

FAIR VALUE: MARKET APPROACH AND FINANCIAL PERFORMANCE OF LISTED CONSTRUCTION COMPANIES IN NIGERIA.

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ABSTRACT

The study evaluate fair value: market approach and financial performance of listed construction companies in Nigeria. The objectives of the study among others where; Describe the relationship between market approach and return on assets of listed construction companies in Nigeria. Evaluate the relationship between market approach and return on equity of listed construction companies in Nigeria. Examine the relationship between market approach and earnings per share 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 There is a significant relationship between market approach (MAP) and return on assets (ROA) of listed construction companies in Nigeria. There is a significant relationship between market approach (MAP) and return on equity (ROE) of listed construction companies in Nigeria. There is no significant relationship between market approach (MAP) and earnings per share (EPS) of construction companies in Nigeria. The study recommends that there is need to provide an environment conducive to the application of standards of fair value accounting because the market approach significantly contributes to return on assets of in listed construction companies in Nigeria. Listed construction companies should apply market approach as it enhances return on assets and return on equity.

Keywords: fair value accounting, financial performance, market approach, earnings per share, return on assets, return on equity.

INTRODUCTION

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).

Fair value in accordance with International Financial Reporting Standards (IFRS 13), fair value on the basis of an 'exit price' notion and uses a 'fair value hierarchy', which results in a market-based, rather than entity-specific, measurement defines the amount at which an asset can be exchanged or a debt settled between knowledgeable and willing parties on a purely commercial basis. The

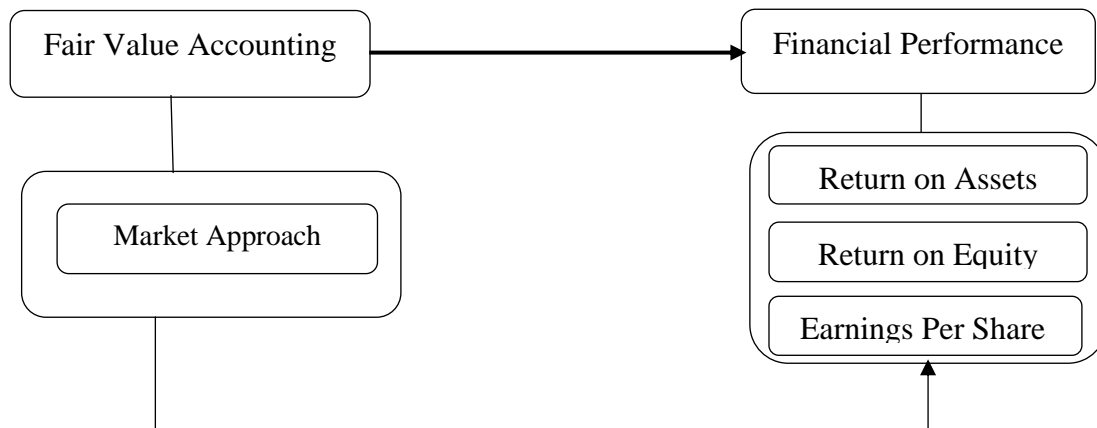
fair value is the best price at which the sale of the property (in an open market) can be made fully and unconditionally, or the corresponding cash equivalent at the valuation date, provided that there are several assumptions that the parties to the sale have sufficient information freely (Dietrich et al., 2014). There are three approaches to fair value accounting calculation, these market approach, income and cost approaches.

