ECONOMIC VALUE ADDED AND FIRM VALUATION IN NIGERIA

Israel Oludare ASOGBA[1], Mayowa Ebenezer ARIYIBI[2] & Kenny Adedapo SOYEMI[3]
[1,3]Department of Accounting, Olabisi Onabanjo University, Ago-Iwoye, Nigeria.
[2]Department of Banking & Finance, Olabisi Onabanjo University, Ago-Iwoye, Nigeria.

E-mail: ariyibimayowa@gmail.com; asogbaisrael@gmail.com

Abstract
This study examined the impact of economic value added on firm valuation in Nigeria. The study used three proxies to capture firm valuation. The variables are income base of firm valuation that is measured as discounted cash flow (DCF), asset based of firm valuation using net book value (NBV) and market based approach of firm valuation using publicly traded prices in the stock exchange (SP), while the explanatory variables (EVA) was measured as the company's profit after full cost of capital, while Firm size (FZE) and Leverage (LVG) are use as control variable. The panel data set were analyzed using pooled, fixed, and random effect estimator while Hausman test was used to select the best estimates. In the sample of selected non-financial firms, from 2012 to 2020, the study shows that EVA has a significant effect on firm valuation. Specifically, the result revealed that EVA has a significant effect on discounted cash flow, which measured income-based approach of firm valuation. EVA depicted a significant effect on book value approach to firm valuation, which is measured using net book value of asset. Similarly, a significant relationship exists between EVA and market-based approach of firm valuation, measured using share prices. Based on the findings of this study, the study recommended that successful value-based management firms should maintain that the technical accounting requirement of EVA is straightforward and makes only minimal adjustments to their accounting procedures. To give investors a normal return on their investment in the company's shares, managers should work to boost future EVA. This is crucial for establishing success standards for management incentive compensation schemes by corporate compensation committees as well as securities analysts evaluating stocks.

Keyword: discounted cash flow, economic value added, firm valuation, ordinary least square, share price
JEL Classification: C23, G32 G34

1. Introduction

For corporations and firms, market valuation and shareholder value generation, as opposed to profit maximization and wealth maximization, has become an increasingly essential problem. Most organizations' financial statements reporting book values do not reflect their underlying financial status, hence value estimation is essential in the business world. Any financial endeavor, such as soliciting new investors or making investment decisions, requires that the equity value created by the endeavor be considered. This is especially true for many entrepreneurial and small businesses, which frequently require funds from outside investors to support rapid expansion. The primary goal of financial statements, according to the International Accounting Standards Board (1989), is to offer information about an enterprise's financial situation and performance that is relevant to diverse investors in making investment

decisions. For well-functioning capital markets and the economy, high-quality accounting data is essential. As a result, investors should place a high value on it. The value relevance of accounting information for equity valuation is a fundamental aspect of accounting quality. Value relevance appears to be more essential to investors than any other aspect, according to Francis and Chipper (1999). Four ways to studying the value relevance of accounting information are identified by Francis et al., (1999). The fundamental analytical view, prediction view, information view, and measurement view of value relevance are the four views. The measuring view of value relevance is used for the purposes of this article. Accounting figures are value relevant if they capture or summarize information that affects stock prices, according to the measurement approach of value relevance (Francis & Schipper, 1999). Traditional financial performance indicators are frequently criticised for ignoring a firm's cost of capital and are thus seen unsuitable for assessing value creation (Bognárová, 2017). Furthermore, because these indicators are almost entirely reliant on data from financial statements, they are susceptible to accounting distortions. It's worthless, and it's been suggested that conventional performance indicators do not often capture the actual surplus (Bantwa & Bhuva, 2020). Despite these limitations, traditional measurements are nevertheless commonly used by analysts and investors. Value-based financial performance metrics, on the other hand, were developed in response to the perceived inadequacies of traditional measures. The main distinction between traditional and value-based metrics is that value-based measures consider a company's cost of capital. They also seek to correct some accounting inconsistencies (Bognárová, 2017).

