PENSION FUND ACCOUNTING AND INFORMATION QUALITY IN NIGERIA

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Abstract

The pension fund accounting and information quality literature is vast, considerably smaller but still comprehensive in the part of the financial informational quality literature that revolves around pension fund accounting. The aim of this study is to empirically fund income measurement on book value in Nigeria. Time series data from 2000-2016 were collected from central bank of Nigeria and National Bureau of statistics. Ordinary least square regression, unit root test, cointegration and error correction model were used in analyzing the data with the aid of e-view version 10. the econometric results indicate that fund income measurement has a significant effect on book value; explaining about 75.2% of to variation in book value, fund income measurement were found to have significant effect on book value. The study therefore conclude that there exist a significant positive effect of fund income measurement on book value and recommends that There is need to streamline and strength accounting information quality requirements, harmonize regulatory arrangements and codify them as separate law. This will assist to minimize inconsistencies in the provision of company's regulations with regard to financial reporting quality, remove a situation where several bodies review and approve financial statements before they are published and curtail differences in assessment (by the relevant bodies/of the quality of financial statements. Besides, there is the need to strengthen the capacity of the regulatory bodies in order to ensure that their statutory provisions are adequately enforced.
Keywords: Fund Income Measurement, Book Value, Pension Fund Accounting, Financial Statement, Information Quality.

Introduction

The development of a strong pension fund accounting has been of longstanding interest to and elicits frequent commentary by academics, professional accountancy bodies, regulators, researchers, and men of affairs (businessmen, Politicians, labour leaders and governments). Research throughout the world has revealed that many employees do not save enough during their working lives, and hence are unable to maintain similar lifestyles to these they led during their working life (Pippin &Tosun, 2014; Wasao, 2014; Okunowo, 2014; Nasir; 2015; Cobhan, 2016; Allahverd; Alagoz & Ortaikapoz, 2017). This is also true with respect to

retirement savings for employees who have a contributory employer—sponsored pension fund; even when they are given an option to contribute more to their pension fund, a significant number still contribute the minimum amount required (Barati & Bakhshagesh, 2015; Che-Azmi & Kamaralzaman, 2019). While there has been a lot of considerable research on the effect of pension fund accounting on accounting information quality in the developed countries. There has been relatively little or no systematic attempt at examining the effect of pension fund accounting on accounting information quality in developing countries, Nigeria in particular. Strikingly, warranting a more indepth empirical analysis of the type undertaken in this study(Abiodun, 2012; Ayzer & Cama, 2013; Alm & Liu, 2013).

Pension funds have been acknowledge to be crucial for economic advancement through the investment of current retirement savings, that will enhance retirees' post occupational earnings. American Academy of Actuaries (AAA) (2014) affirms that a pension structure and accounting information quality is expected to furnish recipient with sufficient income stream throughout their post-employment period. However, for this to be effectively achieved, organizations are expected to engage in periodic evaluation of their pension and disclosure of plan's assets and liabilities in the financial statement (Queisser, 2018). This approach of pension fund accounting and accounting information quality creates a high sense of accountability, measurement and disclosure of pension assets record to all parties (Al-mamary., Shamsuddin & Aziah, 2013; Balogun, 2006).

The problem of accounting for employees' pension contribution and mismanagement resulting in non-remittance, under-remittance, multiple or excess remittances of pension funds and delay in the release of contribution or benefit and gratuities after retirements, had caused undue hardship and has a negative effect on pensioners' sustainability. This delinquency no doubt, has attracted considerable out cry and attention from pensioners, policy makers, practitioners, government officials and the academia Resbaliwo (2005); Agba & Nwosa (2011); Agbaram & Dinbabo (2014).

For many companies, pension fund is a very large liability and for the most part, it is not capture on the statement of financial position. This was in contention with the IAS 19 that requires an employer to recognize a liability when an employee has provided service in exchange for benefits to be paid in the future. Pensions are still being treated as off statement of financial position item. To them it is because pension fund accounting and accounting information quality is complicated and they prefer to treat pension issues as footnotes items, which hitherto makes the footnotes presentation often torturous(Bhiodum, 2012; Aeniji etal 2017; Collins etal, 2017; Nwaiwu & Anurume, 2019).

It is evidence that employers' obligatory contribution to the plan and liability were not recorded even when the contribution has not been made in full, while the management process of the individual pension's funds are mostly done with little public accountability, obscure management processes and limited access to accounting information quality. However, accounting information practice currently allow a degree of choice of policies and professional judgment in determining the methods of measurement, criteria for recognition and even the definition of accounting entity. The exercise of this choice can involve a deliberate non-disclosure of information and manipulation of accounting figures, thereby presenting the business as being more profitable (or less profitable for tax purpose) and financial stronger than it is supposed to be with this practice, accounting information quality

users are being misled and this constitutes a threat to corporate investment and growth (Akenbor & Ibanichuka, 2012;Abdullah & Minhit, 2013; Martin & Pais, 2014; Nwaiwu, 2018).

Hence, the aim of this empirical study is to bridge this gap by assessing the effects of pension fund accounting on book value in developing country, Nigeria. The remainder of this paper is organized as follows after the introduction, section two provides a review of related literature and hypothesis, section three articulates the methodology, section four presents the econometric results and discussion, section five wraps it up with conclusion and recommendations, of the study.

