

Fair value measurement and profitability of listed manufacturing firms in Nigeria

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Abstract

This study examined the connection between fair value measurement and profitability of listed manufacturing companies in Nigeria. The cross-sectional research design was used and data was obtained using annual reports of the companies to be used. It was analyzed with the help of the Maximum Likelihood Estimation (MLE) technique, and the pooled probit regression was used to estimate the parameters of the model. This study involved a study over a period of seven years between the year 2013 and 2019 and the manufacturing firms on the Nigerian Exchange Group. The results indicated that there is a high influence of the fair value measurement on both the profitability of firms, inventory valuation and the financial reporting practices. It is on these results that the study suggests that manufacturing companies should use fair value measurement in the preparation of financial reports since it gives a more conservative and realistic view of the financial performance in line with the principle of prudence in accounting. Moreover, the professional accounting institutions in Nigeria ought to run special workshops among the financial managers and accountants to create awareness and knowledge of the International Financial Reporting Standards (IFRS) with special emphasis on the fair value practices. Lastly, the national standard-setting body should also make sure that there is a rigid implementation of IFRS compliance by imposing sanctions on companies which do not comply with the set guidelines.

Keywords: Fair Value Measurement; Profitability; Manufacturing Firms; Cross-Sectional Design; Maximum Likelihood Estimation (MLE)

1. Introduction

The accounting environment in the world has changed in the recent years where accounting used to be localised to a more harmonised system based on international standards. This has been mainly due to the increasing demand of transparent and comparable financial information especially in the current capital markets that are more globalized (Johri, 2024; Laux & Leuz, 2009). A key turning point was the formation of the International Accounting Standards Committee (IASC) in 1973, later restructured as the International Accounting Standards Board (IASB) in 2001, which now oversees the development and maintenance of the International Financial Reporting Standards (IFRS) (IFRS Foundation, 2023).

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A central pillar of IFRS is the application of fair value measurement (FVM), which emphasises market-based valuations over the traditional historical cost approach. Fair value offers a snapshot of an asset or liability's current market price, aiming to reflect prevailing economic conditions more accurately (Christensen & Nikolaev, 2013; Fontes et al., 2024). This method is especially useful during periods of market volatility, where historical cost may fail to capture economic realities. However, fair value accounting can present challenges in developing economies with illiquid markets and limited valuation expertise (Al Sawalqa, 2015).

Nigeria formally adopted IFRS in 2010, with phased implementation beginning in 2012. The transition was supported by the Financial Reporting Council of Nigeria (FRCN) Act No. 6 of 2011, replacing the Nigerian Accounting Standards Board (NASB) and establishing a stronger regulatory body (Federal Republic of Nigeria Official Gazette, 2011). Since then, public interest entities including listed manufacturing firms—have been required to report under IFRS. While the reform improved alignment with international standards, the actual effectiveness and reliability of fair value accounting within the Nigerian context remain debated.

Although the global literature on fair value is well established, empirical studies focusing on its application in emerging economies like Nigeria are still relatively few. This gap matters, especially in economies where inflation, price instability, and limited market data complicate valuation. In such contexts, the choice between historical cost and fair value can significantly influence reported profits, asset values, and investor perceptions (Linsmeier, 2016; Magnan & Parbonetti, 2018).

This study investigates how fair value measurement affects the financial performance of listed manufacturing firms in Nigeria, focusing on three key areas: profitability, inventory valuation, and financial reporting quality. Specifically, it addresses the following research questions:

- To what extent does fair value measurement impact profitability?
- How does it influence inventory valuation?
- What effect does it have on the quality of financial reporting?

The corresponding objectives are to assess fair value's impact on profitability, its influence on inventory valuation practices, and its implications for transparency and reliability in financial reporting. The hypotheses tested assert that fair value measurement does not significantly influence each of these three dimensions.

By offering evidence from a developing economy, this study adds to the understanding of how valuation methods shape financial reporting. It also provides insights for regulators, policymakers, and practitioners on how IFRS particularly fair value principles can be implemented more effectively in challenging economic environments like Nigeria's.