Stern Stewart & Company proposed the Economic Value Added (EVA) as a management technique (Stern, 1985; Stewart, 1991; Stern, Stewart & Chew, 1995). It provides a method for calculating the economic value a company has achieved or created over a given period. Economic Value Added (EVA) of an enterprise is the best indicator of financial performance for capturing the underlying economic profit (Awan, Siddique & Sarwar, 2014). EVA fills a critical role in today's financial and economic landscape that has received little attention from academics and practitioners. Because EVA is a performance metric, it is linked to shareholder wealth over time. Shareholders scrutinize the company for their specific interests and want management to operate in their best interests. Thus, EVA is significant in terms of determining how much economic value is added by management to shareholders' wealth, whereas other traditional techniques relied on accounted-for information. However, accounting only provides historical or distorted data that has no bearing on a company's actual performance, whereas EVA provides a viable performance measure for businesses (Shil, 2009). In recent years, the measurement of market value addition (MVA) has gotten a lot of attention (Athanassakos, 2007). Furthermore, previous research has

concentrated on determining which metric best measures value creation. Traditional measures such as operating income (OI), profit after tax (PAT), return on investment (ROI), return on asset (ROA), and others have been argued to be misleading, inept, and often result in creative earnings over time (Kaur & Naratng, 2009).

Since one view might not be adequate to provide a solution to the study, this study added to the body of existing knowledge by employing three proxies to capture firm valuation. The variables are the income-based approach of firm valuation, which is measured as discounted cash flow (DCF), the asset-based approach of firm valuation, which is measured as net book value (NBV), and the market-based approach of firm valuation, which is measured as publicly traded prices on the stock exchange (SP). The rationale for all of this is that the aim of investment is to earn future income (cash), which is calculated using predicted future income, which allows for a more accurate comparison with the substitution principle. Similarly, most Nigerian studies have not investigated whether EVA effects firm valuation using MVA; nevertheless, earlier studies have looked at the relationship between EVA and stock returns and ROA. As a result, the goal of this research is to assess the impact of EVA on business valuation in Nigeria, as well as to see if there is a significant difference between EVA and traditional performance measures. The rest of this work is arranged in the following ways. The literature review is discussed in the second section, and the data and empirical methodological issues are presented in the third section. The empirical results are presented in part four, and the final section concludes.

2. Literature Review

2.1 Conceptual Review

Economic value added (EVA) has gotten a lot of credence as a new way to measure performance for some period now. Traditionally, EVA as theory as posit that businesses should endeavour to generate shareholder wealth. Traditional indicators in use overtime namely: return on investment (ROI), return on assets (ROA) and earning before tax (EBT) were employed by the corporations to match managerial interests with shareholder interests (Siniak & Lozanoska 2019). Economic value added (EVA) being a value-based measurement of financial performance, a decision tool for investment purpose that reflects the total amount of value created to shareholders (Geyser & Liebenberg, 2003). Calculated by multiplying the excess return from an investment by the total amount (capital) put into the investment. Economic value added (EVA) is the subtraction of charge for the opportunity cost of all capital spent in a company or on a project from the net operating profit. It's a calculation of true economic profit, or the amount by which earnings exceed or fall short of the needed minimum rate of return that investors may get by investing in similar risky securities (Stewart, 1990). EVA is not new generated residual income, being an

accounting performance measurement; it is subtracting capital charge from operating profit. As a result, EVA is a variation of residual income, with changes to the way income and capital are calculated. EVA is generally seen as a single, straightforward metric that accurately depicts shareholder wealth creation. Value-based measurement systems can provide other practical benefits and also encourage managers to create value and serve as a basis for calculating management benefits (compensation). EVA system in an organisation assists managers in making informed and important decisions, which result in better investment, identifying opportunities that bring about overall improvement, weighing both long- and short-term firm benefits (Roztoci & Needy, 1998). EVA is a dependable indicator of a company's future growth in value and an effective gauge of the prowess of managerial overall decisions. Positive EVA numbers that are constant over time will raise company values, whilst negative EVA values may lower company values.

Some other forward-looking indicators, typically those that are non-financial in nature, should be regularly seen in the time-to-time performance report generated by managers, providing timely warning indicator of potential problem (Wood, 2000). In some industrial sector, EVA only is an inadequate indicator of financial performance. Yearly fluctuations in EVA, negative sometimes are not capable of explaining variations in the value of the firm for new firm with high growth, which include firms in industries that are technologically inclined because the value of the firm is mostly based on the Cashflow expected in the long run (Wood, 2000). Distortion by inflation is another major issue with EVA, this result in difficulty in using it to estimate actual profitability during inflationary periods. The adjusted EVA, a better measure, corrects for inflationary distortions. One of EVA's key flaws is that it is overly reliant on financial measures like capital invested, profit margins, and cost of capital, among others. According to empirical investigations, these measurements are frequently ineffective of predicting future performance (Fletcher & Smith, 2004). EVA is also thought to have a strong financial drive. Revenue realization and expense recognition play a big role in calculating EVA. Managers of firms can alter financial figures to get better financial performance (Horngren, Foster & Datar, 1997). Another important issue with EVA is that, to increase EVA, managers often use already depreciated assets; this practice lowers the asset base in the books of accounts while also ensuring that no depreciation is charged or recognized, resulting in higher EVA. Managers, on the other hand, see a significant reliance on EVA to gauge their performance as dysfunctional since it fails to reflect the actual level of performance at a given point in time. Thus, accounting number manipulation would be legitimate if management are aware that they have significantly improved performance, but this is not instantly apparent in the accounting records (Brewer et al., 1999; Pustylnick, 2011).