Review of related literature and Hypothesis

Based on the accounting profitability theory, the reviewed literature indicates that several factors could affect the financial sustainability of pension fund administrators. These factors can be grouped into two: those related to pension fund outreach and those related to pension fund efficiency. The accounting profitability theory is used to explain various factors that can affect the number and riskness of client, the income and expenses of a pension fund administrator and therefore their profitability. Efficiency refers to the ability to produce maximum output at a given level of input (Chua & Lianto, 1996). Woller (2000) defines efficiency as the most effective way of delivering benefit to the retirees. This involves among others, cost minimization at a given level of operation. Pension fund administration can reduce their total expenses at a given level of operations or increase income at the same level of operation or both. This is what we refer to as efficiency in as far as pension fund income and expenses are concerned. According to Glautier & Underdown (2001) profit can be used to ensure efficiency of an organization. This is particularly true under competitive condition and 51 therefore, fairly applicable to pension fund administrators in Nigeria which operates under perfect

competition condition (Armitage & Conner, 2001; Asuquo., Akpan & Tapany, 2012; Ayegha & Odoh, 2013; Ayzer & Cama, 2013; Bayer, 2016).

The expenditure (costs) and income (revenue) of the pension fund administrations can be affected by either internal or external factors or both. The level of the impact that the factors cause on profitability may vary from one factor to another regardless of whether they are internal or external factors. There are also other factors that may drive the 1evel of income or expenditure of pension fund administrators, which are not controllable within the pension fund administrators. According to Sebreiner (2000), profitability s a stepping stone to financial sustainability. It has also been widely used as a measure of financial sustainability. Many scholars have conducted series of researches to confirm this (Woller & Schreiner, 2002; COAP, 2003; Musalem & Robert 2004; Adongo stork, 2006; Armendariz & Morduch, 2007; Hauner et al, 2007).This study will anchor on accounting profitability theory and theory of intermediation (Bernroider, 2008; Bulsma; etal 2014; Biobele, 2015)..

Pension Fund Accounting

Pension fund accounting draws its significance from IAS 19 - accounting for retirement benefit in the financial statements of employers and IAS 26 - Accounting and Reporting for Retirement Benefit Plan. The accumulated pension expense over one year period and release of information on pension plan's assets and liabilities of a company is known as pension accounting. The assumption necessitates the identification of pension cost and to feature the worth of a pension asset together with pension plan's other relevant requirements (Blake, 2003; Bonol., 2003; Cao, 2005), Copocci & Corhay, 2005; Chris & Ahamah, 2015).

Pension plan are instigated to ensure that pensioner's benefit depict the value of the

service offered by them. According to Halsey (1999) the retirement benefit plans are usually administered by trustee appointed from the employees and the employer as separate entity from the employers' administration. The trustee receives contributions to the plan or scheme, invest them and collect interest or dividend from the investment. Accounting for pension fund encourages report and disclosure that contains a statement of net asset available for benefits and a description of the funding policy. This report will further contain calculations of risk and life expectancies (actuarial) of pensioners. Actuarial assumption under this subject matter is usually appraised and recommended by the company's independent auditors (Collins etal, 2017).

The Actuaries set assumptions because pension benefits are paid far out into the future, but how and when they will be paid is uncertain. This takes into cognizance of interest rate, salaries increases, inflation, investment and other related effect on the cost of a pension plan. It also covers issues on termination assumption relating to the length to which the participant will work for his employee, mortality assumption and retirement assumption relating to when the employee will retire and starts receiving accruable benefits Howbeit, under the relevant assumption in the accounting for pension fund, report of a retirement benefit plan whether defined benefit or defined contributory should contain the following information:
i.   A report on the modification/changes in net assets accessible to beneficiaries
ii.   Disclosure of the accounting policies
iii. A narrative of the pension plan and the significant of any modification in the plan during the period

The value of post-employment benefit plan must be carried in the market value. Where a fair or market value is not used, information on its non-usage must be made known. As a corollary, Harper (2009) in his study on pension fund accounting and the states of pensioners in China, discovered that when pension fund are effectively accounted for, using appropriate assumption, and taking into cognizance inflation rate and other economic assumption on the pension assets, the anticipated retirement benefit could be readily available to meet pensioners' need after retirement. Exley et al. (1997) added that, where details accounting procedures are followed, the pension fund would be effectively measured and managed to the benefit of pensioners in ensuring that income from the pension fund are sufficient to meet pensioners' life expectancy (Dedquah, 2001; Davos & Hu, 2008; Dandayo & Farouk, 2012; Dandago & Rofai, 2014).

Pension funds may be defined as forms of institutional investors, which collect, pool and invest funds contributed by sponsors and beneficiaries to provide for the future pension entitlements of beneficiaries (Davis, 1995). Thus, pension funds provide means for individuals to accumulate savings over their working life 50 as to finance their consumption needs in retirement, either by means of a lump sum or by provision of an annuity, while also supplying funds to end-users such as corporations, other households (Via securitized loans) or governments for investment or consumption. Pension funds have grown strongly in recent years in many countries as well as in emerging markets, both relative to GDP and compared to banks. Navajas (2000) posits that since early withdrawal of funds is usually restricted or forbidden, pension funds have long term liabilities, allowing holding of high risk and high return instruments. Accordingly, monies are intermediated by pension funds into a variety of financial assets, which include corporate equities, government bonds, real estate, corporate debt (in the form of loans or bonds), securitized loans, foreign holdings instruments, money market instruments and deposits as forms of liquidity

(Davos & Hu, 2008; Dolove & Melean, 2016; Eme & Sam, 2017; Fapohunda, 2018).

