

FAIR VALUE ACCOUNTING AND FINANCIAL PERFORMANCE OF LISTED CONSTRUCTION COMPANIES IN NIGERIA

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ABSTRACT

The study examined fair value accounting and financial performance of listed construction companies in Nigeria. The objectives of the study among others where; examine the relationship between cost approach and return on equity of listed construction companies in Nigeria. examine the relationship between income approach and return on equity of listed construction companies in Nigeria. examine the controlling influence of firm size in the relationship between investigate fair value accounting and financial performance of listed construction companies in Nigeria. The study employed the implementation of the expo facto design. The population and sample size of the study is the six (6) listed construction companies with complete financial statements in the Nigerian stock exchange during the period 2011-2020 (10) years. The study emphatically employed the use of secondary data. The formulated research questions were analyzed with descriptive statistics. The hypotheses were tested using the Ordinary Least Square (OLS) Model regression analysis with the aid of E-view (10). The findings of the study among others were that; there is negative and insignificant relationship between cost approach and return on equity of listed construction companies in Nigeria. There is significant relationship between income approach and return on equity of listed construction companies in Nigeria. The study recommends that; appointing experienced accountants and financial managers in the application of fair value standards (cost approach) to increase return on asset deficits in listed construction companies in Nigeria. Holding seminars, conferences and special education programs in relation to fair value to improve the awareness of management and employees of construction and real estate industry in Nigeria.

Keywords: fair value accounting, financial performance, cost approach, income approach and return on equity and firm size.

INTRODUCTION

Financial reporting under IFRS is anchored on the principle of Fair Value (Mark-to-Market) (IFRS 13) as against the historical cost accounting (HCA) which the old GAAP, i.e. International Accounting Standard (IAS) promoted (Matiş & Bonaci, 2018). Historical cost accounting which has been in practice before the introduction of fair value accounting (Karen & Alan, 2011), is the traditional method of recording assets (liabilities) at their original cost. The stable measuring unit assumption is the basis of this valuation method i.e. assets and liabilities may be shown at their initial cost of purchase as if no change in value has occurred since the date of acquisition (Bessong & Charles, 2012). The balance sheet value of the item may, therefore, differ from the real value. This method of accounting compares the sales revenue with the historical cost of the asset to determine the profit. (Meigs, 2014). It is not the case with fair value.

Hence, a lot of controversies has risen on the usefulness of fair value accounting in providing transparency and whether it leads to undesirable actions on the part of firms. In as much as investors want fair value information to better determine the true value of their investments, they also wish to see the historical cost information that provides a measure of cash flows and aids forecasting of financial performance and position. An argument against fair value accounting is the induced volatility of earnings if changes in fair values are reported in earnings. Some researchers believe that this volatility of earnings may not correlate to management's performance, as such,

making it more difficult for users to predict future performance. Benston (2016), gave credence to this stating that Enron's use of fair-value accounting was substantially responsible for its demise. Also remarked that the Enron case highlights the problems a company may face after applying fair value because it complicates the situation and makes managerial fraud hard to detect. The application of fair value accounting pads the financial statements with unrealized gains and losses that impairs income statement and thus understates or overstates performance.

Adegboyegun et al (2020), opined that fair value is the price obtained or amounts paid for selling an asset or for transferring of liability between market participants in an orderly transaction at a particular date. Obigabemi et al. (2016) in other words, it is a financial action used in order to generate higher sales, profitability and worth of a business entity for its shareholders through managing its current and non-current assets, financing, equity, revenues and expenses.

Construction firms use huge resources in their operations, such as machine, materials, money, and technology, which are characterized with complex methods of carry out their activities. Most construction firms usually have business dealings with their clients in arm's length (Agadoni, 2018). Both auditors and users of financial statements, including credit portfolio managers, will need to place greater emphasis on understanding how assets and liabilities are measured and how reliable these valuations are when making decision based on them (Bies, 2015). Typically, the application of fair value accounting would make companies in a transaction to reevaluate the historical value of assets and liabilities even in volatile market conditions, thereby creating large swings in the value of those assets and liabilities (Power, 2010). Besides, there could negative trends in the transaction. This would lead to downward valuations that could trigger selling that is unnecessary because of the volatility of the market and result in reduction in the value of net profits as the historical cost of asset may be ignored (Wallison, 2019).

Statement of the Problem

According to Ahmed (2019), the reported value of assets and liabilities in the statement of financial position (Balance Sheet) are unrealistic. This involves value of fixed assets and cost of materials which create the following problems: inadequate provision for replacement of assets which may lead to liquidity problem during the period of replacement. The cost of sales will be understated in the sense that historical cost fails to provide for the replacement of items sold. Also, the need for more working capital to finance understated stock and the real value of debtors decreases overtime. Thus, in light of the concept and application of the fair value. It is considered the best approach to the comprehensive identification of assets and liabilities.

