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EDITORIAL

The Journal of Banking is a research and policy-based publication of The Chartered Institute of Bankers of Nigeria (CIBN) which typically focuses on topical issues in the core areas of banking and finance as well as other related disciplines with an emphasis on implications for banking policy.

For this edition, intellectual articles were carefully chosen from various subject matters ranging from Financial Deepening, CEO & CFO Strategic Partnership, External Public Debt to Liquidity. Though the content of this edition is diverse, it is clear that most authors attempted to either build models that explain relationships between predetermined variables or focus on the efficiency of existing models.

Oluwatosin Oyetayo & Tirisimiyu Oloko conducted a study on Financial Deepening, Poverty Reduction and Financial Inclusion in Nigeria: Any hope for domestic capital? The study employed the Augmented Dickey-Fuller (ADF) and Phillips Peron (PP) tests to check unit root properties of the variables. The Auto-regressive Distributed Lag (ARDL) was also employed for the short run and long run estimation while Granger causality test was conducted on the Toda Yamamoto VAR model to determine the direction of causality among the variables. The study concluded that the ATM model presents the best relationship between financial deepening, poverty reduction (household consumption) and domestic capital (gross fixed capital formation). In other words, development and investment policies geared towards poverty reduction and capital accumulation could rely on ATM transactions as an effective tool.

Idowu Eferakeya examined the Nexus between Chief Financial Officer, Chief Executive Officer Strategic Partnership, and Demographic Variables on Firms' Financial Performance in Nigeria. In the study, survey research design was used and data were collected from firms listed on the Nigerian Stock Exchange that have both CFO and CEO positions using questionnaire instrument. Data were analysed through multiple regression estimation tools which assisted to test the effect of CFOs and CEO strategic partnership, and demographic variables' similarity on firms' financial performance. The findings showed that, CFOs and CEOs strategic partnership, education and tenure similarity have positive significant effect on financial performance, while age and gender similarities do not. In addition, the interaction of CFOs and CEOs strategic partnership with education and tenure similarities have, positive significant effect on firms' financial performance, on the other hand, age and gender similarities have negative insignificant effect on firms' financial performance.

Dr. Richard Onyekachi, Ndubisi Agbo, Dr. Onwe Basil & Dr. Ugwu Okereke on the other hand investigated the Implications of External Public Debt on Exchange Rate Fluctuations in Nigeria from 1981 – 2018. The variables used in the study included external public debt receipts, external public debt servicing, and exchange rate. The study made use of Ordinary Least Square (OLS) regression and Co-integration test as methodology. Findings showed that external debt receipts and external debt servicing have positive short and long-run relationships with naira exchange rate fluctuations. The policy implication of the study is that Nigerian governments should evolve more efficient external debt management strategies that would ensure that foreign loan

receipts secured net off the effects of the servicing obligations in order to enhance the value and exchange rate of the naira.

Finally, Dr. Tarila Boloupremo investigated the relationship between Liquidity and Performance of the Nigerian Stock Market. He employed the Vector auto-regression model in examining the impact of liquidity measures such as the volume of trading and turnover on stock returns for the period of 1985-2018. From the study, result indicated existence of a positive relationship between liquidity and stock market performance during the period examined after controlling for market size. This result however is not in line with the negative relationship between liquidity and market return as obtained by studies on developed markets.

It is our belief that articles in this edition would fill gaps present in knowledge and add value to the economy particularly the financial services value chain. This edition would also form the basis for further studies and discussion. Potential contributors are therefore encouraged to send intellectual articles and innovative thought pieces on topical issues in the Banking and Finance industry as well as the Economy.

'Seye Awojobi, FCIB
Registrar/ Chief Executive

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FINANCIAL DEEPENING, POVERTY REDUCTION AND FINANCIAL INCLUSION IN NIGERIA: ANY HOPE FOR DOMESTIC CAPITAL?

Oyetayo Oluwatosin[1]

&

Oloko Tirisimiyu[2]

Abstract

The goal of financial deepening is to expand the monetary band and ensure that as much as possible, monetary transactions happen within the ambit of the monetary authorities. This is all in a bid to ensure that funds are properly and adequately channelled to where they are needed most. In most developing economies, the informal sector is still in the majority with elements ravaged by poverty and financial exclusion. Therefore, until financial inclusion is achieved, financial deepening efforts cannot be productive. Guided by the finance-led, demand-following and financial liberalization hypotheses, we employed the Augmented Dickey-Fuller (ADF) and Phillips Peron (PP) tests to check the unit root properties of our variables. The Auto-regressive Distributed Lag (ARDL) was employed for the short run and long run estimation while Granger causality test was conducted on the Toda Yamamoto VAR model to determine the direction of causality among our variables. Based on our result, we conclude that the Automated Teller machine (ATM) model presents the best relationship between financial deepening, poverty reduction

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(household consumption) and domestic capital (gross fixed capital formation). Financial deepening and financial inclusion activities have also resulted in a decline in domestic capital. Poverty reduction (household consumption) presents a ray of hope for capital formation in Nigeria. In all, the causal relationship in each of the models exhibits a finance-led path for poverty reduction while the ATM model exhibits a finance-led path for capital formation, poverty reduction and financial inclusion. Therefore, development and investment policies geared toward poverty reduction and capital accumulation can rely on ATM transactions as an effective tool.