Pension funds are typically sponsored by employers, such as companies, public corporations, industry or trade groups. Accordingly, employers as well as employees typically contribute. Funds may be internally or externally managed. Returns to members of pension plans backed by such funds may be purely dependent on the market (defined contribution funds) or may be overlaid by a guarantee of the rate of return by the sponsor (defined benefit funds). For both types of fund, the liability is real (inflation adjusted) terms. This is because the objective of asset management is to attain a high replacement ratio at 18 retirement (pension as a proportion of final salary) which is itself determined by the growth rate of average earnings. Most countries adopt an expenditure tax treatment for pension funds, exempting pension saving from taxes on contributions and assets returns, while taxing retirement income and lump sums drawn from such tax-favoured assets. Pension saving is generally treated more favourably than other institutional saving, thus leading to greater flows of saving being directed through this channel. It is clear that such fiscal provisions boost the demand for saving via pension funds. Moreover, growth of pension funds is also typically dependent on the generosity of public social security pensions. In countries such as Germany, France and Italy, where social security is relatively generous, pension fund development is less marked than elsewhere (Davis, 1997; Delon & Mclean, 2003; Dens, 2011; DeRoode, 2013; Edogbanyu, 2013; Enache; Milos & Milos 2015; Fapohnada, 2013; Feldestein & Seligman, 2017).

The above mentioned tax exemption of contributions and asset returns are special features distinguishing pension from other such reserves in most countries and making funding attractive to firms as well as individuals corporations can be expected to manage pension funding and investment to maximize benefit to shareholders (Schreiner, 2000). Besides tax exemption, attractions of funding to the firm include the fact that sponsors may in certain circumstances use surplus assets as a contingency reserve. Defined contribution plans have tended to grow faster than defined benefit in recent years, as employers have sought to minimize the risk of their obligations, while employees seek funds that are readily transferable between employers. This study employs defined contribution plans-type of pension funds in Nigeria. A pension is a contract for a fixed sum of to be paid regularly to a pensioner, typically following retirement from service. It is different from severance pay because the former is paid in regular installments while the latter is paid in one lump sum (Clerk, 2004; Donaldson etal 2010; Daggah & Dennies, 2014; Lin, 2014; Marcellus & Osadebe, 2014).

A pension plan created by an employer for the benefit of employees is commonly referred to as an occupational or employer pension. Labour unions, the government and other organizations also fund pensions. Occupational pensions are a form of deferred compensation, usually advantageous to employee and employer for tax reasons. Many pension plan also contain an additional Insurance aspect, since they often will pay benefits to survivors or disabled beneficiaries. The common use of the term pension is to describe the payments a person receives upon retirement, usually under pre-determined legal and/or contractual terms (Hassana, 2008; Nnanta, Okoh & Ugwu, 2011; Njera etal, 2015; Neniyiaba & Okoye, 2015; Nwagura, 2018; Okeye & Akenbor, 2019).

According to Adams (2005) pension is the amount paid by government or company to an employee after working for some specific period of time, considered too old or ill to work or have reached the statutory age of retirement. It is

equally seen as the monthly sum paid to a retired officer until death because the officer has worked with the organization paying the sum. Adebayo (2006) and Robelo (2002) asserted that pension is also the method whereby a person pays into pension scheme a proportion of his/her earnings during his working life. The contributions provide an income (or pension) on retirement that is treated as earned income (Zhaw, 2002; Zhang & Luo, 2013; Zandberg & Spierdijk; 2013; Yu, 2013; Worldridge, 2016; Nwaiwu, 2019).

This is taxed at the investors' marginal rate of income tax. On the other hand, gratuity is a lump sum of money payable to a retiring officer who has served for a minimum period of time. A greater importance has been given to pension and gratuity by employers because of the belief that if employees' future needs are guaranteed, their fears ameliorated and properly taken care of, they will be more motivated to contribute positively to organization's output. Similarly, various government organizations as well as labour unions have emphasized the need for sound, good and workable pension scheme. Dhameji & Dhameji (2009) tried to link commitment to motivation and opined that commitment is also tied to how well an employee is motivated. Motivation here entails the process of influencing employee's behavior towards the attainment of organizational goals. Motivation includes meeting the psychological, financial and emotional needs of workers, because it creates an impression in them that there is life after retirement (Wilson & Aggrey, 2012; Were etal 2017).

In the words of Sule & Ezugwu (2009), a good pension guarantees employee's comfort and commitment to the organization during his/her active years. According to Ozor (2006), Pension consists of lump sum payment paid to an employee upon his disengagement from active service. According to him, payment is usually in monthly installments. He further stated that pension plans may be contributory on noncontributory; fixed or variable benefits; group or individual insured or trustee: Private or public, and single or multi-employer.