2. Literature review

2.1. Conceptual Review

2.1.1. *Concept of Measurement*

Understanding Measurement and Its Role in Research

Measurement is an inseparable element of the knowledge and description of the surrounding world. It enables us to measure the properties like length, weight, temperature or time by giving them numbers with the help of special instruments. We may, as an example, measure length with a ruler, temperature with a thermometer, time with a stopwatch. Every measurement usually has two components: a number and a unit e.g. two metres means how much and in what unit (Field, 2024).

Measurement is more than simple application of tools in academic and scientific settings. It is a logical procedure of marking objects, actions or events with numbers following a set of rules. This is done so that what we are recording is in a manner that is meaningful and consistent to the real world phenomena. These rules, according to Cohen, Manion, & Morrison (2002), can assist in connecting abstract concepts with real-life data so that a researcher could express an observation in numerical form and make a conclusion based on the data.

Measurement is not merely numerical, it is also much concerned with philosophical concepts of knowledge and sense. Use of precise measurement gives science a closer connection to the real-life experience. That is why sometimes clear

thinking and practical knowledge might be more useful than technical knowledge in designing a useful measurement process (Mari et al., 2023).

It can also be mentioned that not every instance of comparison or observation can be regarded as measurement. E.g. merely putting two strings side by side and seeing which is longer is a comparison, not a measurement. The same could be said of counting objects (or the results of a test, say) or checking to see someone passed or failed a test, which may involve measurements but cannot be measurements themselves. When we document or estimate these observations in some organized, dependable manner, measurement enters the picture (Kotronoulas, 2023; Reed et al., 2021).

The value of any assessment whether in education, science, or healthcare depends on the validity of its underlying measurements. Measurement theory, which underpins these practices, provides the conceptual tools and guidelines to ensure data is not only accurate but also meaningful and useful. This theory helps ensure the relevance and integrity of the results derived from tests or research.

Ultimately, data is only as reliable as the measurements used to generate it. If the methods used to assign numbers are flawed or inconsistent, even the most advanced analysis will be based on shaky foundations. Ensuring that measurements follow clear, logical rules is therefore essential for drawing valid and trustworthy conclusions (Suresh et al., 2011).

2.1.2. Fair Value versus Historical Cost Measurement

Fair value represents the estimated price an asset would command or a liability would require to settle in a transaction between informed market participants on the measurement date. As defined by the IASB (2014) (Whittington, 2015), it is a market-based valuation (an exit price), not specific to the reporting entity. In situations where observable prices are unavailable, fair value is derived using valuation techniques that prioritise market-based (observable) inputs while minimising unobservable ones.

Regulatory trends increasingly favour fair value over historical cost due to its capacity to reflect real-time economic conditions. The supporters point to the fact that fair value is more relevant, has more transparency, and creates fewer chances of manipulating earnings (Odoemelam et al., 2019). These characteristics play a critical role especially in the turbulent markets where the stale values under historical cost can mask the true financial position of an entity.

Historical Cost Accounting (HCA) on the contrary, measures assets and liabilities on the basis of their initial cost of acquisition. The advantage of this approach is the consistency and objectivity of the evaluation, since values can be checked by documentation of transactions including invoices or receipts (Tkachuk, 2019). It is, however, not as representative of the realities of the market as it is based on past prices, particularly in inflationary economies (Jennings, 2016).

IAS 16 allows the property, plant and equipment to be accounted either using the cost model or the revaluation (fair value) model. Revaluations under the fair value model must occur regularly to ensure alignment between book and market values. Gains are recognised in other comprehensive income under "Revaluation Surplus," while losses beyond previously recorded surpluses are charged to profit or loss (Deloitte, 2022).

Both models impact profitability differently. Depreciation under HCA is calculated using the original purchase price less residual value, divided over the asset's useful life (Liapis & Kantianis, 2015). In contrast, fair value accounting periodically updates asset values, incorporating impairment and revaluation impacts directly into the income statement or equity (Barlev & Haddad, 2003).

