ex-post factor research by Agbaje and Igbekoyi (2021) examining the association between earnings smoothing and shareholders' wealth in listed manufacturing firms in Nigeria, the authors found a significant positive relationship between earnings smoothing, measured by the asset quality index, and shareholders' wealth. Thus, earnings must be smoothed to achieve a long-term, sustainable increase in the market value of listed manufacturing companies in Nigeria.

Ajekwe and Ibiamke (2017b), while also investigating the impact of earnings smoothing, measured by the standard deviation of the earnings stream over a five-year rolling period, on share price, documented evidence shows that the Nigerian stock market rewards low earnings per share volatility with higher share prices. The result of the multiple regression analysis conducted on a sample of 48 firms from 2013 to 2015 revealed that the Nigerian market rewards stable earnings over time but is somewhat indifferent to the smoothness of past cash flow earnings. The findings of this study suggest that managers of listed firms in Nigeria may resort to "desperate" measures to smooth reported earnings and boost their firms' valuations, despite a lack

of cash-flow stability to support these earnings, which could lead to earnings fraud and loss of shareholder value.

In contrast, the study of Nwaobia and Ajayi (2020) on the relationship between financial reporting quality and shareholder wealth maximization of listed companies in Nigeria, it was found that the individual effects of earnings smoothness and persistence on shareholder wealth maximization were negative and statistically insignificant. This finding is also similar to the one documented by Abogun et al. (2021) where they reported a significantly negative impact of income smoothing on the market value of listed Nigerian firms, this implies that shares of firms that deliberately engage in earnings smoothing are priced low by Nigerian Stock Exchange (NSE) investors, thereby negatively impacting the firms' value. These results demonstrated the need for corporate managers to exercise strong self-control to avoid distorting earnings reporting in ways that undermine its fundamental qualities.

In response to the prevalence of accounting scandals and the collapse of firms as a result of the opportunistic behaviors of managers, other studies (Abogun et al., 2021; Mainoma et al., 2022) decided to examine the impact of earnings smoothing on the value of firms listed in a regulated security market with the moderating effect of market risk. Ex post facto research, conducted using a quantitative approach and a system generalized method of moments panel estimation technique, found that earnings smoothing, measured by accrual-based methods, significantly negatively impacts firm value, as measured by share price. The study also revealed that market risk is a significant variable that defines the relationship between earnings smoothing and firm value.

2.3.6. Discussions of Empirical Evidence from Literature Review

The empirical literature documents the pronounced significance of earnings quality as a measure of accounting information quality. Moreover, earnings persistence and predictability provide reliable insight into future earnings stability and are pivotal in informing investment decisions. Similarly, a higher accrual component of earnings and opportunistic earnings smoothness also increase information risk and information asymmetry. Conversely, because conservatism is conditional on an uncertain event, more conservative earnings are likely to increase information risk and volatility in stock returns, ultimately negatively impacting shareholder value.

2.3.7. Gap in Knowledge and Contribution of this Research

Accounting researchers developed the value relevance construct, which has remained the dominant measure of accounting information quality in the literature. However, although a strong result of value relevance testing is a confirmation of relevance and faithful representation of the fundamental economic phenomena in the accounting information reported by the firm, the lack of value relevance will be difficult to attribute to the non-existence of relevance and faithful representation (reliability) of accounting information (Azar et al., 2019; 14). This assertion affirms the insufficiency of the value relevance construct for operationalizing the quality of accounting information. Hence, a lacuna (gap) in the body of literature remains unexplained.

Furthermore, while the earnings quality literature contains a plethora of evidence on the impact of different measures of earnings quality on stock prices and returns, there is scant empirical evidence from Nigeria. Also, studies examining potential causal relationships among these variables appear non-existent. Moreover, no specific framework has been developed to conceptualize and operationalize the multidimensional attributes of earnings quality and the relationship with shareholder value, assuming stock market performance reflects publicly available firm-specific information efficiently.

This study will contribute to closing the observed gaps by examining the extent to which accounting information quality, as represented by earnings quality from a multidimensional perspective and measured using accounting-based attributes, affects shareholder value. It will also test whether there is a causal relationship between accounting information quality and shareholder value, using evidence from listed consumer goods companies in Nigeria—an area that previous studies have largely overlooked. This contribution to knowledge will be encapsulated in the thesis-developed framework, as reflected in the conceptual model in Figure 2, and further expanded in the final framework, which will be developed based on Figure 1 and the study's results.

2.4. Chapter Summary

The discussion in earlier sections of this chapter describes the study's variables. It reviews the extant literature on the relationship between accounting information quality and shareholder value. The empirical studies are grouped by study objective,

highlighting the global depth of scholarly discussion on the subjects and their application in the Nigerian context. Although there have been robust discussions on the impact of various measures of earnings quality on shareholder value, there is no clear consensus among researchers.

Furthermore, while all the reviewed studies are relevant to this study and form a reasonable basis supporting the research hypotheses, attention is paid to the groundbreaking works of scholars (Ball & Brown, 1968; Dechow & Dichev, 2001, 2002; Fama, 1970; Feltham & Ohlson, 1995; Ohlson, 1995), whose contributions are cited the most in accounting information quality and market-based accounting research. More specifically, this study draws on the work of Fonou-Dombeu et al. (2022), who is one of the few studies that explored the multidimensional attributes of earnings quality and impact on stock return volatility in South Africa, and Azar et al. (2019), who is credited for mentioning the limitation of the value relevance construct as a measure of accounting information quality in their review of value relevance literature to critically evaluate the qualitative characteristics of accounting information with particular focus on relevance versus value relevance.

The next chapter provides a background discussion of the theories on which the study is grounded and presents a conceptual framework for this study.

CHAPTER THREE

THEORETICAL AND CONCEPTUAL FRAMEWORK

3.1. Introduction

The relationship between the concepts of accounting information quality and the shareholder value building blocks—stock price and stock returns—has been discussed under different theoretical foundations, depending on the focus and arguments of previous studies. Some of these theories were discussed in the background of this proposal and in the literature. Agency theory, information asymmetry theory, and the efficient market hypothesis provide the theoretical background for this study. However, this research is primarily grounded in the Efficient Market Hypothesis (EMH).

3.2. Agency Theory

Agency theory explains the contractual relationship between shareholders and management. The shareholders, being owners and principals in the agency contract, appoint the management as an agent to manage the resources contributed by the owners in the corporate name of the company and in the interest of the shareholders (Widiastuti & Rahmawati, 2022: 2). The parties in the agency relationship (the managers and shareholders) have unique expectations in the form of utilities they seek to maximize, thereby creating a divergence or conflicting interest with tendencies for managers to seek to appropriate for themselves from the resources of the shareholders, for their consumptions (Jensen & Meckling, 1976: 9). Agency theory, therefore, seeks to analyze the conflict and to suggest a solution that brings the parties into equilibrium, yielding the desired result. The principal will strive to ensure that the agent makes the best decision in its best interest. However, it is almost impossible for such an alignment of interest to come between the parties. Agency costs are incurred in this relationship to reduce divergence and achieve equilibrium in the utility-maximizing process when there is suspicion between the two parties. The principal can establish an appropriate incentive plan for the agent and incur monitoring costs to limit the divergence of interests. The agent can also incur bonding costs to assure the principal that actions that potentially harm them will not be taken (Jensen & Meckling, 1976: 3-4; Zogning, 2017: 3).

In the agency relationship, shareholders want management to run the company in a manner that increases shareholder value. The management, on the other hand, may look to grow the company in different ways, which may run counter to the shareholders' best interests (Jensen & Meckling, 1976: 4). Even though the management is performing those actions on behalf of the shareholders, there is a divergence of interest and a good reason to believe the manager will not act in the best interest of the shareholders (Andrijašević & Pašić, 2018: 2). Agency costs are meant to force alignment of interests to the point of equilibrium that maximizes all parties' utilities (Smith, 2018: 3). Agency theory is relevant to shareholder value maximization theory, as it seeks to analyze the corporate operating mechanism that guides the direction of the company's affairs, aligning all interests with shareholders' interests. According to Jensen and Meckling, it would be misleading to view a firm as a nexus of contracting relationships between individuals with social responsibility, as if a firm were an individual. Instead, they consider a firm as a ***legal fiction*** that provides the focus for the complex process of aligning the conflicting objectives of the various interest groups of different individuals and institutions towards the equilibrium point within the framework of their contractual relations (Jensen & Meckling, 1976: 7). This contrasts with the Friedman doctrine of "The Social Responsibility of Business," known as Milton Friedman's shareholder value theory (shareholder primacy theory).

Agency theory is one of the four perspectives that have supported the primacy of shareholders. Others are the control perspective, the residual claims perspective, and congruence with social wealth (O'Connell & Ward, 2020: 3). The agency theory sees a corporate entity as a legal fiction or a legal entity, according to Jensen & Meckling (1976: 7), which serves as a special purpose vehicle for the nexus of a contract between the shareholders (principal) on the one hand and the management (agent) on the other hand. The agent acting under the delegation of the principal must direct the affairs of the company in the best way that maximizes the objective of the establishment of the company, which is the protection of the principal's interest (shareholders). Finding answers to questions such as "What should be the primary objective or function of the company?" has long dominated discussions in the finance literature. In the quest to clarify the primary objective of the corporate establishment, the Business Roundtable ("BRT") was explicit in its statement in 1997 that the principal objective of a business enterprise is to generate economic returns for its owners (The

Business Roundtable, 1997: 9). This objective function of a business was first articulated in Friedman's doctrine of "The Social Responsibility of Business…", an article by Milton Friedman that appeared in The New York Times on 13th September 1970. That article became what is now known as the Shareholder Primacy Theory, a shareholder-centric theory of corporate governance that prioritizes maximizing shareholder value as the primary purpose of corporate existence (BELLO & ABU, 2021: 6).

According to Milton Friedman, a business is simply about making money for the company's owners. Managers and directors of the business owe shareholders the responsibility to maximize the business's profits, thereby increasing the firm's equity market value. Hence, the primary purpose of a company is to maximize shareholder value (Hubbard & Bhagat, 2020: 2). This objective ranks above all other corporate objectives. Shareholder primacy holds that shareholder value maximization is the only substitute for maximizing shareholders' utility. As a result of the corporate drive to create value that maximizes the shareholders' wealth, the shareholders' utility can be maximized (Khan & Hussanie, 2018: 2; O'Connell & Ward, 2020: 2). The ideology of Friedman has come a long way since it made an entry into finance theory more than 50 years ago and has been brought under various scrutiny and criticisms because of its seeming ignorance of the other stakeholder interests, shared governance, income and wealth equality, and the battle between the short-term orientation of a single financial objective versus long-term sustainability of shareholder value gains (Robé 2020: 6; Hayden & Bodie 2020: 9; Palladino 2019: 2; Heaton 2017: 7). One such scrutiny is the reverse statement released by The Business Roundtable (BRT), a body of the most powerful Chief Executive Officers (CEOs) in the United States, in August 2019. The statement declared that the corporation's purpose was no longer solely for shareholders, but also to serve the interests of all its stakeholders. Therefore, the responsibility of the corporate board would be to commit to delivering good value to our customers in product and service offerings, making sound investments in the development and welfare of the employees, maintaining good ethical standards with our suppliers, paying good attention to corporate social responsibilities in the community in which they operate, and finally, generating long-term value for shareholders (Grove et al., 2020: 2; Harrison et al., 2020: 2).

It is owing to the corporate fundamentals of being a legal vehicle that nexus the contract in the agency relationship, which comes with the inherent agency problem of divergent interests. In an attempt to limit the divergence, the shareholders initiate a performance-driven incentive or compensation scheme for the managers (Abrardi et al., 2023: 5). This then poses another problem of exaggerated attempts by the managers to improve results that would help balloon the compensation size of the CEOs, thus introducing the narrative of increasing non-financially driven incentives for the CEOs (Grove et al., 2020: 3; Z. (Frank) Li & Thibodeau, 2019: 2). It is these highlighted behavioral factors in agency assumptions that parties would seek to maximize their utilities and explore the benefits that come from the incompleteness of contracts, which would create the difference in information between the parties (Zogning, 2017: 3). However, since the shareholders do not have the time or resources to get the information necessary to make independent governance decisions, the management has delegated governance power (Hayden & Bodie, 2020: 41), which puts the shareholders mostly at a position of information disadvantage, and then having to bear the residual loss of the agency costs resulting from misalignment in the agency relationship to the maximization of shareholder value (Panda & Leepsa, 2017b: 12). Consequent upon the lack of perfect a priori information that characterized the adverse selection problem associated with information asymmetry (Bergh et al., 2019: 11).

3.3. Information Asymmetry Theory

The essential prerequisite for investment decisions is that investors obtain relevant and reliable information to facilitate the efficient allocation of capital in a competitive market. This power of knowledge is the underlying assumption for an efficient market (Huynh et al., 2019: 3). Accounting information, which satisfies the fundamental qualities of relevance and faithful representation of the economic phenomena of an entity, would serve this purpose (Khoufi, 2020: 2). The starting point of good corporate management is stewardship reporting, which assures accounting transparency. It, therefore, addresses the responsibility of the managers to ensure the availability of quality accounting information that directly influences the efficiency of the market investment decisions (Alsalim et al., 2018: 11). However, there are tendencies for managers to make some accounting judgments for the management of accounting information, precisely, earnings, either in objective consideration for the firm's welfare

or deceptive incentives to maximize personal utilities (Eze et al., 2022: 3). From the investors' perspective, a firm's earnings management actions are observable, but the motivations behind them may not be entirely clear, thereby giving management an informational advantage over users of accounting information. Hence, creating an adverse selection problem for the investors (Abad et al., 2018: 5; Hope & Wang, 2018: 2). The adverse selection problem will occur as a result of information asymmetry that exists because the firm, by the actions of its principal officers, rather than presenting the fundamental performance of its economic phenomena, decided to present the figures that show the shareholders what the management wants them to know (Almahrog & Lasyoud, 2021: 2). Information asymmetry will raise an adverse decision-making problem because investors do not know which companies in the market are good and which are bad (Sugiyanto, 2018: 4).

Information asymmetry is considered a source of market friction that leads to market inefficiency (Chang et al., 2022: 19). When it exists, the uneven effects of information asymmetry can influence trading, spreads, and stock prices, leading individual investors to make poor investment decisions, resulting in losses, a decrease in overall market capitalization, and a decline in firm-specific value (Goel et al., 2021: 2; Huynh et al., 2019: 3). To explain the asymmetric information effect on the collapse of market mechanism and prevents the market from functioning efficiently, (Akerlof, 1970: 5-6), explained how quality uncertainty could lead to market failure. He demonstrated this model using ***"The Market for Lemons"*** in the automobile industry, where cars are sold honestly and dishonestly, resulting in both high- and low-quality representations. The buyers' problem would then be to identify good quality, and demand for goods in this market would be a function of (1) the price of the article being offered for sale and (2) the average quality of the article. Also, the article's supply from the seller's point of view and the average quality will depend on the price. Therefore, as quality falls, the price will also fall, and vice versa, until no goods are traded at any given price. Regarding the capital market, equity stock represents the article being traded, the existence of companies willing to feed the market with inferior information quality, which tends to mislead the investors, cause adverse selection problems, mispricing, prevent the market price from converging towards equilibrium, and can drive the market out of existence; thus, market failure sets in (Dari-Mattiacci et al., 2021: 1; Gong & Diao, 2022: 16; Raj, 2022: 15). To economists, market failure is the inefficient

allocation of resources in a free market where laws of demand and supply interact to determine the price (Abraham, 2019: 5).

3.4. Efficient Market Hypothesis

The efficient market hypothesis (EMH) assumes that stocks are efficiently priced at any point in time to reflect their intrinsic value, without over- or underpricing, with rational, knowledgeable investors using all available information to maximize their wealth. EMH, also known as the efficient market hypothesis, is premised on the idea of market efficiency. According to Woo, Mai, McAleer, and Wong (2020: 2), this concept describes a market where relevant information is quickly incorporated into security asset prices so that no single investor expects to earn a return above the market average through their investment strategies. For this market to reach an equilibrium price that reflects the market's expected return using the relevant information at any time, Fama (1970b: 6) identified three (3) essential market conditions that could either facilitate or hinder market efficiency. An efficient market is one that (a) has no transaction costs of trading in securities, (b) all market participants have free and costless access to all available information, and (c) all market participants have complete knowledge and agree on the implications of current information for the current price and distributions of future prices of each security. These conditions are sufficient to ensure that the current price of a security "fully reflects" all available information.

However, efficient market conditions are sufficient to ensure that the market price of securities fully reflects available information, but not necessary for market efficiency. Since transaction costs, information limitations, and disagreement among investors about the pricing implications of public information are not a necessary source of market inefficiency (Fama, 1970: 7). Although the absence of the above-listed efficient market conditions is only a potential source of market inefficiency, the EMH cannot explain other causes of market anomalies. However, the reasons for market anomalies form the basis for the introduction of behavioral theories in finance. Behavioral theories describe the many market anomalies that are a source of market inefficiency (Woo et al., 2020: 8).

3.5. The interactions between Efficient Market Hypothesis, Information Asymmetry, and Agency Theory

Information can be viewed as an economic commodity that is sought after and acquired by economic agents, who expend resources to maximize their state-dependent utility (Allen, 1990: 2). The commodity as described may originate through endowment or be produced from other resources to be delivered at a place, time, and for the purpose for which it originated. Although public goods, economic agents can change the allocation of commodities, thereby making them a valuable resource (Allen, 1990: 2; Stigler, 1961: 2). While the price system is believed to be an efficient way of transmitting the information required to arrive at the Pareto optimal allocation of resources (Grossman & Stigkitz, 1976: 2), the influence of economic agents in allocating them can act as a barrier to achieving that efficiency by restricting the flow of information from an informed individual to an uninformed individual, thereby causing moral hazards. This condition implies that although the information might be a public good, information asymmetry amongst market participants may remain high (Komalasari & Nasih, 2020: 2). This creates an incentive in the market to seek information that is not readily accessible to everyone, so market participants benefit from costly information acquisition (Allen, 1990: 5), leading to adverse selection problems due to inefficient transmission of available information, preventing Pareto efficiency.

Information asymmetry has been extensively discussed in the context of the problems it creates in agency relationships between shareholders (principals) and managers (agents). The agency relationship would have no problems if information were symmetrically available to the principal and the agent; the principal would know everything the agent knows. However, when information is asymmetric, the principal (agent) controls the private information known only to the agent (principal), leading to agency conflict. In other words, information asymmetry occurs when there is an imbalance of information among market participants. The information asymmetry aspect of agency theory jeopardizes the principal-agent relationship, creating an inherent principal-agent problem. Komalasari & Nasih (2020: 3).

The unrealistic assumption of complete and uniform information among market participants, which stems from information asymmetry in the markets, creates tension

among the Efficient Market Hypothesis (EMH), agency theory, and information asymmetry. Information asymmetry often leads to moral hazard, in which agents may act in their own self-interest, potentially harming the principal. Agency theory addresses these issues by emphasizing the importance of contract design and monitoring to align agents' interests with those of the principal. Theoretical tensions arise when these theories are applied to real-world scenarios, where information asymmetry can lead to market failures and inefficient outcomes.