EVA, like other performance measures, tries to resolve the fundamental tension between the need to create a performance measure that is substantially associated with shareholder wealth while also being less susceptible to random swings in stock prices. This is a challenging contradiction to reconcile, and it explains why all accounting-based performance indicators have a low year-to-year correlation with stock returns (Bognárová, 2017). Furthermore, successful value-based management firms are said to keep the technical accounting parts of EVA simple, making minimum changes to their accounting methods. They spend time and effort finding and evaluating the operational elements, or value drivers, that have the most impact on the development of economic profits (Fletcher & Smith, 2004). The valuation of a company is necessary for calculating stock prices, which is an important factor in many models (keys and Briggs, 1990). One of the most important companies aims is to maximize shareholder value. The market value of a company is a key measure of its shareholders' wealth. According to Biggs (1978), stock price occasionally, is the exclusive measure of performance in the model. It's more typically used as part of a weighted average that incorporates other measures. A firm's value can be determined using a variety of measures, each of which is likely to yield a value that differs from the others. The accounting net worth or book value of a company is the first and most accessible measure of its worth. However, because the accounting rule in a model may be at variance (in divergence) with generally accepted financial accounting principles, this measure might be problematic. This is because adhering to certain generally held principles, such as historical cost and conservatism, can result in values that are far from acceptable. The market value of all outstanding shares is the second metric. This is a widely used approach of valuing public firms in the real world. Its use, however, necessitates the existence of a functioning real-time stock market. This requirement is not met in models that do not allow participants to trade shares, and even when such trading is permitted, the trades are typically too few and infrequent to allow for reliable valuation. The capitalized value of its expected future performance is the third metric. Modigliani and Miller (1961) pointed out that, while four different methods of capitalization can be used for this goal, when the markets are ideal, they all result in the same valuation. People are perfectly rational, and the future is totally predictable.

However, if the Goosen's technique is used, the capitalized valued measure has a flaw because it requires at least one arbitrary parameter (m). The deductive application of human judgment is the fourth measure. Firms are graded on a psychometric scale using this procedure. The results are then translated to monetary values using a formula. The issue with this metric is that it necessitates subjective evaluation. The accounting net value of a firm, adjusted for intangibles and the idiosyncrasies of accounting rules employed in the simulation, is the sixth metric. Although a general principle for adjustment could be

established, the precise principle must be determined by the model's specifics. The adjusted net worth metric, on the other hand, eliminates both issues because it does not require an arbitrary parameter and can be totally objective. The challenge is that it necessitates a thorough understanding of the imitation techniques utilized in each model. The market value measure of establishing a firm's value, also known as market capitalization, is the most dependable and straightforward technique of determining a firm's value. It is also known as total value of all outstanding shares. It's worth noting that this strategy only works for publicly traded corporations with easily known share values. The number of outstanding shares multiplied by the current stock price yields a company's market capitalization (market value).

2.2 Empirical Review

Altaf (2016) investigated Stern Stewart & Company's argument that economic value added is a better measure for explaining market value in India than traditional earnings-based measurements. To achieve the study's objective, they used multivariate regression analysis. The study's findings show that operating income has a strong relationship with market value added in both the manufacturing and service industries. Ifeanyi and Chukwuma (2016) used publicly traded firms to investigate the impact of board size on financial performance (as measured by both economic values added (EVA) and return on assets (ROA)) in Nigeria's manufacturing sector. The study uses a quantitative panel approach to analyze secondary (panel) data from the audited financial statements of 46 listed manufacturing firms taken from 95 NSE subsectors over a twelve-year period (2003-2014). Manufacturing companies with smaller boards are more viable than those with larger boards, according to the study. Firms in the sector with larger board size, on the other hand, reported lower profitability. Bognárová (2017) uses regression models to investigate the incremental information of a series of performance measures from 2010 to 2015, analyzing MVA performance and the link between EVA and MVA. According to the results of the models, the dominance of a modern performance measure EVA over two other traditional performance measures in explaining changes in MVA in the case of selected companies over the studied period was affirmed. As well, Ceryova et al. (2018) used economic value added, economic value-added momentum, and economic value-added margin to evaluate the business performance of Microsoft Corporation, an American multinational technology corporation, from 2010 to 2015. They discovered that between 2010 and 2015, the value of economic value added increased significantly. As a result, Microsoft Corporation's executives have amassed a substantial amount of wealth. Thus, the company's excellent performance is highlighted by the economic value-added momentum, and the company's remarkable productivity performance is highlighted by the economic value-added margin. Pasha and Ramzan (2019) looked at the asymmetric impact of economic value-added dynamics on stock market value in Pakistan, using panel