While HCA offers simplicity and stability, its limitations in dynamic markets necessitate the adoption of fair value measurement in many reporting scenarios. A balanced approach, supported by clear and consistent policy application, remains essential to ensuring reliable and relevant financial reporting.

2.1.3. Fair Value Measurement and Historical Cost Accounting

Historical Cost Accounting (HCA) records assets at the price that was paid initially, only decreasing them by depreciation or by additions. It provides predictability and uniformity in accounting, which makes profit planning and long-term decision-making easier (Lee, 2020). The major weakness however is that it does not consider current market conditions particularly in inflationary economies.

Fair Value Accounting (FVA) on the other hand revalues assets and liabilities to their current market value. This method, which is promoted in IFRS 13, is applicable especially to assets that have observable prices in market. It tends to produce higher depreciation expenses particularly in the case when the component approach is used and this makes the reported profits lower than those reported under HCA (Turki et al., 2016; Angeloni, 2016). However, FVA is praised for enhancing transparency and aligning accounting with real-time economic performance.

The differences between these two methods affect profitability metrics and stakeholder decision-making. Under HCA, profits may appear inflated, potentially leading to higher dividend pay-outs that erode equity. FVA, however, can better match earnings with economic reality, even if that results in lower profits and higher volatility.

Empirical research shows that FVA can influence investor perception and firm behaviour. For example, Reis & Stocken (2007) argue that fair value reporting supports better price coordination in competitive markets and leads to higher expected profits and output. Bleck and Liu (2007) suggest that historical cost, while more conservative, may obscure firm performance and encourage earnings management in opaque markets.

Rodríguez-Pérez et al. (2014), in their study of Spanish insurers, found that although FVA significantly alters the face of financial statements, the overall assessment of efficiency and profitability changes marginally for most firms. This implies that while FVA may influence analysts' perceptions, its broader impact is conditional on asset types and firm structure.

In developing economies like Nigeria, research comparing both methods are still emerging. Bessong & Charles (2015) found that the choice of accounting method HCA or FVA directly affects reported depreciation, taxation, and dividends. Their study of pre-IFRS and post-conversion data from Nigerian manufacturing firms suggests that fair value reporting yields more realistic but potentially lower profitability figures.

Moreover, in specific contexts like Zakat assessment in Malaysia, Awang & Mokhtar (2015) highlight how using HCA can distort wealth redistribution and understate liabilities. This reinforces the view that valuation methods have wider implications beyond corporate reporting.

While HCA provides consistency and verifiability, FVA offers timelier and potentially more relevant information, especially in dynamic markets. The choice between the two should be guided by reporting objectives, market context, and stakeholder needs.

2.1.4. Uncertainty of Measurement

Measurement uncertainty refers to the degree of doubt associated with any quantitative observation. It reflects the inherent limitations in every measurement process, regardless of the quality of the instrument used (Dieck, 2007). Even with highly calibrated tools such as precision rulers or thermometers, results are never entirely free from potential deviation. For example, a measured length of two metres might realistically range from 1.99 to 2.01 metres, indicating an uncertainty margin of ± 1 cm.

This margin is crucial for interpreting the reliability of results, particularly in scientific or technical settings. Two critical factors influence measurement uncertainty: objectivity and relevance. Objectivity refers to the extent to which a measurement is free from bias, ensuring consistency across observers and contexts. Relevance, meanwhile, assesses how well a measurement reflects the true property being evaluated (Reiss & Sprenger, 2014). High-quality measurements aim to maximise both, thus minimising uncertainty and enhancing the credibility of the data.

2.1.5. Reliability and Validity of Measurement Instruments

Reliability and validity are foundational concepts in evaluating the quality of measurement tools. Reliability concerns the consistency of a measurement whether it produces stable and repeatable results under similar conditions. It is primarily affected by random errors, which can cause results to vary unpredictably (Ahmed & Ishtiaq, 2021).