Keywords: *Monetary Transactions, Finance-Led, Payment Channel, Household Consumption, Savings*

1.0 Introduction

In any economy of the world, the pivotal role played by the financial system remains sacrosanct. Therefore, national governments will always strive to promote financial development in order to generate economic efficiency (Cihak, Dermirguc-Kunt, Feyen & Levine 2013; Lynch 1996). Financial development as a concept refers to the measurement of the performance of the financial system using some selected indicators that cuts across the money and capital markets. For the purpose of analysis, financial development is further divided into; financial deepening and financial inclusion, even though there has been a lot of confusion and mix up in their terms of reference in literature.

Financial deepening also known as financial depth is defined as the increased provision of broad ranged financial services to all levels of the society. This explains why monetary and credit aggregates used for measuring financial deepening are weighted

in proportion to the gross domestic capital. An effective financial deepening is expected to result in financial liquidity which can lead to increased business opportunities, increased economic growth and improvement in the well-being of the society. On the other hand, financial inclusion also known as inclusive financing has been tagged as the panacea for eradicating poverty (Cull, Dermirguc-kunt & Lyman, 2012; United Nations, 2017).

The focus in financial inclusion is the extent to which financial services are available, accessible and used by the widest spectrum of the population. Where financial deepening is low, it results in financial fragmentation which is characterized by financial exclusion. Financial inclusion will help overcome financial fragmentation and exclusion and generally foster productivity and economic growth (Debroy, 2010).

Essentially, financial inclusion facilitates both credit and savings for households. Access to and use of other financial services apart from credit; such as payments and savings have been described as even more important (Beck, Peria, Obstfield, Presbitero, 2018). Therefore, having an efficient, accessible and safe retail payment mechanism is crucial for achieving a higher level of financial inclusion. Financial inclusion via payment and savings channel also has the advantage of making government sponsored social programs more cost effective and efficient (Muralidharan & Sukhtankar, 2016). No doubt, financial deepening and financial inclusion being the crux of the matter in financial development both play important roles in achieving economic growth by reducing poverty and inequality while maintaining financial stability and a reduction in systemic risk (Han & Melecky, 2013; Hannig & Jansen, 2010)

Dwelling on some important theoretical foundations of the relationship between finance and economic growth such as Schumpeter (1912), subsequent theoretical positions gives

credence to the importance, nature and characteristics of the relationship between finance and economic growth (De-Gregorio & Guidotti, 1995; Guiso, Sapienza & Zingales 2002; Rajan & Zingales, 1998). The finance-led growth also referred to as supply-leading argues that, finance contributes to economic growth via its propensity to increase the rate of capital accumulation coupled with the increased efficiency in the use of capital in the present and future. When the focus is on a low- or middle-income economy, the relative importance of improved efficiency of investments is even much more important (Beck, Dermirguc-kunt & Levine, 2007; Khaitan 2014). It is established that a strong nexus exists between financial deepening as a measure of financial development and economic growth in developing economies than in the developed ones (Acaravci, Ozturk & Acaravci, 2009; Cull, Dermirguc-kunt & Lyman, 2012). This is especially significant for the total factor productivity of growth. The platform created by the liquid stock market to trade ownership of financial assets and other productive innovations, enhances efficient resource allocation, savings, investment, physical capital formation and increased economic growth (Bruhn & Love, 2014; Khaitan, 2014).

In a country where developed financial sector, households, firms and the economy at large benefit, business opportunities and innovations are encouraged thereby increasing industrial competition and the growth of firms generally. The household has access to better and cheaper financial services for saving money and making payments. By creating an efficient and effective platform for transaction between households and firms, transaction cost is reduced thereby making asset accumulation and consumption smoothening possible. The finance-led theorists therefore strongly support the view of finance led-causal relationship between finance and economic growth (Levine 1991; Levine & Zervos, 1996; Shaw 1973).

Demand-following theorists have taken an opposing view that business activities spur banks to finance enterprises (Odhiambo 2007; Patrick 1966; Robinson 1952). Activities of the financial market are considered a lagged response to economic growth. Therefore, economic activity is expected to serve as a causal factor to financial development. The popular McKinnon and Shaw (1976) paradigm condemns the situation where government intervenes in the activities of the financial market by controlling the interest rate thereby resulting in financial repression. They particularly focused on the developing economies suggesting 'financial sector liberalization' as a solution to the fragmentation imposed on those economies by centralized decision making. Financial liberalization through the mechanisms of increased labour demand and increase in wages for the lower income groups reduce poverty and inequality. Bank deregulation that results in the opening of more bank branches especially in areas previously unbanked; tend to provide increased income opportunities for the locales. Deposit mobilisation and credit disbursement is facilitated in the rural areas and thus decreasing unemployment while giving better opportunities to existing business owners.