cointegration, FMOLS, and DOLS as new evidence. For the study period of 2006–2015, the study sample consisted of 70 non-financial Pakistan Stock Exchange listed firms from 13 industries. Panel cointegration, panel FMOLS, and panel DOLS are used in the study. In the long run, it was discovered that EVA has a negative weak but significant relationship with stock return.

In terms of working capital management, Maeenuddina et al. (2020) in their study evaluated and provided empirical fact about the economic value-added momentum in comparison to some conventional financial measurements. For a period of 11 years (2007-2017), the sample of the study was sixty-nine (69) quoted non-financial firms on the Pakistan Stock Exchange. The results showed positive significant relationship between working capital management and EVA momentum, demonstrating the addition of value by reduction in the company's cash conversion cycle. Shishany et al. (2020) in their study the impact of economic value added (EVA) adoption on stock performance; investigate whether adopting the EVA framework improves the firm's performance as well as the long-term impacts on the firm's value. It also evaluates how the market responds to the news that EVA will be used as a compensation mechanism. The paper also addresses this gap in the literature by demonstrating whether the adoption of EVA increases company value as measured by market prices over time. 89 US companies that have adopted EVA as a compensation method make up the study sample. The performance of adopting companies is compared to that of a few chosen matching companies as well as to market indices, especially the S&P500 portfolio. The CAR and BHAR aggregation methods are then used to evaluate the possibility of EVA adoption by various US firms. The findings, however, indicated a modest improvement in the performance of organisation that adopted EVA within five years of the adoption date. Does the EVA valuation model explain the market value of equity better under changing required return than constant required return? is a study by Behera S. (2020). Examined if the EVA valuation model could be carried out under changing required return by effecting changes to the model, as well as whether the valuation model under the assumption of constant required return had a better explanatory capacity than the model under the assumption of changing required return. The intrinsic worth of stocks as determined by valuation models and the market value of stocks of 69 large-cap, 88 mid-cap, and 79 small-cap companies were sampled using the relative information content analyses. The outcomes demonstrated that the EVA-based valuation model with varying normal market return did better than the EVA-based valuation model with fixed required return.

The question of whether economic value added (EVA) as a performance assessment metric encourages public administrators to improve the performance of public organizations is investigated by Subedi and Farazmand (2020). Using 2274 firm-year observations for the years 2009 to 2010 in China, the research

uses data from the Wind Info Database (WIND). It employs first-difference change analysis methodology to handle firm-level unobservable heterogeneities and address endogeneity issues. It has been discovered that using EVA as a performance evaluation metric encourages public officials to boost the total effectiveness of the public organizations under investigation. According to the research, after adopting EVA as their performance evaluation metric, public administrators make wise investment and operational decisions that improve the overall organizational performance. Omneya et al (2021) looked at Is EVA Momentum (Economic Value-Added Momentum) a Better Performance Measurement Tool? evidence from listed Egyptian firms. Return on assets (ROA) and return on equity (ROE), two financial performance indicators for businesses, were examined in the research. The financial industry was excluded from the data collection for companies listed on the Egyptian Stock Exchange between 2010 and 2019. By using relative information content analysis and stepwise regression, the study also aims to contribute to the announcement of the economic value-added measure with the greatest explanatory power pertinent to firm financial performance. Except for EVA with ROE, the results indicated a significant effect for both economic values added on the financial performance of the firm. Additionally, it was discovered that EVA Momentum was the best economic indicator for enhancing and explaining financial performance.

3. Methodology

The sample for this study was made up of thirty (30) non-financial firms quoted on the Nigeria Stock Exchange (NSE) covering the period of 2012-2020. The study employed the panel regression analysis.