There are four commonly recognised types of reliability:

- Inter-rater reliability, which assesses agreement between different observers or raters.
- Intra-rater reliability, which considers consistency within the same observer over time.
- Test-retest reliability, which evaluates consistency across multiple administrations of the same test.
- Internal consistency, which measures how well items within a test correlate with each other (Cohen et al., 2017).

While reliability ensures consistency, validity addresses the accuracy of what is being measured. A valid instrument truly captures the concept it is intended to measure. Unlike reliability, validity is affected by systematic errors deviations that consistently push results in a particular direction, thereby misrepresenting the construct (Taherdoost, 2016).

Viswanathan (2005) also highlights the need for a unified framework of validity. Traditional classifications such as content validity, criterion-related validity, and construct validity often overlap and lack clear boundaries. Moreover, understanding how measurements influence real-world decisions and actions has become increasingly important. Hence, any robust validity assessment must integrate both the technical soundness of the instrument and the implications of its use.

Together, reliability and validity determine the overall integrity of a measurement process. Without them, data lose credibility, and conclusions drawn from such data risk being fundamentally flawed.

2.2. Theoretical Framework

2.2.1. Neoclassical Theory

The neoclassical theory of the firm views the organisation primarily as an economic agent focused on maximising profit or minimising costs. This theoretical approach, influenced by early 20th-century economic thought, assumes that firms operate under rational decision-making within perfectly competitive markets. In this model, external market conditions such as pricing, demand, and resource availability are considered exogenous and largely beyond the firm's control (Mhella, 2023; Furubotn, 2001).

According to this framework, the firm is treated as a black box: it transforms inputs into outputs with the objective of achieving optimal economic performance. However, this oversimplification of internal processes and motivations led to growing dissatisfaction during the 1930s, particularly in explaining organisational behaviour under real-world market imperfections (Spread, 2016). This criticism laid the groundwork for alternative theories that considered internal decision-making and managerial behaviour as central to understanding firm dynamics.

2.2.2. Managerial Theory

The development of managerial theory was a reaction to the shortcomings of the neoclassical assumptions, especially concerning the place of managers in the corporate systems. Baumol (1961) proposed a model in which sales revenue maximisation was proposed as an alternative managerial goal besides pure profit maximisation. He reasoned that managers particularly those in large companies usually have objectives of expanding their market share, raising sales volume or enhancing organisational size objectives which may not necessarily be in line with shareholder profit.

This theory acknowledges that contemporary corporations are in an environment where ownership and control are separated and managers have freedom to pursue their own agendas which may not be in line with those of the owners. Opponents of the model argue that profit maximisation should be the end goal and some view the theory of Baumol as a modification and not a repudiation of neoclassical thought (Abdulaziz, 2024). However, managerial theory gives us a good view of strategic behaviours based on internal motives, organisational incentives and market positioning.

2.2.3. Penrose's Theory of Firm Growth

The seminal work by Edith Penrose on firm growth, presented a dynamic and resource based approach and was a stark contrast to the static neoclassical models. She stated that companies expand not merely through the influence of the market but rather through the internal competences and managerial resources they have (Penrose, 2009). The main idea of her theory is the managerial limits to growth i.e. the firm cannot grow to the extent of market demand, rather the ability of the firm to manage growth at any particular point of time.

Penrose considered firms as a set of productive resources and their growth relied on the effectiveness of the managerial capabilities that were implemented and extended. She emphasized that firm-specific managerial skills are team-based and are not developed and co-ordinated overnight, and this would naturally limit the rate of growth of a firm. The treatment of adjustment costs has been one of the criticisms of this theory (Lockett et al., 2009; Volpe & Biferali, 2008). Although Penrose viewed them as variable and controllable over time, subsequent works indicate that these costs can, in practice, act as fixed costs with structural constraints to the scalability of the organisation.

However, the theory of Penrose has had substantial impact on the modern strategic management and resource based perspectives of the firm through providing a subtle insight into the internal growth forces.