Chen and Boyle (2020), The market approach uses the prices associated with actual market transactions for similar or identical assets and liabilities to derive a fair value. For example, the prices of securities held can be obtained from a national exchange on which these securities are routinely bought and sold. International accounting standards have disclosed the components of the fair value definition that the fair value is determined on a given date and in accordance with changing market conditions from time to time. The definition of fair value includes "willing and informed parties", which means the willing purchaser, the buyer who is the catalyst for the purchase and not the obligor, or the excessive desire to buy at any price. The buyer makes the purchase in accordance with current market realities and expectations in this market. The seller is not forced to sell or excessive in the desire to sell at any price, this would be a catalyst to sell his investment properties at the best price can be obtained in the open market after the appropriate marketing procedures for sale, in addition to the informed parties, which means that both buyer and seller are Interested in knowledge and the knowledge of the nature and characteristics of the investment property, its actual and expected uses and the state of the market at the date of the financial position. The estimation of fair value is based on several principles. Hammad (2003), examined two principles for estimating fair value: If an active market exists, fair value is taken from the active market and not taken from others. In the absence of an active market, Methods are available under existing conditions.

Financial performance is a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. According to Agadoni (2018), financial performance is a complete evaluation of a company's overall standing in categories such as assets, liabilities, equity, expenses, revenue, and overall profitability. It is measured through various business-related formulas that allow users to calculate exact details regarding a company's potential effectiveness. Kenton and Scott (2020), typically financial performance is measured by certain parameters, such as return on assets and return on equity. Financial performance is the yardstick to assess the financial health of an organization in order to determine if it well geared, has enough liquidity and can settle its debt more effectively. In a business transaction, the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction is very relevant as none of the participants in the transaction would want to operate at a loss.

Statement of the Problem

In an extremely changing world with economic and financial developments. Reported value of assets and liabilities in the statement of financial position are unrealistic as to whether historical cost or fair value. Thus, in the light of the above problems and the importance in finding a lasting solution for reporting assets and liabilities of companies. The study deviated 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 in fair value accounting: market approach and financial performance of listed construction companies in Nigeria.



Aim/ Objectives of the Study

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

1. Describe the relationship between market approach and return on assets of listed construction companies in Nigeria.
2. evaluate the relationship between market approach and return on equity of listed construction companies in Nigeria.
3. examine the relationship between market approach and earnings per share of listed construction companies in Nigeria.

Research Hypotheses

Ho₁: There is no significant relationship between market approach and return on assets of listed construction companies in Nigeria.

Ho₂: There is no significant relationship between market approach and return on equity of listed construction companies in Nigeria.

Ho₃: There is no significant relationship between market approach and earnings per share of listed construction companies in Nigeria.

Market Approach

The market approach is a widely used valuation technique and is defined as 'uses prices and other relevant information generated by market transactions involving identical or comparable assets or liabilities. Valuation techniques consistent with the market approach use prices from observed transactions for the same or similar assets e.g., P/E and P/EBIDTA multiples. Another example of a market approach is matrix pricing, which is normally used to value certain types of financial instruments e.g., debt securities estimated using transaction prices and other relevant market information like coupon, maturity and credit rating.

As the name suggests, this is a market-orientated approach to evaluation. It involves differentiating between the use of current market prices and the use of analogies when it comes to defining fair market value. In the first case, the concrete market price serves as a guideline for determining fair value. One precondition is that when we talk about the market we are talking about an active market, for which three requirements need to be met:

- The assets or liabilities in question should be predominantly homogenous (detached from geographical or material links to any competitors).
- Generally, there should be willing buyers and sellers available.
- The prices of the assets in question should be public information.

In the second case there is no concrete market price for the asset in question, meaning that the fair value must be determined using comparable assets. In order to do this, the values to be compared are modified accordingly e.g., by making increases or reductions. Even the use of multipliers that can be linked to revenue and earnings is possible. The simple transparency of the market method make it the preferred choice when it comes to calculating fair market value. It is often the case, though, that insufficient or inadequate data makes the application of the market method impossible, as neither the specific market price nor comparable value is available. The theory behind the market approach is that the value of a business can be determined by comparing the business to similar companies for which transaction values are known. When preparing a market approach valuation, evaluators compare the sales of companies in the same industry as the subject index. Unfortunately, the details of many transactions are private, and it is oftentimes difficult to find comparable data. Also, the subject company is most likely different from the comparable companies in some way (smaller, bigger, more product diversification, etc.) that it makes it difficult to compare companies.