Dependent Variable: Firm Valuation

We use three proxies to capture firm valuation as one view might not be enough to provide solution to the study. The variables are income base of firm valuation that is measured as discounted cash flow (DCF), asset based of firm valuation using net book value (NBV) and market-based approach of firm valuation using publicly traded prices in the stock exchange (SP). The reason behind all these is purpose of investment is to earn future income (cash) which is considering expected future income which is better to make reasonably comparison with principle of substitution.

Independent Variables

There are two categories of independent variables in this research. First, economic value added, the main independent variable, would be measured using the most popular proxies. (Biddle et al., 2009; Chen

et al., 2011; Du et al. 2018). Second, firm size (FZE) and leverage (LVG), which are the control variable discussed based on prior research. We need accounting data from the financial statement to compute EVA. There must be a few adjustments made. The following formula is used to compute the EVA, which represents the company's profit after total cost of capital:

EVA = Net Sales – Operating Expenses – taxes – Capital Charges

	Net Sales – Operating expenses
=	Operating profit (EBIT, Earnings before Interest and Tax)
-	Taxes
=	Net operating profit after tax (NOPAT)
-	Capital charges (Invested capital cost of capital)
=	Economic Value Added (EVA)

Net operating profit after tax, or NOPAT. It gauges profits from ongoing business operations. It is comparable to EBIT (Earnings before interest and tax) less taxes, which is a common beginning point in analysts' valuation models. EVA can be thought of as NOPAT fewer capital charges for a business. Capital charges are calculated by multiplying the amount of capital invested by the company by the weighted average cost of capital (WACC). WACC is the additions of each component of capital minus short-term debt, long-term debt, and shareholders' equity minus weighted for its relative proportion, at market value, in the company's capital structure:

$$WACC = \frac{D}{D+E}.i.(1-t) + \frac{E}{D+E}.r \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3.1)$$

Where.
i = the average interest rate,
r = the required return on equity,
t = the tax rate,
D = the amount of debt capital, and
E = the amount of equity capital.

Based on the general form of panel data regression model, the econometric models of Moghaddam and Shoghi (2012); Ongeri (2014); Atlaf (2016) and Omneya et al (2021) are adapted in this study.

$$FV_{it} = f\left(EVA_{it}\right) \qquad (3.2)$$

Where the above equation of (3.1) is decomposed into three econometric equations to meet up specific objectives of this study with control variables added.

Objective One:

$$DCF_{it} = \beta_1 + \beta_2 EVA_{it} + \beta_3 FZE_{it} + \beta_4 LVG_{it} + \varepsilon_{it} \quad (3.3)$$

Objective Two:

$$NBV_{it} = \beta_1 + \beta_2 EVA_{it} + \beta_3 FZE_{it} + \beta_4 LVG_{it} + \varepsilon_{it} \quad (3.4)$$

Objective Three:

$$SP_{it} = \beta_1 + \beta_2 EVA_{it} + \beta_3 FZE_{it} + \beta_4 LVG_{it} + ROA + \varepsilon_{it} \quad (3.5)$$

Where:

DCF_{it} = Discounted Cash Flow (Dependent Variable)

NBV_{it} = Net Book Value (Dependent Variable)

SP_{it} = Company Stock Prices (Dependent Variable)

ROA_{it} = Return on Asset

EVA_{it} = Economic Value Added (Independent Variable)

FZE_{it} = Firm Size (Control Variable)

LVG_{it} = Leverage (Control Variable)

4. Analysis results and Discussion

This section deals with the analysis and discussion of empirical findings. This covers the descriptive statistics, correlation matrix, Hausman Test and fixed & Random Effect Model.

Table 1: Descriptive Statistics

	SP	DCF	NBV	EVA	FSIZE	LEV	ROA
Mean	61.09689	15.92478	15.39237	20.63065	18.07881	17.17127	17.86283
Median	12.36092	16.01745	15.29082	20.56441	17.88088	17.25798	13.18641
Max	1046.322	17.23761	18.26163	25.00800	20.64449	18.30771	81.37550
Min	0.044437	9.040944	11.96270	14.57101	16.85637	15.54876	0.017132
Std. Dev.	168.2845	0.975599	0.867621	1.831811	0.755281	0.528534	15.08813
Skew.	4.721448	-2.912093	0.129761	-0.332930	1.992108	-0.702383	1.342773
Kurt.	25.16596	19.95077	5.552430	3.515814	6.313762	3.496257	4.744783
Jarque-Bera	3628.113	2007.811	41.13906	4.345285	167.8437	13.87273	64.10269
Prob.	0.000000	0.000000	0.000000	0.113876	0.000000	0.000972	0.000000
Obs.	270	270	270	270	270	270	270

Authors' Compilation, (2022).