2.3. Empirical Review

Literature on fair value measurement (FVM) and historical cost accounting (HCA) presents a range of evidence in different industries and countries, which is related to different methodological approaches and realities.

In their study, Leonard et al. (2018) aimed at comparing the impact of FVM and HCA on the financial performance of publicly listed companies in Nigeria. They analysed ten firms over a period of ten years, and these were divided into two regimes, namely, HCA regime (2007-2011) and FVM regime (2012-2016). Using descriptive statistics and paired sample t-tests and SPSS, the research established that there was a statistically insignificant positive change in profit after tax in the FVM regime. Also, there was negative but not significant difference in earnings per share and return on equity. These results indicate that the switch to FVM in the context of Nigerian firms did not lead to a considerable increase in firm performance. The paper recommended that fair value provisions under IFRS should be critically reviewed to increase cross border comparability and efficiency of operations.

Ezeani & Oladele (2012) examined the consequences of IFRS adoption in Nigeria university system in terms of how international standards could affect the quality of financial reporting. The study has used Z-tests and survey methodology based on a sample of 160 senior accountants and internal auditors. The findings highlighted substantial knowledge gaps among financial professionals concerning IFRS requirements, particularly around fair value principles. The authors recommended integrating IFRS-related content into academic curricula to strengthen professionals' understanding and minimise valuation uncertainties linked to FVM.

Rodríguez-Pérez et al. (2011) conducted an empirical study on Spanish insurance companies to assess whether adopting FVM would significantly alter perceptions of firm efficiency and profitability. Using Data Envelopment Analysis (DEA), they restated the financial statements of 85 companies under both FVM and HCA. While the valuation changes significantly affected balance sheet figures, only a limited number of companies showed meaningful changes in their DEA efficiency scores. Their findings suggest that although valuation bases can affect analysts' perception in select cases, the overall appraisal of most firms remains consistent across both accounting methods.

In the Nigerian banking sector, Chidoziem et al. (2020) examined the relationship between FVM and financial performance using regression analysis on secondary data. Their study revealed a negative correlation between fair value reporting and the performance of deposit money banks. As a corrective measure, they advocated for the strengthening and expansion of regulatory frameworks surrounding FVM to mitigate any adverse impacts.

Taken together, these studies underscore the complexity and context-specific outcomes of adopting FVM over HCA. While some research highlights negative or negligible effects on performance, others support its adoption based on perceived transparency and relevance benefits. The divergent findings suggest that institutional capacity, sectoral peculiarities, and regulatory environments all play crucial roles in mediating the impact of FVM.

3. Methodology

3.1. Research Design

The research study used a cross sectional research design that is suitable when studying phenomena at a particular time. The given design can be used to collect information about a specific population and helps to develop both descriptive and inferential insights (Creswell & Creswell, 2017). The cross-sectional method of analysis was especially suitable in examining the effects of accounting measurement methods on the performance of firms since it enabled the researcher to take into account trends and patterns during a stipulated period of time and generalize about the information collected.

3.2. Population of the Study

The research population will be the manufacturing companies listed in the Nigerian Stock Exchange (NSE). To establish a strong temporal coverage and consistency in measuring reporting and performance of firms over time, the study concentrated on financial data of seven years (2013-2019). The chosen period is also in tandem with post-adoption of IFRS in Nigeria, thus making the data more relevant to both fair value and historical cost measurement systems.

3.3. Sample Size

A sample of 15 manufacturing firms was selected purposively out of the population. The firms were selected because they had full financial statements during the time of the study and their significance to the research goals. The validity

of statistical analysis was guaranteed by the fact that the sample was manageable but representative, which does not affect the generalizability (Etikan, Musa, & Alkassim, 2016).

3.4. Sampling Technique

Purposive sampling was used to select the firms which are most informative and relevant to this study. Such a non-probability sampling technique is applicable in studies in which the emphasis is on a particular attribute- in this case, the firms that report under both fair value and historical cost regimes and where randomness of the general population is not a major factor in the research findings (Palinkas et al., 2015).