Thus, in the light of the above problems and the importance in finding a lasting solution for reporting assets and liabilities of companies. This researcher seeks to fill the gap on the study titled fair value accounting and financial performance of listed construction companies in Nigeria. Secondly, to statistically accept, debunk or reconcile the inconsistency in existing empirical studies in developed economies which are often generalized to developing economies to close the knowledge gap. Thirdly, by deviating from the concentrated manufacturing and financial (banking) sector to focusing on the construction firms of Nigeria in other to fill the gap of analysis scope gap. Thus, it on the above gaps noted, that incited the researcher in writing on fair value accounting and financial performance of listed construction companies in Nigeria in order to determine their relationship.

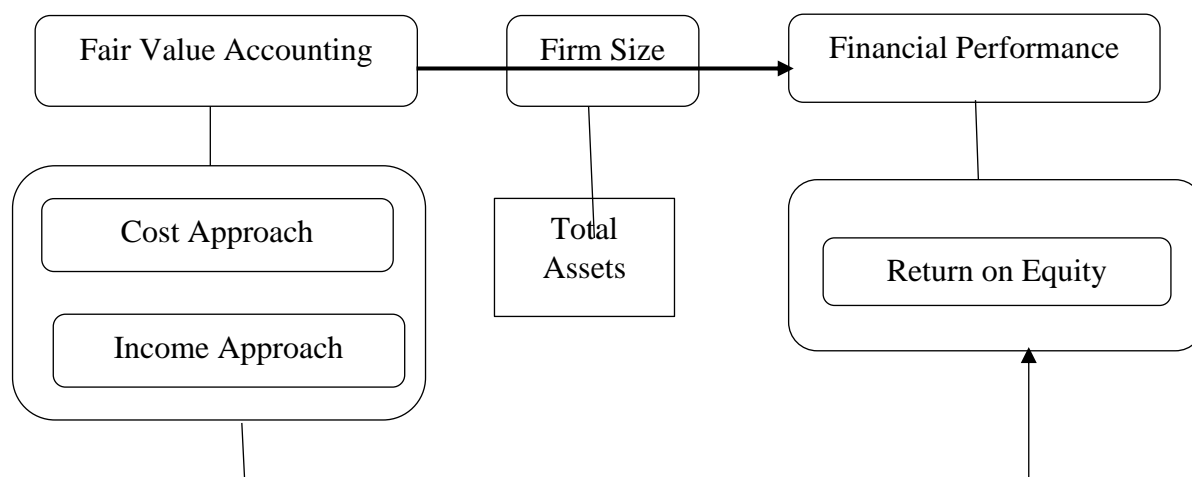


Figure 1 Conceptual Framework model

Aim/ Objectives of the Study

The main aim/objective of this study is to investigate fair value accounting and financial performance of listed construction companies in Nigeria. The specific objectives include the following to:

1. examine the relationship between cost approach and return on equity of listed construction companies in Nigeria.
2. examine the relationship between income approach and return on equity of listed construction companies in Nigeria.
3. examine the controlling influence of firm size in the relationship between investigate fair value accounting and financial performance of listed construction companies in Nigeria.

Research Hypotheses

The following null hypotheses were tested at a 0.05 level of significance.

- Ho₁ There is no significant relationship between cost approach and return on equity of listed construction companies in Nigeria.
 Ho₂: There is no significant relationship between income approach and return on equity of listed construction companies in Nigeria.
 Ho₃: Firm size does not have significant controlling influence in the relationship between fair value accounting and financial performance of listed construction companies in Nigeria.

CONCEPTUAL FRAMEWORK

Fair Value Accounting

The "fair value" is an economic term before it is a tool for accounting measurement, and its recent entry into the accounting world was a reflection of the development of economic theory in particular, in light of the tremendous economic developments in communications, technology and the metal trade. This is an approach to financial reporting whereby profits are measured by comparing revenue with the current replacement cost of the assets consumed in the earning process. The logic of this approach lies in the concept of the going concern. It recognizes in the income statement, the cost which a going concern actually has to pay to replace its expiring assets (Meigset, 2012). They went on to say that the profit figure resulting from FVA closely parallels the

maximum amount which a business can distribute to its owners and still be able to maintain the present size and scale of its operations.