From the above table, it is observed that the mean value of all the variables are positive suggesting that the variables on the average increased over the period studied. Share price (SP) has the highest mean value (#61.09), suggesting that for the firms sampled, the average share price is #61.09k. Similarly, the mean of EVA is 20.63 while firm size (FSIZE) has a mean value of 18.07 while return on asset (ROA) as

a measure of financial performance recorded (17.86) mean value. Conversely, the mean values of all the variables are closer to the median, suggesting that the variables are symmetrical and normally distributed.

On the other hand, it was observed that all the variables range from positive-to-positive value as depicted by the result of the minimum and maximum. Also, among the variables studied, share price has the highest value for standard deviation while others were relatively low. Thus, implying that the share price of the firms sampled is unstable and unpredictable. Furthermore, it was discovered that all the variables are positive skewed except for DCF, EVA and LEV. Also, all the variables are leptokurtic since their value is greater than three (3) which implies that the variables produce higher extreme outliers than those of the normal distribution.

Regression Analysis

Table 2: EVA and Income Based Firm Valuation

Dependent Variable: DCF			
Variable	Pooled	Fixed	Random
C	13.50044 (3.5360) 3.8179*	22.48881 (6.0005) 3.7478*	16.00504 (4.2736) 3.7450
EVA	0.008870 (0.0477) 0.1858	-0.079522 (0.0558) -1.4234	-0.034610 (0.0486) -0.7170
FZI	0.177556 (0.1157) 1.5344	-0.304945 (0.2529) -1.2057	0.087962 (0.1501) 0.5858
LEV	-0.056549 (0.1560) -0.3622	0.034475 (0.2460) 0.1401	-0.055839 (0.1845) -0.3024
R-squared	0.023190	0.492137	0.005496
Adjusted R-squared	0.002698	0.349579	-0.015368
F-statistic	1.131642	3.452188	0.263429
Prob(F-statistic)	0.338435	0.000001	0.851652
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	25.5225	3	0.0000

Authors' Computation (2022)

The result for the pooled effect, fixed effect and random effect is reported in Table 2 above. As for the results obtained from the pooled regression models, the coefficient of EVA and FSIZE all shows a positive relationship with discounted cash flow (DCF) which measures the Income Based Firm Evaluation (DCF). This implies that Economic Value Added is poised to improve Income Based Firm Evaluation of the firms

sampled. Similarly, the firm size (FSIZE) also improves Income Based Firm Evaluation suggesting that as firms acquire more assets which is a measure of firm size, Income Based Firm Evaluation will improve positively. However, leverage (LEV) depicted a negative relationship. Furthermore, given the value of the r-squared from the pooled regression analysis, only about 2.3% of changes in the explanatory variable are influenced by the variables considered in this study. The F-statistics on the other hand shows that the variables considered have insignificant impact on Income Based Firm Evaluation of the firm sampled.

On the other hand, the result of the fixed effect model shows the coefficient of EVA and FSIZE all shows a negative relationship with Income Based Firm Evaluation (DCF). This implies that Economic Value Added has the potential to negatively influence the income Based approach to Firm Evaluation of the firms sampled. Similarly, the firm size (FSIZE) also depicted a negative coefficient Income Based Firm Evaluation suggesting that as firms acquire more assets which is a measure of firm size, Income Based Firm Evaluation will be affected negatively. However, leverage (LEV) depicted a positive relationship, suggesting that an increase in leverage is expected to improved income-based approach to firm valuation The r-squared from the fixed effect model shows that 49% of changes in the explanatory variable is influenced by the variables considered in this study, suggesting that the model is fit and can be used for decision making. The F-statistics on the other hand shows that the variables considered have significant impact on income-based approach to firm valuation of the firm sampled.

While the result of the random effect model reveals that, EVA and LEV depicted a negative coefficient, suggesting that they both have a negative effect of income-based approach to firm valuation, while FSIZE depicted a positive relationship with income-based approach to firm valuation. The r-squared and F-statistics from the random effect model reveals that EVA has no significant relationship with income-based approach to firm valuation.

Furthermore, the above table also revealed that the constant of each of the model is positive and significance. It can also be seen from the result obtained above that the r-square for each of the models is relatively low, with only fixed effect model having value greater than 45%. It is also noteworthy to also mention that the F-statistics for the entire models were insignificant except for fixed effect model. The result of the Hausman Test favours the use of fixed effect which gave an appropriate result for the analysis. Thus, the conclusion of this hypothesis is based on the fixed effect model and the result obtained revealed that the EVA has a significant effect on income-based approach to firm valuation. This is consistent with the work of Geyser & Liebenberg (2003).