3.5. Method of Data Collection

The study relied entirely on secondary data derived from annual financial statements of the selected firms. These reports were obtained from the official websites of the Nigerian Stock Exchange and the firms' investor relations portals. Secondary data sources were preferred due to their reliability, standardized reporting under IFRS guidelines, and historical availability (Saunders, Lewis, & Thornhill, 2019).

3.6. Method of Data Analysis

The analysis was conducted using STATA statistical software, leveraging multiple linear regression techniques to assess the relationship between the measurement method (fair value vs historical cost) and firm performance indicators. The Maximum Likelihood Estimation (MLE) approach was applied to enhance the accuracy of parameter estimation in the presence of potential model complexities. Additionally, a pooled probit regression model was used to estimate the effect of the independent variables on binary or categorical dependent outcomes.

Results were presented in tabular formats for clarity and ease of interpretation. The standard decision rule was applied: statistical significance was determined at a 5% level ($p \leq 0.05$). Hypotheses were accepted or rejected based on the computed p-values relative to this threshold.

3.7. Model of Specification

The general model of the study is

$$FVM: a_0 + a_2 PROF + a_2 INVV + a_3 FR + \epsilon$$

Where:

FVM = Fair Value Measurement

$PROF$ = Profitability

$INVV$ = Inventory Valuation

FR = Financial Reporting

a_0 = Intercept

$a_2 - a_3$ = Parameters

ϵ = Error term

The parameters of the models are estimated using STATA computer software.

4. Results

4.1. Presentation and Analysis of Data

4.1.1. Presentation of Data

Research Data

Table 1 Financial Data for selected companies

Company	CROID	Fy	Net income	Total asset at fair value	Total inventory at fair value	Roa
Guiness plc	1	2010	6,087,665,000	5,087,665,000	34,675,998	0.005696
Guiness plc	1	2011	8,071,850,000	6,071,850,000	50,176,000	0.006216
Guiness plc	1	2012	81,561,050,000	31,561,050,000	13,034,000	0.00016
Guiness plc	1	2016	8,129,149,000	1,129,149,000	127,931,000	0.015737
Guiness plc	1	2017	8,275,826,000	4,275,826,000	127,325,000	0.015385
Guiness plc	1	2019	8,628,891,000	2,628,891,000	337,670,000	0.039132
PZ couson	2	2019	7,655,574,000	5,655,574,000	586,208,000	0.076573
PZ couson	2	2013	624,000,619,000	633,000,619,000	831,088,716,000	1.331872
PZ couson	2	2014	280,477,742,000	347,477,742,000	400,010,823,000	1.426177
PZ couson	2	2015	963,441,000,000	369,441,000,000	123,040,000,000	0.127709
PZ couson	2	2016	1,124,875,000,000	4,124,875,000,000	111,567,000,000	0.099182
PZ couson	2	2017	1,611,087,000,000	2,611,087,000,000	234,153,000,000	0.145339
Burger plc	3	2018	1,475,441,000,000	2,475,441,000,000	535,016,000,000	0.362614
Burger plc	3	2019	28,006,505,000	82,006,505,000	7,875,622,000	0.281207
Burger plc	3	2013	32,663,299,000	23,663,299,000	5,333,970,000	0.163302
Burger plc	3	2014	49,818,490,000	71,818,490,000	3,900,779,000	0.0783
Burger plc	3	2015	55,477,999,000	55,477,999,000	1,214,741,000	0.021896
B.O.C Gases Nig	4	2016	83,161,837,000	83,161,837,000	51,226,232,000	0.615982
B.O.C Gases Nig	4	2017	91,240,640,000	57,240,640,000	1,948,617,000	0.021357
B.O.C Gases Nig	4	2018	67,325,232,000	48,325,232,000	5,875,736,000	0.087274
B.O.C Gases Nig	4	2019	67,423,536,000	88,423,536,000	1,344,864,000	0.019947
B.O.C Gases Nig	4	2013	71,526,871,000	54,526,871,000	2,205,933,000	0.030841
B.O.C Gases Nig	4	2014	70,376,125,000	90,376,125,000	9,209,246,000	0.130858