3.6. Conceptual Model

The study's conceptual framework, shown below, depicts the a priori expectation that accounting information quality impacts information-asymmetric firms and shareholder value. The information asymmetry theory posits that the information gap between the firm and the capital market leads to adverse selection, causing investors to misallocate resources due to over- or underpricing of equity shares. This framework depicts the interaction between the foundational theories—efficient market hypothesis, information asymmetry theory, and agency theory—and the study variables.

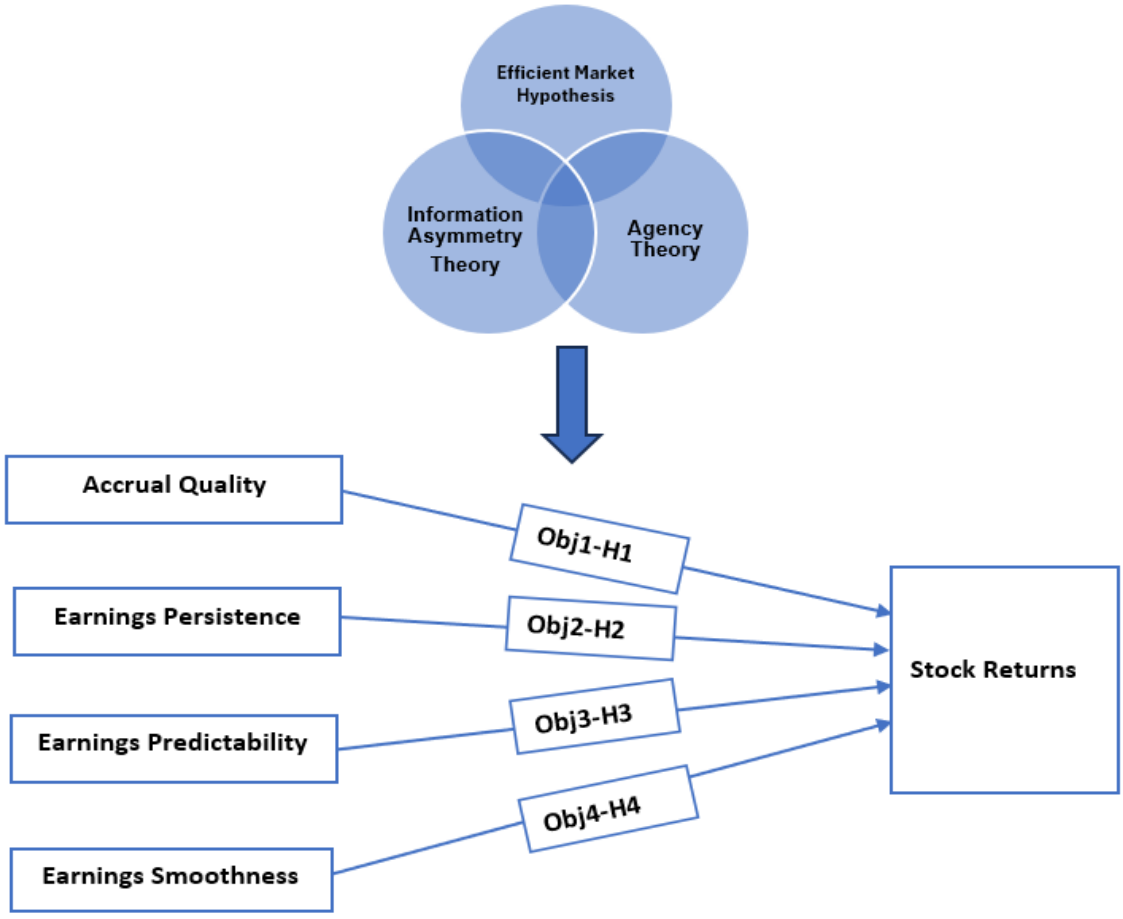

Figure 2: Conceptual model of the relationship between accounting information quality and shareholders' value. (**Source: Author)**

Key to Figure 2:

1. Obj1-H1 = Objective 1 & Hypothesis 1
2. Obj2-H2 = Objective 2 & Hypothesis 2
3. Obj3-H3 = Objective 3 & Hypothesis 3
4. Obj4-H4 = Objective 4 & Hypothesis 4

3.7. Chapter Summary

This chapter clearly describes the efficient market hypothesis as the grand theory of this study and its interaction with information asymmetry theory and agency theory. The chapter further concluded that although information asymmetry in agency relationships is a potential source of stock market inefficiency, the behavioural patterns of market participants, which the efficient market hypothesis fails to explain, can be explained by other behavioural theories in finance. Although outside the scope of this study. The next chapter provides the operationalization of the research variables, including specific definitions of the measures.

CHAPTER FOUR

OPERATIONAL MEASURES OF STUDY VARIABLES

4.1. Introduction

Accountants usually refer to the qualitative characteristics of financial information prescribed by the FASB/IASB Conceptual Frameworks when questions arise about the quality of accounting information. The qualitative characteristics described in the previous chapters—fundamental (primary) and enhancing (secondary) qualities of accounting information — form the basis for every measure developed or used in the literature to operationalize accounting information quality. However, there has been no consensus on the most preferred measure of the term quality.

For instance, the value relevance construct was developed as a quantitative measure to assess the relevance of accounting information. Also, information is of no relevance without reliability, and reliability is a function of faithful representation of accounting information. According to Pathirawasam (2013: 2), if no value relevance can be described for any accounting information, nobody can rely on such information, and it can easily be described as having no relevance or decision-making usefulness. Thus, achieving good results in the value relevance model indicates that the accounting information input into the model is both relevant and reliable, and that the model serves as a direct check on the validity and reliability of the financial statements. Although attributing the lack of relevance and reliability to the absence of value relevance would be difficult (Azar et al., 2019: 14; Chandrapala, 2013: 2).

A large body of literature exists on the various variables used as proxies for accounting information quality. Pioneering researchers such as Ball and Brown (1968: 3) consider the quality of accounting information (income numbers) from the perspective of usefulness, which can be evaluated from its content and timing, since the deficiency of both can impair the usefulness of the income numbers, which are of particular interest to the investors. The conservatism principle was also tied to the asymmetric timeliness of earnings in Basu (1997), in which earnings recognition depends on the timing of the incorporation of good and bad news into earnings reporting. Both timeliness and conservatism are market-based measures of accounting information that derive their values from the stock market. The other market-based measure of

accounting information quality is the value relevance construct developed by researchers (Easton & Harris, 1991; Feltham & Ohlson, 1995; Ohlson, 1995).

Measuring the extent to which accounting information is associated with stock prices/returns has been one of the most fundamental issues in accounting and finance research for almost six decades. The value relevance model was constructed to measure these relationships. Ohlson (1995) developed the Stock Price Model (SPM), or the Stock Price Regression Model (SPRM), to test the value relevance of earnings and the book value of equity by regressing the stock price of listed firms on these variables. On the other hand, to test the association between stock returns and accounting information, Easton and Harris (1991) developed the Stock Return Model (SRM), also known as the Stock Return Regression Model (SRRM). These two models have become the most prominent in the study of accounting information quality, with many subsequent researchers (local and international) adopting them to examine the value relevance of accounting performance measures and stock prices, or stock prices as a test of accounting information quality. Value relevance of earnings, cash flows, book value of equity, and stock price (Apete et al., 2022; Indrayono, 2019; Mulenga & Bhatia, 2020; Ogiriki & Tovie, 2022; Rauf & Randika, 2016; Srivastava & Muharam, 2021). Value relevance of dividend per share, earnings per share, cash flow from operations, book value per share, return on assets, intangible assets, and share price (Bankole, 2020; Egiyi, 2021; Weerawickrama & Tilakasiri, 2020). The association between earnings, equity book value, operating cash flows, P/E ratio, and stock returns (Abass, 2019).

The concentration of the extant literature on accounting information quality relationship with the shareholder value concept, with a focus on value relevance, has only attempted to test one of the fundamental qualities of accounting information-relevance, which has also been said to be deficient in gauging the true relevance of accounting numbers in the absence of a value relevance relationship. Efforts to employ the accounting-based attributes that would truly test the predictive, confirmatory, and reliability qualities of the accounting earnings, that is, the summary of accounting performance and the most important accounting information that is of interest to the investors, are almost non-existent in accounting information quality literature. Hence, this study focuses on operationalizing accounting information quality using accounting-based measures of earnings quality.

However, despite the robust earnings-quality literature, there is no consensus on measures of earnings quality. It has been viewed from a multidimensional perspective and as a multidimensional measure of accounting information quality. Hence, this study operationalizes accounting information quality by adopting the accounting-based measures of earnings quality used in Fonou-Dombeu et al. (2022).

4.2. Operationalization of Study Variables and the Measurements

Accounting-based measures of earnings quality—accrual quality, earnings persistence, earnings predictability, and earnings smoothness—have been adopted as the independent variable—accounting information quality. Stock returns—the dependent variable—will measure shareholder value.

4.2.1. Measure of the Dependent Variable

The shareholder value theory assumes a single standard measure of shareholder value: the combined value of dividends and share price increase (O'Connell & Ward, 2020: 2). This measure is called stock returns. Hence, it would serve as the dependent variable in this study.

According to Reddy & Narayan (2016: 1) Stock returns are the income that investors earn from the capital invested in the stock market. This income may be from gains from trading shares or dividends received. The measurement involves calculating the percentage rate of return for a given observation period. The calculation requires several inputs, such as share price gains or losses, corporate restructuring or divestment actions (e.g., split-offs, spin-offs, carve-outs), and returns on capital in the form of special and regular dividends. Simply put, stock returns are a ratio that measures the appreciation in the price plus any dividends paid, divided by the price at the beginning of the period (Hung & Van, 2020: 5; Hung Dang et al., 2022: 5; Suroso, 2022: 6). This calculation has its theoretical background in the original Return Regression Model (RRM) of Easton & Harris (1991: 5), and forms the definition of stock returns stated in the relation below, as used in Goel et al. (2021: 4), and also adopted for this study.

$$R_{it} = \frac{(P_{it} - P_{it-1}) + D_{it}}{P_{it-1}} \quad (1)$$

Where:

R_{it} is the stock returns at the end of year t, and P_{it} and P_{it-1} are the stock prices at the end of year t and t-1, respectively. At the same time, D_{it} is the dividend per share for year t.

4.2.2. Measure of the Independent Variables

The independent variables comprise four accounting-based measures of earnings quality. These include accrual quality, earnings persistence, predictability, and smoothness. To ensure the stability of the values of study variable measures, the earnings quality attributes used as proxies for the independent variables will be calculated using the Rolling-Window Analysis of Time-Series Models, consistent with the study of (Francis et al., 2004b: 9-11).

Accrual Quality – The measure of accrual quality in this study upholds the estimate used in the model of Dechow and Dichev (2002) as it explains in clear terms the concept of accounting accruals, as the other component of accounting earnings, which includes cash flow and accruals (Dechow & Dichev, 2002: 6). Whereas prior studies have used the modified Dechow & Dichev (2002), which introduced changes in sales revenue and the gross value of property, plant, and equipment as an additional economic determinant of current accruals (Cho et al., 2017; Christensen et al., 2023; Fonou-Dombeu et al., 2022) this modified model was dropped because it is thought to be a double count of the cash flow relating to changes in sales revenue, which was included in the original model. At the same time, gross plant, property, and equipment are investment activities that are not included in either operating cash flows or earnings components.

This study therefore upholds the original model, which measures accrual quality as the standard deviation of the residuals from a regression of current-period working capital accruals on operating cash flows in the previous, current, and future periods. Thus, the higher the standard deviation, the lower the quality of accruals in earnings. To derive practical measures of working capital accrual quality, the following firm-level time-series regression is proposed (Dechow & Dichev, 2002: 7):

$$\Delta WC_{it} = \beta_0 + \beta_1 CFO_{it-1} + \beta_2 CFO_{it} + \beta_3 CFO_{it+1} + \varepsilon_{it} \quad (2)$$

Where:

ΔWC_{it} is the current period changes in working capital accruals, CFO_{it-1} is the cash flow from operations from the previous period, CFO_{it} is the cash flow from operations in the current period, and CFO_{it+1} is the future period cash flow from operations. B_1, β_2, and β_3 are the slope coefficients of the previous, current, and future period cash flow from operations, while ε_{it} is the residual.

$$AQ_{it} = \sigma(\varepsilon_{it}) \quad (3)$$

Where:

AQit is accrual quality, σ denotes the standard deviation of the residual ε_{it}

Earnings Persistence and Predictability – both are time-series earnings measures. The difference between predictability and persistence is that predictability is reflected in the average absolute level of annual earnings shocks, whereas time-series persistence reflects the serial correlation in earnings. Earnings persistence (PERSIST) is measured as the slope coefficient obtained from the simple regression of current earnings on past earnings (Dechow et al., 2010: 9; Fonou-Dombeu et al., 2022: 7; Lipe, 1990b: 3):

$$Earnings_{it} = \beta_0 + \beta_1 Earnings_{it-1} + \varepsilon_{it} \quad (4)$$

Where:

$Earnings_{it}$ is the current period earnings, $Earnings_{it-1}$ is the previous period earnings, $Earnings_{it}$. In this model, earnings are generally scaled by the number of shares in most studies. β_1 is the slope coefficient for previous-period earnings, which measures its persistence. A higher coefficient (β_1) for $Earnings_{it-1}$ indicates greater persistence in the earnings stream. The a priori assumption is that higher earnings persistence will provide stronger equity valuation inputs. It does follow that if firm A has a more persistent perpetual earnings stream than firm B, firm A's persistent earnings will provide a more accurate prediction of future earnings than firm B and produce a smaller margin of equity valuation error than firm B (Dechow et al., 2010: 9).

The predictability of earnings is the ability of previous periods' earnings to predict future earnings, and it is measured by the variance (σ^2) of earnings' persistence shock (ε_{it}) in the univariate earnings process given in equation (4) (Lipe, 1990b: 3):

$$PREDICT_{it} = \sigma^2 \quad \varepsilon_{it} \quad (5)$$

The higher(lower) the variance of the shock, the lower(higher) the predictability of earnings

Earnings Smoothness—Earnings smoothness is defined as the standard deviation of net operating income divided by the standard deviation of cash flows from operations. Higher(lower) values of Smoothness indicate smaller(bigger) earnings smoothness (Francis et al., 2004b: 13).

$$SMOOTH_{it} = \sigma NOI_{it} / \sigma CFO_{it} \quad (6)$$

As in other previous studies (Francis et al., 2004b: 13; Perotti & Wagenhofer, 2014: 8), firm-based earnings, net operating income, and cash flow from operations are scaled by total assets

4.2.3. Measure of Control Variables

The existing body of literature on accounting and finance (Kipngetich et al., 2021; Mia & Santosa, 2019; Nadyayani & Suarjaya, 2021; Nisha & Ghosh, 2018; Nugroho, 2020; Yuliarti & Diyani, 2018) provides insights into the various measures of operational success that can influence stock returns. The measures include, among others, firm size, leverage, market-to-book ratio, operating cash flows, and profitability. DD also argued that the accruals and earnings quality will be systematically affected by the firm's industry and operating characteristics (Dechow & Dichev, 2002:3). Therefore, investors and analysts need to pay attention to fundamental factors that are measurable in accounting information, such as poor corporate governance and management decisions regarding capital structure composition and capitalization policies. These factors can influence stock price performance (Yustini et al., 2018:2).

Investors in global stock markets rely on accounting information in financial statements as an essential component of fundamental analysis for investment decisions. Investors also require this information about the entities of interest to evaluate corporate performance. This is because the primary interest of shareholders in a company is the return they receive from the company's productivity, namely dividends and stock appreciation. Hence, one can conclude that the financial variables are suitable indicators of stock returns. (Tlemsani, 2020:3; Yustini et al., 2018:2). Consequently, the regression model employed in this study considers leverage and profitability as control variables.

From the many economic variables that influence stock price performance, I have taken fundamental factors that can be derived from the accounting information disclosed in the company's financial statements and annual reports, such as the profitability ratio measured with return on total assets (ROTA) and leverage ratio calculated by the ratio of debt to total assets, because they represent the summary of the implications of overall management decisions impacting on the operating performance and corporate financial stability. Calculating leverage involves determining the ratio of aggregate debt to total assets' value. Profitability is measured by return on total assets, calculated as operating profit (profit before interest and tax) divided by the carrying value of total assets.

Table 1 below shows the operationalization of the variables for this study

Type of Variable	**Proxies**	**Measures**
Independent Variable	• Accrual Quality (AQ) • Earnings Persistence (PERSIST) • Earnings Predictability (PREDICT) • Earnings Smoothness (SMOOTH)	• $AQ_{it} = \sigma(\varepsilon_{it})$, i.e., Eq. (3) as derived from Eq. (2) • PERSIST = Eq. (4) • $PREDICT_{it} = \sigma^2 \varepsilon_{it,}$ i.e., Eq. (5) as derived from Eq. (4) • $SMOOTH_{it} = \sigma NOI_{it} / \sigma CFO_{it}$
Control Variable	• Return on Assets (ROA) • Leverage (LEV)	• ROA= PBIT/TA • LEV = Debt/TA
Dependent Variable	Stock Returns (SR)	$R_{it} = \frac{(P_{it} - P_{it-1}) + D_{it}}{P_{it-1}}$

4.3. Chapter Summary

This chapter's objective is to show the operationalization of the study variables. It provides a strict definition that links the study's concepts to the variables used as proxies for measurement, thereby bridging theory and empirical research.

It begins with a background understanding of the linkage between various measures of accounting information quality, as apparent in the literature and often used in practice, and the qualitative characteristics of accounting information prescribed by the Conceptual Framework of Financial Reporting (the fundamental and enhancing

qualities). This chapter established that these qualities form the basis of every measure developed or used in the literature to operationalize accounting information quality.

The chapter then assigned specific definitions to the accounting-based measures of earnings quality—accrual quality, earnings persistence, earnings predictability, and earnings smoothness —used as proxies for the independent variable. The measure of stock returns, which represents the dependent variable, was also defined. Insights were also provided on the various control variables that can influence stock returns, as reported in the literature, and these were narrowed to leverage and profitability ratios (Debt/Total Assets and ROTA) used as control variables in this study.

The chapter concluded with a table classifying the study variable types, their proxies, and operational measures. In the next chapter, a detailed discussion of the methodological issues relevant to achieving the objectives of this research is presented.

CHAPTER FIVE

RESEARCH METHODOLOGY

5.1. Introduction

The previous chapter provided a step-by-step guide to operationalizing and defining the research variables to be measured during the transition from theoretical and conceptual to technical and empirical research design, a crucial element of a research methodology.

In the first chapter of this study, background information was provided, which enabled the mapping of the statement of the problem, the outline of the research objectives, and the study hypotheses. This chapter outlines the step-by-step procedure the researcher followed to achieve the research objectives. These procedures constitute the research methodology**.** Al-Ababneh (2020: 3) defined methodology as the strategic choices, planned actions, and processes designed to guide the use of methods tailored to achieve targeted objectives. Research is usually based on the researcher's philosophical beliefs, which shape how the researcher sees or perceives reality. The ideas would naturally form the basis of questions the researcher aims to answer. Such philosophical beliefs are referred to as the research paradigm, the framework for the research.

This chapter begins with a detailed description of the research paradigm and design employed in this study. The rest of the chapter described the population and sample size, the sampling technique, the data collection methods, the reliability and testing of the collected data, model estimation, model specification, and the data analysis method.