Meigs (2012) stated that fair value accounting (FVA) is concerned with the value of net asset to the business and combines replacement cost, realizable value and present value that should be attached to such assets. They went further to state that FVA is a modification of historical cost profit to arrive at the surplus after allowing for the impact of price changes on the funds needed to continue the existing business and to maintain its operating capacity, whether financed by share capital or borrowing.

The International Standard Accounting Board's (IASB) position on fair value was published in International Financial Reporting Standard 13-Fair value measurement, which was premised on the following concepts (Horton, 2019).

- Active Market: That is a market in which transactions for the asset or liability take place with sufficient frequency and volume to provide pricing information on ongoing basis.
- Exit Price: The price that would be received to sell an asset or paid to transfer a liability.
- Highest and Best Use: The use of a non-financial asset by market participants that would maximise the value of the asset or the group of assets and liabilities within which the asset would be used.
- Most Advantageous Market: the market that maximises the amount that would be received to sell the asset or minimises the amount that would be paid to transfer the liability after taking into account transaction cost and transport costs.
- Principal Market: the market with the greatest volume and level of activity for the asset or liability. (Deloitte, 2013).

Fair value accounting is therefore, a valuation concept which combines the concepts of replacement cost at realizable value in determining whether selling price should be used for the purpose of establishing the value of an asset to the business.

Cost Approach

Osioma (2011), the cost approach reflects the amount that would be required currently to replace the service capacity of an asset. This approach is often referred to as current replacement cost and is typically used to measure the fair value of tangible assets such as plant and equipment. From the perspective of a market participant seller, the price that would be received for the asset is based on the cost to a market participant buyer to acquire or construct a substitute asset of comparable utility, adjusted for obsolescence. Obsolescence is broader than depreciation and encompasses: Physical deterioration; functional/technological obsolescence; and economic obsolescence. These three approaches are consistent with generally accepted valuation methodologies used outside financial reporting.

Paul (2019), The cost approach involves two approaches to determining fair value – the cost of reproduction and the cost of replacement. When the cost approach is applied, the fair value of the asset is based on what it would cost a market participant buyer to acquire or construct a substitute asset of comparable utility, adjusted for obsolescence (i.e., its current replacement cost). The approach is based on the rationale that a market participant buyer would not pay more for an asset than the amount for which it could replace the service capacity of that asset. (IFRS 13: B9). For the purpose of measuring an asset's current replacement cost, obsolescence encompasses (1) physical deterioration, (2) functional (technological) obsolescence, and (3) economic (external) obsolescence; obsolescence is a broader concept than depreciation for financial reporting purposes or tax purposes. (IFRS 13: B9]

Income Approach

Obigabemi et al. (2016), the income approach converts future cash flows or income and expenses to a discounted amount. A fair value using this approach will reflect current market expectations about future cash flows or income and expenses. Valuation techniques include: Present value

techniques e.g., discount rate adjustment rate technique and expected present value technique; Options pricing models e.g. Black-Scholes-Merton; Multi-period excess earnings method; and Relief from royalties' method. The standard does not limit the valuation techniques that are consistent with the income approaches. It provides some application guidance, but only in relation to present value techniques.

The income approach to fair value measurement estimates the fair value of an entity, intangible assets, or other assets and liabilities by calculating the present value of future cash flows that the entity or asset is expected to generate over its lifetime. The cash flows are discounted to the measurement date at a rate of return that is required to compensate for the risk associated with receipt of the future cash flows. Also known as the cash value method, the basis of this approach is the discounting of all relevant cash flows with a risk-equivalent interest rate on the day of valuation. This, in combination with values for the amount and duration of the cash flows, allows you to calculate the fair value. Here are the following procedures for doing so (Rosikah, et al., 2018).

Immediate cash flow method: The value is calculated using future profit earnings which can then be assigned to the asset in question. This occurs directly in the form of cash flows. Relief from royalty method: Fair value is determined using the relief from royalty method through future royalty fees that need to be paid to a third party in return for an asset. To do this, the license rate in question is multiplied by the turnover (Ahiauzu & Asawo, 2016). Dietrich (2013). Residual value method: Central to this method is that the asset to be valued is assigned any income as a residual income. For this it is necessary for the cash flows of all other assets (tangible and intangible) are subtracted from the overall income. Excess earnings method: The excess earnings method involves determining the changes in future cash flows based on cost savings or revenue, which is generated through intangible assets. In order to determine this, the cash flows of similar companies are consulted wherein the asset to be examined does not exist.