However, the big advantage of the market approach is that when comparable data is found, we can see exactly what the company is worth in the marketplace. Pricing multiples are then used to help determine a reasonable selling price for the subject company when comparing the company to the marketplace. The market approach is similar to using comparable sales in the process of buying or selling a home. Often, the house that is for sale is compared to similar houses in the same neighborhood that have recently sold. However, in real estate it is easy to determine the number of bedrooms and bathrooms a house has, whereas in business valuation the standard of value being used may be unclear as well as the details of the business sold.

There are essentially two market approaches to valuing a business.

The first relies on finding comparable publicly-traded companies, analyzing price/earnings ratios and other value indicators, establishing an average, and applying it to the subject company. This is obviously a very imprecise way to assess value, due in part to the fact that markets can under- or over-value companies. Also, it is hard to estimate how much the difference in multiples among similar companies is due to individual company specific factors.

The second market valuation approach is similar to the use of real estate comparable. This valuation method relies on a sales analysis of similar properties, and indicates full cash value by analyzing recent sales or offering prices of similar companies. If similar transactions are not identical to the subject business, the selling price of the comparable property is adjusted to reflect differences from the subject business just as in real estate, where value adjustments may be made on the basis of outdated design features.

There are several drawbacks to this approach. In many situations, the market may not be active enough to provide sales data on comparable properties, and there may not be credible sources to provide independent verification of value. For valuation of large, complex, income-producing properties, a thorough analysis of similar transactions is complicated; not only are there fewer of these transactions, but information related to the economic factors which influenced the decisions of buyers in those transactions is not available through public records. These types of transactions often include purchase of intangible assets such as trademarks, patents, favorable contracts, trade secrets, and customer relationships. The actual fair value of these assets is opaque to an outsider who was not involved in the sale.

To be useful for comparison purposes, the sale price of a comparable company should identify its value components tangible versus intangible assets, real versus personal property, and taxable versus non-taxable assets. Even if the appraiser can allocate the different elements of value, the complexity of factors may make the sale a less reliable indicator of enterprise value. And even if

all the necessary information is available, the process of making value adjustments to the comparables and the subject company is subjective, and thus, produces a valuation that is not as solidly defensible as one calculated via a different valuation technique.

For these reasons, the market valuation method may provide some useful data points regarding the "going rate" for a similar business at a given point in time but in many cases, it will not adequately assess the company's actual fair value. However, the market approach is sometimes used as a merger and acquisition (M&A) valuation technique. In an M&A transaction, the acquiring company often anticipates achieving some type of business synergy through the acquisition of the subject business, and as a result, is not as concerned with establishing the exact value of the subject company when negotiating the purchase. The market valuation approach is also one of the most commonly used valuation techniques in finance.

IFRS 13 defines the market approach as "a valuation technique that uses prices and other relevant information generated by market transactions involving identical or comparable (i.e. similar) assets, liabilities, or a group of assets and liabilities, such as a business" [IFRS 13.B5]. Under the market approach, the value is determined based on comparable transactions.

The valuation techniques based on market approach are: (a) valuation techniques using market multiples derived from a set of comparable [IFRS 13.B6]; and (b) matrix pricing [IFRS 13.B7], Market multiples. A market multiple expresses the value of a business or other asset in terms of its ratio to a financial, operating or physical metric. Multiples might be in ranges with a different multiple for each comparable asset or liability. When multiples are derived from a number of comparable entities, there will typically be a range of multiples calculated and the selection within the range should be based on markets' expectations (KPMG, 2011). The selection of the appropriate multiple within the range requires judgement, considering qualitative and quantitative factors specific to the measurement (Ernst & Young, 2012, pp. 108).