5.2. Research Paradigm

According to Abdul Rehman and Alharthi (2016: 2), the research paradigm provides assumptions about 1) Ontology, which answers the questions about what reality is. 2) Epistemology – which answers the question of how to know reality. Then, there is 3) research methodology and methods, which provide the step-by-step process of discovering reality or answering the research questions. Philosophically, this study is premised upon the ontological assumption, which speaks to the nature of being, to be, and the existence of a general idea and belief (Nasution, 2018: 2). Ontology refers to

the reality around us and seeks to answer questions about the existence of a priori expected life reality and the things common to all realities. That is the study of what is or exists and what is to be or to exist. Ontology can therefore be said to apply to this study, as it concerns the perceived reality of a relationship between accounting information quality, measured by earnings quality, and the concept of shareholder value.

This research followed the positivist paradigm. Alharahsheh and Pius (2020: 3) explained Positivism and Interpretivism as the two fundamental research paradigms. According to them, Positivists work with observable realities within society that can yield generalizable findings. On the other hand, Interpretivism, or Interpretivists, emphasizes subjective interpretation from a biased perspective and uses qualitative methods. The positivist paradigm of research, according to Konge, Artino, and Park (2020: 2), aligned with the deductive reasoning model of scientific research, which builds on verifying a priori hypotheses formulated through the operationalization of variables and making inferences from the results of tested hypotheses as the basis for generalization about reality being tested. Furthermore, studies that align with this paradigm focus mainly on observable reality within society, producing generalized ideas about the explanatory, correlational, or causal relationships using quantitative approaches (Alharahsheh & Pius, 2020b: 3).

According to Konge et al. (2020: 2), positivism is aligned with the hypothetical deductive mode, which is a circular process of deductive reasoning that begins with an established theory from the literature to building testable hypotheses of the realities postulated by the theory, design of scientific method of testing the hypotheses through the operationalization of the research variables and conducting empirical examination that would ultimately produce the findings that can be generalized to strengthen or refined the theory and contribute to the literature (theory → hypothesis → operationalization of variables → examination → generalization of theory). This study aimed to test the reality of the linkage between information asymmetry theory and the efficient market hypothesis in determining equity stock prices and their impact on shareholder value. The study examined empirical data from listed consumer goods companies in Nigeria to test the stated hypotheses, using the study's operationalized variables (accounting information quality and shareholder value). The findings aim to advance the theoretical understanding of the interaction between agency theory,

information asymmetry, and efficient market hypothesis, their influence on equity stock pricing, and their impact on shareholder value. Hence, the study aligns with the positivist paradigm.

5.3. Research Design

Kothari and Garg (2014) provide an excellent background, meaning, and purpose for a good research design, describing it as the contextual structure within which research is conducted. The design provides the blueprint for the approach and methods of data collection, measurement, and analysis to answer the research questions and achieve the study's objectives. To achieve the underlying research objectives, the researcher employed a correlational and causational research design with a quantitative method to examine the extent of the impact of accounting information quality on the shareholder value of listed consumer goods companies in Nigeria (Akarim et al., 2012: 5; Tan, 2014: 2). The dependent variable (stock returns) is regressed on measures of the independent variable (earnings quality) to examine the extent to which accounting information quality impacts shareholder value. The Granger causality test examines whether a causal relationship exists between the variables (Akarim et al., 2012: 5; Cai & Giorgioni, 2021: 32).

5.4. Population and Sample Size

The sample for this study was selected from the twenty-one (21) listed consumer goods companies on the Nigerian Stock Exchange (NSE) as of April 2023, which traded between 2012 and 2023.

The consumer goods sector was chosen for its strategic role in the Nigerian economy and its visibility to investors. As producers of essential goods, this sector is highly sensitive to macroeconomic conditions, making it an important sector for examining how accounting information quality affects shareholder value. Within the Efficient Market Hypothesis, the sector provides a practical setting to assess how accounting disclosures are reflected in share prices, while agency theory highlights the role of transparent reporting in reducing conflicts between managers and shareholders. The 2012–2023 period further strengthens this choice, as it captures IFRS adoption, economic shocks, and recovery phases, offering a dynamic backdrop for evaluating the interplay between accounting information quality and shareholder value in an emerging market.

5.5. Sampling Technique

The study is located in Nigeria. It employs secondary data collected from the financial statements of the companies sampled from the targeted population of consumer goods companies listed on the Nigerian Stock Exchange between 2012 and 2023. For each observation variable, panel data is collected with the purposive sampling method using the following criteria for the sample selection:

a. Companies to be included in the sample should be consistently trading on the floor of NSE between 2012 and 2023;
b. Sufficient data should be available for the sample period with relevant information for measuring all the research variables.
c. Following the above criteria, 13 (thirteen) firms were finally included in the sample selection for having a complete set of financials in the relevant years for the extraction of data for the variables. While 8 (eight) firms were excluded because of data unavailability.

5.6. Data Collection Method

Data collection is the systematic process of gathering information on specific study variables for analysis, aimed at answering research questions or testing hypotheses to achieve the research objectives. Data collection methods are means, tools, or techniques used in collecting data for a specific research project (Mwita, 2022:1). Generally, data collection methods are divided into two main categories: primary and secondary data collection methods (Mazhar, 2021:1-2; Taherdoost, 2021:4). To answer research questions, a researcher usually analyzes data collected from either primary or secondary sources. In some research, the source can be a combination of both primary and secondary data. Primary data sources are based on the processes by which the researcher personally gathers data for the study using methods such as questionnaires, interviews, focus groups, observation, surveys, case studies, and experimental methods, and no one has access to this data until it is published (Taherdoost, 2021:6). Secondary data, on the other hand, are data that were previously collected by someone else, or gathered from published sources, and have already undergone the statistical process (Mazhar, 2021:2; Taherdoost, 2021:25).

Data collected for research can also be classified as quantitative or qualitative, strictly following the research approach. According to Celo, Braakmann & Benetka (2008: 3),

the difference between quantitative and qualitative research approaches is in how data are collected and analyzed. Data collected in quantitative research must be reduced to numerical values to conduct a statistical analysis. In contrast, data collection in qualitative research is non-numerical, i.e., texts, pictures, videos, etc. However, data can be collected for both qualitative and quantitative approaches from primary, secondary, or a combination of both sources.

Quantitative data were collected for this study from secondary sources, including the published financial statements of sampled listed consumer goods companies and the Nigerian Stock Exchange historical database. Data are downloaded from the Nigerian Stock Exchange database in Excel format. The firm-specific accounting numbers from the published financial statements of the sampled listed companies also form part of the quantitative analysis of accounting information quality in relation to market-based stock performance, thereby impacting shareholder value. Data collected ranged from 2012 to 2023.

5.7. Data Validity & Reliability

This section discusses the diagnostic tests used to validate the reliability of the measuring instruments and tools used to test the stated hypotheses and achieve the research objectives. Commenting on the concepts of validity and reliability, (SÜRÜCÜ & MASLAKÇI, 2020; 5) say that although the two concepts are closely related, they express confidence in the different properties of the measuring instrument. The reliability of a measuring instrument does not necessarily confirm its validity. However, the validity of the measuring instrument is most likely a confirmation of its reliability. Hence, reliability alone is not a sufficient condition to ensure validity. It is, therefore, essential for a researcher to test both the validity and reliability to ensure the soundness of the study data and that they are replicable to produce accurate results (Mohajan, 2017: 2). The measuring instrument to be employed in a study must satisfy the two conditions. Otherwise, it will not be healthy to interpret the study results correctly.

5.7.1. Validity

Validity is defined as how accurately a methodology measures a variable that it intends to measure (I. Ahmed & Ishtiaq, 2021: 3). It is a test quality in research that define the extent to which a concept is accurately measured in quantitative research (Heale &

Twycross, 2015: 2). According to Cook and Campbell (1979), in Masocha 2017: 78), validity is the main issue affecting quantitative research. Therefore, an appropriate validity check should be employed to determine whether the measuring tool suitably measures the variables according to the purpose of the research (SÜRÜCÜ & MASLAKÇI, 2020: 4).

The literature contains a plethora of validity types. For instance, in describing the various types of validity, Heale & Twycross (2015: 2) grouped validity into three (3) categories, including content validity, construct validity, and criterion validity. Furthermore, in the thesis submitted to the University of South Africa (UNISA), Masocha (2017: 78) explained that the different validity issues that influence a study's overall validity can be grouped into internal and external validity. Therefore, the researcher must decide which validity to test to meet the study's needs and purposes (SÜRÜCÜ & MASLAKÇI, 2020: 5).

Table 2: Types of Validity

Types of Validity	**Description**
Content Validity	This validity test the extent to which a measurement instrument accurately measures all aspects of a construct of a study concept (Heale & Twycross, 2015: 2)
Construct Validity	This validity test the extent to which the research measurement tool measures the intended construct or what it claims to measure (Heale & Twycross, 2015: 2)
Criterion Validity	This validity test the extent to which a research measurement tool is related to other tools that measure the same variables (Heale & Twycross, 2015: 2)
Internal Validity	Internal validity relates to research design and captures the extent to which changes in explanatory variable(s) cause changes in the dependent variable(s). It validates causal claims in relationships between variables and assures that the study results can be accepted based on the research design (Quintão et al., 2020: 6; Rogers & Revesz, 2019a: 3)

External Validity	External validity concerns the transferability or generalizability of the study (results) to other relevant settings or groups. This aims to validate the sampling technique and determine whether the data collected from the study sample is a representation of the study population (Mohajan, 2017: 16)

Test of Validity

The study is tested for internal and external validity to ensure that the research design and measurement tools accurately capture the intended construct of accounting information quality and that the results can be generalized to represent the research population.

a) Internal Validity

Internal validity concerns the research design and reflects the extent to which the independent variable(s) account for the observed variation in the dependent variable(s). A study can claim internal validity if the independent variable is the sole explanation for the results. Whereas a study will be said to lack internal validity if other factors outside the independent variable(s) influence the observed variation in the dependent variable(s) (Cahit, 2015: 1; Rogers & Revesz, 2019b: 3). Internal validity is the essential condition (***sine qua non***) of validity requirement for the result of any study to be interpretable (Campbell & Stanley, 2015: 11). According to Campbell and Stanley (2015), in Masocha (2017: 78), four (4) factors are the main threats to internal validity in a correlational study. The threats are extraneous variables, historical effects, selection bias, and regression analysis.

- **Extraneous Variables**

Jumoke and Oyebanji (2017: 12) described extraneous variable(s) as the variable(s) that are not considered in the study variables but have a controlling influence on the relationship between the dependent and independent variables. Extraneous variables may subtly affect research outcomes if not adequately considered and controlled in the study, as they can influence the measurement of study variables and the relationships among them.

To assess the threat of extraneous variables, the researcher reviewed studies that examine the interaction between information asymmetry theory and the efficient market hypothesis to determine whether variables beyond the firm-specific fundamental qualities of accounting information influence stock prices and, in turn, variations in shareholder value. If other variables are considered extraneous variables, Bevins (1999) in Masocha (2017: 79) recommended to control for the variables in the regression models. Adopting the approach of Masocha (2017: 79), a pilot study was conducted with a few selected sample firms to determine the effect of the identified extraneous variables on the shareholder value measured by stock returns.

- **History effects**

History threat to internal validity refers to changes that occur as a result of changing events in the data source, which could affect the measurement variables in a way that could influence the final results of the study (Cahit, 2015: 2). History does not affect this study because the data are drawn from the historical financial statements of the selected sample firms that have been audited and are not subject to change after publication.

- **Selection bias**

Selection bias refers to bias in the sampling process. This bias occurs during the sampling stage, where the researcher prefers one firm over the other, thereby introducing bias into the study model when the ordinary least squares (OLS) is used. Thus, this creates the situation of Type I or Type II error, which can lead to finding a significant relationship that does not exist or failure to find a significant relationship that does exist (Certo et al., 2016: 6-7; Flannelly et al., 2018: 10). In this study, no firm is preferred over another, as all firms in the population that meet the sample selection criteria have the opportunity to be included in the final sample. Hence, a selection that could invalidate the study's results is avoided.

- **Regression analysis (Statistical Regression)**

Statistical regression (or regression towards the mean) can threaten internal validity when measurement error is a risk for variables with extremely high or low scores relative to their means. The scores tend to move (or regress) towards the mean, thus affecting the distribution of the data (Flannelly et al. 2018: 9). The sample data with

extreme values far away from the average point of other observations are called ***outliers***. The outliers can occur due to measurement, clerical, or sampling errors. Other outliers could occur genuinely from the nature of the data, but rather than being extreme (Ghosh & Vogt, 2012: 1).

According to Ghosh and Vogt (2012: 1), genuine outliers can be treated in any of the following three (3) ways:

1) Keep the outlier and treat it like any other data point or
2) Winsorize it (i.e., set the extreme outliers equal to a specified percentile of the data or modify it by selecting the extreme outliers equal to a specified range of values closer to other sample values); or
3) Eliminate it (i.e., drop it from the sample).

However, each method for treating outlier risks produces poor estimates of the parameters of interest. For instance, Methods 2) and 3) would introduce statistical bias that may undervalue the outlier while keeping it and treating it like the other points, as suggested by Method 1) may overvalue it and cause the estimate to vary drastically from the true population value (Ghosh & Vogt, 2012: 1).

According to Ghosh and Vogt (2012: 2), treatments in Methods 2) and 3) above, i.e., winsorizing or eliminating, are the two standard ways of treating outliers. Although the panel data regression model that is used in this study accounts for such differences in the firm-specific data points (Masocha, 2017: 80), the author still considered using treatment method 2) (winsorizing the outliers) to properly test for heteroscedasticity.

b) External Validity

After establishing the study's internal validity, external validity was assessed to determine whether the results can be generalized to similar subjects in a different setting. The external validity of the study shows the extent to which the results of the study can be generalizable to other settings, especially across the population represented in the sample that provided the empirical evidence for the conclusion reached within the geographical location of the study (I. Ahmed & Ishtiaq, 2021: 5; Zohrabi, 2013: 6).

The study uses only accounting-based earnings-quality attributes to measure accounting information quality, thereby ensuring external validity. The four accounting-

based measures of earnings quality bear the fundamental qualities of accounting information (relevance and faithful representation) that are not influenced by market conditions. They are influenced solely by management's choices regarding accounting policies, estimates, and the judgmental application of relevant accounting standards (GAAP). This ensures the external validity of the constructs measured by the explanatory variables.

5.7.2. Reliability

Reliability is a test of the consistency of a measure (Heale & Twycross, 2015: 2). It is an indicator of how stable the obtained values (results) from a measurement will be when put through repeated measurements or tests using the same tests or measurement instruments under the same circumstances (SÜRÜCÜ & MASLAKÇI, 2020: 3). In other words, reliability refers to whether the chosen data collection technique and analytical procedure would produce consistent results if repeated at different times or can be replicated.

Test of Reliability

Heale and Twycross (2015: 2) outlined three (3) attributes of reliability that are tested for in a study. Each of those attributes is discussed below:

a) Internal Reliability (Homogeneity)

Internal reliability is the consistency of data collection, analysis, and interpretation of study findings. A study is said to have internal consistency if an independent researcher comes to similar findings and conclusions as the original researcher, reanalysing the information (Zohrabi, 2013: 7).

Obtaining internal consistency in data collection that would guarantee similar results after retesting by an independent researcher is relatively easy in quantitative research, given the stability of the numeric data generated from secondary sources. Unlike in qualitative research, data is derived mainly from narrative primary sources.

To ensure consistency in data analysis and the interpretation of findings, the panel datasets and regression models undergo robust diagnostic testing to assess the reliability of measurements and results. These diagnostic tests include:

1) Panel-data unit-root tests for stationarity in panel datasets and ensuring that the panel data model does not have unit roots. According to (Niyimbanira, 2013: 2), this test is essential as it helps avoid spurious regression.
2) Panel cointegration tests, which aim to establish cointegration among variables. This helps to identify scenarios where two or more non-stationary variables are integrated in a way that cannot deviate from equilibrium in the long term (Nkoro & Uko, 2016: 6). The primary purpose of the cointegration test is to determine whether regression analysis can be performed by determining if error correction exists among the individual panel members or the whole panel (Lau et al., 2019: 9).
3) The entire approach to the study model specifications depended on the cointegration of the study variables.
4) Selecting the most suitable individual-specific effects model is a critical task. To ensure the accuracy of the choice, the Haussmann Specification test rigorously evaluates the fixed- and random-effects models, providing the necessary information to make an informed decision.
5) Before analyzing the data, several other tests were performed to ensure that the assumptions of linear regression were met. These tests included normality, multicollinearity, heteroscedasticity, and autocorrelation (Fonou-Dombeu et al., 2022: 7).

b) Stability Test

Stability is the test of consistency of results using an instrument with repeated testing (Heale & Twycross, 2015: 3). The test-retest reliability testing ensures the consistency of the results when the measuring instrument is applied to the same sample group of the same population at different times (SÜRÜCÜ & MASLAKÇI, 2020: 15).

c) Equivalence

This is a test of the consistency of responses among multiple users of an instrument or among alternate forms of an instrument. This test includes a process for qualitatively determining the level of alignment between two or more observers (Heale & Twycross, 2015: 3). The study adopts a quantitative approach, using secondary data with firm-specific uniqueness. Hence, the equivalence test does not apply.

5.8. Models of Estimation

The panel data regression model is used in this study. A panel dataset is a cross-sectional time-series dataset that, ideally, provides repeated measurements of a set of variables over a period for observed units, such as individuals, households, firms, cities, and states (Xu et al., 2007:3). Panel data regression models examine group (individual-specific) effects, time effects, or both to address heterogeneity or unobserved individual impacts (Park, 2011:8). Three types of panel data estimation models are frequently used in the literature, namely the pooled model, the fixed effects model, and the random effects model (Baltagi, 2001:12-15; Xu et al., 2007:9-15):

(i) **Pooled Model:** The simplest and most basic estimation model. It involves pooling the data and applying Ordinary Least Squares (OLS), also called pooled OLS. It assumes a constant coefficient (α) across individuals, making it suitable for cross-sectional and time-series data.

(ii) **Fixed Effects (FE) Model**: The fixed effects model is widely used when we want to control for omitted variables that are constant over the period and vary across the units; that is called unobserved heterogeneity or fixed effects. This is an example of an individual-specific effects model that assumes unobserved heterogeneity across individuals captured by αi for all t. They are referred to as Fixed Effects (FE) Models, where the individual-specific effects can correlate with the regressors x. The fixed effects model is an appropriate specification if we focus on a specific set of N firms, say, Dangote, Nestle, Cadbury, etc., and our inference is restricted to the behavior of these sets of firms.

(iv) **Random Effects (RE) Model**: The random effects model regards the unobserved heterogeneity (αi) as a random variable rather than a fixed one. The random effects model is an example of an individual-specific effects model. It does not allow the individual-specific effects αi to be correlated with the regressors x. It assumes that the individual-specific effects are independent of the regressors and includes αi in the error term, yielding a composite error term Ɛi = (αi + eit).