Source: Extracted from various Annual Reports

4.2. Analysis and Interpretation of Results

Table 2 presents descriptive statistics for 105 observations. Fair Value Measurement (FVM) had a mean of 2.49 (SD = 1.20), with values ranging from 0.75 to 9.75. Profitability averaged 3.75 (SD = 1.70), Inventory Valuation 2.91 (SD = 0.64), and Timely Financial Reporting 3.81 (SD = 0.39). Maximum and minimum values varied across variables. Tests for skewness and chi-square suggest that the variables follow a normal distribution at the 5% significance level, validating the suitability of parametric analyses.

Table 2 Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max	p(skewness)	Prob>Chi ²
FVM	105	2.48	1.2047	0.75	9.75	0.0000	0.0000
PROF	105	3.75	0.7017	1	4	0.0000	0.0000
INVV	105	2.91	0.6383	2	4	0.2980	0.0000
FR	105	3.81	0.3943	3	4	0.0000	0.0000

Source: Researchers Computation Using STATA (2022)

Table 3 Correlation Matrix

	FVM	PROF	INVV	FR
FVM	1.000			
PROF	-0.0187	1.0000		
INVV	-0.0754	-0.1550	1.0000	
FR	0.1438	0.3742	-0.2731	1.0000

Source: Researchers Computation Using STATA (2022)

Table 3 reveals mixed correlations among variables. Fair value measurement is negatively associated with profitability and inventory valuation but shows a positive link with financial reporting. None of the explanatory variables exhibit high intercorrelation, indicating that multicollinearity is not a concern in the model's structure.

Table 4 Regression Results on Profitability and Fair value measurement

PROF	Coef.	Std.Error.	Z	p>/z/
FVM	-0.1521	0.1891	-0.80	0.021

Source: Researcher's computation STATA (2022).

Number of obs = 105

LR Chi2 (1) = 0.58

Prob > Chi2 = 0.0066

Pseudo R2 = 0.01056

Table 4 indicates a low pseudo-R-squared value (0.01056), suggesting limited explanatory power of the model. However, the model remains statistically valid, as evidenced by the chi-square p-value (0.0066), which confirms the overall significance of the regression for estimating relationships among the variables under investigation.

Table 5 Regression Result on Inventory valuation and Fair value measurement

PROF	Coef.	Std.Error.	Z	p>/z/
FVM	-0.10105	0.1479	-0.71	0.00

Source: Researcher's computation STATA (2022).

Number of obs = 105

LR Chi2 (1) = 0.52

Prob > Chi2 = 0.0018

Pseudo R2 = 0.0618

Table 5 reveals a low pseudo-R-squared value of 0.0618, indicating limited explanatory strength. Nonetheless, the model remains statistically significant overall, as supported by the chi-square p-value of 0.0018. This suggests that, while other influencing factors exist, the model is still valid for drawing general inferences.

Table 6 Regression Result on Financial reporting and Fair value measurement

PROF	Coef.	Std.Error.	Z	p>/z/
FVM	0.10524	0.4036	1.105	0.006

Source: Researcher's computation STATA (2022)

Number of obs = 105

LR Chi2 (1) = 3.51

Prob > Chi2 = 0.0010

Pseudo R2 = 0.0361

Table 6 reports a pseudo-R-squared value of 0.0361, indicating that the explanatory variable explains only a small portion of the variance in the dependent variable. Despite this low explanatory power, the model as a whole is statistically significant, as evidenced by the chi-square p-value of 0.0010. This suggests that, although other unaccounted factors influence the outcome, the model remains useful for drawing inferences related to the research question.

4.3. Test of Hypotheses

To evaluate the hypotheses, regression analysis was employed, utilising both the individual significance test (z-test) and the overall model significance test (chi-square test). The model's goodness of fit was assessed using the coefficient of determination. All computations and statistical estimations were performed using STATA software.