One of the many benefits accruing from a developed financial sector is financial stability along with the reduction in systemic risk (Khaitan 2014). How well this is achieved is determined by the wideness of the spectrum of the population that have access to financial services and how well government regulation and supervisory framework covers their economic and banking activities. When banks have greater access to deposits, it increases their funding base and strengthens their resilience to overcome financial stress. The most efficient mechanism for transmitting the effect of monetary policy remains interest rate and credit administration. Therefore, it is important that households and firms participate in credit markets which are sure means for

reducing systemic risk. Participation of households and firms in financial markets will also lead to greater efficiency of the financial intermediation process through the facilitation of increased domestic savings and investment cycles.

Literature is replete with studies on the relationship between finance and economic growth both from the developed (Acaravci et al. 2009; Bist 2018; King and Levine, 1993; Levine 1997) and developing economies, (Ngongang 2015; Ogwumike and Salisu, 2012; Osuji and Chigbu, 2012; Shittu 2012). Many of them have looked at the causal relationship between financial development and economic growth using monetary aggregates (Osuji and Chigbu 2012) credit aggregates (Bist 2018; Effiong 2017) or both as indicators of financial development (Ibrahim 2017; Ogunyiola 2013). In addition to both monetary and credit indicators of financial development, some have even included the capital market indicators (Ngongang 2015; Ogwumike and Salisu, 2012) to establish either uni-directional or bi-directional causality from financial development to economic growth. Empirical evidences available also show that the direction of causality could flow from either finance to growth (Esso, 2010; Kargbo and Adamu, 2009), growth to finance (Gurgay et al. 2007; Ogunyiola 2013; Shahnoushi, Ebad, Daneshvar, Shokri, 2008), or bi-directional for different countries (Akinlo and Egbetunde 2010; Demetrades and Andrianova 2003; Odeniran and Udeaja 2010) or at different stages of development for a particular country (Chinaemerem & Chigbu 2012; Odhiambo 2009). However, finance does not directly lead to economic growth. Studies have shown that there is a transmission mechanism through which the effect gets to economic growth. King and Levine (1993a) argue that financial development stimulates economic growth by increasing the rate of capital accumulation. They went ahead to state four ways through which the financial sector affects growth. These include: fostering productivity improvement by choosing entrepreneurs and projects

that are of higher quality; mobilising external financing for the selected entrepreneurs; providing superior channels for diversifying the risk of innovative activities; and lastly, revealing more accurately, the potentially large profits associated with the uncertain business of innovation. This position is further clarified by Beck, Levine, & Loayza (2000) when they concluded that financial intermediaries exert a large positive impact on total factor productivity growth which serves as a transmission mechanism to overall GDP growth. Dermirguc-kunt (2006) sums it up by concluding that finance affects growth by influencing the saving, investment and technological innovations.

Another contentious issue in financial development and economic growth research is the composition of financial development itself. Financial development as a concept comprises of financial deepening and financial inclusion both of which could have varying effect on economic growth under different circumstances. In recent times, there have been a wave of agitations arising from countries with a large population of low-income households especially India on the separation of financial deepening from financial inclusion. Debroy (2010) argued that the two terms are quite distinct and the policy implications for the two differ too. When it comes to looking at the effect of the finance sector on economic growth, Khaitan (2014) adjudged that the term financial deepening is more precise and is able to give a better estimation of the direction of causality between finance and growth. Earlier, Mohan (2006) using some economic and monetary statistics of India, observed that financial inclusion is a serious concern among low-income households. Specifically, he observed that higher credit growth between the periods; 2001-2002 is not matched with a corresponding adequate deposit growth. He further argued that where deposit growth does not match with credit growth, the resulting excess demand would surely lead to increase in real

interest rate, thereby increasing the possibility of further financial exclusion.