In the educational material on fair value measurement issued in December 2012 (updated in February 2013), IASB provides specific guidance for using valuation techniques within the market approach (IFRS Foundation, 2012, par. 42, pp. 18). Valuation multiples can be calculated either for the equity holders (i.e. equity value) or for both debt and equity holders (i.e. enterprise value). The numerator in calculating a valuation multiple is either equity value or enterprise value (EV), and the denominator is a performance measure that has to be consistent with the valuation bases in the numerator.

For example, earnings before interest and taxes (EBIT), Earnings before interest, taxes and amortisation (EBITA), Earnings before interest, taxes, depreciation and amortisation (EBITDA) and revenue performance measures provide returns to all capital providers, whether debt or equity holders. Consequently, investors would apply enterprise value to such measures, because enterprise value reflects the value to all capital providers. Similarly, a net income (profit or loss) performance measure is a measure of earnings (E) after providing the return to debt capital providers (i.e. interest payments). Therefore, it is a measure of earnings available to equity capital providers and, for this reason, investors would apply the equity value (i.e. an entity's market capitalisation, based on its quoted share price (P)) to the net income measure in a price/earnings (P/E) multiple. The same logic applies to price/book value (P/B) multiples, in which book value (B) represents the book value of an entity's shareholders' equity. Table no. 2 summarizes the advantages and disadvantages of different market multiples.

The results of estimating the fair value using the market approach may be affected by common errors, inappropriate selection of companies or inappropriate adjustments, relying on third-party data without validating, or mismatch of multiples and financial data.

Matrix pricing: This is a mathematical technique used principally to value some types of financial instruments, such as debt securities, without relying exclusively on quoted prices for the specific securities, but rather relying on the securities relationship to other benchmark quoted securities. The method derives an estimated price of an instrument using transaction prices and other relevant

market information for benchmark instruments with similar features (e.g., coupon, maturity or credit rating) (Ernst & Young, 2012).

Table 1. Advantages and disadvantages of different market multiples

Multiple	Resulting Value	Advantages	Disadvantages
EV/EBIT	Enterprise Value	Ignores capital structure and tax situation	Asset base differences can distort results
EV/EBITDA	Enterprise Value	Ignores capital structure and tax situation; considers asset base differences	
EV / Revenue	Enterprise Value	Easily calculated	Ignores operating differences
P/B	Equity Value	Most useful with financial institutions or 'spread' businesses	Unreliable in many industries due to different accounting practices
P/E	Equity Value	Common usage; easily computed	Influenced by capital structure and different accounting practices

Source: Adapted from Deloitte (2013b), "IFRS 13 and Valuation Techniques", 27 May, pp. 24, available at: <http://www.icapksachapter.org/wp-content/uploads/presentation/IFRSPPT2013.pdf>

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 (Jermainis, 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 (Jermainis, 2016). ROE is expressed as a percentage and calculated as: Return on Equity = Net Income/Shareholder's Equity.

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.

Return on Assets (ROA)

Return on Assets (ROA) is an indicator of how profitable a company is relative to its total assets. ROA gives an idea as to how efficient management is at using its assets to generate earnings. Calculated by dividing a company's annual earnings by its total assets, ROA is displayed as a percentage. ROA gives a manager, investor, or analyst an idea as to how efficient a company's management is at using its assets to generate earnings. Return on assets is displayed as a percentage.

The formula for return on assets is: $\text{Net Income} / \text{Total Assets}$.

ROA tells you what earnings were generated from invested capital (assets). ROA for public companies can vary substantially and will be highly dependent on the industry. This is why when using ROA as a comparative measure, it is best to compare it against a company's previous ROA numbers or the ROA of a similar company.