Ugwu (2006) stated that there are four main classifications of pension in Nigeria. These are:

i. **Retiring Pension**: This type of pension is usually granted to a worker who is permitted to retire after completing a fixed period of quality service usually 30 to 35 years or on attaining the age of 60 to 65 years for the public service in Nigeria and 70 years of age for professors and judges.

ii. **Compensatory Pension**: This type of pension is granted to a worker whose permanent post is abolished and government is unable to provide him with suitable alternative employment.

iii. **Superannuating Pension**: This type of pension plan is given to a worker who retires at the prescribed age limit as stated in the condition of service.

iv. **Compassionate Allowance**: This happens when pension is not admissible or allowed on account of public servants removal from service for misconduct, insolvency or incompetence or inefficiency (Amujiri, 2009:140).

Generally speaking, pension is a way of securing the welfare of employees after disengaging from active service at old age. In the words of Ayegba, James & Odoh (2013), pension is periodic income payment to employees who have become eligible for benefits by reason of age, earnings and service after retirement. Pension is catering for the employees at a period of life where the employees cannot fend for themselves. Pension entails planning for the future. Pension is a fixed sum paid regularly to an employee after retirement under certain conditions. This means that an individual can only receive money or pension after he has worked for an organization

or the government for a number of years. It is an entitlement that is due a worker when he can no longer work at old age (Verbic & Sprak, 2014; Vigitha Smith, 2014; Shipe, etal 2015).

According to Adams (2005) as cited in Eme, Uche & Uche (2014) a pension is the amount government or a company pays to a worker who has reached the statutory age of retirement after working for a specific period of time. Pension is employee compulsory saving, that is paid to him at old age to keep him close to the level when he was working. Pensions are monthly sum Paid to a retired worker until his/her death. Ozor (2006) sees pension as a lump sum payment made to a worker after retirement from active service Ozor (2006) posits that it is monthly installment payments (Sia, 2010; Sia, 2010; Poshchenko, 2013; Postal, 2017).

The surest way for retirees to solve and meet financial obligations is through pension payments. The pension plan provides regularly income for workers after retirement from active services. The definitions from the foregoing clearly highlight the features of pension. All definitions hold common grounds that pensions are monthly payments. It is paid to an employee after retirement from active service. Pension is certain in nature; it secures the future of an employee at old age. Pension is different from gratuity and severance which is a lump sum that is paid at once (Sculean & Mos, 2010; Payne, etal, 2014; Orifono, 2016; Onyx & Dalaer, 2016; Olanrewayu, 2016).

However, it is sad that these pensions are not or are hardly paid to some retirees. This situation has made employees to reduce their age so that they can work longer in a company. The consequences of these actions are that most employees constitute nuisance and wastage to the economy and manpower administration. The manipulation of age in both the private and public sector is a common thing. The aim is to remain longer in service. There is the need as a

matter of urgency for organizations - private and public to provide adequate financial resources for the aged in Nigeria. Securing the future of the young at old age begins with proper implementation and execution of dependable, effective and efficient pension system. Demakin (2008) as cited in Oyerogba, Olalcyc & Solomon (2013) posit that the pension system in Nigeria is bedeviled with transgressed, uncertainty and lack the merit of providing financial security for old age (Olga, 20120 Okuns & Peter, 2015; Olanrewaya, 2016; Okeye & Akenbor, 2019).

Book Value

It may be established that according to present accounting rules, the book value of a companies (i.e. the value of its equity as indicated in the statement of financial position) is mainly determined using a historical cost model founded basically on the realization principle, presuming the principle of going concern; yet values determined on the basis of the revaluation model based on the time value principle begin to appear in relation to n growing number of items (Nwaiwu, 2016).

Accordingly, in the statement of financial position compiled in application of IFRS. examined in the framework of the empirical research, the historical cost model based on the realization principles and the revaluation model based on the time. Value principles are present in parallel (Ohlson, 2001; Ohayinka,, 2010; Edia & Okeye, 2012; Oyunbanerm & Bamiwoye, 2014).

We should also stress that the statement of financial position may only contain elements which meet the recognition or presentation criteria. Consequently, book value is only constituted by elements owned or controlled by the company, resulting from past events and producing an expected profit in the future, which may be measured reliably, for its only to ensure the assertion of the philosophy that accounting, needs to present a true and fair view

(Ibanichuka & Nwaiwu 2016; Nwaiwu & Ogbonna, 2016).

Also, the aim of accounting needs to be taken into account when analyzing the developments of book value, as this provides the explanation for book value being just what it is. Through the intermediary of the statement of financial position, accounting provides information to stakeholder about the current financial position of the company. Obviously it is impossible to satisfy the information needs of all coalition member o priority should be established among the individual interests. As a resu1t, in current accounting practice the aim of determining the results enjoy priority, and the calculation of the values of wealth and equity are subordinated to this objective (Nyong & Duze, 2011; Ogunbamera & Zoniwaye, 2014; Ogwunike, 2018).

Hypothesis Development
In line with the empirical study and arguments of various sociological researchers, the foregoing discussion provides the context for one important hypothesis that track the effect of retirement savings account on time lag, formulated in the null form, to wit:
H_{01}: Fund income Measurement accounts does not exert any significantly effect on book value in Nigeria.