4.3.1. Significance Level

A 5% level of significance was adopted for hypothesis testing. This threshold is commonly applied in management and behavioural science research to determine statistical relevance.

4.3.2. Decision Rule

If the computed p-value is less than or equal to 0.05, the null hypothesis is rejected in favour of the alternative. Conversely, if the p-value exceeds 0.05, the null hypothesis is retained.

4.3.3. Hypothesis 1

H_0 : Fair value measurement does not significantly influence the profitability of quoted firms.

H_1 : Fair value measurement significantly influences the profitability of quoted firms.

Table 7 Regression Results on Profitability and Fair value measurement

FVM	Coefficient	z-test statistic	p-value	R-squared	Chi-sq
PROF	-0.1521	-1.80	0.021	0.0456	0.58 (0.0066)

Source: Extracted from STATA Computations

4.4. Decision

The coefficient of -0.1521 suggests a significant negative relationship between profitability and fair value measurement ($p = 0.021$). This supports the alternative hypothesis, indicating that fair value measurement significantly affects profitability.

4.4.1. Hypothesis II

H_0 : Fair value measurement has no effect on inventory valuation.

H_1 : Fair value measurement affects inventory valuation.

Table 8 Regression results on Inventory valuation and Fair value measurement.

FVM	Coefficient	z-test statistic	p-value	R-squared	Chi-sq
PROF	-0.1045	-1.71	0.00	0.0618	0.52 (0.0018)

Source: Extracted from STATA Computations

4.5. Decision

The coefficient of -0.10105 reveals a significant negative relationship between inventory valuation and fair value measurement ($p = 0.000$). This supports the alternative hypothesis, confirming that fair value measurement significantly influences inventory valuation.

4.5.1. Hypothesis III

H_0 : Fair value measurement does not affect financial reporting.

H_1 : Fair value measurement significantly affects financial reporting.

Table 9 Regression results on financial reporting and Fair value measurement

FVM	Coefficient	z-test statistic	p-value	R-squared	Chi-sq
PROF	0.6724	1.67	0.006	0.0361	3.51 (0.0010)

Source: Extracted from STATA Computations

4.6. Decision

With a coefficient of 0.10524, the results show a significant positive relationship between financial reporting and fair value measurement ($p = 0.006$). This supports the alternative hypothesis and confirms that fair value measurement significantly influences the quality of financial reporting among quoted firms.

5. Discussion of Findings

This study assessed the relationship between fair value measurement and profitability determination among listed manufacturing firms in Nigeria. The descriptive statistics confirmed that most variables were normally distributed at the 5% significance level. The correlation matrix revealed both positive and negative associations among the variables, with no indication of multicollinearity, supporting the reliability of the model.

The regression results indicate three key findings:

First, profitability exhibited a significant negative relationship with fair value measurement (coefficient = -0.1521, $p = 0.021$), suggesting that increased use of fair value accounting may correspond with reduced profitability levels. Second, inventory valuation also showed a significant negative impact on fair value measurement (coefficient = -0.10105, $p = 0.000$), implying that changes in inventory valuation practices could influence how firms apply fair value principles.

Third, financial reporting demonstrated a significant positive effect (coefficient = 0.10524, $p = 0.006$), indicating that fair value measurement contributes to more timely and relevant financial disclosures.

Overall, the findings highlight the complex influence of fair value measurement across financial dimensions and reinforce its growing relevance in the financial reporting framework of manufacturing firms.

6. Conclusion and Recommendations

This study explored the relationship between fair value measurement and profitability among listed manufacturing firms in Nigeria. Findings indicate that fair value significantly influences profitability, inventory valuation, and financial reporting. The evidence suggests that using fair value provides a more accurate reflection of financial health than historical cost. Incorporating inventory costs enhanced the depth of analysis, and results confirm that depreciation and taxation also play critical roles. Fair value proves more reliable during inflationary periods, supporting investor decisions and regulatory expectations. Future studies should explore how valuation methods influence share prices and investigate causes behind differences in reported profits and expenses.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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