5.9. Model Specifications

Drawing from some of the studies presented in the literature review (Fonou-Dombeu et al., 2022; Hung & Van, 2020; Hung Dang et al., 2022), the hypotheses will be tested

using the following generalized model for the relationship between accounting information quality and shareholder value:

$$SHV_{it} = \beta_0 + \beta_{it}AIQ_{it} + \beta_{it}LEV_{it} + \beta_{it}ROA_{it} + \varepsilon_{it} \quad (7)$$

Specifically, the model in Eq. 7 will be substituted with the various measures of the variables as derived in chapters 4.2.1 – 4.2.2 to individually test the hypotheses in H_{1a} – H_{1e}, which seek to examine the relationship between the various measures of earnings quality used to proxy accounting information quality and stock returns used as a proxy for shareholder value:

H_{1a} Accrual quality impacts the stock returns of listed consumer goods companies in Nigeria.

$$SR_{it} = \beta_0 + \beta_{it}AQ_{it} + \beta_{it}LEV_{it} + \beta_{it}ROA_{it} + \varepsilon_{it} \quad (8)$$

H_{1b} Earnings persistence impacts the stock returns of listed consumer goods companies in Nigeria.

$$SR_{it} = \beta_0 + \beta_{it}PERSIST_{it} + \beta_{it}LEV_{it} + \beta_{it}ROA_{it} + \varepsilon_{it} \quad (9)$$

H_{1c} Earnings predictability impacts the stock returns of listed consumer goods companies in Nigeria

$$SR_{it} = \beta_0 + \beta_{it}PREDICT_{it} + \beta_{it}LEV_{it} + \beta_{it}ROA_{it} + \varepsilon_{it} \quad (10)$$

H_{1d} Earnings smoothness impacts the stock returns of listed consumer goods companies in Nigeria.

$$SR_{it} = \beta_0 + \beta_{it}SMOOTH_{it} + \beta_{it}LEV_{it} + \beta_{it}ROA_{it} + \varepsilon_{it} \quad (11)$$

H_{1e} Accrual quality, earnings persistence, earnings predictability, and earnings smoothness Granger-cause the variation in stock returns of listed consumer goods companies in Nigeria

Hypothesis H_5 is tested using the Granger Causality approach and adopting the model of (Islam et al., 2018: 5; Yua et al., 2020: 6). The a priori expectation of this study is that accounting information quality, represented by accrual quality, earnings persistence, earnings predictability, and earnings smoothness, has a unidirectional causal relationship with shareholder value and Granger-causes variation in stock

returns. The hypothetical impact of accounting information quality variables and the dependent variable is mathematically represented in the equation below:

$$SR_{it} = \beta_0 + \beta_1 AQ_{it} + \beta_2 PERSIST_{it} + \beta_3 PREDICT_{it} + \beta_3 SMOOTH_{it} + \beta_{it} LEV_{it} + \beta_{it} ROA_{it} + \varepsilon_{it} \quad (12)$$

5.10. Data Analysis Method

The association between the independent variables (accounting information quality) and the dependent variable (shareholders' value) will be examined using correlation and multiple linear regression analysis (Al-Zarqi & Bedoui, 2023: 14) to determine the direction, strength, and impact of the relationship between earnings quality and Stock Returns of listed consumer goods companies at the NSE. Data analysis is conducted using Stata.

5.11. Chapter Summary

This chapter focuses on the research methodology used in this study. The chapter explains the research process in eight sections. The first section is a general introduction to the chapter, including a defining statement of the research methodology. The second section reviews the relevant research paradigms by outlining the assumptions of various research philosophies, aligning the study with an ontological assumption, and situating it within the positivist paradigm.

The subsequent sections, three to six, introduce the research design, population and sample size, sampling technique, and data collection methods. Section seven explains the robust validity and reliability tests that will be conducted to ensure the validity of the measures of the research variables and the reliability of the test results. The last section specifies the regression models used to test the research hypotheses.

The next chapter presents the collected empirical data, analyzes the data to test the research hypothesis, and discusses the research findings in relation to achieving the research objectives. A new framework for understanding the relationship between accounting information quality and shareholder value, based on the research findings.

CHAPTER SIX

DATA ANALYSIS AND DISCUSSION OF FINDINGS

6.1. Introduction

This chapter presents the empirical analysis of the collected data, tests the study hypotheses, and presents the findings from the tested individual hypotheses by applying several statistical tests to answer the research questions, with a focus on the specific study objectives.

In this chapter, five hypotheses were tested using five models specified in Chapter Five. The first four aimed to establish the direction and magnitude of the relationship between the explanatory variables representing accounting information quality and stock returns, which are measures of shareholder value. The last hypothesis was tested using Granger Causality to determine whether any of the explanatory variables Granger-cause the variation in stock returns.

The models were analysed using the Dynamic Panel Estimation technique, given the presence of cross-sectional dependency in the panel data. Various diagnostics tests such as the Hausman (1978) test, the Variance Inflation Factor (VIF), Pesaran's Test for cross-sectional independence, and Wooldridge Test for autocorrelation in panel data to detect the possibility of presence of multicollinearity among the predictor variables in the regression model, assess whether the error terms in the panel data regression model are correlated across cross-sectional units, and test for the first-order autocorrelation in panel data models. The results from these tests informed the adoption of the Arellano-Bond Dynamic Panel Estimation technique.

Section 6.2.1 presents the descriptive statistics for the variables adopted. Section 6.2.2 presents and discusses the correlation coefficients. Section 6.2.3 presents and discusses the results of hypothesis testing for each empirical model. Section 6.2.4 presents and discusses the Granger causality test in response to the 5th research hypothesis. The post estimation tests were presented in 6.2.5, and section 6.2.6 presented the Dynamic Panel Estimation Results. Section 6.3 presented the post-test discussion of the findings. Finally, section 6.4. presents the new framework for modeling the observed relationship between accounting information quality and shareholder value and summarizes the study's findings.

6.2. Data Presentation and Analysis

The dataset analysed comprises 130 observations of 13 consumer goods firms listed on the Nigerian Stock Exchange (NSE) from 2013 to 2022, which is the actual study period. However, although the study period is 10 years (2013 to 2022), some study variables required data from t-1 and t+1; therefore, it was necessary to include the years 2012 and 2023, extending the period to 12 years. As a result, for each variable, the actual number of observations is 130, because the technical coverage of t-1 and t+1 was required only for the computation of the variables in period t.

6.2.1. Descriptive Statistics

The descriptive statistics provide an overview of the study sample's characteristics and summarize the data sets, which are essential for understanding them.

Table 3: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
SR (Stock Returns)	130	0.0980	0.5305	-0.7625	1.8849
AQ (Accrual Quality)	130	3.8647	4.6982	0.0054	22.9571
PERSIST (Earnings Persistence)	130	-0.1197	9.9647	-49.5165	60.0609
PREDICT (Earnings Predictability)	130	38.2954	108.9639	0.0004	849.5227
SMOOTH (Earnings Smoothness)	130	0.4675	1.0244	0.0011	8.0696
LEV (Leverage)	130	0.0869	0.0898	0.0000	0.5035
ROA (Return on Assets)	130	0.1076	0.0969	-0.1054	0.3835

Source: Author’s Computation using Stata

The table presents descriptive statistics for the study's key variables, including the mean, standard deviation, minimum, and maximum. These statistics provide insights into the distribution and characteristics of the dataset. Stock returns (SR) have a mean value of 0.0980**,** indicating that, on average, the listed consumer goods companies experience a small positive return. However, the standard deviation of 0.5305 suggests significant fluctuations in stock returns, with a wide range from **-**0.7625 to 1.8849, indicating that some firms experience negative returns while others achieve high gains.

Accrual quality (AQ) has an average of 3.8647 and a relatively high standard deviation of 4.6982, indicating substantial variation in how firms manage their accruals. The range of 0.0054 to 22.9571 suggests that while some companies maintain strong accrual quality—where accruals are more closely related to actual cash flows—others exhibit extremely high volatility, indicating poor-quality accruals that are far from the actual realization of the cash components of reported earnings, which could impact earnings reliability. Similarly, Earnings persistence (PERSIST) has a mean value of **-** 0.1197**,** indicating that past earnings are not strongly predictive of future earnings for most firms. The large standard deviation of 9.9647 and the wide range from -49.5165 to 60.0609 suggest that earnings persistence varies significantly across firms, with some showing strong earnings continuity and others experiencing erratic earnings behaviour.

Earnings predictability (PREDICT) has a high mean of 38.2954 but an exceptionally large standard deviation of 108.9639, showing extreme variability. The minimum value of 0.0004 and the maximum value of 849.5227 indicate that while some firms have highly predictable earnings, others exhibit drastic unpredictability, possibly due to inconsistent financial performance or external market factors. Also, Earnings smoothness (SMOOTH) has a mean of 0.4675**,** suggesting that most firms do not engage in excessive earnings smoothing. However, the standard deviation of 1.0244 and the wide range from 0.0011 to 8.0696 show that some firms smooth their earnings significantly, while others allow earnings to fluctuate naturally.

Leverage (LEV) has a mean of 0.0869, suggesting that the sample firms generally have low debt levels. The relatively low standard deviation of 0.0898 and the range from 0.0000 to 0.5035 indicate that while some companies operate without debt, others have moderate financial leverage.

The average return on assets (ROA) is 0.1076**,** suggesting that firms generate about 10.76% return on their assets. The standard deviation of 0.0969 shows moderate dispersion in profitability, while the range from -0.1054 to 0.3835 indicates that some firms experience losses while others achieve strong returns.

The descriptive statistics reveal significant variations in the firms' financial performance, accounting information quality, and stock returns. The high standard

deviations in variables such as earnings persistence and predictability suggest diverse financial management strategies among the firms. The generally low leverage levels indicate that most consumer goods companies in Nigeria rely more on equity financing than debt financing.

6.2.2. Correlation Analysis

Correlation analysis helps determine the strength and direction of the relationship between stock returns (SR) and various measures of accounting information quality, including accrual quality (AQ), earnings persistence (PERSIST), earnings predictability (PREDICT), earnings smoothness (SMOOTH), leverage (LEV), and return on assets (ROA). The correlation coefficient ranges from -1 to 1, where positive values indicate a direct relationship (as one variable increases, the other increases), negative values indicate an inverse relationship (as one variable increases, the other decreases), and values close to 0 indicate a weak or no relationship.

Table 4: Correlation Analysis

Variable	SR	AQ	PERSIST	PREDICT	SMOOTH	LEV	ROA
SR	1.0000						
AQ	-0.1683	1.0000					
PERSIST	-0.1784	0.1015	1.0000				
PREDICT	0.0902	0.2862	-0.0136	1.0000			
SMOOTH	0.0633	0.0394	0.0038	0.0640	1.0000		
LEV	-0.1783	0.3582	0.0801	-0.0974	-0.0904	1.0000	
ROA	0.1028	0.0475	0.0302	0.0364	-0.0622	-0.0260	1.0000

Source: Author's Computation using Stata

Table 6.2.2 reveals a weak negative correlation between stock returns and accrual quality, with a correlation coefficient of -0.1683. This suggests that firms with higher accrual quality experience slightly lower stock returns. This could be because high accrual adjustments may signal earnings management, leading to investor skepticism. Investors may perceive higher accruals as a sign of aggressive accounting, which can reduce confidence in reported earnings and negatively impact stock performance.

Furthermore, the weak negative relationship (-0.1784) indicates that greater earnings persistence does not necessarily translate into higher stock returns. Earnings stability

is generally considered a positive attribute, but it does not guarantee future profitability growth, which is a key concern for investors. This weak correlation suggests that investors may focus more on other financial metrics when making investment decisions.

Contrarily, the table reported a weak positive correlation coefficient of 0.0902, suggesting that companies with more predictable earnings tend to have slightly higher stock returns. Earnings predictability can instil confidence in investors in a firm's future financial performance. Still, the low magnitude of the correlation suggests that other market dynamics, such as economic conditions and industry trends, may play a stronger role in influencing stock returns. Similarly, a very weak positive relationship (0.0633) exists between earnings smoothness and stock returns, suggesting that earnings smoothness has little effect on stock returns. While earnings smoothness can indicate financial stability, excessive smoothing may raise concerns about earnings manipulation. Investors may view artificially smooth earnings as an attempt to conceal financial volatility, with minimal impact on stock returns.

Still, the result shows a weak negative correlation of -0.1783 between leverage and stock returns, meaning that companies with higher debt levels tend to have slightly lower stock returns. High debt increases financial risk, making investors cautious about the company's ability to meet debt obligations. This negative correlation suggests that investors prefer companies with lower financial leverage because they face reduced risk of financial distress. The weak positive correlation, with a coefficient of 0.1028, indicates that firms with higher returns on assets tend to have slightly higher stock returns. This aligns with the idea that profitability is a factor in attracting investors. However, the low correlation suggests that other factors, such as market perception, macroeconomic trends, and company-specific strategies, may have a greater impact on stock performance than ROA alone.

To explicitly analyse the correlation coefficient of the endogenous variables, the table reports a moderate positive correlation of 0.2862, suggesting that firms with better accrual quality also tend to have more predictable earnings. This relationship is logical because accurate reporting enhances earnings forecasts, enabling investors to make more informed decisions. Additionally, a moderate positive correlation suggests that firms with higher accrual quality tend to have higher leverage. This indicates that firms

with more transparent accounting practices may attract more debt financing. Lenders and creditors may feel more comfortable providing funds to companies with reliable financial reporting, thereby leading to higher leverage levels.

Contrarily, the table reported a weak positive correlation coefficient of 0.0902, suggesting that companies with more predictable earnings tend to have slightly higher stock returns. Predictability in earnings can provide investors with confidence in a firm's future financial performance. Still, the low magnitude of the correlation suggests that other market dynamics, such as economic conditions and industry trends, may play a stronger role in influencing stock returns. Similarly, there exists a very weak positive relationship of 0.0633, suggesting that earnings smoothness does not have a strong effect on stock returns. While earnings smoothness can indicate financial stability, excessive smoothing may raise concerns about earnings manipulation. Investors may view artificially smooth earnings as an attempt to conceal financial volatility, with minimal impact on stock returns.

Conclusively, the correlation analysis reveals mostly weak relationships between stock returns and the independent variables, suggesting that factors beyond these accounting information quality measures influence stock returns in listed consumer goods companies. However, key insights can be drawn from the analysis.

First, accrual quality is moderately related to leverage and earnings predictability, indicating that firms with strong financial reporting tend to attract debt financing and have more stable earnings forecasts. This suggests that transparent financial reporting can enhance a firm's ability to secure external funding. Second, leverage negatively correlates with stock returns, suggesting that highly leveraged firms may not generate higher shareholder value due to increased financial risk. Investors may be wary of companies with high debt levels, as they pose a greater risk of financial distress.

Finally, earnings predictability and return on assets exhibit slight positive relationships with stock returns, suggesting that investors may value profitability and predictable earnings, but not strongly enough to significantly drive stock returns. This indicates that while accounting information quality measures play a role in investor decision-making, broader market conditions and company-specific factors also have significant influences.

While correlation analysis provides preliminary insights, further econometric analysis (such as regression models and Granger causality tests) is needed to determine causality and the actual impact of accounting information quality on shareholder value.

6.2.3. Specification and Diagnostic Tests for Panel Data Models

As was discussed in the methodology chapter 5, to ensure validity and reliability of the results, the researcher conducted various diagnostic tests, starting with the Hausman specification test of model specification, and then the Variance Inflation Factor (VIF), Pesaran's Test for cross-sectional independence, and Wooldridge Test for autocorrelation in panel data. The individual tests leading to the adoption of the Arellano-Bond Dynamic Panel Estimation technique are presented below.

6.2.3.1. Hausman Specification Test

The Hausman specification test was conducted to determine whether the fixed- or random-effects model is more appropriate for testing the stated hypothesis regarding the relationship between accounting information quality, measured by earnings quality, and shareholder value, represented by stock returns. The test had a null hypothesis in support of the random-effects model, while the alternative hypothesis states that the fixed-effects model is appropriate. A significant p-value indicates that the fixed effects model is more efficient than the random effects model and vice versa.

Table 5: Hausman test

Variables:	**(b)** **fe**	**(B)** **re**	**(b-B)** **Difference**	**Standard Error**
AQ	-0.0080346	-0.0183546	0.01032	0.0076634
PERSIST	-0.0106578	-0.0083566	-0.0023012	0.0020225
PREDICT	0.0005714	0.0005744	-2.99e-06	0.0002204
SMOOTH	0.0481016	0.0320273	0.0160743	0.0149127
LEV	-1.135163	-0.5169267	-0.6182364	0.5169352
ROA	0.6825886	0.6162133	0.0663753	0.566972

Chi-Sq.	= 3.51
Prob>chi-sq.	= 0.7423

Source: Author's Computation using Stata

Based on the Hausman test result, with a p-value (Prob>chi2) of 0.7423, which exceeds the 0.05 significance level, we fail to reject the null hypothesis that the Random Effects (RE) model is more appropriate. This means that we cannot conclude that the Fixed Effects (FE) model is more efficient. In other words, the Hausman test suggests that the Random Effects (RE) model is a better fit for the study data than the Fixed Effects (FE) model. This implies that the individual-specific effects are uncorrelated with the explanatory variables, and that the random effects model can be used without concern for omitted-variable bias. Thus, allowing for efficient estimation through generalized least squares (GLS).

6.2.3.2. Analysis of Variance Inflation Factor (VIF)

The Variance Inflation Factor (VIF) detects multicollinearity among the predictor variables in a regression model. Multicollinearity occurs when two or more predictors are highly correlated, leading to unreliable estimates of regression coefficients and distorting the model's interpretation.

Table 6: Variance Inflation Factor (VIF) Table

Variable	**VIF**	**1/VIF**
AQ	1.32	0.7569
LEV	1.23	0.8162
PREDICT	1.15	0.8700
SMOOTH	1.02	0.9800
PERSIST	1.01	0.9854
ROA	1.01	0.9897
Mean VIF	1.12	

Source: Author's Computation using Stata

In this case, the VIF values for each independent variable are relatively low, with a mean VIF of 1.12. The VIF value for accrual quality (AQ) is 1.32, which is considered

low. A VIF below five typically indicates that multicollinearity is not a serious concern and that the variable is not highly correlated with other predictors. The VIF for leverage (LEV) is 1.23, indicating no significant multicollinearity. This value is well below the 10 threshold, suggesting that leverage does not exhibit problematic correlations with other variables. More importantly, the VIF of earnings Predictability (PREDICT) = 1.15, which is even lower, further suggesting that this variable is not highly correlated with other predictors in the model. Lastly, the VIF for earnings Smoothness (SMOOTH) is 1.02, very close to 1, indicating little multicollinearity with the other variables. This is a very healthy result, implying that earnings smoothness is not redundant when other predictors are present.

Similarly, earnings persistence (PERSIST) has a VIF of 1.01**,** suggesting no multicollinearity concerns. This is also an excellent result, reinforcing that persistence does not share redundant information with other predictors. Also, the VIF for return on assets (ROA) is 1.01, indicating that ROA is not highly correlated with the other variables in the model. This suggests that ROA does not suffer from multicollinearity issues and provides unique explanatory power in the regression model.

The model's Mean VIF is 1.12, which is relatively low and well below the commonly accepted threshold of 10**.** This suggests that there is no significant multicollinearity among the predictor variables in this model. Since multicollinearity is not a concern, the regression coefficients can be interpreted with greater confidence, as correlations among predictors do not inflate the significance of any independent variable.