Nigeria as a country with a large population of low-income households (Akinbode, Okeowo & Azeez, 2017; Anyawu 2005) have also adopted financial inclusion. This is evident from the policy directions and statistics given by the Central Bank of Nigeria which clearly spells out the financial inclusion and financial deepening activities. In recent times, there have been argument and heated debate about the rise in Nigeria's Gross Domestic Product (GDP) that is not matched by majority of the peoples' standard of living. It therefore makes it important to dissect the term economic growth and begin to look at some investment and productive component. For the purpose of this work, we have identified capital formation which is a product of the savings and investment activities in the economy. This is to establish how financial development has affected this important factor necessary for economic growth. The result we believe will reveal the gap that may exist between financial development and economic growth in Nigeria. In addition, this study contributes to the on-going debate (arising from more recent evidences) on whether the expansion of the outreach of financial services have significant real effects or not, and if yes, through which channel? The rest of this paper is structured as follows; Section 2, methodology; Section 3, presentation of result and discussion of findings; Section 4, conclusion of the work

2.0 Methodology

2.1 Data & Instruments

The period of study covers 2009-2016. Our study period has been constrained to this time frame as a result of the condition of one of our parameters; financial inclusion. Data on financial inclusion indices with variants like ATM, POS, WEB transactions, Mobile Payments and Cheque only became published starting from 2009. Therefore, we collected monthly data on the transaction value aggregates of these variants from the Central Bank of Nigeria annual report (2009-2016). This was done to increase our observation points for a robust estimation and analysis. This constraint further affected our financial deepening parameter for which we proxy with the domestic credit. We take into cognisance the recent debate in the literature that private sector credit relative to GDP representing the credit aggregates may not be adequate. This is because credit is also provided to government.

There seems to be a consensus in the literature currently that domestic credit adequately captures the credit aggregates in the economy (Buncic & Melecky, 2014; Khaitan 2014; World Bank 2017; World Economic Forum 2012). However, because of our choice of monthly data and the impossibility of getting GDP monthly values, we have simply collected data from the Central Bank of Nigeria annual report (2009-2016) on the monthly aggregate domestic credit. Poverty reduction is proxied with household consumption. Household consumption has become a veritable indicator of poverty and inequality in recent times (BRAPOV, 2007).

Poverty and inequality estimates could differ significantly depending on the welfare measures and poverty line adopted. Generally, consumption and income serve as the yardstick for measuring welfare. However, in recent times, more argument and

justification have been put forward supporting consumption as a more accurate measure of welfare than income (Deaton, 2003; Meyer & Sullivan, 2003). Data on household consumption was sourced from the World Development Indicators (WDI, 2017) report. The annual data on household consumption was decomposed to monthly data using the quadratic data interpolation method.

2.2 Modelling and Estimation

For the purpose of estimating the relationship between the gross fixed capital formation, financial deepening, financial inclusion and poverty, we state a log linear empirical model as follows;

$$InGFCF_t = \alpha_0 + \beta_1 InFDP_t + \beta_2 InHHC_t + \beta_3 InATM_t + \varepsilon_t \quad (1)$$

$$InGFCF_t = \alpha_0 + \beta_1 InFDP_t + \beta_2 InHHC_t + \beta_3 InMBP_t + \varepsilon_t \quad (2)$$

$$InGFCF_t = \alpha_0 + \beta_1 InFDP_t + \beta_2 InHHC_t + \beta_3 InPOS_t + \varepsilon_t \quad (3)$$

$$InGFCF_t = \alpha_0 + \beta_1 InFDP_t + \beta_2 InHHC_t + \beta_3 InCHQ_t + \varepsilon_t \quad (4)$$

$$InGFCF_t = \alpha_0 + \beta_1 InFDP_t + \beta_2 InHHC_t + \beta_3 InWEB_t + \varepsilon_t \quad (5)$$

Where, **In** denotes the natural logarithm function, **GFCF** is Gross fixed Capital Formation, **FDP** is financial deepening, **HHC** is household consumption, **POS** is point of sale, **CHQ** is cheque, **WEB** is web transactions, ε_t is the error term. ATM, POS, MBP, CHQ and WEB are the financial inclusion variables. Since the five variants serve as alternatives within the financial inclusion framework in Nigeria, they are therefore modelled separately in order to check the significance of their effect on gross fixed capital formation. As established in previous works on payment channels

in Nigeria such as, Oyewole, Gambo, Abba & Onuh (2013), we also fear there may be auto-correlation issues amongst the variants.

3.0 Presentation of Result and Discussion of Findings

3.1 Preliminary Tests

We first tested for the presence of unit roots in our variables using the Augumented Dickey Fuller (ADF) and the Phillips peron (PP) test. The two tests involve the intercept and linear trend of the variables. The test statistics generated for the levels and first differences of the variables are given in the Table 1 below:

TABLE 1

TEST FOR UNIT ROOTS: LEVELS AND FIRST DIFFERENCE OF VARIABLES

Augumented Dickey Fuller (ADF)			**Phillips Peron (PP)**		
Variable	Test Statistic	95% critical value	Variable	Test Statistic	95% critical value
LATM (level) LATM (f. diff)	-2.462662 -11.64273**	-3.457808 -3.458326	LATM (level) LATM (f. diff)	-2.462662 -11.64273**	-3.457808 -3.458326
LCHQ (level) LCHQ (f.diff)	-2.462662 -11.32092***	-3.457808 -3.458856	LCHQ (level) LCHQ (f.diff)	-2.462662 -11.64273**	-3.457808 -3.458326
LFDP (level) LFDP (f.diff)	-3.263787 -11.72701**	-3.457808 -3.458326	LFDP (level) LFDP (f.diff)	-3.263787** -11.72701**	-3.457808 -3.458326
LGFCF (level) LGFCF (f.diff)	-2.474226 -10.08473**	-3.457808 -3.458326	LGFCF (level) LGFCF (f.diff)	-2.474226 -10.08473**	-3.457808 -3.458326