Financial Performance

Financial performance (reflected in profit maximization, maximizing return on assets and maximizing shareholder return) is based on the firm's efficiency (Barbosa & Louri, 2015). According to other authors (Barbosa and Louri 2015; Vernimmen 2019), the assessment of financial performance is based on the return on investment, residual income, earnings per share, dividend yield, price/earnings ratio, growth in sales, market capitalization, etc. Financial performance is a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. It is a general measure of a firm's overall financial health over a given period of time and can be used to compare similar firms across the same industry. Kaplan and Norton (2015) argue that, performance can also be assessed on a balanced scorecard of critical success factors through four perspectives financial, customers, internal business processes and learning and growth.

The measurement of performance is dependent upon the information introduced in the measurement system and the instruments employed. The classical indicators used in financial analysis to measure performance have been the return on investment, leverage, capital efficiency, liquidity, cash flow, inventory turnover, receivables turnover ratio. According to Richard (2019), corporate performance comprises the actual output or results of an organization as measured against its intended outputs (or goals and objectives). In organization performance encompasses three specific areas of firm outcomes: financial performance (profits, return on assets, return on investment, etc.); product market performance (sales, market share, etc.); and shareholder return (total shareholder return, economic value added, etc. Organizational effectiveness captures organizational performance plus the myriad internal performance outcomes normally associated with more efficient or effective operations and other external measures that relate to considerations that are broader than those simply associated with economic valuation (either by

shareholders, managers, or customers), such as corporate social responsibility (Kenton & Scott, 2020).

Measurement of Financial Performance

a. Return on Equity (ROE)

The return on equity ratio or ROE is a profitability ratio that measures the ability of a firm to generate profits from its shareholder's investments in the company (Jermanis, 2016). A business that has a high return on equity is more likely to be one that is capable of generating cash internally (Horton, 2019). Return on equity (ROE) measures the rate of return on the ownership interest (shareholders' equity) of the common stock owners. It measures a firm's efficiency at generating profits from every unit of shareholders' equity (also known as net assets or assets minus liabilities). Return on equity measures a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested (Jermanis, 2016).

ROE is expressed as a percentage and calculated as: Return on Equity = Net Income/Shareholder's Equity. Net income is for the full fiscal year (before dividends paid to common stock holders but after dividends to preferred stock). Shareholder's equity does not include preferred shares. The ROE is useful for comparing the profitability of a company to that of other firms in the same industry (Mansfield, 2020).

ROE is also an indicator of how effective management is at using equity financing to fund operations and grow the company.

Formula

The return on equity ratio formula is calculated by dividing net income by shareholder's equity.

$$\text{Return on Equity Ratio} = \frac{\text{Net Income}}{\text{Shareholder's Equity}}$$

Most of the time, ROE is computed for common shareholders. In this case, preferred dividends are not included in the calculation because these profits are not available to common stockholders. Preferred dividends are then taken out of net income for the calculation.

Fair Value Accounting and Financial Performance

The use of fair value has several advantages as the users of the financial statements need appropriate, reliable and comparable information to assess the financial position of the entity and the outcome of its business, so that such information is useful for them to make economic decisions. The most important of these problems is the absence of market prices for certain assets or the market price does not reflect the fair price, In addition to the complexity of certain accounting treatments of fair value, difficult in understanding and the lack of proper application of international accounting standards occur. More than 130 countries follow the International Financial Reporting Standards (IFRS), which have been set by the International Accounting Standards Board (IASB) (Jerry, 2015). As a result, the accounting philosophy and the bodies concerned with the development, modification and development of accounting principles, concepts and principles, including the International Accounting Standards Board (IASB), have begun to replace accounting principles based on fair value with the principle of historical cost. As a result, Nigerian has adopted the International Financial Reporting Standards (IFRS). Therefore, it is necessary to reveal the reflection and impact of fair value on the financial indicators that measure the performance of Nigerian joint stock companies listed on the ASE, including the appropriateness and reliability of the financial statements, and the appropriateness of accounting information of great importance to decision-makers.

Relationship between cost approach and financial performance

The cost approach is defined as a valuation technique that reflects the amount that would be required currently to replace the service capacity of an asset (often referred to as current replacement cost). This method is often used to measure the fair value of tangible assets that are used in combination with other assets or with other assets and liabilities (Thi, 2020). When the cost approach is applied, the fair value of the asset is based on what it would cost a market participant buyer to acquire or construct a substitute asset of comparable utility, adjusted for obsolescence (i.e. its current replacement cost). The approach is based on the rationale that a market participant buyer would not pay more for an asset than the amount for which it could replace the service capacity of that asset. For the purpose of measuring an asset's current replacement cost, obsolescence encompasses (1) physical deterioration, (2) functional (technological) obsolescence, and (3) economic (external) obsolescence; obsolescence is a broader concept than depreciation for financial reporting purposes or tax purposes. Cost basis estimates what it would cost to replace a structure, deducting, depreciation, and adds in the value of the land (Kim, 2019).