Earnings per Share (EPS)

According to Gitman (2019) earnings per share represent the number of monetary-value earned during the period on behalf of each outstanding share of ordinary stock. It is considered as an important indicator of corporate success and is watched by investing public. EPS is calculated as follows:

$$\text{Earnings per-share (EPS)} = \frac{\text{Net Profit}}{\text{Number of ordinary shares outstanding}}$$

EPS is a calculation that allocates a company's profit to each of its ordinary shares (Vaidya, 2014). It serves as indication of profitability by measuring the entity's performance in relations to share capital that is employed to generate such return. IAS 33 has made provision for three categories of EPS, namely basis EPS, diluted EPS and headline EPS (BDO, 2014).

Relationship between market approach and financial performance

Much of the work of an ordinary value revolves around carrying out market value estimates for various purposes. Such estimates are needed by most market economies. It has been no surprise then that almost the first task that the international valuation standards committee (IVSC) set for itself, upon its formation in the early 1980s, was to arrive at an international consensus as to the definition of market value (Thi, 2020).

The expression market value and the term fair value as it commonly appears in accounting standards are generally compatible, if not in every instance exactly equivalent concepts. Fair value, an accounting concept, is defined in International Accounting Standards and other accounting standards as the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's-length transaction. Fair value is generally used for reporting both market and non-market values in financial statements. Where the market value of an asset can be established, this value will equate to fair value. Where the market value of an asset cannot be established, its value is arrived at using a surrogate such as depreciated replacement cost (DRC) (Tudor & Bonaci, 2011).

Much of the interplay between the terms "fair value" and "market value" from the standpoint of the IVSC has arisen when valuations for financial reporting are considered. The Standard for Financial Reporting is an Application in IVS 2003's known as International Valuation Application 1 (IVA 1), Valuation for Financial Reporting, the objective of which is to explain the principles that apply to valuations prepared for use in financial statements and related accounts of business entities. IAS 16 or International Accounting Standards 16 (paragraph 6) as "the amount for which

an asset could be exchanged, or a liability settled, between knowledgeable willing parties in an arm's-length transaction. (Song, 2015).

The market value basis of valuation is recognized as the most widely required and main basis of valuation for most valuations around the globe. The valuations are required for purposes such as purchasing property, selling property, for accounting purposes (both private and governmental), for securing loans (personal or business), for submission to regulatory authorities and for statutory purposes including taxation. Market Value is a representation of value in exchange, or the amount a property would bring if offered for sale in the (open) market at the date of valuation under circumstances that meet the requirements of the market value definition. To determine market value, a Valuer must first determine the highest and best use of the property. The highest and best use of a property is the most probable use of the property. That use may be for continuation of a property's existing use or for some alternative use. The most common methods used to estimate market value include the cost approach, sales comparison approach and the income capitalization approach, including discounted cash flow analysis but fundamental to the determination of market value by these methods is that they are arrived at based on market derived data (Kim, 2019).

According to Thi (2020), valuation bases other than market value or non-market-based values include non-market-based valuations of property use methods that consider the economic utility or function of an asset, other than its ability to be bought and sold by market participants, or the effect of unusual or a typical condition. Market value is the price a property may fetch when the seller places it on the market under normal condition. The expression market value and the term fair value as it commonly appears in accounting standards are generally compatible, if not in every instance exactly equivalent concept.

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).

Empirical Studies

Abiahu, et al (2020), evaluated the effect of fair value reporting on financial profitability and firm value with focus on deposit money banks listed on the Nigerian Stock Exchange Using a sample of 13 banks quoted on the Exchange, the study employed secondary data gathered from published annual reports of eight years (four years pre-IFRS, historical value measurement and four years post-IFRS fair value measurement) 2018 to 2015. The study was anchored on the agency theory while descriptive analysis was employed to summarize data collected while SPSS Version 23 software and regression analysis were used to analyze data. The result support the hypothesis

that fair value reporting does not significantly affect reported profitability. Fair value was however found to affect firm valuation. Overall, this study suggests that the study concludes that in order to effectively evaluate financial performance and position, knowledge of fair value is not enough. Users also need to know the historical cost of the investment. Therefore, companies should adopt a hybrid form of measurement (measurements which entail both fair and historical values) in reporting their activities to reflect actual value creation.