In summary, the low VIF values across all predictors suggest that the independent variables are not highly correlated, indicating that the model is not suffering from multicollinearity. This enhances the reliability of the regression results and enables a more accurate interpretation of the relationships between the independent variables and stock returns.

6.2.3.3. Wooldridge Test for Autocorrelation in Panel Data

The Wooldridge test is used to test for first-order autocorrelation in panel data models. The null hypothesis (H_0) states that there is no first-order autocorrelation, while the alternative hypothesis (H_1) suggests that there is autocorrelation. The test results show that the Test Statistic (F-value) is 3.482, while the p-value is 0.0867

Since the p-value is 0.0867, which is slightly above the typical significance level of 0.05, we fail to reject the null hypothesis. This suggests that there is no significant evidence of first-order autocorrelation in the panel data model at the 5% significance level. While the p-value is relatively close to 0.05, indicating some possible autocorrelation, it does not provide strong enough evidence to conclude that autocorrelation is present. Therefore, we would assume that first-order autocorrelation is not a major concern in this case.

6.2.3.4. Pesaran's Test of Cross-Sectional Independence

Pesaran's Test for Cross-sectional Independence assesses whether the error terms in a panel data model are correlated across cross-sectional units. This test is essential because cross-sectional dependence can lead to biased estimates and incorrect conclusions if left unaddressed.

The results for Pesaran's Test of Cross-Sectional Independence show that the Test Statistic (Pesaran's test) is 9.075 and the p-value is 0.0000. The p-value of 0.0000 is highly significant (well below the conventional significance level of 0.05), leading to the rejection of the null hypothesis of no cross-sectional dependence. This indicates the presence of cross-sectional dependence in the data. In practical terms, this means that the error terms for different cross-sectional units (such as firms in a panel data setting) are correlated, and hence, standard regression methods that assume independence across cross-sections may not be appropriate. Therefore, alternative approaches that account for cross-sectional dependence should be used to obtain reliable results.

Additionally, the average absolute value of the off-diagonal elements is 0.345, a measure of the correlation across cross-sectional units. A value closer to 1 would indicate a higher degree of dependence. The value of 0.345 suggests moderate cross-sectional dependence, further supporting the need to adjust the estimation method.

6.2.4. Dynamic Panel Estimation Model

Given the presence of cross-sectional dependence in the panel data, as indicated by the cross-sectional dependency test, the random-effects model may not be suitable. Cross-sectional dependence can lead to biased and inconsistent estimates in traditional panel data models, including random-effects models. This dependency can

arise from unobserved common factors, spatial effects, or other forms of correlation between cross-sectional units.

In light of this finding, we opt to proceed with a dynamic panel model, which can better account for the complexities and dependencies in the data. Dynamic panel models, such as the Arellano-Bond and Blundell-Bond estimators, are designed to address such problems as cross-sectional dependence, endogeneity, and autocorrelation. By incorporating lagged dependent variables and using appropriate instrumental variables, these models can provide more robust and reliable estimates, allowing us to draw more accurate conclusions from the analysis.

Table 7: Arellano-Bond Dynamic Panel-Data Estimation Results

Variable	Coefficient	Std. Error	z-Statistic	P-value	Significance
L1.sr	-0.0056	0.0996	-0.06	0.955	Not Significant
Aq	-0.0032	0.0177	-0.18	0.858	Not Significant
Persist	-0.0176	0.0053	-3.31	0.001	**Significant at 1%**
Predict	0.0003	0.0005	0.56	0.578	Not Significant
Smooth	0.0403	0.0488	0.83	0.408	Not Significant
Lev	-0.7254	0.9230	-0.79	0.432	Not Significant
Roa	0.8811	0.9906	0.89	0.374	Not Significant
Constant	0.0304	0.1324	0.23	0.818	Not Significant

Source: Author's Computation using Stata

The Arellano-Bond dynamic panel estimation was applied to investigate the determinants of Stock Returns (SR) across a panel of 13 firms over 8 years (104 observations). This model is suitable for addressing endogeneity, autocorrelation, and unobserved heterogeneity in dynamic panel data, especially when the lag of the dependent variable is included as a regressor. In this case, the first lag of stock returns (L1.SR) was included to account for possible return persistence.

Interestingly, the result shows that the lagged value of stock returns (L1.SR) has a minimal and statistically insignificant effect on current stock returns, with a coefficient of -0.0056 and a p-value of 0.955. This suggests that prior stock performance does not significantly influence current performance in the panel, indicating a lack of return persistence and possibly an efficient market response to new information.

Earnings Persistence (PERSIST) emerged as the only statistically significant predictor of stock returns among the measures of earnings quality used as proxies for accounting information quality. The coefficient for PERSIST is negative and statistically significant at the 1% level, with a coefficient of -0.0176 and a p-value of 0.001, implying that firms with more persistent earnings tend to have lower stock returns. This finding is somewhat counterintuitive as persistence is generally associated with stability. However, it could imply that the market views high earnings persistence as a signal of limited future growth opportunities or that it has already priced in expected earnings, thereby reducing potential returns.

Other earnings quality attributes — Accrual Quality (AQ), Earnings Predictability (PREDICT), and Earnings Smoothness (SMOOTH) — did not have significant effects on stock returns. This suggests that these qualitative dimensions of earnings, while important in understanding financial reporting behaviour, may not be strong determinants of market performance in this context. Specifically, AQ had a negative but non-significant relationship, with a coefficient of -0.0032 and a p-value of 0.858. Predictability and smoothness both showed weak and statistically insignificant associations.

In terms of financial structure, Leverage (LEV) was negatively related to stock returns (coefficient = -0.7254), but the effect was not statistically significant ($p = 0.432$). This result suggests that a firm's debt structure has a limited impact on its market returns during the sample period. Similarly, Return on Assets (ROA), a key indicator of firm profitability, was positively associated with stock returns (coefficient = 0.8811), but the association was not statistically significant ($p = 0.374$). While the direction of ROA's effect aligns with expectations — more profitable firms typically offer higher returns — its lack of significance suggests that profitability alone is not a strong driver of returns when other accounting variables are present.

Overall, the model's Wald chi-square test indicates that the joint effect of all variables on stock returns is marginally significant ($\chi^2 = 13.92$, $p = 0.0526$). Although only one predictor, earnings persistence, was statistically significant on its own, the near-significance of the overall model suggests a moderate explanatory power.

In conclusion, this analysis provides evidence that, among several firm-level accounting attributes, only earnings persistence has a significant negative effect on stock returns in this dataset. This highlights the complex relationship between accounting information quality and market performance, suggesting that the quality and nature of earnings can influence investor expectations and firm valuation in nuanced ways.

6.3. Discussion of Findings

The results from the Arellano-Bond Dynamic Panel Model provide evidence of the combined variables' overall statistically significant predictive ability, showing the joint effect of the earnings quality measures on stock returns. However, except for earnings persistence, the other individual predictors do not provide strong evidence of explanatory power for stock returns. This further confirms the multidimensional attributes of earnings quality as a measure of accounting information quality. While the overall model shows a marginally significant (p-value = 0.0526) impact of the variables on stock returns, except for earnings persistence, none of the other individual variables is significant. This suggests that although earnings quality measures may collectively impact stock returns, their individual effects are weak. This implies that investors rely on other financial and non-financial factors when making investment decisions.

6.3.1. Relationship between Accrual Quality and Stock Returns

As stated in section 1.5 of chapter 1, the first objective of the study is to examine how accrual quality impacts the stock returns of listed consumer goods companies in Nigeria. In response to the research objective, the following hypothesis was tested:

- **Hypothesis 1**: Accrual quality impacts the stock returns of listed consumer goods companies in Nigeria

The results of the Arellano-Bond Dynamic Panel-data Estimation are presented in Table 7, which show that AQ had a negative but non-significant impact on stock returns with a coefficient of -0.0032 and a p-value of 0.858. The negative coefficient (-0.0032) implies that firms with higher accrual quality tend to have lower stock returns. This could be because investors view high accrual quality as an indication of conservative earnings management, thereby reducing speculative trading opportunities. However, since the p-value is 0.858, this relationship is not statistically significant, making it

difficult to draw firm conclusions. Meanwhile, the negative insignificant relationship reported in this finding tends to provide a direction that supports the conclusions of the very early studies of Sloan (1996) who found that though future earnings predictably depend on the proportions of cash and accrual components of the current earnings, the variation in stock price acts as if the investors are unable to differentiate between the two components of earnings (accrual and cash), a reverse recognition of the traditional efficient market hypothesis. Unlike the present study, which shows an insignificant negative impact on stock returns, Hung and Van (2020) found strong evidence of a negative effect of accrual quality on stock returns. However, the results of the present study are in the opposite direction to those of Wijesinghe & Kehelwalatenna (2017), who found a non-significant but positive effect of accrual quality on stock returns.

Furthermore, the findings presented here in this study, though not statistically significant, tends to lean towards the findings of Ayuba (2022), and Mutalib, Jahun, Akpan, and Daniel (2020) who presented evidence of a statistically significantly negative impact of accrual quality on the share prices of listed firms and listed consumer goods firms in the Nigeria Stock Exchange (NSE). In contrast, the findings in this empirical analysis perfectly align with the results in the study of Gonçalves, Gaio, and Lélis (2020), who found no statistical evidence of a negative relationship between future stock returns and accounting accruals, but disagree with the findings of Dang & Tran (2019), who found a statistically significant positive effect of accrual anomaly on stock returns. The studies by Ogbaisi and Aronmwan (2022), which revealed a statistically significant positive impact of accrual quality on firms' share prices in Nigeria, also do not align with the present study's results.

6.3.2. Relationship between Earnings Persistence and Stock Returns

The second objective of this study, as stated in section 1.5 of chapter 1, is to examine how earnings persistence impacts the stock returns of listed consumer goods companies in Nigeria. This objective was responded to by testing the second hypothesis stated below:

- **Hypothesis 2**: Earnings persistence impacts the stock returns of listed consumer goods companies in Nigeria

In response to the second research objective and hypothesis on earnings persistence, the Arellano-Bond Dynamic Panel-data Estimation results in Table 6.2.4 reported a negative coefficient of -0.0176 and a p-value of 0.001, implying that firms with more persistent earnings tend to have significantly lower stock returns. This contradicts the assumption that earnings persistence is a desirable quality of earnings and an important consideration for investment decisions. The p-value (0.001) suggests a statistically significant relationship at the 1% level. This result implies that firms with more persistent earnings tend to have lower stock returns. Although this result counterintuitive, the portrayed negative impact tends to conform with the findings in Fatma and Hidayat (2019), who found earnings persistence to influence the equity stock valuation of consumer goods firms negatively, but seems to contradicts the findings of Hung and Van (2020), and Dang et al. (2020) who reported a positive influence of earnings persistence on stock returns and firm values for listed firms in Vietnam.

Furthermore, prior studies such as Al-Zarqi and Bedoui (2023) and Adityanur and Mardijuwono (2020) have reported a statistically significant influence of earnings persistence on variation in stock returns, which contradicts the negative, albeit not statistically significant, coefficient for earnings persistence reported in the current study. The studies by Ogiriki and Asemota (2024) and Akintoye and Salawu (2018) also found that earnings persistence has a statistically significant positive effect on firm value, as measured by Tobin's Q, which is the direct opposite of the significantly negative influence of earnings persistence on stock returns reported by the present study.

6.3.3. Relationship between Earnings Predictability and Stock Returns

The third objective of this study, stated in section 1.5 of chapter 1, is to examine how earnings predictability impacts the stock returns of listed consumer goods companies in Nigeria. This objective was addressed under the third hypothesis, which states that:

- **Hypothesis 3**: Earnings predictability impacts the stock returns of listed consumer goods companies in Nigeria

The Arellano-Bond dynamic panel-data estimation results in Table 7 revealed a coefficient of 0.0003 for Earnings Predictability and a p-value of 0.578. This positive, yet minimal, coefficient indicates that firms with more predictable earnings tend to have

slightly higher stock returns. However, the p-value of 0.578 suggests that this relationship is not statistically significant, providing insufficient evidence to conclude that earnings predictability affects stock returns or strongly influences investor decisions. This result may suggest that other qualitative factors, such as management strategy or competitive positioning, are more important in shaping investor expectations. Although there is no statistically significant evidence to conclude the very weak positive explanatory power of earnings predictability reported in this study, the seems to trail towards confirming the findings of Al-Zarqi and Bedoui (2023) and Kundu and Banerjee (2021) who found significantly positive impact of earnings predictability on stock returns as it is with the study of Ayuba (2022), which reports statistically significant positive effects of earnings predictability on the market share price of listed companies in Nigeria. But in its own case, it does not have sufficient statistical evidence to conclude that a positive relationship exists, as revealed in the empirical study.

6.3.4. Relationship between Earnings Smoothness and Stock Returns

The fourth objective of the study, as stated in section 1.5 of chapter 1, is to examine how earnings smoothness impacts stock returns of listed consumer goods companies in Nigeria. The hypothesis below was tested to provide insights into the a priori expectation of the relationship that exists between the observed and explanatory variables.

- **Hypothesis 4**: Earnings smoothness impacts the stock returns of listed consumer goods companies in Nigeria

The results of the fourth tested hypothesis on the Earnings Smoothness effect on stock returns exhibit a coefficient of 0.0403 and a p-value of 0.408, as shown in the Arellano-Bond dynamic panel-data estimation results in Table 7. This positive coefficient implies that firms with smoother earnings may experience higher stock returns. However, the high p-value (0.408) suggests no statistically significant relationship between earnings smoothness and stock returns. This positive coefficient on earnings smoothness provides some indication of alignment with prior research, such as Al-Zarqi and Bedoui (2023), which finds a positive impact of earnings smoothness on stock returns. Similarly, Khurana, Xia, and Zhang (2017) also found a significantly positive association between real earnings smoothing and firm-specific stock price crash risk.

6.3.5. Effects of Leverage and Return on Assets on Stock Returns

The Arellano-Bond Dynamic Panel-data Estimation results provide evidence that leverage negatively impacts stock returns, with a coefficient of -0.7254 and a p-value of 0.432. This large negative coefficient suggests that firms with higher debt levels experience lower stock returns, consistent with the risk-return trade-off: higher leverage increases financial risk, leading to greater investor caution. However, the p-value (0.432) indicates that this effect is not statistically significant, meaning that leverage alone does not strongly dictate stock return performance. This result provides insufficient insight into Khan, Hassan, and Ali's (2012) conclusion.

Lastly, examining the impact of ROA on stock returns reported a strong positive coefficient of 0.8811 and a probability of 0.374. This result shows that ROA positively affects stock returns, suggesting that more profitable firms tend to generate higher stock returns. This result is expected, as profitability is a key determinant of long-term stock performance. However, the p-value of 0.374 suggests that this relationship is not statistically significant, implying that while investors consider profitability, it is not the sole driver of stock returns.

However, the constant shows a coefficient of 0.0304 and a p-value of 0.818. The constant term represents the expected stock return when all independent variables are zero. Although it suggests a base return of 3.04%, the p-value (0.818) shows that this estimate is not statistically significant, meaning it lacks strong predictive power.

The study found a mixed effect of accounting information quality variables on shareholder value. While accrual quality and leverage show negative coefficients, suggesting that investors may associate high-quality earnings with high debt levels and lower returns. Other variables, such as predictability and smoothness, exhibit weak positive effects on stock returns. The impact of ROA on stock returns is strong, but its statistical insignificance suggests it does not substantially influence stock prices in isolation.

6.3.6. Pairwise Granger Causality Test

In response to the fifth research objective stated in section 1.5 of chapter 1, which aims to examine whether a causal relationship exists between accrual quality, earnings persistence, earnings predictability, earnings smoothness, and the stock returns of listed consumer goods companies in Nigeria, the study conducted a Granger

causality test to find answers and test the fifth research hypothesis on the causal relation between these key variables.

- **Hypothesis 5**: Accrual quality, earnings persistence, earnings predictability, and earnings smoothness cause the variation in stock returns of listed consumer goods companies in Nigeria.

Table 8: Pairwise Granger Causality Tests Results

Pairwise Granger Causality Tests			
Date: 04/23/25 Time: 19:35			
Sample: 2014 2023			
Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Prob.
AQ does not Granger-cause SR	104	0.90190	0.4091
SR does not Granger-cause AQ		0.89820	0.4106
PERSIST does not Granger-cause SR	104	0.46833	0.6274
SR does not Granger-cause PERSIST		5.13758	0.0075
PREDICT does not Granger-cause SR	104	0.01510	0.9850
SR does not Granger-cause PREDICT		1.00629	0.3693
SMOOTH does not Granger-cause SR	104	1.63676	0.1998
SR does not Granger-cause SMOOTH		0.21058	0.8105
ROA does not Granger-cause SR	104	0.41401	0.6621
SR does not Granger-cause ROA		6.11604	0.0031
LEV does not Granger-cause SR	104	0.38668	0.6803
SR does not Granger-cause LEV		1.80071	0.1705
PERSIST does not Granger-cause AQ	104	0.18366	0.8325
AQ does not Granger-cause PERSIST		0.04293	0.9580
PREDICT does not Granger-cause AQ	104	0.04870	0.9525
AQ does not Granger-cause PREDICT		9.10277	0.0002
SMOOTH does not Granger-cause AQ	104	0.31324	0.7318
AQ does not Granger-cause SMOOTH		0.13887	0.8705

ROA does not Granger-cause AQ	104	1.22132	0.2992
AQ does not Granger-cause ROA		1.38240	0.2558
LEV does not Granger-cause AQ	104	3.18492	0.0457
AQ does not Granger-cause LEV		1.51489	0.2249
PREDICT does not Granger-cause PERSIST	104	0.25935	0.7721
PERSIST does not Granger-cause PREDICT		0.05150	0.9498
SMOOTH does not Granger-cause PERSIST	104	0.04916	0.9521
PERSIST does not Granger-cause SMOOTH		0.09358	0.9107
ROA does not Granger-cause PERSIST	104	0.68581	0.5061
PERSIST does not Granger-cause ROA		1.42838	0.2446
LEV does not Granger-cause PERSIST	104	1.55486	0.2163
PERSIST does not Granger-cause LEV		0.40174	0.6702
SMOOTH does not Granger-cause PREDICT	104	0.14348	0.8665
PREDICT does not Granger-cause SMOOTH		0.13859	0.8708
ROA does not Granger-cause PREDICT	104	2.48008	0.0889
PREDICT does not Granger-cause ROA		0.69595	0.5010
LEV does not Granger-cause PREDICT	104	0.92595	0.3996
PREDICT does not Granger-cause LEV		1.08203	0.3429
ROA does not Granger-cause SMOOTH	104	0.02328	0.9770
SMOOTH does not Granger-cause ROA		3.01175	0.0537
LEV does not Granger-cause SMOOTH	104	0.59976	0.5509
SMOOTH does not Granger-cause LEV		0.71846	0.4900
LEV does not Granger-cause ROA	104	0.66825	0.5149
ROA does not Granger-cause LEV		0.36744	0.6934

Based on the Pairwise Granger Causality Tests conducted on data from 2012 to 2023 with two lags, the results provide insight into the directional relationships between earnings quality indicators and stock returns (as a proxy for shareholder value), as well as interactions among the variables. The key findings are discussed below:

The test reveals that AQ does not Granger-cause stock returns (F = 0.90190, p = 0.4091), and stock returns also do not Granger-cause AQ (p = 0.4106). This suggests no predictive relationship in either direction between AQ and stock returns within the sampled period. Interestingly, earnings persistence (PERSIST) does not Granger-cause stock returns (F = 0.46833, p = 0.6274), but stock returns significantly Granger-cause earnings persistence (F = 5.13758, p = 0.0075). This implies that past market performance of firms, as measured by stock returns, can help predict future earnings persistence, suggesting that market performance could influence how consistently firms report earnings or the sustainability of earnings over time.