Relationship between income approach and financial performance

The income approach converts future amounts (e.g. cash flows or income and expenses) to a single discounted amount taking into account, inter alia, risk and uncertainty. When the income approach is used, the fair value measurement reflects current market expectations about those future amounts. Examples of valuations techniques consistent with income approach given by IFRS 13 include present value techniques, option pricing models and the multi-period excess earnings method (IFRS 13) (Tudor & Bonaci, 2011).

The income approach, sometimes referred to as the income capitalization approach, is a type of real estate appraisal method that allows investors to estimate the value of a property based on the income the property generates. Acquisition and construction of real estate that is accounted for as investment property is governed by the requirements of IAS 40, 'Investment property', IAS 16, 'Property, plant and equipment', and IAS 23, 'Borrowing costs'. The requirements of IAS 17, 'Leases', apply when an entity leases out the real estate property or an entity does not elect to classify its property interest under an operating lease as investment property. The requirements of IAS 18, 'Revenue', apply for revenue generated by a real estate entity other than lease income (Kim, 2019).

Theoretical Framework

Asset Theory

The study is anchored on asset theory, Bessong and Charles (2012), state that asset is any object of value either tangible or intangible that can be consumed or appreciated over time. Several studies such as Callen and Morel 2015; Hall and Oriani 2016, suggest that assets are recorded in their historical cost basis as a result of consistency and free of misspecification in comparison to valuations using fair value. However, in estimating the historical cost of an asset, all incidental costs incurred in improving the asset should be added back to the historical cost whereas simple maintenance costs should be treated as ordinary expense. In the study by Wier, et al (2015), the original acquisition cost which is employed as the historical cost should be adjusted to account for changes in price level between the acquisition and valuation period. Bessong and Charles (2012) argue that although historical costs of assets are duly recorded, there exist some level of difficulty in defining the historical cost components of certain properties and whether those assets should be treated using first-in-first-out approach or last-in-first-out approach. They further notice that such a problem becomes more severe with unfinished goods. Profitability Theory Profitability is the ability of a company or an individual to earn profit from its business activities and make adequate returns to the investors, the higher the profit ratio per Naira sales made the better (Nwude, 2014).

Related Empirical Studies

Chukwu and Akpeckon (2019), examined the relationship between fair value accounting and financial performance of manufacturing companies in Nigeria. The study adopted a descriptive and quasi experimental design in a bid to achieve a holistic evaluation of the effect of fair value accounting on the financial performance of manufacturing companies in Nigeria. The data employed in the study was generated from the annual reports of ten (10) selected manufacturing companies listed on the Nigeria Stock Exchange from 2018-2010 (representing historical cost regimes) and 2014-2016 (representing fair value regimes). The paper formulated four hypotheses. It tested the hypotheses using least square method of multiple regression. The result showed that fair value accounting has a positive and significant impact on both profit before tax and return on assets. It is therefore recommended that fair value accounting should be adopted in order to achieve a more realistic measurement of financial performance the one under the historical cost basis.

Gonzalo et al (2011), assessing the impact of fair-value accounting on financial statement analysis: a data envelopment analysis approach. This paper attempts to shed some light on this issue by restating the financial investments and tangible fixed assets of a sample of 85 Spanish insurance companies, applying fair value instead of historical-cost-based valuations. We find that the numbers on the face of the financial statements change considerably and observe that the magnitude of these changes varies between companies and classes of assets. However, only in a few cases does a change in the valuation basis lead to a relevant change in DEA scores; within our sample, the overall assessment of companies with regard to efficiency and profitability remains largely the same under both valuation bases. These findings seem to indicate that a change from historical-cost to fair-value accounting could alter analyst perceptions of a limited number of companies but likely will not have a major impact on the appraisal of the majority of them.

Amaefule, et al (2018), comparatively examined the effect of fair value measurement (FVM) and historical cost accounting (HCA) on the performance of quoted firms in Nigeria. Data were sourced from the online published accounts of ten quoted firms for a period of ten years segregated into HCA regime (2007 – 2011) and FVM regime (2012- 2016). Descriptive Statistics (Mean) and Inferential Statistics (Paired sample t-test) were employed in the analysis of the data collected with the aid of Statistical Package for the Social Sciences (SPSS) version 21. Findings from the analysis revealed that a positive but insignificant difference exists in the profit after tax of the firms between the FVM and HCA regimes; and that fair value measurement exerts negative but insignificant effect on the earnings per share and return on equity of the firms. The study thus concluded that fair value measurement as it is being practiced and implemented by Nigerian firms, exerts no significant change in firms' performance as was reported under the HCA regime. It therefore recommended, among other things, that the International Accounting Standards should review the current provisions on the fair value practices in the International Financial Reporting Standards to ensure improved operations of firms across national borders.