Olanike (2016), inclined towards finding the impact of fair value accounting on financial statement quality in the banking sector of UK. The research questions to be addressed in this study will include: Is there a strong relationship between fair value accounting and quality of financial statements. What are the overall benefits of preparing fair value based financial statements in the UK banking sector? In order to achieve research objectives, inductive approach has been used for identifying the components and conducting the analysis of the problem, whereas descriptive approach has been used for the literature review of fair value accounting. Researcher conducted interviews of 20 major investors of top four banks of UK in order to arrive at the conclusion. The most important conclusions that have been reached includes that fair value accounting provides useful and relevant information to financial statements' users and assists them in decision making. A strong relationship exists between fair value and accounting information's appropriateness in decision making. Furthermore, a relationship exists between reliability of information and fair value.

Fadia (2015), examined the effect of fair value accounting on Jordanian investment properties. The main objective of this study was to examine whether developments in financial reporting environment following the adoption of IFRS resulted in more relevant financial information over time. This study uses a quantitative methodology in addressing the research questions. The relevance of fair value has been tested by studying the effect of fair value measurement applications for investment properties on the financial performance of Jordanian firms, its share prices and market values, the study also examined the effect of unrealized gains and losses on financial statements. Ohlson (1995), theoretical frameworks have been used to examine this relationship. A sample of Jordanian firms (consisting of 41 real estate companies) listed in the Amman stock exchange during the 2018-2011 time period has been used. Our study findings, based on the results of multiple regression analysis showed that financial performance of Jordanian real estate companies is significantly positively related to investment properties valued at fair values. Furthermore, the book value incremental information content is greater than information content of the net income and the unrealized gain & losses inclusion in owners' equity increases the explanatory power of the firm's market value model of real estate companies. This study concludes that fair value accounting measurements for Jordanian real estate companies have been value relevant during all the period of the study.

Omesi and Igonikon (2018), the study examined the effect of fair value accounting on financial performance of quoted banks in Nigeria. This study was guided by the following objectives; to determine the effect of fair value accounting on financial performance of quoted banks in Nigeria, to determine the relationship between fair value accounting and financial performance of quoted banks in Nigeria, to assess how fair value accounting can be implemented and how it can improve financial performance in quoted banks in Nigeria and to investigate the difference in reporting financial performance using fair value measurement and historical cost convention. The study will employ OLS simple regression, correlation coefficient and t-statistic and reported profit as a proxy for performance, depreciation as a proxy the ability for continuity and expansion, inventory (cost of sales) as a proxy for manager's effort, and taxation as a proxy for return to the society.

Leonard et al (2018), examined fair value measurement versus historical cost accounting: A comparative effect on firms' performance 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.

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).

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 2 Operational Measurement of Variables

Variable	Type of Variables	Measurement Scale	Source of Data
Market approach (MAAP)	Dimension independent variable	Is based on market transactions involving identical or similar assets or liabilities. (Cristina & Bunea, 2019; IFRS 13).	Current market cost of Assets
Return on Assets (ROA)	Measure of dependent variable	ROA is income divided by total assets	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
Earnings Per Share (EPS)	Measure of dependent variable	EPS is calculated as a company's profit divided by the outstanding shares of its common stock.	