Table 3: EVA on Book Value Based Approach of Firm Valuation

Dependent Variable: NBV			
Variable	**Pooled**	**Fixed**	**Random**
C	15.92893 (3.1193) 5.1065*	22.42699 (4.8180) 4.6547*	19.16370 (3.7495) 5.1109*
EVA	0.012599 (0.0420) 0.2993	-0.007477 (0.0448) -0.1666	3.5005 (0.0407) 0.0008
FZI	0.018288 (0.1020) 0.1791	-0.145150 (0.2030) -0.7147	-0.045254 (0.1360) -0.3326
LEV	-0.066717 (0.1376) -0.4845	-0.249024 (0.1975) -1.2604	-0.172776 (0.1605) -1.0761
R-squared	0.003336	0.570698	0.008719
Adjusted R-squared	-0.017573	0.450192	-0.012077
F-statistic	0.159559	4.735857	0.419243
Prob(F-statistic)	0.923362	0.000000	0.739465
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	7.053142	3	0.0702

Authors' Computation (2022)

The result of the effect of EVA on Book Value Based Approach of Firm Valuation for the pooled effect, fixed effect and random effect is reported in Table 4.3 above. As for the results obtained from the pooled regression models, the coefficient of EVA and FSIZE all shows a positive relationship with book value-based approach of firm valuation (NBV). This implies that Economic Value Added is poised to improve book value-based approach of firm valuation of the firms sampled. Similarly, the firm size (FSIZE) also improves book value-based approach of firm valuation suggesting that as firms acquire more assets which is a measure of firm size, book value-based approach of firm valuation will improve positively. However, leverage (LEV) depicted a negative relationship.

On the other hand, the result of the fixed effect model shows the coefficient of EVA and FSIZE and LEV all shows a negative relationship with book value-based approach of firm valuation (NBV). This implies that economic value added has the potential to negatively influence the book value-based approach of firm valuation of the firms sampled. Similarly, the firm size (FSIZE) also depicted a negative coefficient book value-based approach of firm valuation suggesting that as firms acquire more assets which is a measure of firm size, Income Based Firm Evaluation will be affected negatively. While, leverage (LEV) also depicted a negative relationship, suggesting that an increase in leverage is expected to negatively influence book value-based approach of firm valuation. The r-squared from the fixed effect model shows

that 57% of changes in the explanatory variable is influenced by the variables considered in this study, suggesting that the model is fit and can be used for decision making. The F-statistics on the other hand shows that the variables considered have significant impact on book value-based approach of firm valuation of the firm sampled. While the result of the random effect model reveals that FSIZE and LEV depicted a negative coefficient, suggesting that they both have a negative effect of book value-based approach of firm valuation, while EVA depicted a positive relationship with book value-based approach of firm valuation. The r-squared and F-statistics from the random effect model reveals that EVA has no significant relationship with book value-based approach of firm valuation.

Furthermore, the above table also revealed that the constant of each of the model is positive and significance. It can also be seen from the result obtained above that the r-square for each of the models is relatively low, with only fixed effect model having value greater than 55%. It is also noteworthy to also mention that the F-statistics for the entire models were insignificant except for fixed effect model. However, the result of the Hausman Test favours the use of fixed effect which gave an appropriate result for the analysis. Thus, the conclusion of this hypothesis is based on the fixed effect model and the result obtained revealed that the EVA has a significant effect on book value-based approach of firm valuation.

Table 4: Effect of EVA on Market Based Approach of Firm Valuation

Dependent Variable: SP			
Variable	**Pooled**	**Fixed**	**Random**
C	777.8356 (633.0416) 1.2306	227.5472 (237.6987) 0.9572	239.4257 (236.4861) 1.0124
EVA	3.970362 (8.2768) 0.4796	0.477283 (10.7686) 0.2341	0.489712 (2.0301) 0.2412
FZI	-26.78404 (22.2662) -1.2028	-2.327695 (10.7686) -0.2161	-2.843115 (10.5154) -0.2703
LEV	-15.99879 (27.0501) -0.5914	-7.879716 (8.9698) -0.8764	-8.043196 (8.8914) -0.9046
ROA	-2.210301 (1.0509) -2.1031	0.082433 (0.2670) 0.3086	0.056652 (0.2652) 0.2136
R-squared	0.034355	0.977993	0.007810
Adjusted R-squared	0.007154	0.971567	-0.020139
F-statistic	1.262994	152.1758	0.279448
Prob(F-statistic)	0.287408	0.000000	0.890890
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.