Bui (2020), impact of factors on fair value accounting: empirical study in Vietnam. This study applied quantitative re-search methods and collected data by sending questionnaires to 127 accountants and directors of listed companies. Particularly, binary logistic regression was conducted to investigate the extent of the impact of each factor on the adoption of fair value. The results have shown that human resources have the strongest and positive impact on the adoption of fair value, and this is followed by the benefits of fair value. Difficulties and markets negatively affect the use of fair value. Furthermore, the control variables that affect the use of fair value are sector, size and length of operation with different levels of impact. The accuracy rate of the overall predictive model is 85.8%. The findings provide guidance of the application of fair value accounting in companies and give recommendations to policy makers in establishing a legal accounting framework in Vietnam.

METHODOLOGY

The ex post facto designs were employed. The population of the study is the nine (9) listed construction companies with complete financial statements in the Nigerian Stock Exchange during the period 2011-2020 (10) years. The study employed the use of secondary data. The formulated research questions were analyzed with descriptive statistics. The hypotheses were tested using the Ordinary Least Square (OLS) Model regression analysis with the aid of E-view (10).

Table 1 Names of the Six Listed Companies

S/N	Name of Listed Company
1	Arbico Plc.[bls]
2	Julius Berger Nig.
3	SFS Real Estate Investment Trust
4	Smart Products Nigeria Plc[MRF]
5	Union Homes Real Estate Investment Trust (REIT)
6	UPDC Real Estate Investment Trust

Source: Author's computation form NSE, 2021

Operational Measurement of Variables

The aim of the study is to ascertain empirically the relationship in terms of effect that exist between audit committee on quality of earnings of listed construction companies in the Nigerian.

Table 1.1 Operational Measurement of Variables

Variable	Type of Variables	Measurement Scale	Source of Data
Cost Approach (COAP)	Dimension independent variable	Is based on the amount required to replace the service capacity of an asset (frequently referred to as current replacement cost) (Cristina & Bunea, 2019; IFRS 13).	Annual report
Income approach (INAP)	Dimension independent variable	Is based on future amounts that are converted (discounted cash flow (DCF)) to a single present amount. (Cristina & Bunea, 2019; IFRS 13).	Annual report
Return on Equity (ROE)	Measure of dependent variable	ROE is net income divided by the value of its total shareholders' equity, expressed as a percentage.	Annual report

Source: Author's conception, 2021

Model Specifications

According to Nmesirionye et al. (2019), regression analysis is concerned with the study of how one or more variables affect changes in another variable. Thus, on the basis of the theoretical framework, the study adopted the regression formula adopted in the work of with some modifications. The model is specified as:

$$Y = f(a_0 + bX_1) + Et$$

Where:

- y = Criterion variable
- f = Function
- x = Independent (explanatory) variables
- a = Intercept
- b = Slopes

In functional form, our hypotheses model are:

Where;

- CAP = Cost Approach
- IAP = Income Approach

ROE = Return on Equity
C₀ = Constant term (y intercept)
β = Coefficient of the independent variable
ū = Error term (causes of return on asset or return on equity not explained by variables in the model)

Thus, the study developed two simple variate hypotheses models:

The First Model: The first hypothesis test model; shows the relationship between return on equity and cost approach:

$$H_{01}: ROE = f(CAP) \dots \dots \dots (ii)$$

The Second Model: The second hypothesis test model; shows the relationship between return on equity and income approach:

$$H_{02}: ROE = f(IAP) \dots \dots \dots (iii)$$

To make the data uniform and easy to regress and analyses due to the fact that some of the data like firm size are in millions of thousands and others are in millions. While return on assets and earnings per shares are in ratio, the data were converted to natural logarithm (log) form as follows:

The First Model: The first hypothesis test model; shows the relationship between return on equity and cost approach:

$$H_{01}: NLROE = f(NLCAP) \dots \dots \dots (v)$$

The Two Model: The two hypothesis test model; shows the relationship between return on equity and income approach:

$$H_{02}: NLROE = f(NLIAP) \dots \dots \dots (vi)$$

Where;

NLROE = Natural logarithm of Return on Equity
NLCAP = Natural logarithm of Cost Approach
NLIAP = Natural logarithm of Income Approach

Decision Rule

If the probability value (PV) in the coefficient table is less than 0.05 alpha level, we Reject the null hypotheses and accept significant relationship.