Methodology:
This section shows the methodology used to evaluate the long run equilibrating effect and short run dynamics in the variables if any to achieve the target of the study. The research design applied is ex-post facto research design. The ex-post facto research design according to Onwumere (2009), Ibanichuka (2012), Ibanichuka and Nwaiwu (2019) is the type of research involving events that have already taken place. Time series data regarding the variables of study were sourced from the central bank of bank statistical bulletin, central bank of Nigeria Reports, National Bureau of statistics

and financial statements of years 2000-2016 of pencom in Nigeria. The choice of secondary data and its sources were based on the fact that the data are assumed to be reliable, suitable and adequate for the nature, scope and objectives of the study and are therefore assumed to be error free.

We utilized ordinary least squares (OLS) regression analysis, unit root test, co-integration and error correlation model were used in analyzing the data with the aid of electronic view version 10.

Model Specification
The model specification is based on the existing theory that retirement savings account and time lag significantly influence each other (Agbaam & Dinbabo, 2014; Falola & Ohumakin, 2017). Specifically, the model from related empirical evidences used by Al-mamary Shamsudlin & Aziah (2013), Ahmad (2016), Basel., Baker & Omar (2016), Collins., Maydew & Weiss (2017), Nwaiwu (2018), Nwaiwu & Ironkwe (2019) was adopted but we made modifications. We infact generated three models that empirically achieve the first objectives and the corresponding research questions. Consequently, the model specification was formulated in the following functional forms:
$$TL_{it} \quad = \quad \int (FIM_{it}) - \quad - \quad - \quad - \quad - \quad - \quad i$$

These functional or deterministic forms do not have Beta, we then introduced Beta into the mathematical form as thus:
$$TL_{it} \quad = \quad \alpha_0 + \beta_1 FIM_{it} \quad - \quad - \quad - \quad - \quad - \quad - \quad ii$$

These functional and mathematical forms do not equally have a random or stochastic variable and since in statistical effect we deal with random or stochastic disturbance term stated as a multiple regression model as follows:

$$TL_{it} = \alpha_0 + \beta_1 FIM_{it} + \mu_{it} \quad - \quad - \quad -$$
$$- \quad - \quad iii$$

Where: BV_{it} = Book Value for the period of time. FIM_{it} = Fund Income Measurement for the period of time. μ_{it} =Represents the random or stochastic disturbance term or error term or unexplained variables for the period of time. α_0 = Intercept term for the period of time. β_1 = Are parameters known as partial regression coefficients or partial slope coefficients for the period of time. $_{it}$ = Denotes the value of the variables for the period of time

Aprior Expectation: In order to ensure that the empirical results are robust, several diagnostic tests will be performed. Thus, as stated above, our parametric estimates are expected to confirm to apriori expectation. In all, the fund income measurement is expected to increase with the increase in this time lag as shown below

$\beta_1 > 0 <$

Results and Discussions
Data Presentation
The data presented below show the values of Fund Assets Record, Fund Income Measurement, Retirement Saving Accounts, Time Lag and Book Value, covering 2000 to 2016 period.

Table 1: Fund Income Measurement (FIM), Book Value (BV), from 2000 to 2016.

Year	FAR	BV
2000	120,685,428,380	0.55
2001	122,683,428,380	0.5
2002	889,929,765	0.75
2003	92,887,304,673	0.82
2004	109,207,063,166	0.82
2005	195,185,921,457	0.81
2006	232,857,238,038	0.7
2007	261,333,273,712	0.55
2008	219,945,781,667	0.8
2009	298,433,371,026	0.84
2010	410,286,371,626	0.82
2011	326,870,334,770	0.8
2012	362,780,374,887	0.75
2013	421,670,351,701	0.87
2014	489,350,751,321	0.85
2015	579,387,101,512	0.75
2016	785,310,300,131	0.98

Source: Central Bank of Nigeria Statistical Bulletin and Annual Report of pension fund administrators.

Empirical Results
We attempted to find out the time series properties of all the variables (both dependent and independent) to avoid spurious regression, which arises as a result of the regression of two or more non-stationary time series data. The most common cause of violation of stationarity

is a trend in the mean, which can be due either to the presence of a unit root or of a deterministic trend. That is to say that time series have to be de-trended before any meaningful analysis can be performed. Removing a trend from the data enables us to focus our analysis on the fluctuations in the data near or around the trend. According to Brooks (2008), un-trended data may lead to spurious estimates. Thus, time series analysis was carried out to establish that the data is stationarity or that it has non-stationarity problem using Augmented Dickey-Fuller (ADF) test. The decision guideline is that the absolute value of the calculated ADF-statistic should be more than the absolute values of the Test Critical Values. Below are the results;

Table 2: ADF unit root test results on Funds Income Measurement(FIM) data

Null Hypothesis: D(FIM) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 1 (Automatic - based on SIC, maxlag=3)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.081722	0.0316
Test critical values:	1% level	-4.800080	
	5% level	-3.791172	
	10% level	-3.342253	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations
    and may not be accurate for a sample size of 14

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(FIM,2)
Method: Least Squares
Date: 11/10/18   Time: 11:57
Sample (adjusted): 4 17
Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(FIM(-1))	-2.368752	0.580332	-4.081722	0.0022
D(FIM(-1),2)	0.581537	0.333764	1.742359	0.1121
C	-1.78E+09	1.51E+09	-1.182241	0.2645
@TREND("1")	2.41E+08	1.46E+08	1.642280	0.1316

R-squared	0.756902	Mean dependent var	3.83E+08
Adjusted R-squared	0.683973	S.D. dependent var	3.89E+09
S.E. of regression	2.19E+09	Akaike info criterion	46.08577
Sum squared resid	4.79E+19	Schwarz criterion	46.26836
Log likelihood	-318.6004	Hannan-Quinn criter.	46.06887

F-statistic	10.37858	Durbin-Watson stat	1.981761
Prob(F-statistic)	0.002052		

At first difference, table 2 shows that at 5 percent significance level FIM has a calculated absolute ADF- test statistic of 4.081722, which is more than the Test critical value of 3.791172, also the table indicates a 3 percent probability value, which is less than the conventional 5 percent level of significance. Hence, FIM is stationary at first difference. Note that only intercept was included in the ADF test equation (no trend).