Cross-section random	8.164818	3	0.0427

Authors' Computation (2022)

The result of the effect of EVA on Market Based Approach of Firm Valuation for the pooled effect, fixed effect and random effect is reported in Table 4.3 above. As for the results obtained from the pooled regression models, the coefficient of EVA shows a positive relationship with share price which is a measure for Market Based Approach of Firm Valuation (SP). This implies that Economic Value Added is poised to improve share prices as a measure of market-based approach of firm valuation of the firms sampled. While FSIZE, LEV and ROA all revealed a negative coefficient, suggesting that when share prices is used in measuring the Market Based Approach of Firm Valuation, it will result in a reduction in share price as it presently has a negative influence on market-based approach of firm valuation.

On the other hand, the result of the fixed effect model shows that the coefficient of FSIZE and LEV all shows a negative relationship with market-based approach of firm valuation, measured using share price (SP). This implies that they have the potential to negatively influence the market-based approach of firm valuation of the firms sampled. While EVA the depicted a negative coefficient book value-based approach of firm valuation suggesting that as firms acquire more assets which is a measure of firm size, Income Based Firm Evaluation will be affected negatively. While EVA and ROA depicted a positive relationship, suggesting that and increase in EVA and ROA is expected to positively influence market-based approach of firm valuation. The r-squared from the fixed effect model shows that 97% of changes in the explanatory variable is influenced by the variables considered in this study, suggesting that the model is fit and can be used for decision making. The F-statistics on the other hand shows that the variables considered have significant impact on market-based approach of firm valuation of the firm sampled.

While the result of the random effect model reveals that the coefficient of EVA and ROA shows a positive relationship with share price which is a measure for Market Based Approach of Firm Valuation (SP). This implies that Economic Value Added is poised to improve share prices as a measure of market-based approach of firm valuation of the firms sampled. While FSIZE, and LEV all revealed a negative coefficient, suggesting that when share prices is used in measuring the Market Based Approach of Firm Valuation, it will result in a reduction in share price as it presently has a negative influence on market-based approach of firm valuation. The r-squared and F-statistics from the random effect model reveals that EVA has no significant relationship with book value-based approach of firm valuation.

Furthermore, the above table also revealed that the constant of each of the model is positive. It can also be seen from the result obtained above that the r-square for each of the models is relatively low, with only

fixed effect model having value greater than 70%. It is also noteworthy to also mention that the F-statistics for the entire models were insignificant except for fixed effect model. However, the result of the Hausman Test favours the use of fixed effect which gave an appropriate result for the analysis. Thus, the conclusion of this hypothesis is based on the fixed effect model and the result obtained revealed that the EVA has a significant effect on share price as a measure for market-based approach of firm valuation.

5. Conclusion and Recommendations

The study evaluates the impact of economic value added on firm valuation in Nigeria. The study uses three proxies to capture firm valuation. The variables are income base of firm valuation that is measured as discounted cash flow (DCF), asset based of firm valuation using net book value (NBV) and market based approach of firm valuation using publicly traded prices in the stock exchange (SP), while the explanatory variables (EVA) was measured as the company's profit after full cost of capital, while Firm size (FZE) and Leverage (LVG) are use as control variable. Based on the findings of this study, EVA has a significant effect on firm valuation. Specifically, the result revealed that EVA has a significant effect on discounted cash flow-which measured income-based approach of firm valuation. Also, EVA depicted a significant effect on book value approach to firm valuation, which is measured using net book value of asset. Similarly, a significant relationship exists between EVA and market-based approach of firm valuation, measured using share prices. Thus, this study concludes that Economic Value Added has a significant effect on firm valuation. It therefore recommended that successful value-based management firms should maintain that the technical accounting requirement of EVA is straightforward and makes only minimal adjustments to their accounting procedures. To give investors a normal return on their investment in the company's shares, managers should work to boost future EVA. This is crucial for establishing success standards for management incentive compensation schemes by corporate compensation committees as well as securities analysts evaluating stocks. To increase the wealth of owners because they hold a particular position in the company and need the rate of return due to the risk, managers must work to satisfy both the needs of the company's customers and those of the owners. Firms should also strengthen internal financing to reduce financing from debt, as debt may affect the value of EVA.

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