If the probability value (PV) is greater than 0.05 alpha level, we accept the null hypothesis and accept no significant relationship.

Data Analyses and Results Interpretations

Univariate Descriptive Analysis

The following table present the summary of the descriptive statistics of the data collected for the measures of the explanatory variables dimension {cost approach (CAP) and income approach (IAP)} also of dependent variable measures {return on equity (ROE) } which containing mean, median, maximum, minimum, standard deviation, skewness and kurtosis, Jarque-Beta and its statistical probabilities are revealed.

Descriptive Analysis

	CAP	IAP	ROE	FRMSIZ
Mean	-1.07E+08	127.7596	11.87396	59553192
Median	-1.03E+08	35.29994	16.82504	53015555
Maximum	1.10E+08	155.7177	35.02000	90848082
Minimum	-2.32E+08	-6264758.	-35.04000	19657617
Std. Dev.	1.08E+08	5491209.	23.80832	23237064
Skewness	0.536507	1.754243	-0.643820	0.128058
Kurtosis	2.727709	6.120399	2.295719	2.181027
Jarque-Bera	0.510625	9.185986	0.897512	0.306797

Probability	0.774674	0.010123	0.638422	0.857788
Sum	-1.07E+09	12775960	118.7396	5.96E+08
Sum Sq. Dev.	1.05E+17	2.71E+14	5101.526	4.86E+15
Observations	60	60	60	60

Source: Data Result from E-view (v.12), 2021

Table shows that the descriptive statistics of the data collected for the independent variable's dimensions of the study. The cost approach (CAP), and income approach (IAP) have a mean value of -1.07E+08 and 127.7596 respectively, also, median value of -1.03E+08 and 35.29994 respectively, also the maximum and minimum values of cost approach (CAP) were 1.10E+08 and -2.32E+08 and income approach (IAP) were 155.7177 and -6264758. On the other hand, the standard deviation values of 1.08E+08 and 5491209 signifying that the data deviate from the mean values of the two study dimensions, which implies that there is a wide dispersion of the data from the means because the standard deviation is closed to the mean.

The table also indicates the three measures of the criterion variable of the study that return on equity (ROE) have a mean value of 11.87396. The maximum and minimum values of return on equity (ROE) was 35.02000 and -35.04000, On the other hand, the standard deviation values of 5.926652, 23.80832 and 112.4457 signify that the data deviates from the mean values of the three study measures, which implies that there is a dispersion of the data from the mean because the standard deviation is close to the mean.

The table also indicates that the moderator variable of the study, exchange rate (FRMSIZ), has a mean value of 59553192. Also, the median value of 53015555, the maximum and minimum values of 90848082 and 19657617. On the other hand, the standard deviation value of 23237064, which signifies that the data deviates from the mean values of the three study measures because the standard deviation is close to the mean.

The first Model: The first hypothesis test model; shows the relationship return on equity and cost approach:

$$H_{01}: ROE = f(CAP) \dots \dots \dots (v)$$

Model 1

Dependent Variable: ROE
Method: Least Squares
Date: 10/07/21 Time: 13:37
Sample: 2011 2020
Included observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CAP	-1.26E-07	6.38E-08	-1.971524	0.0841
C	25.29972	9.449397	2.677390	0.0280
R-squared	0.626991	Mean dependent var	11.87396	
Adjusted R-squared	0.642864	S.D. dependent var	23.80832	
S.E. of regression	20.71646	Akaike info criterion	9.076591	
Sum squared resid	3433.375	Schwarz criterion	9.137108	
Log likelihood	-43.38296	Hannan-Quinn criter.	9.010204	
F-statistic	3.886906	Durbin-Watson stat	1.588446	
Prob(F-statistic)	0.000145			

Source: Researcher's Statistical Computation from E-view (v.10), 2021.

From the table output above, the coefficient of CAP and ROE is 1.26E-07. This value implies that for every unit increase in ROE is predicted to be accompanied by a 1.26E-07-unit decrease in CAP.

The T-statistics is above 1, which is sufficient statistical evidence of significant @ 1% T-stat confidence level. The Prob value of CAP is 0.0841, which means the relationship between CAP and ROE is statistically not significant at the 5 percent significant level.

The result also showed that the R², which measures the goodness of fit, is 0.626991, meaning that 62 percent of the variation in the return on equity can be explained by the dimension of the independent variables. The result indicates that the model is proper and adequate for the study. The model's goodness of fit and appropriateness is also supported by the outcomes of F-statistics and probability of F-statistics of 3.886906 and 0.084145 respectively. The Durbin-Watson statistics of 1.588446 also indicate the absence of serial autocorrelation.