Analysis of Cointegration
Table 3: Results of Johansen Cointegration Test on <u>TLAG</u> and FIM
Date: 11/10/18 Time: 12:54
Sample (adjusted): 5 17
Included observations: 13 after adjustments
Trend assumption: Linear deterministic trend
Series: TLAG FIM
Lags interval (in first differences): 1 to 3

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.739666	18.35378	15.49471	0.0180
At most 1	0.063905	0.858503	3.841466	0.3542

 Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
 * denotes rejection of the hypothesis at the 0.05 level
 **MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.739666	17.49528	14.26460	0.0149
At most 1	0.063905	0.858503	3.841466	0.3542

 Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
 * denotes rejection of the hypothesis at the 0.05 level
 **MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b'*S11*b=I):

TLAG	FIM
148.8074	-3.48E-09
56.29531	4.01E-09

Unrestricted Adjustment Coefficients (alpha):

D(TLAG)	-0.011154	-0.001538
D(FIM)	7.56E+08	-2.67E+08

1 Cointegrating Equation(s):   Log likelihood   -246.0664

Normalized cointegrating coefficients (standard error in parentheses)

TLAG	FIM
1.000000	-2.34E-11
	(8.9E-12)

Adjustment coefficients (standard error in parentheses)

D(TLAG)	-1.659768
	(0.59824)
D(FIM)	1.13E+11
	(7.6E+10)

In table 3 above, both Trace and Max-eigen value tests reveal there is one co-integrating equation. Thus, the co-integration results reported in the Table show that the null hypothesis of no co-integration should be rejected and the alternative of hypothesis that states that at most one cointegration equation (CE) is accepted.

In spite of this, movement away from this relationship may well take place because of shocks in any of the variables in the short run. Therefore, short run changes in the variables are assessed utilising Error Correction Model (ECM) in the study. Hence, having established Co-integration, (ECM) is specified to show the short run changes in the variables under study.

Table 4: Results of Johansen Cointegration Test on FIM and BV
Date: 11/10/18   Time: 13:02
Sample (adjusted): 5 17
Included observations: 13 after adjustments
Trend assumption: Linear deterministic trend (restricted)
Series: BV FIM
Lags interval (in first differences): 1 to 3

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.892757	32.89848	25.87211	0.0056
At most 1	0.257695	3.873943	12.51798	0.7603

Trace test indicates 1 cointegratingeqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.892757	29.02453	19.38704	0.0015
At most 1	0.257695	3.873943	12.51798	0.7603

Max-eigenvalue test indicates 1 cointegratingeqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b'*S11*b=I):

BV	FIM	@TREND(2)
-34.85461	1.33E-09	0.348962
-21.48779	-2.65E-09	-0.005097

Unrestricted Adjustment Coefficients (alpha):

D(BV)	0.092260	0.006972
D(FIM)	9.03E+08	-6.94E+08

1 Cointegrating Equation(s):   Log likelihood   -266.8323

Normalized cointegrating coefficients (standard error in parentheses)

BV	FIM	@TREND(2)
1.000000	-3.82E-11	-0.010012
	(3.2E-11)	(0.00162)

Adjustment coefficients (standard error in parentheses)

D(BV)	-3.215695
	(0.54247)

D(FIM)	-3.15E+10
	(2.2E+10)

In table 4 above, trace as well as Max-eigen value tests indicate there is one co-integrating equation. Thus, the co-integration results reported in the Table show that the null hypothesis of no co-integration should be rejected and the alternative of hypothesis that states that at most one cointegration equation (CE) is accepted.

Then again, movement away from this relationship may well take place because of shocks in any of the variables in the short run. Therefore, short run changes in the variables are assessed utilising Error Correction Model (ECM) in the study. Hence, having established Co-integration, (ECM) is specified to show the short run changes in the variables under study while preserving the long-run relationship.