For earnings predictability (PREDICT), neither direction shows a statistically significant relationship. PREDICT does not Granger-cause stock returns (p = 0.9850), nor do stock returns Granger-cause PREDICT (p = 0.3693), indicating no dynamic influence in either direction.

Similarly, earnings smoothness (SMOOTH) does not Granger-cause stock returns (p = 0.1998), and stock returns do not Granger-cause SMOOTH (p = 0.8105). This suggests that smooth earnings trends do not significantly impact shareholder value over time, nor does market performance influence smoothing behaviour.

Regarding control variables, ROA (return on assets) does not Granger-cause stock returns (p = 0.6621). However, stock returns do Granger-cause ROA (F = 6.11604, p = 0.0031). This suggests that stock performance might influence firm profitability metrics by boosting investor confidence and capital access following strong returns. This is also evidenced by the fact that stock returns also Granger-cause earnings persistence significantly.

Leverage (LEV) does not Granger-cause stock returns (p = 0.6803), nor is the reverse relationship significant (p = 0.1705), indicating that firm debt levels and stock performance do not dynamically predict each other over time in the consumer goods sector.

When analysing the interrelationships among the earnings quality attributes, the test indicates a strong one-way causal relationship from AQ to PREDICT (F = 9.10277, p = 0.0002). This implies that the quality of accruals can significantly influence the

predictability of earnings. However, there is no reverse causality—PREDICT does not influence AQ (p = 0.9525).

In either direction, no significant causal relationships were found between PERSIST and AQ, PERSIST and PREDICT, or PERSIST and SMOOTH. Likewise, no Granger causality was observed between SMOOTH and PREDICT, indicating that these aspects of earnings quality tend to operate independently in the sampled firms.

Some relationships were detected among control variables and earnings quality attributes. Notably, LEV Granger-causes AQ (F = 3.18492, p = 0.0457), suggesting that changes in a firm's leverage can influence its accrual accounting practices, possibly due to earnings management under financial pressure. However, AQ does not Granger-cause LEV (p = 0.2249), implying no feedback effect.

No significant bidirectional or unidirectional causal effects were observed between the control variables (ROA and LEV) and most other earnings quality indicators (PERSIST, PREDICT, SMOOTH), indicating weak overall dynamic interaction.

The Granger causality analysis reveals limited predictive relationships among earnings quality attributes and stock returns in Nigerian consumer goods firms. The most notable findings are that stock returns Granger-cause earnings persistence and return on assets (ROA), while accrual quality (AQ) Granger-causes earnings predictability. These results suggest that market behaviour may influence internal reporting consistency and profitability, and that specific accounting attributes, such as accrual quality, help explain other dimensions, including predictability. The findings have implications for investors, regulators, and managers in understanding how

market and financial reporting variables interact over time

6.4. Proposed Framework: The Earnings Quality–Stock Returns Paradox

The proposed framework is structured in a way that integrates empirical findings of this study while acknowledging the complexities of the interaction between accounting-based measures of earnings quality, which proxied the accounting information quality and shareholder value represented by stock returns, within the lens of efficient market hypothesis, information asymmetry, and agency theory, and possible refinements for future exploration.

The framework, therefore, captures the theoretical foundation, empirical findings, and potential refinements for future research.

6.4.1. Conceptual Foundation

a) Theoretical Pillars

The proposed framework is built upon the following three (3) theoretical pillars:

(i) Agency Theory – Managers may manipulate financial reporting, leading to uncertainty in earnings quality and its impact on stock returns

(ii) Information Asymmetry – Investors may have differing levels of access to quality earnings information, affecting stock price reactions.

(iii) Efficient Market Hypothesis (EMH) – Stock prices incorporate available information, potentially neutralizing any effect from earnings quality.

b) Accounting-Based Measures of Earnings Quality

The framework's conceptual foundation is grounded in accounting-based measures of earnings quality and financial metrics derived from core accounting information that summarize the performance and financial health of consumer goods companies listed on the Nigerian Stock Exchange (NSE). The measures include accrual quality, earnings persistence, earnings predictability, and earnings smoothness, while firm-specific control variables (Leverage, ROA) refine the interaction between the defined qualities of earnings and stock returns.

6.4.2. Empirical Findings and Counterintuitive Relationships

a) The results from the Arellano-Bond Dynamic Panel-data Estimation show that:

(i) Except for earnings persistence, no individual predictor shows a significant relationship with stock returns. This suggests that the market may already incorporate fundamental accounting information, validating the Efficient Market Hypothesis (EMH).

(ii) Some of the findings defy a priori expectations with the revelation of some counterintuitive results, indicating potential behavioural anomalies or measurement gaps.

b) To account for the behavioural anomalies in the empirical findings, the framework acknowledges the need for:

(i) Alternative explanations such as behavioural finance perspectives (investor overreaction, sentiment biases).

(ii) Possible nonlinear dynamics—earnings quality may influence returns only under specific circumstances (economic downturns, industry-specific factors).

(iii) Firm-specific factors moderation—Leverage and ROA may dilute the observable relationship between earnings quality and stock performance.

6.4.3. The Contributory Frameworks

The contributory frameworks, developed based on the research findings, are presented below.

6.4.3.1. A Reflection of the Empirical Relationship between Earnings Quality Measures and Shareholder Value

Figure 3 presents a contributory framework that depicts the empirical relationship between earnings quality measures and stock returns through the lenses of agency theory, information asymmetry, and the efficient market hypothesis. The black arrows pointing from the independent variables — accrual quality (AQ), earnings predictability (PREDICT), earnings persistence (PERSIST), and earnings smoothness (SMOOTH) — indicate the extent and direction of their impacts on the dependent variable, stock returns. Although accrual quality and earnings persistence were found to be negatively related to stock returns, only earnings persistence emerged as the accounting-based measure of earnings quality that had a statistically significant impact on stock returns. Earnings predictability and earnings smoothness, on the other hand, were found to have a positive but insignificant effect on the dependent variable, stock returns.

The yellow arrow on the model illustrates the causal relationship between earnings quality measures and stock returns, as well as their interaction. The empirical findings from the Granger causality test, as depicted in Figure 3, show unidirectional relationships between stock returns and earnings persistence, as well as between stock returns and return on assets (ROA). This means that stock returns Granger-cause changes in earnings persistence and return on assets. Similarly, there is a unidirectional relationship between accrual quality and earnings predictability, with accrual quality Granger-causing changes in earnings predictability.

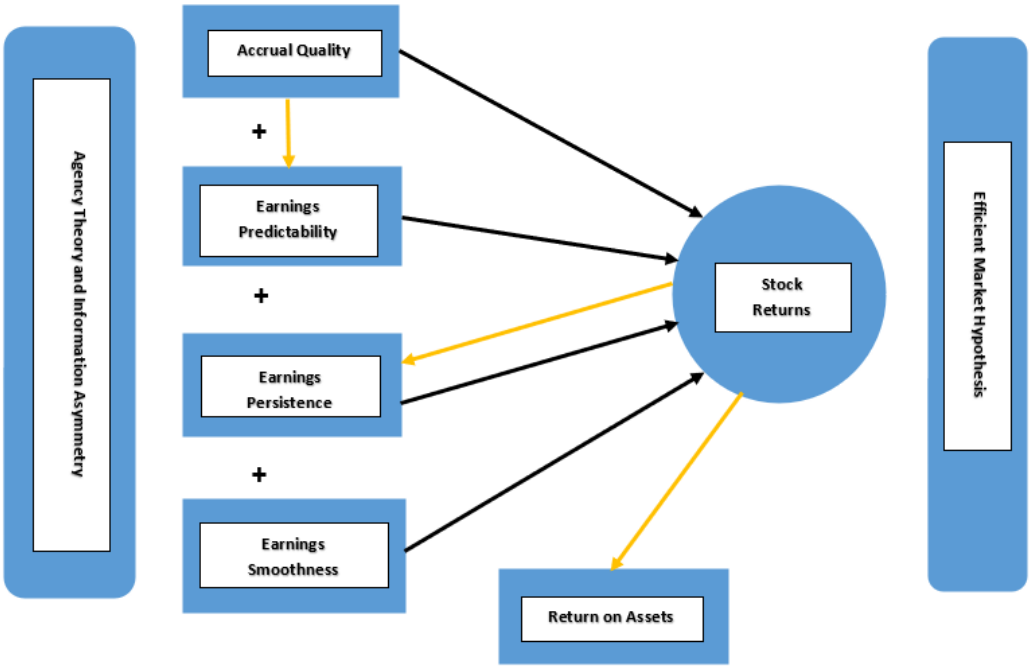

Figure 3: Author's Developed Framework: The Earnings Quality–Stock Returns Paradox

6.4.3.2. The Interaction of Efficient Market Hypothesis (EMH), Agency Theory, and Information Asymmetry within the Model

This presents a structured theoretical perspective that links the Efficient Market Hypothesis (EMH), Agency Theory, and Information Asymmetry to earnings quality measures and stock returns, as shown in Figure 3 above.

1. **Theoretical Perspective**
   a) **Agency Theory & Information Asymmetry**
   (i) **Earnings Persistence as a negative signal:** Normally, persistence is viewed as a positive indicator of sustainable performance. However, if persistence is negatively associated with returns, it may suggest that investors interpret highly persistent earnings as a sign of managerial manipulation (e.g., aggressive smoothing or earnings management), a product of information asymmetry.
   (ii) **Agency lens:** Managers may over-engineer persistence to reduce volatility in reported earnings, but investors discount it as "too good to be true," leading to lower returns.

b) Efficient Market Hypothesis (EMH)

(i) EMH assumes that stock prices reflect all available information. High earnings quality (predictable, persistent, transparent) is incorporated into Stock Returns more efficiently by the markets.

(ii) A negatively priced earnings persistence means markets have learned that overly persistent earnings are not credible signals of future performance due to perceived information asymmetry.

(iii) **Causal link**: Investors rationally adjust prices downward when earnings appear artificially stable, consistent with EMH's concept of information efficiency.

c) Earnings Quality-Return Relationships

(i) Accrual Quality, Predictability, Smoothness → Stock Returns

a. No significant statistical link. They remain theoretically relevant but empirically weak in this model.
b. They may still reduce information asymmetry, but investors don't reward them directly in returns.

(ii) Earnings Persistence → Stock Returns (Negative)

a. Strong persistence → suspicion of manipulation → discounted pricing by investors → lower returns.
b. This reverses the usual causal arrow: instead of persistence boosting returns, it reduces them.

d) Return on Assets (Feedback Loop)

(i) Stock Returns → ROA → Persistence

a. If persistence is negatively priced, the feedback loop becomes problematic.
b. Firms with strong ROA may sustain persistence, but markets penalize this persistence in returns.
c. This reaction creates a tension: whereas operational strength (ROA) reinforces persistence, investors discount it.

2. Interaction of the theories within the Model

Figure 4 presents a contributory framework that depicts the empirical narratives that emerge from the interaction among the Efficient Market Hypothesis (EMH), Agency Theory, and Information Asymmetry within the model. Agency theory in this interaction explains why persistence may be penalized because managers over-smooth

earnings, creating suspicion. Information asymmetry, on the other hand, is reduced in form but not in substance. Meanwhile, investors suspect manipulation behind the numbers. The negative pricing of earnings persistence confirms the market's rational response to discount perceived earnings manipulation that may not signal the firm's genuine future performance. This highlights investors' skepticism toward managerial reporting practices, which aligns with the EMH assumption.

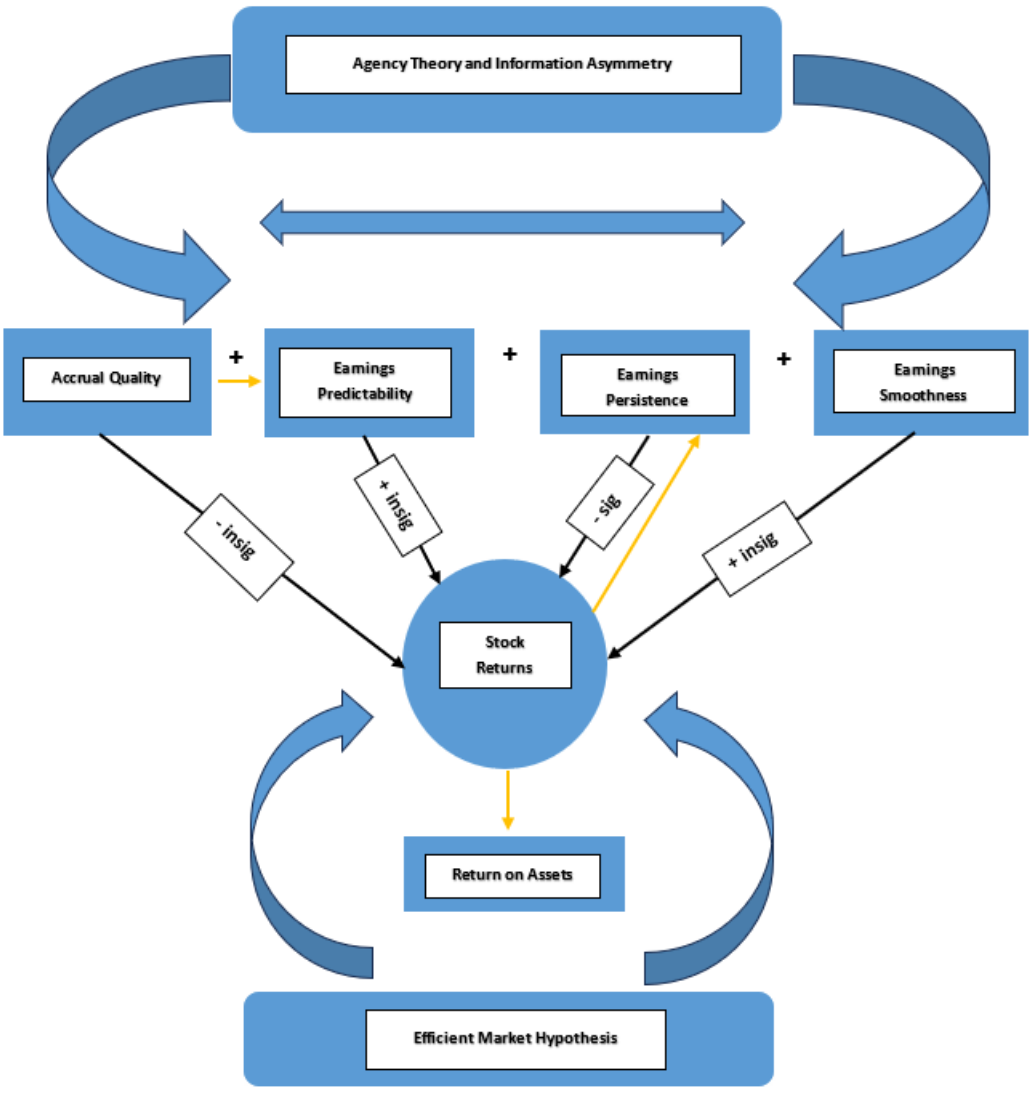

Figure 4: Author's Developed Framework: The Interaction of EMH, Agency Theory, and Information Asymmetry within the Earnings Quality–Stock Returns Paradox

6.5. Chapter Summary

This chapter analysed empirical data to examine the relationship between accounting information quality, measured by earnings quality attributes, and shareholder value,

represented by the stock returns of consumer goods listed on the Nigerian Stock Exchange, within the sampled period. To achieve this, several tests were conducted to examine the extent and direction of the relationship between accounting-based measures of earnings quality (accrual quality, earnings persistence, earnings predictability, and earnings smoothness) and stock returns. The impact of modifying firm-specific factors, such as return on assets (ROA) and leverage, was also considered in the analysis of whether a relationship exists between changes in dividends and various financial performance metrics.

The expectation, as per Fonou-Dombeu et al. (2022), was that the lack of transparency in earnings reporting increases information asymmetry regarding a firm's performance and, thus, information risk. Anything that increases information risk would increase uncertainty about earnings, reduce earnings quality, and lead to negative stock price variation. Since information risk is characterized by either information asymmetry or poor earnings quality, it was expected that any earnings quality measure directly linked to information risk would increase stock return volatility, either positively or negatively. So, the a priori expectation was that accrual quality and earnings smoothness, which are sources of distortion of reported earnings, would increase information risk and be positively associated with changes in stock returns. That's if distortion of reported earnings is high through accrual process and smoothness, earnings quality will be low, resulting in negative variation in stock returns. Also, earnings persistence and earnings predictability, which inform users about the suitability of earnings, helping analysts to forecast the future value of firms more accurately, would reduce uncertainty about earnings information and thus be positively correlated with variation in stock returns. The findings in this study, however, contradict most of these general assumptions and are therefore counterintuitive.

The findings from this study revealed that accounting information quality measures (accrual quality, earnings persistence, predictability, smoothness, leverage, and return on assets) have limited predictive power for stock returns. While the overall model is statistically significant, only earnings persistence has a significantly negative impact on stock returns; all other individual predictors are significant at the 5% level, reinforcing the notion that stock returns are influenced by a much broader set of factors beyond accounting quality alone. This suggests that stock price movements are primarily driven by broader market dynamics, investor sentiment, economic

conditions, and firm-specific strategic decisions rather than accounting-based measures of earnings quality alone.

This finding aligns with financial market theories that emphasize the roles of market efficiency, behavioural finance, and macroeconomic conditions in determining stock prices. Given that various external factors drive stock returns, future studies should incorporate additional variables, such as macroeconomic indicators (inflation, interest rates), market sentiment, industry trends, and firm-specific competitive advantages.

This chapter concludes with a proposal for new frameworks that offer structured approaches to explaining the research findings by integrating theoretical perspectives with empirical evidence. It maintains a rigorous academic approach while highlighting gaps for future research.

The next chapter provides a summary of the findings, the study's contributions, and a concluding remark for the thesis.

CHAPTER SEVEN

SUMMARY OF FINDINGS, CONTRIBUTION, RECOMMENDATION, AND CONCLUSION

7.1. Introduction

The primary aim of this study is to develop a framework, grounded on a sound conceptual, theoretical, and empirical foundation, to depict the relationship between accounting information quality and shareholder value. Accounting information quality was represented by earnings quality, measured using four (4) accounting-based attributes—accrual quality, earnings persistence, earnings predictability, and earnings smoothness—through the lenses of the Efficient Market Hypothesis, Agency Theory, and Asymmetric Information Theory. The study examined the extent to which earnings quality impacts shareholder value, proxied by stock returns, with evidence from 'Consumer Goods' companies listed on the Nigerian Stock Exchange (NSE).

This chapter aims to highlight the theoretical and empirical implications of the study's findings and how these findings will shape future research. More precisely, the chapter will outline the study's findings, clearly demonstrate the theoretical contributions to the existing body of knowledge, and highlight areas for future research.