The Two Model: The second hypothesis test model; shows the relationship return on equity and income approach:

$$H_{02}: ROE = f(IAP) \dots \dots \dots (vi)$$

Model 2

Dependent Variable: ROE
Method: Least Squares
Date: 10/07/21 Time: 13:40
Sample: 2011 2020
Included observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
IAP	4.85E-07	1.52E-06	3.318545	0.0082
C	11.25403	8.170545	1.377390	0.2057
R-squared	0.612525	Mean dependent var	11.87396	
Adjusted R-squared	0.610909	S.D. dependent var	23.80832	
S.E. of regression	25.09390	Akaike info criterion	9.459983	
Sum squared resid	5037.629	Schwarz criterion	9.520500	
Log likelihood	-45.29991	Hannan-Quinn criter.	9.393596	
F-statistic	51.01471	Durbin-Watson stat	2.009390	
Prob(F-statistic)	0.008229			

Source: Researcher's Statistical Computation from E-view (v.10), 2021.

From the table output above, the coefficient of IAP and ROE is 4.85E-07. This value implies that for every unit increase in ROE is predicted to be accompanied by a 4.85E-07-unit decrease in IAP. The T-statistics is above 1, which is sufficient statistical evidence of significant @ 1% T-stat confidence level. The Prob value of IAP is 0.0082, which means the relationship between IAP and ROE is statistically significant at the 5 percent significant level.

The result also showed that the R², which measures the goodness of fit, is 0.626991, meaning that 61 percent of the variation in the return on equity can be explained by the dimension of the independent variables. The result indicates that the model is proper and adequate for the study. The model's goodness of fit and appropriateness is also supported by the outcomes of F-statistics and probability of F-statistics of 51.01471 and 0.008229 respectively. The Durbin-Watson statistics of 2.009390 also indicate the absence of serial autocorrelation.

Analysis on the Moderating Variable

H₀₃: Firm size has no moderate influence on the relationship between fair value accounting and financial performance of listed construction companies in Nigeria.

Partial Correlations Matrix
Table 4.14

Correlations				
Control Variables		FVA	FINP	
FRMSIZ	Correlation	1.000	.881	
	FVA	Significance (2-tailed)	.	
		df	0	
	FINP	Correlation	.881	1.000
		Significance (2-tailed)	.008	.
		df	60	0

Source: Author's calculations using SPSS V.23

From the output of the partial correlation explains that, firm size bears a significant influence on the relationship between fair value accounting and financial performance of listed construction companies in Nigeria. The correlation coefficient of 0.881 means that, firm size positively influences the interplay of fair value accounting and financial performance as depicted by the probability level of 0.008 which is lesser than the chosen alpha level of 0.05, thus leading to the rejection of the null hypothesis and accepting the alternative hypothesis. Hence, there is significant influence of firm size in the relationship between fair value accounting and financial performance of listed construction companies in Nigeria

Summary Results Findings

Hypotheses	Coefficient	Std. Error	T-Stat	P-Value 0.05	Statistical Decision	Result
H0 ₁	1.26E-07	6.38E-08	1.971524	0.0841	Insignificant	Accepted H0 ₆
H0 ₂	4.85E-07	1.52E-06	3.318545	0.0082	Significant	Rejected H0 ₄
H0 ₃				0.008	Significant	Reject H0 ₁₀

H0₁: There is no significant relationship between cost approach (CAP) and return on equity (ROE) of construction companies in Nigeria.

H0₂: There is a significant relationship between income approach (IAP) and return on equity (ROE) of construction companies in Nigeria.

H0₃: There is significant influence of firm size in the relationship between fair value accounting and financial performance of listed construction companies in Nigeria.

CONCLUSION AND RECOMMENDATION

Thus, the study concludes that, there is negative and insignificant relationship between cost approach and return on equity of listed construction companies in Nigeria. There is significant relationship between income approach and return on equity of listed construction companies in Nigeria. There is significant influence of firm size in the relationship between fair value accounting and financial performance of listed construction companies in Nigeria. The findings of the study have important policy implications which led to making of the following recommendations that; Appointing experienced accountants and financial managers in the application of fair value standards (cost approach) to increase return on asset deficits in listed construction companies in Nigeria. Holding seminars, conferences and special education programs in relation to fair value to improve the awareness of management and employees of construction and real estate industry in Nigeria. Construction and real estate industry should concentrate on fair value accounting for financial performance.

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