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;

- MAP = Market Approach
- ROA = Return on Asset
- ROE = Return on Equity
- EPS = Earnings Per Share
- C₀ = Constant term (y intercept)
- β = Coefficient of the independent variable
- U = Error term (causes of return on asset or return on equity not explained by variables in the model)

Thus, the study developed three multivariate hypotheses models:

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

$$H_{01}: ROA = f(MAP) \dots \dots \dots (i)$$

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

$$H_{02}: ROE = f(MAP) \dots \dots \dots (ii)$$

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

$$H_{03}: EPS = f(MAP) \dots \dots \dots (iii)$$

The Third Model: The third hypothesis test model; shows the relationship between earnings per share and market 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

Descriptive Analysis

Table 3

	MAP	ROA	ROE	EPS
Mean	1.56E+08	-3.246356	11.87396	75.60900
Median	1.27E+08	-3.604184	16.82504	32.88500
Maximum	2.83E+08	7.650220	35.02000	318.9900
Minimum	3003280.	-12.37016	-35.04000	-35.04000
Std. Dev.	94.16925	5.926652	23.80832	112.4457
Skewness	0.229590	0.329165	-0.643820	1.438375
Kurtosis	2.050914	2.422808	2.295719	3.500133
Jarque-Bera	0.463171	0.319395	0.897512	3.552426
Probability	0.793275	0.852401	0.638422	0.169278
Sum	1.56E+09	-32.46356	118.7396	756.0900
Sum Sq. Dev.	7.98E+16	316.1268	5101.526	113796.3
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 of the study. The market approach (MAP), have a mean value of 1.56E+08, also, median value of 1.27E+08, also the maximum and minimum values of market approach (MAP) were 2.83E+08 and 3003280. On the other hand, the standard deviation values of 94.16925, 1.08E+08 and 5491209 signifying that the data deviate from the mean values of the three 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 assets (ROA), return on equity (ROE) and earnings per share (EPS) have a mean value of - 3.246356, 11.87396 and 75.60900 respectively. The maximum and minimum values of return on assets (ROA) were 7.650220 and -12.37016, respectively, while the return on equity (ROE) was 35.02000 and -35.04000, respectively while the earnings per share (EPS) was 318.9900 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 First Model: The first hypothesis test model; shows the relationship return on assets and market approach:

$$H0_1: ROA = f(MAP)..... (i)$$

Table 4 Model 1

Dependent Variable: ROA
 Method: Least Squares
 Date: 10/07/21 Time: 13:22
 Sample: 2011 2020
 Included observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MAP	1.70E-08	2.14E-08	2.793794	0.0402
C	0.590058	3.854997	0.153063	0.4321
-				
R-squared	0.573013	Mean dependent var	3.246356	
Adjusted R-squared	0.642860	S.D. dependent var	5.926652	
S.E. of regression	6.052329	Akaike info criterion	6.615620	
Sum squared resid	293.0455	Schwarz criterion	6.676137	
Log likelihood	-31.07810	Hannan-Quinn criter.	6.549233	
F-statistic	46.30109	Durbin-Watson stat	1.625470	
Prob(F-statistic)	0.000017			

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

From the table output above, the coefficient of MAP and ROA is 1.70E-08. This value implies that for every unit increase in ROA is predicted to be accompanied by a 1.70E-08 unit decrease in MAP. The T-statistics is above 1, which is sufficient statistical evidence of significant @ 1% T-stat confidence level. The Prob value of MAP is 0.0402, which means the relationship between MAP and ROA is statistically significant at the 5 percent significant level.

The result also showed that the R2, which measures the goodness of fit, is 0.573013, meaning that 57 percent of the variation in the return on assets 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 46.30109 and 0.000017 respectively. The Durbin-Watson statistics of 1.625470 also indicate the absence of serial autocorrelation.

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

$$H0_2: \text{ROE} = f(\text{MAP}) \dots \dots \dots (iv)$$

Table 5

Dependent Variable: ROE
 Method: Least Squares
 Date: 10/07/21 Time: 13:36
 Sample: 2011 2020
 Included observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MAP	1.35E-07	7.55E-08	4.794197	0.0105
C	33.02768	13.58225	2.431680	0.0411
R-squared	0.586933	Mean dependent var	11.87396	
Adjusted R-squared	0.497800	S.D. dependent var	23.80832	
S.E. of regression	21.32407	Akaike info criterion	9.134407	
Sum squared resid	3637.729	Schwarz criterion	9.194924	
Log likelihood	-43.67203	Hannan-Quinn criter.	9.068020	
F-statistic	3.219143	Durbin-Watson stat	2.239119	
Prob(F-statistic)	0.110529			