LHHC (level) LHHC (f.diff)	-1.289377 -6.539647**	-3.458856 -3.458856	LHHC (level) LHHC (f.diff)	-11.91728** -6.977149**	-3.457808 -3.458326
LMPB (level) LMBP (f.diff)	-3.855574 -6.835594**	-3.457808 -3.459397	LMPB (level) LMBP (f.diff)	-3.855574** -11.32311**	-3.457808 -3.458326
LPOS (level) LPOS (f.diff)	-5.207181** -9.400661**	-3.457808 -3.458856	LPOS (level) LPOS (f.diff)	-5.207181** -12.32421**	-3.457808 -3.458326
LWEB (level) LWEB (f.diff)	-4.206857* -10.84660**	-3.45708 -3.458326	LWEB (level) LWEB (f.diff)	-4.206857** -10.84660**	-3.457808 -3.458326

Source: Authors' Computation

N.B: 1%, 5% and 10% levels of significance are denoted as ***, **, * respectively. The asterisks indicate the rejection of the null hypothesis of unit root. All variables are in their natural log form.

3.2 Co-integration Test

In choosing our co-integration technique, we bore in mind the position of all the theories guiding the relationship between financial development, physical capital formation and economic growth. We therefore followed the works of Iheanacho (2016), Nwani and Bassey (2016), and Nkoro and Uko (2013) to employ the Autoregressive Distributed Lag (ARDL) of Pesaran, Shin and Smith (2001), and its inherent bounds test to estimate the co-integrating relationships of our variables. Apart from revealing the magnitude of the lagged response of variables, this technique is also known to be suitable in situations where variables are not integrated of same order, or when they are integrated of either order I(0) or I(1) (Ogwumike & Salisu, 2012). Our ARDL model is specified as follows:

$$\Delta InGFCF_t = \partial_{0i} + \sum_{i=1}^{n} \beta_{1i} \Delta GFCF_{t-i} + \sum_{i=0}^{n} \beta_{2i} \Delta InFDP_{t-i} + \sum_{i=0}^{n} \beta_{3i} \Delta InHHC_{t-i} + \sum_{i=0}^{n} \beta_4 \Delta InATM_{t-i} +$$
$$\partial_1 InGFCF_{t-i} + \partial_2 InFDP_{t-i} + \partial_3 InHHC_{t-i} + \partial_4 InATM_{t-i} + \varepsilon_{1t}$$

$$\Delta InGFCF_t = \partial_{0i} + \sum_{i=1}^{n} \beta_{1i} \Delta GFCF_{t-i} + \sum_{i=0}^{n} \beta_{2i} \Delta InFDP_{t-i} + \sum_{i=0}^{n} \beta_{3i} \Delta InHHC_{t-i} + \sum_{i=0}^{n} \beta_{4i} \Delta InCHQ_{t-i} +$$
$$\partial_1 InGFCF_{t-i} + \partial_2 InFDP_{t-i} + \partial_3 InHHC_{t-i} + \partial_4 InCHQ_{t-i} + \varepsilon_{1t}$$

$$\Delta InGFCF_t = \partial_{0i} + \sum_{i=1}^{n} \beta_{1i} \Delta GFCF_{t-i} + \sum_{i=0}^{n} \beta_{2i} \Delta InFDP_{t-i} + \sum_{i=0}^{n} \beta_{3i} \Delta InHHC_{t-i} + \sum_{i=0}^{n} \beta_{4i} \Delta InPOS_{t-i} +$$
$$\partial_1 InGFCF_{t-i} + \partial_2 InFDP_{t-i} + \partial_3 InHHC_{t-i} + \partial_4 InPOS_{t-i} + \varepsilon_{1t}$$

$$\Delta InGFCF_t = \partial_{0i} + \sum_{i=1}^{n} \beta_{1i} \Delta GFCF_{t-i} + \sum_{i=0}^{n} \beta_{2i} \Delta InFDP_{t-i} + \sum_{i=0}^{n} \beta_{3i} \Delta InHHC_{t-i} + \sum_{i=0}^{n} \beta_{4i} \Delta InMBP_{t-i} +$$
$$\partial_1 InGFCF_{t-i} + \partial_2 InFDP_{t-i} + \partial_3 InHHC_{t-i} + \partial_4 InMBP_{t-i} + \varepsilon_{1t}$$

$$\Delta InGFCF_t = \partial_{0i} + \sum_{i=1}^{n} \beta_{1i} \Delta GFCF_{t-i} + \sum_{i=0}^{n} \beta_{2i} \Delta InFDP_{t-i} + \sum_{i=0}^{n} \beta_{3i} \Delta InHHC_{t-i} + \sum_{i=0}^{n} \beta_{4i} \Delta InWEB_{t-i} +$$
$$\partial_1 InGFCF_{t-i} + \partial_2 InFDP_{t-i} + \partial_3 InHHC_{t-i} + \partial_4 InWEB_{t-i} + \varepsilon_{1t}$$