This chapter is organized as follows: an introduction, followed by an outline of the findings of this study, arranged by study objective in section 7.2. In contrast, section 7.3 outlines the study's theoretical and methodological contributions to the existing body of knowledge. Section 7.4 acknowledges the need for further, more extensive studies and provides recommendations for future research. Finally, the chapter closes with a concluding remark.

7.2. Summary of Findings on The Research Objectives

The overall aim of this study is to provide empirical evidence to the thesis statement that accounting information quality, represented by earnings quality, should impact the extent of variation in the shareholder value of listed consumer goods companies in Nigeria, which will culminate in the development of a framework that conceptualizes the empirical evidence within the lens of the grounded theoretical foundations. Based on a thorough literature review, accounting-based measures of earnings quality—accrual quality, earnings persistence, earnings predictability, and earnings

smoothness—were adopted as proxies for accounting information quality. At the same time, the stock returns proxy shareholders' value.

The motive behind adopting the accounting-based measures of earnings quality in this study, as opposed to market-based measures, specifically value relevance, which has featured prominently as a measure of accounting information quality in the previous studies, was due to the profound statement in Azar et al. (2019: 15), which states that achieving strong results in the value relevance model indicates that accounting numbers are both relevant and reliable. However, when the model reveals a lack of value relevance, it is difficult to attribute the cause to relevance or reliability. This indicates that the value relevance construct has not fully resolved the issue of operationalizing the term "quality," as evidenced in the literature.

The findings reported below are based on the objectives set for this study, which examined how accrual quality, earnings persistence, earnings predictability, and earnings smoothness impact the stock returns of 'Consumer Goods' companies listed on the Nigerian Stock Exchange (NSE).

7.2.1. To examine how accrual quality impacts the stock returns of listed consumer goods companies in Nigeria

The first objective, which examines how accrual quality affects the stock returns of listed consumer goods in Nigeria, was motivated by the hypothesis in Fonou-Dombeu et al. (2022) that accrual quality is positively associated with stock return volatility. This was based on the belief that earnings manipulation is primarily achieved by manipulating the accrual process. This act is directly linked to increased information risk regarding a firm's performance. Consequently, any factor that increases information risk will also increase the volatility of stock prices and, hence, the volatility of stock returns. Meanwhile, information risk encompasses either information asymmetry or poor earnings quality.

Although the a priori expectation of the relationship between earnings quality measures that directly increases information risk is that it will also increase the volatility of stock returns and vice versa, accrual quality exhibited a negative relationship with stock returns in the study by Fonou-Dombeu et al. (2022), where firms having a high value of accrual quality exhibit decreased stock returns volatility. Other studies, such as Sloan (1996), Hung and Van (2020), Ayuba (2022), and Mutalib et al. (2020), also

reported a statistically significant negative impact of accrual quality on stock returns. On the contrary, authors such as Dang and Tran (2019) and Wijesinghe & Kehelwalatenna (2017) found a statistically significant positive impact of accrual quality on firms' share prices.

This study found a negative but insignificant impact of accrual quality on stock returns, with a coefficient of -0.0032 and a p-value of 0.858. Based on these results, the author failed to reject the null hypothesis that accrual quality does not impact the stock returns of listed consumer goods in Nigeria. These results fail to support the notion that earnings quality measures, which increase information risk, will be positively correlated with variation in stock returns.

7.2.2. To examine how earnings persistence impacts the stock returns of listed consumer goods companies in Nigeria

The second objective was premised on the notion that persistent earnings are sustainable and therefore reduce uncertainty about a firm’s reported earnings and, ultimately, information risk. Hence, earnings persistence is presumed to be positively correlated with stock returns. This is so because it allows analysts to reliably predict future earnings, thereby reducing the chances of forecasting errors. This is a good value expected from accounting information. Based on this notion, it was hypothesized that earnings persistence impacts the stock returns of listed consumer goods companies in Nigeria, thereby affirming the author's a priori expectations regarding the relationship between earnings quality measures that reduce information risk and stock price variation.

The results of this study reported a negative coefficient of -0.0176 and a p-value of 0.001, implying that firms with more persistent earnings tend to have significantly lower stock returns. This contradicts the general notion of a positive relationship between earnings persistence and stock returns. The p-value (0.001) suggests a statistically significant relationship at the 1% level. The researcher therefore rejects the null hypothesis and upholds the alternative hypothesis that earnings persistence significantly impacts the stock returns of listed consumer goods companies in Nigeria. Although the impact is minimal, given the very small negative coefficient of -0.0176. This result affirms the findings of Fonou-Dombeu et al. (2022), who found a negative relationship between earnings persistence and stock return volatility. It also aligns with

the conclusions of Fatma and Hidayat (2019), who found a negative relationship between stock returns and equity valuation. The result in this study, however, contradicts the findings of other authors, such as Hung and Van (2020) and Dang et al. (2020), who reported a positive influence of earnings persistence on stock returns and firm value for listed firms.

7.2.3. To examine how earnings predictability impacts the stock returns of listed consumer goods companies in Nigeria

The third hypothesis examined the impact of earnings predictability on stock returns, based on the direct link between earnings persistence and earnings predictability. Earnings predictability is the ability of past earnings to predict future earnings (Lipe, 1990b). When future earnings are easily predictable, it reduces the likelihood of forecasting errors and enables financial analysts to determine a firm's value more accurately. If predictable earnings improve earnings quality, earnings predictability is indirectly related to information risk (Fonou-Dombeu et al., 2022: 5), which means that earnings predictability will have a positive impact on stock returns. This is the a priori expectation of the author and is affirmed in the third hypothesis statement.

The result of this study revealed a positive coefficient of 0.0003 for earnings predictability and stock returns, with a p-value of 0.578. This positive, though minimal, coefficient indicates that firms with more predictable earnings tend to have slightly higher stock returns. However, this relationship is not statistically significant ($p = 0.578$), providing insufficient evidence for the author to conclude that earnings predictability affects stock returns. This result affirms the findings of Fonou-Dombeu et al. (2022), which found no significant effect of earnings predictability on stock returns volatility.

7.2.4. To examine how earnings smoothness impacts the stock returns of listed consumer goods companies in Nigeria

The fourth research hypothesis was formulated to examine the extent to which earnings smoothness affects the stock returns of listed consumer goods in Nigeria. Earnings smoothness refers to the deliberate attempt to influence reported earnings to minimize earnings volatility. Consequently, earnings smoothness reduces earnings quality, increases information risk, and negatively impacts stock returns.

The hypothesis examining the impact of earnings smoothness on stock returns yielded a positive coefficient of 0.0403 and a p-value of 0.408. This positive coefficient suggests that firms with smoother earnings may experience higher stock returns. However, the high p-value (0.408) indicates no statistically significant evidence that a positive relationship exists between earnings smoothness and stock returns.

7.2.5. To examine whether a causal relationship exists between accrual quality, earnings persistence, earnings predictability, earnings smoothness, and the stock returns of listed consumer goods companies in Nigeria

The fifth hypothesis was tested to achieve the research objective, which examines whether earnings quality — measured by accrual quality, earnings persistence, earnings predictability, and earnings smoothness — Granger-causes variation in stock returns of listed consumer goods companies in Nigeria. It also aims to provide insight into the interaction between these variables.

The Granger causality analysis reveals limited predictive relationships among earnings quality attributes and stock returns in the listed Nigerian consumer goods firm. The most notable findings are that stock returns Granger-cause earnings persistence and return on assets (ROA), while accrual quality (AQ) Granger-causes earnings predictability. These results suggest that market behaviour may influence internal reporting consistency and profitability, and that specific accounting information qualities, such as accrual quality, help explain other dimensions, including predictability.

7.3. The Contributions of this Study

Accounting information quality, a multidimensional concept, has been measured predominantly through the value relevance construct, which has not fully captured its operationalization. This study was conducted to provide another perspective on the measurement of accounting information quality in research on the earnings-shareholder value nexus. It aimed to contribute to existing studies in this area by using accounting-based measures of earnings quality as predictors of shareholder value and by testing for causality between the variables.

7.3.1. Contribution to the Knowledge Gap

As stated above, over the decades, accounting researchers have constructed value relevance as a measure of accounting information—particularly earnings—as a predictor of variations in share prices or stock returns. This measure has remained the dominant measure of accounting information quality in the literature, which assesses the informational content of earnings relative to the market price of stock or stock returns. Authors such as Apete, Collins, Udeh, and Ezekwesili (2022), Ogiriki and Tovie (2022), Srivastava and Muharam (2021), Mbekomize and Popo (2020), Weerawickrama and Tilakasiri (2020), and many others, already discussed in the empirical literature in chapter 2, had the two variance relevance models of Ohlson (1995) and Easton and Harris (1991) prominently featured in their studies.

However, despite the documented limitations of the results of the value relevance model in attributing lack of value relevance to the non-existence of relevance and faithful representation of the fundamental economic phenomena in the accounting information reported by the firm (Azar et al. 2019; 14), the model continues to remain prominent in the methodology for measuring accounting information quality. This study, therefore, contributes to the existing literature by providing a different perspective on measuring accounting information quality—the accounting-based measure of earnings quality, which fully captures the fundamental qualities of relevance and reliability.

Furthermore, while the earnings quality literature includes a large body of work examining the relationship between different measures of earnings quality and stock prices or returns, there is scant empirical evidence from Nigeria. Also, studies examining potential causal relationships among these variables appear nonexistent. Moreover, no specific framework exists in previous studies for conceptualizing and operationalizing the multidimensional attributes of earnings quality and their relationship with shareholder value. This study, therefore, makes a contribution towards closing this gap in the body of knowledge by:

(i) Adopting the accounting-based measures of earnings quality as measures of accounting information quality

(ii) Analysing causal relationships, whether relationships exist between accounting information quality and stock returns, as well as the existence of

an interaction between the variables. While there was no evidence of a causal relationship from accounting information quality to stock returns, the research provided evidence of stock returns Granger-causing earnings persistence and ROA.

(iii) Developing new frameworks of the observed relationship between earnings quality and stock returns within the lens of agency theory, information asymmetry, and efficient market hypothesis as the driving theories

7.3.2. Theoretical and Practical Contributions

The findings from this study have far-reaching implications for both existing theories on the relationship between accounting information quality and practical considerations for capital market participants.

a) Theoretical Contributions

(i) The study findings revealed a paradox that contradicts the conventional wisdom on the relationship between earnings quality and stock price or stock returns

(ii) The study opened up a path for discussions supporting the idea that other forces (sentiment, external shocks) might overshadow fundamental accounting information quality.

b) Practical Contributions

(i) Investors should look beyond earnings quality and consider macroeconomic trends, behavioural biases, and firm-specific financial strength.

(ii) Policymakers might need to strengthen transparency measures if earnings quality is being neutralised by market efficiency.

7.3.3. Methodological contributions

To achieve the study's objectives, panel data models were used. In support of panel data models, Park (2011:8) noted that they examine group (individual-specific) effects, time effects, or both, thereby helping address heterogeneity and unobserved individual effects. While previous studies have employed either the Random Effect or Fixed Effect models or a combination of both in addition to the traditional pooled regression to circumvent endogeneity problems and account for firms' specific unobservable effects that may manifest in the data, this study opt for the Dynamic Panel Estimation model as a result of moderate cross-sectional dependence in the data evidence from the Pesaran's test of cross-sectional dependency conducted necessitating complete

abandonment of the results of the Hausman which suggests that the Fixed Effect model was suitable for the data set.

Further adjustments to the estimation method help address cross-sectional dependence, which can lead to biased and inconsistent estimates in traditional panel data models, including random-effects models. Dynamic panel models, such as the Arellano-Bond and Blundell-Bond estimators, are designed to address issues like cross-sectional dependence, endogeneity, and autocorrelation. Based on all these, this study has made a vital contribution to methodology in this area. This is especially true, as most studies employed fixed-effects, random-effects, pooled-effects, OLS, or combinations of these models to test various hypotheses and conduct cross-sectional analyses of the relationship between accounting information quality and shareholder value.

7.4. Recommendation and Direction for Future Studies

The counterintuitive findings of this study challenge the traditional view that earnings quality directly impacts stock prices or returns, underscoring the need for further investigation. Thus, suggesting the following future research directions that seek to:

(i) Investigate whether behavioural biases or market anomalies might explain the counterintuitive results.
(ii) Explore alternative statistical approaches to capture nonlinear or lagged effects.
(iii) Examine how macroeconomic conditions (interest rates, inflation) influence the relationship.

7.5. Concluding Remarks

Prior researchers developed the value relevance model, which has been a dominant measure of accounting information quality. However, the limitation of the value relevance construct in operationalizing the fundamental quality of accounting information as prescribed by the Conceptual Framework of Financial Reporting has been observed in the literature (Azar et al., 2019: 14). This study was therefore motivated by this observed limitation of the existing measure of accounting information quality in the literature, that it set out to develop a framework within the lens of the efficient market hypothesis and its interaction with information asymmetry theory, to conceptualize the impact of accounting information quality using the four (4)

accounting-based measures of earnings quality: (1) accrual quality, (2) earnings persistence, (3) earnings predictability, and (4) earnings smoothness on the shareholder value, measured by stock returns of 'Consumer Goods' companies listed on the Nigerian Stock Exchange (NSE).

The reviewed empirical studies present differing views on the relationship between accounting information quality and shareholder value. This observable relationship between the independent and dependent variables, measured using different proxies, has been tested through various hypotheses and within the framework of multiple accounting and finance theories, especially agency theory. The literature is clear that there is no universal agreement on the extent and direction of the impact of accounting information on shareholder value. A group of authors reported a significant effect of earnings quality measures on stock prices or stock returns (Ayuba, 2022; Dang et al., 2020; Dang & Tran, 2019; Mutalib et al., 2020; Ogbaisi & Aronmwan, 2022; Ogiriki & Asemota, 2024; Perotti & Wagenhofer, 2014). Then, other studies concluded that no statistically significant relationship exists between the variables (Gonçalves et al., 2020; Pimentel & De Aguiar, 2016; Wijesinghe & Kehelwalatenna, 2017). Meanwhile, no attention was given to exploring the possibility of a causal relationship between the variables.

In the middle of the debates in empirical literature, Azar et al (2019), while explaining the difference between "relevance and value relevance" quality of accounting information, commented on the limitation of the value relevance model, which has been a dominant measure of accounting information quality over the decades – the difficulty to attribute the lack of value relevance in accounting information to the absence of relevance and faithful representation (reliability) – the two most critical fundamental qualities of accounting information as prescribed by the Conceptual Framework of Financial Reporting. This means that the value relevance model does not distinguish between relevance and reliability. In addition, the efficiency of the stock market may not be comprehensive. In other words, the stock market may not fully incorporate all available information into stock prices.

To explore the theoretical differences in how accounting information relates to stock returns, this study followed the approach of Fonou-Dombeu et al. (2022), who examined the relationship between stock return volatility in South Africa and earnings

quality measures. Our study used four accounting-based measures of earnings quality—namely, accrual quality, earnings persistence, earnings predictability, and earnings smoothness—to proxy for accounting information quality and analyzed their effects on stock returns. Although, there was not enough statistical evidence to support the 4 study hypotheses, as only one of the earnings quality measures (earnings persistence) significantly impacts the variation in stock returns of listed consumer goods companies in Nigeria, the study found, with statistically significant evidence, that there are interactions between accrual quality and earnings predictability, with accrual quality Granger-causing changes in earnings predictability. This study also showed that a causal relationship exists between stock returns and earnings persistence, with stock returns Granger-causing changes in earnings persistence and the return on assets, a control variable featured in the study. These findings formed the basis of developing a contributory framework to address the previously understudied area.

It was acknowledged that the findings of this study have theoretical implications, guiding future research to explore alternative explanations for how behavioural biases, market inefficiency, and macroeconomic trends might overshadow the influence of fundamental accounting information. There is also concern about methodological issues, suggesting the possibility of non-linear dynamics in which earnings quality may influence returns only under specific circumstances, such as economic downturns or industry-specific factors, warranting consideration of nonlinear regression models for future research. Furthermore, this research has implications for decision-making by investors, regulators, and managers, showing how market and accounting information, or financial reporting variables, interact over time.

In conclusion, this research has demonstrated that to fully understand the impact of earnings quality on stock returns, it is crucial to broaden the scope of explanatory variables to consider how external factors interact with the fundamental accounting information in dictating the changes in stock prices, stock returns, and, by extension, shareholder value.

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Appendix

A.0 Panel Data Set Declaration on Stata

```
  ___  ____  ____  ____  ____ (R)
 /__    /   ____/   /   ____/
___/   /   /___/   /   /___/   14.0   Copyright 1985-2015 StataCorp LP
  Statistics/Data Analysis             StataCorp
                                       4905 Lakeway Drive
     Special Edition                   College Station, Texas 77845 USA
                                       800-STATA-PC        http://www.stata.com
                                       979-696-4600        stata@stata.com
                                       979-696-4601 (fax)

Single-user Stata perpetual license:
       Serial number:  10699393
         Licensed to:  Dr SHERIFF ALADE BAMIDELE
                       BAYERO UNIVERSITY, KANO

Notes:
      1.  Unicode is supported; see help unicode_advice.
      2.  Maximum number of variables is set to 5000; see help set_maxvar.

. *(10 variables, 130 observations pasted into data editor)

. xtset firmid year, yearly
       panel variable:  firmid (strongly balanced)
        time variable:  year, 2014 to 2023
                delta:  1 year
```

A.1 Descriptive Analysis

```
. summarize sr aq persist predict smooth lev roa
```

Variable	Obs	Mean	Std. Dev.	Min	Max
sr	130	.0980162	.5305082	-.7625	1.8849
aq	130	3.864747	4.698187	.0054	22.9571
persist	130	-.119763	9.964679	-49.5165	60.0609
predict	130	38.29535	108.9639	.0004	849.5227
smooth	130	.4674515	1.024423	.0011	8.0696
lev	130	.0869	.0897916	0	.5035
roa	130	.1076446	.0968932	-.1054	.3835

A.2 Correlation Analysis

```
. corr sr aq persist predict smooth lev roa
(obs=130)
```

	sr	aq	persist	predict	smooth	lev	roa
sr	1.0000						
aq	-0.1683	1.0000					
persist	-0.1784	0.1015	1.0000				
predict	0.0902	0.2862	-0.0136	1.0000			
smooth	0.0633	0.0394	0.0038	0.0640	1.0000		
lev	-0.1783	0.3582	0.0801	-0.0974	-0.0904	1.0000	
roa	0.1028	0.0475	0.0302	0.0364	-0.0622	-0.0260	1.0000

.