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

From the table output above, the coefficient of MAP and ROE is 1.35E-07. This value implies that for every unit increase in ROE is predicted to be accompanied by a 1.35E-07-unit decrease in MAP. The T-statistics is above 1, which is sufficient statistical evidence of significant @ 1% T-stat confidence level. The Prob value of MAP is 0.0105, which means the relationship between MAP 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 0.586933, meaning that 58 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 3.219143 and 0.110529 respectively. The Durbin-Watson statistics of 2.239119 also indicate the absence of serial autocorrelation.

The Three Model: The three-hypothesis test model; shows the relationship earnings per share and market approach:

$$H0_3: \text{EPS} = f(\text{MAP}) \dots \dots \dots (vii)$$

Table 6

Dependent Variable: EPS
 Method: Least Squares
 Date: 10/07/21 Time: 13:42
 Sample: 2011 2020
 Included observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
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MAP	6.69E-07	3.50E-07	1.913047	0.0921
C	-28.88505	62.92468	-0.459042	0.6584
R-squared	0.613879	Mean dependent var	75.60900	
Adjusted R-squared	0.528114	S.D. dependent var	112.4457	
S.E. of regression	98.79149	Akaike info criterion	12.20176	
Sum squared resid	78078.06	Schwarz criterion	12.26127	
Log likelihood	-59.00378	Hannan-Quinn criter.	12.13437	
F-statistic	3.659750	Durbin-Watson stat	1.905070	
Prob(F-statistic)	0.092098			

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

From the table output above, the coefficient of MAP and EPS is 6.69E-07. This value implies that for every unit increase in EPS is predicted to be accompanied by a 6.69E-07-unit decrease in MAP. The T-statistics is above 1, which is sufficient statistical evidence of significant @ 1% T-stat confidence level. The Prob value of MAP is 0.0921, which means the relationship between MAP and EPS is statistically not significant at the 5 percent significant level.

The result also showed that the R², which measures the goodness of fit, is 0.613879, meaning that 61 percent of the variation in the earnings per share 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 3.659750 and 0.092098 respectively. The Durbin-Watson statistics of 1.905070 also indicate the absence of serial autocorrelation.

Summary Results Findings

Table 4.14 Summary Computation of Hypotheses Results

Hypotheses	Coefficient	Std. Error	T-Stat	P-Value 0.05	Statistical Decision	Result
H0 ₁	1.70E-08	2.14E-08	2.793794	0.0402	Significant	Rejected H0 ₁
H0 ₂	1.35E-07	7.55E-08	4.794197	0.0105	Significant	Rejected H0 ₄
H0 ₃	6.69E-07	3.50E-07	1.913047	0.0921	Insignificant	Accepted H0 ₆

From the summary of hypotheses table above, the results of the hypotheses of the study were presented in line with the statistical decision rule: 'if the probability value (PV) is less than 0.05 alpha level, we reject the null hypotheses and accept significant relationships. Meanwhile, if the probability value (PV) is greater than 0.05 alpha level, we accept the null hypothesis and accept an insignificant relationship. Hence:

CONCLUSION AND RECOMMENDATIONS

There is a significant relationship between market approach (MAP) and return on assets (ROA) of listed construction companies in Nigeria. There is a significant relationship between market approach (MAP) and return on equity (ROE) of listed construction companies in Nigeria. There is no significant relationship between market approach (MAP) and earnings per share (EPS) of construction companies in Nigeria. The study recommends that there is need to provide an environment conducive to the application of standards of fair value accounting because the market approach significantly contributes to return on assets of in listed construction companies in Nigeria. Listed construction companies should apply market approach as it enhances return on assets and return on equity.

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