Where $(\partial_1 - \partial_4)$ corresponds to the long run relationship, the null of non-existence of long run relationship between the variables is examined. This is defined by ($H_0 : \partial_1 = \partial_2 = \partial_3 = \partial_4 = 0$). The decision to accept or reject H_0 is based on the following conditions: if F-value > upper bound, reject H_0 meaning variables are not co-integrated. On the other hand, if F value < lower bound, accept H_0 meaning variables are co-integrated. However, if F-value $\geq$ lower bound and $\leq$ upper bound, the decision will be inconclusive.

The ARDL model above is re-parameterized into the Error Correction Model (ECM). The ECM model incorporates both the long run and short run information. The model is specified below:

$$\Delta InGFCF_t = \partial_{0i} + \sum_{i=1}^{n} \beta_{1i} \Delta GFCF_{t-i} + \sum_{i=0}^{n} \beta_{2i} \Delta InFDP_{t-i} + \sum_{i=0}^{n} \beta_{3i} \Delta InHHC_{t-i} + \sum_{i=0}^{n} \beta_4 \Delta InATM_{t-i} + \lambda_1 ECM_{t-i} + \mu_{1t}$$

$$\Delta InGFCF_t = \partial_{0i} + \sum_{i=1}^{n} \beta_{1i} \Delta GFCF_{t-i} + \sum_{i=0}^{n} \beta_{2i} \Delta InFDP_{t-i} + \sum_{i=0}^{n} \beta_{3i} \Delta InHHC_{t-i} + \sum_{i=0}^{n} \beta_{4i} \Delta InCHQ_{t-i} + \lambda_1 ECM_{t-i} + \mu_{1t}$$

$$\Delta InGFCF_t = \partial_{0i} + \sum_{i=1}^{n} \beta_{1i} \Delta GFCF_{t-i} + \sum_{i=0}^{n} \beta_{2i} \Delta InFDP_{t-i} + \sum_{i=0}^{n} \beta_{3i} \Delta InHHC_{t-i} + \sum_{i=0}^{n} \beta_{4i} \Delta InPOS_{t-i} + \lambda_1 ECM_{t-i} + \mu_{1t}$$

$$\Delta InGFCF_t = \partial_{0i} + \sum_{i=1}^{n} \beta_{1i} \Delta GFCF_{t-i} + \sum_{i=0}^{n} \beta_{2i} \Delta InFDP_{t-i} + \sum_{i=0}^{n} \beta_{3i} \Delta InHHC_{t-i} + \sum_{i=0}^{n} \beta_{4i} \Delta InMBP_{t-i} + \lambda_1 ECM_{t-i} + \mu_{1t}$$

$$\Delta InGFCF_t = \partial_{0i} + \sum_{i=1}^{n} \beta_{1i} \Delta GFCF_{t-i} + \sum_{i=0}^{n} \beta_{2i} \Delta InFDP_{t-i} + \sum_{i=0}^{n} \beta_{3i} \Delta InHHC_{t-i} + \sum_{i=0}^{n} \beta_{4i} \Delta InWEB_{t-i} + \lambda_1 ECM_{t-i} + \mu_{1t}$$

Where $(\beta_1 - \beta_4)$ represents the short run dynamics. The Co-integration result is presented below:

TABLE 2
CO-INTEGRATION TEST RESULT

Models		F-Statistics	Remark
GCFC(GCFC||FDP,HHC, ATM)	ARDL(1,2,1,1)	7.703408***	Co-integration
GCFC(GCFC||FDP,HHC, CHQ)	ARDL(1,0,0,1)	4.213595**	Co-integration
GCFC(GCFC||FDP,HHC, POS)	ARDL(1,0,0,0)	5.176912***	Co-integration
GFCF(GFCF||FDP,HHC, MBP)	ARDL(1,0,1,0)	5.076733***	Co-integration
GFCF(GFCF||FDP,HHC, WEB)	ARDL(1,0,1,1)	5.662724***	Co-integration

Source of Asymptotic critical values bounds- Pesaran et al. 2001
Selection based on Akaike information Criterion (AIC), Restricted intercept and no trend for k=3