Analysis of Error Correction Model
Table: 5 Error Correction Model of TLAG and FIM
Dependent Variable: D(TLAG)
Method: Least Squares
Date: 11/10/18   Time: 12:59
Sample (adjusted): 2 17
Included observations: 16 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.001060	0.004523	0.234432	0.8183
D(FIM)	3.52E-12	2.15E-12	1.638543	0.1253
T(-1)	-0.867942	0.311052	-2.790343	0.0153

R-squared	0.379891	Mean dependent var	0.003125
Adjusted R-squared	0.284490	S.D. dependent var	0.020887
S.E. of regression	0.017668	Akaike info criterion	-5.066817
Sum squared resid	0.004058	Schwarz criterion	-4.921957
Log likelihood	43.53454	Hannan-Quinn criter.	-5.059399
F-statistic	3.982034	Durbin-Watson stat	1.776044
Prob(F-statistic)	0.044776		

Table 5 reveals that the independent variable, funds income management explains only about 37 percent change in Time Lag. The Durbin-Watson statistics (1.776) is not far more or far less than the acceptable range and shows no presence of autocorrelation, with one independent variable ($k = 1$) and 17 observation ($n = 17$), lower critical value of Durbin-Watson (d_L) = 1.133 and upper critical

value of Durbin-Watson (d_U) = 1.381. Evidently there is no positive autocorrelation because Durbin-Watson = 1.776 and greater than 1.188 as well as 1.381. The Error Correction Term indicated in the table as T is negative as expected. The absolute value of the coefficient of the error correction term indicates that roughly 86% of the disequilibrium in the level of

Time Lag is offset by short run adjustment in each year.

The estimation results show that the independent variable FIM is statistically insignificant in explaining changes in the level of Accrual in Nigeria at 5% level of significance. The coefficient of FIM is 3.52 while the p-value is 0.1253, which is far more than 0.05 level of significance and indicating an insignificant positive relationship with Accrual, the dependent variable. Having done Error Correction Model (ECM) analysis, the study proceeds to test for causality using Pair-Wise Granger Causality Test.

Table 6:Error Correction Model of BV and FIM
Dependent Variable: D(BV)
Method: Least Squares
Date: 11/10/18   Time: 13:08
Sample (adjusted): 2 17
Included observations: 16 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.015480	0.026798	0.577669	0.5734
D(FIM)	2.17E-11	1.19E-11	1.832876	0.0898
Y(-1)	-0.637623	0.238338	-2.675288	0.0191

R-squared	0.394809	Mean dependent var		0.026875
Adjusted R-squared	0.301702	S.D. dependent var		0.126001
S.E. of regression	0.105292	Akaike info criterion		-1.496803
Sum squared resid	0.144123	Schwarz criterion		-1.351942
Log likelihood	14.97442	Hannan-Quinn criter.		-1.489385
F-statistic	4.240403	Durbin-Watson stat		2.057029
Prob(F-statistic)	0.038221			

Table 6 reveals that the independent variable, Funds Income Management accounts for only about 39 percent change in Book Value. The Durbin-Watson statistics (2) is not far more or far less than the acceptable range and shows no presence of autocorrelation, with one independent variable (k = 1) and 17 observations (n = 17), lower critical value of Durbin-Watson (d_L) = 1.133 and upper critical value of Durbin-Watson (d_U) = 1.381. Evidently there is no positive autocorrelation because Durbin-Watson = 2 and greater than 1.188 as well as 1.381. The Error Correction Term indicated in the table as Y is negative as expected. The absolute value of the coefficient of the error correction term indicates that roughly 83% of the disequilibrium in the level of Book is offset by short run adjustment in each year.

The estimation results show that the independent variable FIM is statistically insignificant in explaining changes in the level of Book Value in Nigeria at 5% level of significance. The coefficient of FIM is 2.17 while the p-value is 0.0898, which is more than 0.05 level of significance and indicating an insignificant positive relationship with Book Value, the dependent variable. Having done Error Correction Model (ECM) analysis, the

study proceeds to test for causality using Pair-   Wise Granger Causality Test.

Pair-Wise Granger Causality Analysis
Table 7: Pairwise Granger Causality Tests on FIM and TLAG
Pairwise Granger Causality Tests
Date: 11/10/18   Time: 12:57
Sample: 1 17
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
FIM does not Granger Cause TLAG	15	0.37450	0.6969
TLAG does not Granger Cause FIM		1.75269	0.2226

The results of the Pair-wise Granger Causality tests presented in table 7 above show an F-Statistic of 0.37450 as well as 1.75269 with a corresponding p-value of 0.6969 and 0.2226, which implies that no causalities exist between FIM and TLAG using 0.05 level of significance.

Table 8: Pairwise Granger Causality Tests on FIM and BV
Pairwise Granger Causality Tests
Date: 11/10/18   Time: 13:05
Sample: 1 17
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
FIM does not Granger Cause BV	15	0.15006	0.8626
BV does not Granger Cause FIM		0.14919	0.8633

The results of the Pair-wise Granger Causality tests presented in table 8 above show an F-Statistic of 0.15006 as well as 0.14919 with a corresponding p-value of 0.8626 and 0.8633, which implies that no causalities exist between FIM and BV using 0.05 level of significance.

Test of Hypothesis
Having performed the analysis, we proceed to test the hypotheses formulated in chapter one above to enable us discuss our findings.

Hypothesis One: Fund income measurement does not exert any significant influence on Book Value

The estimated ECM results in table 6, showed a positive and insignificant effect of fund assets record on book value. From the results, the effect of funds income measurement on audit lag has a p-value = 0.0898. This figure is more than 0.05 the preferred level of significance and the decision guideline is that if the p-value is more than 0.05 we accept the Null Hypothesis, if otherwise we reject. Therefore, we accept the Null Hypothesis that funds income measurement has no significant effect on book value.