A.3 Fixed Effect Result

```
. xtreg sr aq persist predict smooth lev roa, fe

Fixed-effects (within) regression               Number of obs      =       130
Group variable: firmid                          Number of groups   =        13

R-sq:                                           Obs per group:
     within  = 0.0979                                         min =        10
     between = 0.1238                                         avg =      10.0
     overall = 0.0874                                         max =        10

                                                F(6,111)           =      2.01
corr(u_i, Xb)  = -0.3025                        Prob > F           =    0.0704
```

sr	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
aq	-.0080346	.013505	-0.59	0.553	-.0347957	.0187264
persist	-.0106578	.0050204	-2.12	0.036	-.0206061	-.0007095
predict	.0005714	.0004986	1.15	0.254	-.0004166	.0015594
smooth	.0481016	.0472349	1.02	0.311	-.0454976	.1417008
lev	-1.135163	.7623409	-1.49	0.139	-2.645792	.3754661
roa	.6825886	.7374346	0.93	0.357	-.7786872	2.143864
_cons	.1085916	.1194858	0.91	0.365	-.1281775	.3453607
sigma_u	.14664729					
sigma_e	.52666224					
rho	.07195373	(fraction of variance due to u_i)				

```
F test that all u_i=0: F(12, 111) = 0.60                     Prob > F = 0.8393

. est store fe
```

A.4 Random Effect Result

```
F test that all u_i=0:  F(12, 111) = 0.60                   Prob > F = 0.8393

. est store fe

. xtreg sr aq persist predict smooth lev roa, re

Random-effects GLS regression                   Number of obs      =       130
Group variable: firmid                          Number of groups   =        13

R-sq:                                           Obs per group:
     within  = 0.0889                                         min =        10
     between = 0.2652                                         avg =      10.0
     overall = 0.0971                                         max =        10

                                                Wald chi2(6)       =     13.22
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0396

------------------------------------------------------------------------------
          sr |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          aq |  -.0183546   .0111201    -1.65   0.099    -.0401496    .0034404
     persist |  -.0083566    .004595    -1.82   0.069    -.0173626    .0006495
     predict |   .0005744   .0004472     1.28   0.199    -.0003021    .0014509
      smooth |   .0320273   .0448191     0.71   0.475    -.0558165    .1198712
         lev |  -.5169267   .5603049    -0.92   0.356    -1.615104    .5812506
         roa |   .6162133   .4715427     1.31   0.191    -.3079933     1.54042
       _cons |    .109571   .0891813     1.23   0.219    -.0652211    .2843631
-------------+----------------------------------------------------------------
     sigma_u |          0
     sigma_e |  .52666224
         rho |          0   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

A.4 Hausman Test Result

```
. est store re

. hausman fe re

                 ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |      fe           re         Difference          S.E.
-------------+----------------------------------------------------------------
          aq |   -.0080346    -.0183546          .01032        .0076634
     persist |   -.0106578    -.0083566       -.0023012        .0020225
     predict |    .0005714     .0005744       -2.99e-06        .0002204
      smooth |    .0481016     .0320273        .0160743        .0149127
         lev |   -1.135163    -.5169267       -.6182364        .5169352
         roa |    .6825886     .6162133        .0663753         .566972
------------------------------------------------------------------------------
                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =        3.51
                Prob>chi2 =      0.7423

.
```

A.5 Cross sectional dependency test Test Result

Pesaran's test of cross sectional independence = 9.075, Pr = 0.0000

Average absolute value of the off-diagonal elements = 0.345

. xtserial sr aq persist predict smooth lev roa

Wooldridge test for autocorrelation in panel data
H0: no first order autocorrelation
F(1, 12) = 3.482
Prob > F = 0.0867

A.5 Arellano-Bond Dynamic Panel-data Estimation

```
. xtabond sr aq persist predict smooth lev roa, lags(1) artests(2)

Arellano-Bond dynamic panel-data estimation     Number of obs      =       104
Group variable: firmid                          Number of groups   =        13
Time variable: year
                                                Obs per group:
                                                              min =         8
                                                              avg =         8
                                                              max =         8

Number of instruments =     43                  Wald chi2(7)       =     13.92
                                                Prob > chi2        =    0.0526
One-step results
```

sr	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
sr						
L1.	-.0056279	.0996078	-0.06	0.955	-.2008555	.1895997
aq	-.0031705	.0176911	-0.18	0.858	-.0378443	.0315034
persist	-.0175663	.0053142	-3.31	0.001	-.0279818	-.0071507
predict	.0002961	.0005319	0.56	0.578	-.0007465	.0013387
smooth	.040333	.0487672	0.83	0.408	-.055249	.1359149
lev	-.7254464	.9230357	-0.79	0.432	-2.534563	1.08367
roa	.881132	.9905785	0.89	0.374	-1.060366	2.82263
_cons	.0303981	.1323529	0.23	0.818	-.2290088	.2898051

```
Instruments for differenced equation
        GMM-type: L(2/.).sr
        Standard: D.aq D.persist D.predict D.smooth D.lev D.roa
Instruments for level equation
        Standard: _cons
```

Backups

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Notes:
1. Unicode is supported; see help unicode_advice.
2. Maximum number of variables is set to 5000; see help set_maxvar.
. *(10 variables, 130 observations pasted into data editor)
. xtset firmid year, yearly
panel variable: firmid (strongly balanced)
time variable: year, 2014 to 2023
delta: 1 year
. xtreg sr aq persist predict smooth lev roa, fe
Fixed-effects (within) regression Number of obs = 130
Group variable: firmid Number of groups = 13
R-sq: Obs per group:
within = 0.0979 min = 10
between = 0.1238 avg = 10.0
overall = 0.0874 max = 10
F(6,111) = 2.01
corr(u_i, Xb) = -0.3025 Prob > F = 0.0704
sr Coef. Std. Err. t P>t [95% Conf. Interval]
aq -.0080346 .013505 -0.59 0.553 -.0347957 .0187264
persist -.0106578 .0050204 -2.12 0.036 -.0206061 -.0007095
predict .0005714 .0004986 1.15 0.254 -.0004166 .0015594
smooth .0481016 .0472349 1.02 0.311 -.0454976 .1417008
lev -1.135163 .7623409 -1.49 0.139 -2.645792 .3754661

roa .6825886 .7374346 0.93 0.357 -.7786872 2.143864
_cons .1085916 .1194858 0.91 0.365 -.1281775 .3453607
sigma_u .14664729
sigma_e .52666224
rho .07195373 (fraction of variance due to u_i)
F test that all u_i=0: F(12, 111) = 0.60 Prob > F = 0.8393
. est store fe
. xtreg sr aq persist predict smooth lev roa, re
Random-effects GLS regression Number of obs = 130
Group variable: firmid Number of groups = 13
R-sq: Obs per group:
within = 0.0889 min = 10
between = 0.2652 avg = 10.0
overall = 0.0971 max = 10
Wald chi2(6) = 13.22
corr(u_i, X) = 0 (assumed) Prob > chi2 = 0.0396
sr Coef. Std. Err. z P>z [95% Conf. Interval]
aq -.0183546 .0111201 -1.65 0.099 -.0401496 .0034404
persist -.0083566 .004595 -1.82 0.069 -.0173626 .0006495
predict .0005744 .0004472 1.28 0.199 -.0003021 .0014509
smooth .0320273 .0448191 0.71 0.475 -.0558165 .1198712
lev -.5169267 .5603049 -0.92 0.356 -1.615104 .5812506
roa .6162133 .4715427 1.31 0.191 -.3079933 1.54042
_cons .109571 .0891813 1.23 0.219 -.0652211 .2843631
sigma_u 0
sigma_e .52666224
rho 0 (fraction of variance due to u_i)
. est store re
. hausman fe re
---- Coefficients ----
(b) (B) (b-B) sqrt(diag(V_b-V_B))
fe re Difference S.E.
aq -.0080346 -.0183546 .01032 .0076634
persist -.0106578 -.0083566 -.0023012 .0020225
predict .0005714 .0005744 -2.99e-06 .0002204
smooth .0481016 .0320273 .0160743 .0149127
lev -1.135163 -.5169267 -.6182364 .5169352

roa .6825886 .6162133 .0663753 .566972
b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg
Test: Ho: difference in coefficients not systematic
chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 3.51
Prob>chi2 = 0.7423

```
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Notes:
      1.  Unicode is supported; see help unicode_advice.
      2.  Maximum number of variables is set to 5000; see help set_maxvar.

. edit

. *(9 variables, 130 observations pasted into data editor)

. summarize sr aq persist predict smooth lev roa

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
          sr |       130    .0980162    .5305082     -.7625     1.8849
          aq |       130    3.864747    4.698187      .0054    22.9571
     persist |       130    -.119763    9.964679   -49.5165    60.0609
     predict |       130    38.29535    108.9639      .0004   849.5227
      smooth |       130    .4674515    1.024423      .0011     8.0696
-------------+--------------------------------------------------------
         lev |       130       .0869    .0897916          0      .5035
         roa |       130    .1076446    .0968932     -.1054      .3835
```

```
. sktest sr aq persist predict smooth lev roa

                    Skewness/Kurtosis tests for Normality
                                                  ------ joint ------
    Variable |       Obs  Pr(Skewness)  Pr(Kurtosis) adj chi2(2)   Prob>chi2
-------------+-------------------------------------------------------------
          sr |       130     0.0000        0.0013       29.41         0.0000
          aq |       130     0.0000        0.0000       46.53         0.0000
     persist |       130     0.0278        0.0000       39.70         0.0000
     predict |       130     0.0000        0.0000           .         0.0000
      smooth |       130     0.0000        0.0000           .         0.0000
         lev |       130     0.0000        0.0000       39.65         0.0000
         roa |       130     0.0179        0.3208        6.26         0.0437

. pwcorr sr aq persist predict smooth lev roa

             |       sr       aq  persist  predict   smooth      lev      roa
-------------+-------------------------------------------------------------
          sr |   1.0000
          aq |  -0.1683   1.0000
     persist |  -0.1784   0.1015   1.0000
     predict |   0.0902   0.2862  -0.0136   1.0000
      smooth |   0.0633   0.0394   0.0038   0.0640   1.0000
         lev |  -0.1783   0.3582   0.0801  -0.0974  -0.0904   1.0000
         roa |   0.1028   0.0475   0.0302   0.0364  -0.0622  -0.0260   1.0000

. xtset firmid year, yearly
       panel variable:  firmid (strongly balanced)
        time variable:  year, 2012 to 2021
                delta:  1 year

. xtreg sr aq persist predict smooth lev roa, fe

Fixed-effects (within) regression               Number of obs      =       130
Group variable: firmid                          Number of groups   =        13

R-sq:                                           Obs per group:
     within  = 0.0979                                         min =        10
     between = 0.1238                                         avg =      10.0
     overall = 0.0874                                         max =        10

                                                F(6,111)           =      2.01
corr(u_i, Xb)  = -0.3025                        Prob > F           =    0.0704

------------------------------------------------------------------------------
          sr |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
```

```
------------+----------------------------------------------------------------
         aq |  -.0080346    .013505    -0.59   0.553    -.0347957    .0187264
    persist |  -.0106578   .0050204    -2.12   0.036    -.0206061   -.0007095
    predict |   .0005714   .0004986     1.15   0.254    -.0004166    .0015594
     smooth |   .0481016   .0472349     1.02   0.311    -.0454976    .1417008
        lev |  -1.135163   .7623409    -1.49   0.139    -2.645792    .3754661
        roa |   .6825886   .7374346     0.93   0.357    -.7786872    2.143864
      _cons |   .1085916   .1194858     0.91   0.365    -.1281775    .3453607
------------+----------------------------------------------------------------
    sigma_u |  .14664729
    sigma_e |  .52666224
        rho |  .07195373   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(12, 111) = 0.60                     Prob > F = 0.8393

. est store fe

. xtreg sr aq persist predict smooth lev roa, re

Random-effects GLS regression                   Number of obs     =       130
Group variable: firmid                          Number of groups  =        13

R-sq:                                           Obs per group:
     within  = 0.0889                                         min =        10
     between = 0.2652                                         avg =      10.0
     overall = 0.0971                                         max =        10

                                                Wald chi2(6)      =     13.22
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.0396

------------------------------------------------------------------------------
          sr |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          aq |  -.0183546   .0111201    -1.65   0.099    -.0401496    .0034404
     persist |  -.0083566    .004595    -1.82   0.069    -.0173626    .0006495
     predict |   .0005744   .0004472     1.28   0.199    -.0003021    .0014509
      smooth |   .0320273   .0448191     0.71   0.475    -.0558165    .1198712
         lev |  -.5169267   .5603049    -0.92   0.356    -1.615104    .5812506
         roa |   .6162133   .4715427     1.31   0.191    -.3079933     1.54042
       _cons |    .109571   .0891813     1.23   0.219    -.0652211    .2843631
-------------+----------------------------------------------------------------
     sigma_u |         0
     sigma_e |  .52666224
         rho |         0   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

```
. est store re

. hausman fe re

                ---- Coefficients ----
             |      (b)          (B)          (b-B)     sqrt(diag(V_b-V_B))
             |       fe           re        Difference          S.E.
-------------+----------------------------------------------------------------
          aq |   -.0080346    -.0183546          .01032        .0076634
     persist |   -.0106578    -.0083566       -.0023012        .0020225
     predict |    .0005714     .0005744       -2.99e-06        .0002204
      smooth |    .0481016     .0320273        .0160743        .0149127
         lev |   -1.135163    -.5169267       -.6182364        .5169352
         roa |    .6825886     .6162133        .0663753         .566972
------------------------------------------------------------------------------
                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =        3.51
                Prob>chi2 =      0.7423

. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects

        sr[firmid,t] = Xb + u[firmid] + e[firmid,t]

        Estimated results:
                     |       Var     sd = sqrt(Var)
             ---------+-----------------------------
                  sr |    .281439       .5305082
                   e |   .2773731       .5266622
                   u |          0              0

        Test:   Var(u) = 0
                           chibar2(01) =     0.00
                         Prob > chibar2 =   1.0000

. regress sr aq  persist predict smooth lev roa

      Source |       SS           df       MS      Number of obs   =       130
-------------+----------------------------------   F(6, 123)       =      2.20
       Model |   3.5246234         6  .587437234   Prob > F        =    0.0470
```

```
   Residual |  32.7810074       123  .266512255   R-squared       =    0.0971
------------+----------------------------------   Adj R-squared   =    0.0530
      Total |  36.3056308       129  .281438998   Root MSE        =    .51625

------------------------------------------------------------------------------
          sr |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          aq |  -.0183546   .0111201    -1.65   0.101    -.0403661     .003657
     persist |  -.0083566    .004595    -1.82   0.071    -.0174521     .000739
     predict |   .0005744   .0004472     1.28   0.201    -.0003108    .0014597
      smooth |   .0320273   .0448191     0.71   0.476    -.0566893     .120744
         lev |  -.5169267   .5603049    -0.92   0.358    -1.626016    .5921624
         roa |   .6162133   .4715427     1.31   0.194    -.3171764    1.549603
       _cons |    .109571   .0891813     1.23   0.222    -.0669579    .2860998
------------------------------------------------------------------------------

. vif

    Variable |       VIF       1/VIF
-------------+----------------------
          aq |      1.32    0.756919
         lev |      1.23    0.816220
     predict |      1.15    0.870030
      smooth |      1.02    0.980037
     persist |      1.01    0.985433
         roa |      1.01    0.989690
-------------+----------------------
    Mean VIF |      1.12

. predict e
(option xb assumed; fitted values)

. swilk e

                    Shapiro-Wilk W test for normal data

    Variable |       Obs       W           V         z       Prob>z
-------------+------------------------------------------------------
           e |       130    0.88140     12.213     5.631    0.00000

. ovtest

Ramsey RESET test using powers of the fitted values of sr
       Ho:  model has no omitted variables
                 F(3, 120) =      0.63
                  Prob > F =      0.5980
```

```
. imtest

Cameron & Trivedi's decomposition of IM-test

---------------------------------------------------
            Source |       chi2     df      p
-------------------+-------------------------------
  Heteroskedasticity |      44.00     27    0.0207
          Skewness |      15.41      6    0.0173
          Kurtosis |       4.19      1    0.0407
-------------------+-------------------------------
             Total |      63.59     34    0.0015
---------------------------------------------------

. linktest

      Source |       SS           df       MS      Number of obs   =       130
-------------+----------------------------------   F(2, 127)       =      6.83
       Model |  3.52526437         2  1.76263218   Prob > F        =    0.0015
    Residual |  32.7803664       127  .258113121   R-squared       =    0.0971
-------------+----------------------------------   Adj R-squared   =    0.0829
       Total |  36.3056308       129  .281438998   Root MSE        =    .50805

------------------------------------------------------------------------------
          sr |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        _hat |    1.00127     .27181     3.68   0.000     .4634068    1.539133
      _hatsq |  -.0315958    .634058    -0.05   0.960    -1.286282     1.22309
       _cons |   .0010357   .0558663     0.02   0.985    -.1095136     .111585
------------------------------------------------------------------------------

. xtreg sr aq persist predict smooth lev roa, fe

Fixed-effects (within) regression               Number of obs      =       130
Group variable: firmid                          Number of groups   =        13

R-sq:                                           Obs per group:
     within  = 0.0979                                         min =        10
     between = 0.1238                                         avg =      10.0
     overall = 0.0874                                         max =        10

                                                F(6,111)           =      2.01
corr(u_i, Xb)  = -0.3025                        Prob > F           =    0.0704

------------------------------------------------------------------------------
```

```
          sr |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          aq |  -.0080346    .013505    -0.59   0.553    -.0347957    .0187264
     persist |  -.0106578   .0050204    -2.12   0.036    -.0206061   -.0007095
     predict |   .0005714   .0004986     1.15   0.254    -.0004166    .0015594
      smooth |   .0481016   .0472349     1.02   0.311    -.0454976    .1417008
         lev |  -1.135163   .7623409    -1.49   0.139    -2.645792    .3754661
         roa |   .6825886   .7374346     0.93   0.357    -.7786872    2.143864
       _cons |   .1085916   .1194858     0.91   0.365    -.1281775    .3453607
-------------+----------------------------------------------------------------
     sigma_u |  .14664729
     sigma_e |  .52666224
         rho |  .07195373   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(12, 111) = 0.60                     Prob > F = 0.8393

. xttest3

Modified Wald test for groupwise heteroskedasticity
in fixed effect regression model

H0: sigma(i)^2 = sigma^2 for all i

chi2 (13)  =     203.83
Prob>chi2 =      0.0000


. xtcsd, pesaran abs



. xtpcse sr aq persist predict smooth lev roa

Linear regression, correlated panels corrected standard errors (PCSEs)

Group variable:   firmid                  Number of obs     =       130
Time variable:    year                    Number of groups  =        13
Panels:           correlated (balanced)   Obs per group:
Autocorrelation:  no autocorrelation                  min =        10
                                                      avg =        10
                                                      max =        10
Estimated covariances      =        91    R-squared         =    0.0971
Estimated autocorrelations =         0    Wald chi2(6)      =     13.77
Estimated coefficients     =         7    Prob > chi2       =    0.0323

------------------------------------------------------------------------------
```

| Panel-corrected
sr | Coef. Std. Err. z P>|z| [95% Conf. Interval]

aq	-.0183546	.0099251	-1.85	0.064	-.0378073	.0010982
persist	-.0083566	.005363	-1.56	0.119	-.0188678	.0021546
predict	.0005744	.0004639	1.24	0.216	-.0003349	.0014837
smooth	.0320273	.0330045	0.97	0.332	-.0326604	.0967151
lev	-.5169267	.4225086	-1.22	0.221	-1.345028	.3111749
roa	.6162133	.5314584	1.16	0.246	-.425426	1.657853
_cons	.109571	.1224555	0.89	0.371	-.1304374	.3495794

Ethics Approval Certificate

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