As contained in Table 2, the result indicates that in all the models, the F-statistic is greater than the upper critical bound at 1% and 5% levels of significance. The null hypothesis of no co-integration is therefore rejected. The implication is that there is a long run causal relationship among the variables in all the models. The result of the long run and short run estimates of the co-efficient of our variables are presented below

TABLE 3
LONG RUN CO-EFFICIENT (DEPENDENT VARIABLE: GFCF)

Variables	ATM	CHQ	POS	MBP	WEB
C	-4.876283 (-0.913069)	-16.38089** (-2.458581)	-16.03137*** (-3.545889)	-5.466085 (-0.465537)	-2.117577 (-0.439213)
LATM	-0.166701* (-1.940425)				
LCHQ		-0.159738 (0.842882)			
LPOS			-0.103989* (-1.852815)		
LMBP				-0.028789 (-0.378348)	
LWEB					-0.108918* (-1.753608)
LFDP	-0.49889*** (2.683318)	0.432395 (1.567859)	0.630365*** (-2.66024)	0.375917 (1.253070)	0.418139*** (2.77131)
LHHC	0.473327** (2.389326)	0.872471*** (3.89972)	0.785193*** (-3.865918)	0.538584 (1.580960)	0.390192* (1.844850)

MODEL DIAGNOSTICS

AIC	*-2.075899*	*-1.865592*	*-1.818013*	*-1.808309*	*-1.942698*
SIC	-1.940617	-1.811826	-1.791130	-1.754543	-1.862049

Note: t-statistics in parenthesis, ***, **, * denotes 1%, 5%, 10%

The long run result presented in Table 3 above shows that all the financial inclusion variants are negatively related to gross fixed capital formation in the long run. Cheque and mobile payment have insignificant effects while ATM, POS and WEB are significant at 10%. The ATM, POS and WEB have significant negative effect of about sixteen percent (16%), ten percent (10%) and ten percent (10%) respectively on Gross fixed capital Formation (GFCF). The implication of this is that the productive economy is not yet benefiting from the financial transactions occurring from the usage of financial payment services.

In the review of meta-studies from low- and middle-income countries, Duvendack and Mader (2019) discovered that the impact of financial inclusion can be heterogenous across and within different levels of income, time, population, places, ethnicity and gender. They concluded that financial services may not even have a meaningful net positive effect on poor or low-income users.

Earlier, Cull, Hebreck & Hole, (2014) had concluded that most of the people using these financial services are not saving or investing. Recent high-level empirical evidences from developing economies (Barry 2018; Steinert, Zenker, Filipak, Movsisyan, Cluve, 2018;) and developed economies (Klapper and Singer, 2017) reveal that financial inclusion initiatives do not have transformative effects yet. Though positive effects could be

observed in some studies, Duvendack and Mader (2019) advice caution towards such. According to them, this may have been as a result of poor methodology with a high risk of bias. More rigorous studies with lower risk of bias are less likely to find any significant effect of financial inclusion.

Digital financial inclusion could have a negative effect on savings and investment except when it comes with some control measures (Ashraf, Karlan & Yin, 2010; Karlan, Ratan & Zinman, 2014). For instance, Karlan et al (2014) using Randomised Control Trials (RCT) conducted in Phillipines, Bolivia and Peru observed that digital text "goal-specific" savings also known as "commitment savings" helped the individuals increase their savings for housing, school fees and so on.

In another study carried out in Malawi, Brune, Gine, Goldberg and Yang (2013) discovered that the productivity of farmers was greatly improved when payment for cash crops sold was made directly into their savings account. The farmers involved in this practice also scaled up their investment in farm inputs by 13%. This in turn led to a 21% increase in value of crop output while household consumption after harvest was increased by 11%.

Earlier, Orszag and Orszag (2005) had recommended that workers in formal employment be made to sign up for retirement plan and other long-term entitlements linked to their savings accounts. This according to them will help overcome 'under saving' caused by inertia.

Schaner (2013) using a sample of women in Kenya, discovered that the reduction of transaction fees on ATM cards accompanied by a more convenient access to cash has a negative effect on women's use of accounts. The study reveals that women with savings accounts are usually dissatisfied with the fact that they

have less control over withdrawals which may be influenced by their spouses. Therefore, such women will prefer savings accounts with controls and other security features just to ensure that they can accumulate more savings over time.

Financial deepening activities (aggregate domestic credit) and household consumption combined with each of the financial inclusion variants have also produced different effects. When combined with ATM, aggregate domestic credit has a significant negative effect to the tune of 49%, while household consumption has a significant positive effect of 47%. We can safely say that credit transactions via the ATM results in a decline in savings and investments. However, household consumption activities through the ATM channel boosts savings and investments in Nigeria. When there is access to ATM, households are driven to save more to smoothen their consumption in future but will save less when on loan (Barry 2018).