Discussion of Findings:
This section dealt with discussion of findings, utilizing three series data of Fund Income

Measurement (FIM), of Pension Fund Accounting (PFA) on Book Value (BV), Information Quality (IQ) in Nigeria. Data were from the central bank of Nigeria (CBN), Pencom 2016 and National Bureau of statistics but empirical analysis was limited to seventeen (17) years, from 2000-2016.
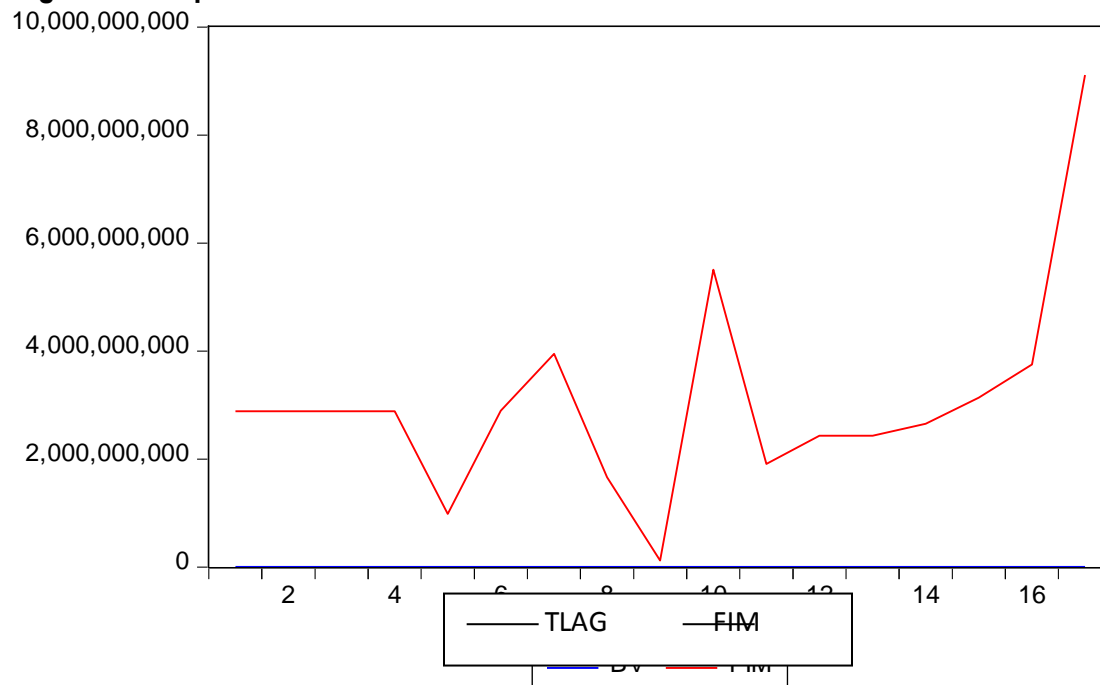
Fund Income Measurement on Book Value as indicated in table 6. The analyse can confidently say that fund income measurement is positively and significantly influenced by time lag the sub-dependent variable. The absolute value of the coefficient of the error correction term shows roughly. 86% of the disequilibrium in the level of time lag and equally off set by short run adjustment in each year. Indeed the estimation econometric results indicated that the sub-variable fund income measurement is statistically significant in explaining changes in the level of time lag in Nigeria at 5% level of significance. Put with the coefficient of 3.52 and p-value of 0.1253, which is far more than 0.05% level of significance and equally consistent with the study apriori expectation.

Indeed, like previous discussion of findings, table 6. fund income measurement on book value, the analyses for unit root implied that the variables fund income measurement on book value are stationary at first differencing (i.e.) at the order 1(1) hence the Johansen co-integration test was conducted. The econometric result obtained from the co-integration analysis suggests that the variables have a long run effect. This is become the trace result for unrestricted co-integration rank test shows there is a significant co-integration between the variables for the co-integrating equations. At this point the study had a picture of the effect of the variables in the long run. The implication of the result is that the variables have the capability to influence significantly with each other in the distant future.

The Granger Causality test conducted the various causal effect that subset of each measure of pension fund accounting on accounting information quality which is "fund income measurement on book value. The finding made in the granger section proved that the influence of fund income measurement on book value is not caused by pension fund accounting but may have been caused by another external factor.

The test of hypothesis considered from the hypotheses which were raised to address the central objectives of this study. The findings made showed that fund income measurement has a significant and positive influence on book value in Nigeria. Also, the study observed that the findings made in the course of this study is in agreement with those of Collins., Mayslew., Midgley & Venaik (2008) in London.

Figure 1: Graph of BV on FIM

Conclusion and Recommendations

From the discussion of the econometric results, the study with difficulties conclude that the exist a strong positive and significant effect of fund income measurement on book value in Nigeria. Based on the above conclusion, the study recommends that;

i. There is need to streamline and strength accounting information quality requirements, harmonize regulatory arrangements and codify them as separate law. This will assist to minimize inconsistencies in the provision of company's regulations with regard to financial reporting quality, remove a situation where several bodies review and approve financial statements before they are published and curtail differences in assessment (by the relevant bodies/of the quality of financial statements. Besides, there is the need to strengthen the capacity of the regulatory bodies in order to ensure that their statutory provisions are adequately enforced.

ii. The findings of this study can be used in the debate on the efficacy of regulatory pressure on accounting practice in Nigeria.

iii. The study provides a model which can be used as a framework for analyzing the success or otherwise of the relationship between pension fund accounting and accounting information quality.

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