When financial deepening and household consumption are combined with cheque, aggregate credit has insignificant effect, while household consumption has a positive and significant effect of 87% on savings and investment. The implication is that household consumption going through cheque is most likely to be for investment. Under POS, aggregate credit has a significant and positive effect of 63%, while household consumption has a significant and positive effect of 78% on savings and investment. The implication is that both the credit and consumption transactions going through the POS contributes positively to savings and investments.

The insignificant positive effects of aggregate credit and household consumption under mobile payment imply the level of usage of this financial service is still very low. Under WEB payments, both aggregate credit and household consumption

have positive and significant effects of 41% and 39% respectively. The Implication is that credit and consumption transactions through the WEB contribute positively to savings and investment.

Evaluation of the models using the Akaike Information (AIC) and Swartz Information (SIC) reveals ATM model performs best followed by the WEB model. The model is best where AIC/SIC is minimized.

TABLE 4
SHORT RUN ERROR CORRECTION ESTIMATES
(DEPENDENT VARIABLE: GFCF)

Variables	ATM	CHQ	POS	MBP	WEB
ECM(-1)	-0.279290*** (-6.350560)	-0.209983*** (-4.691999)	-0.233503*** (-5.169299)	-0.248551*** (5.150195)	-0.269290*** (-5.440644)
∆LATM	-0.276130*** (-5.406952)				
∆LCHQ		-0.124137** (-2.715082)			
∆LPOS					
∆LMBP					
∆LWEB					-0.082518*** (-4.291416)
∆LFDP	-0.4502777** (-2.693904)				

∆LHHC	-1.119473** (-2.582336)			- 0.571339*** (-5.150195)	-0.718986** (-2.946813)

DIAGNOSTIC TESTS

Adj R^2	*0.411103*	*0.242651*	*0.197477*	*0.198001*	*0.305997*
D.W Statistics	2.230131	1.997176	2.049551	2.037896	2.121111
LB(Q-2)	2.0127	0.2376	0.5142	0.3724	0.7035
LB(Q^2 – 2)	0.3026	0.0400	0.0390	0.0220	0.0551
Heteroskadasticy (F-stat)	0.141178	0.018847	0.017981	0.009679	0.025270
Ramsey Reset (F-stat)	3.504064*	5.006575**	1.187045	1.573175	0.123206

Note: t-statistics in parenthesis, ***, **, * denotes 1%, 5%, 10%

The error correction short run result presented in Table 4 above reveals the short run dynamics between our variables. Fundamentally as required, the speed of adjustment of short run disequilibrium in the long run is negative and less than unity. The diagnostics also conform to benchmarks. We observe the adjusted R-square is quite low. This we believe is as a result of the parsimonious nature of our parameters. Parameters had to be differenced at different lags to obtain favourable levels of significance. The short run coefficients are similar to the long run except that household consumption transaction via the ATM in the short run has a negative and significant effect on domestic capital. From the short and long run results, we can safely deduce that

ATM as a financial inclusion variant has had the strongest and most consistent relationship with financial deepening (aggregate domestic credit) and Poverty Reduction (Household consumption) to have the most significant effect on domestic capital (gross fixed capital formation).

3.3 Causality Tests

Going by the result of our stationarity tests where all of our variables are I(1) series with some also showing signs of significance at levels, in order to test their causality relationship, the Toda-Yamamoto long run causality test is found appropriate. Under the Toda and Yamamoto (1995) test, estimation is done on a vector autoregressive (VAR) model in levels. The method artificially augments the correct order of the VAR, k, by the maximum order of integration $\partial_{\max}$. This way, the usual test statistics for Granger causality has the convenient asymptotic distribution that supports established inferences. The result of the estimated model is presented below;

TABLE 5
TODA YAMAMOTO (ADJUSTED GRANGER CAUSALITY) RESULT

	Null Hypothesis	Chi-square	P-value	Decision
ATM	LFDP does not granger cause GFCF	6.875044**	0.0321	Reject Null
	LFDP does not granger cause LHHC	7.051297**	0.0294	Reject Null
	LGFCF does not granger cause LATM	5.715090*	0.0574	Reject Null
	LFDP does not granger	5.900958*	0.0523	

	cause LATM			Reject Null
CHQ	LFDP does not granger cause LHHC	6..366781**	0.0414	Reject Null
	LCHQ does not granger cause LHHC	15.68210**	0.0004	Reject Null
	LFDP does not granger cause LCHQ	10.48755**	0.0053	Reject Null
MBP	LMBP does not granger cause LFDP	5.039875*	0.0805	Reject Null
	LFDP does not granger cause LHHC	5.506451*	0.0637	Reject Null
	LFDP does not granger cause LMBP	18.00334**	0.0001	Reject Null
POS	LFDP does not granger cause LHHC	5.550596*	0.0623	Reject Null
	LFDP does not granger cause LPOS	8.670692**	0.0131	Reject Null
WEB	No signs of causality	-	-	

The causality result presented above in table 5 shows financial deepening (aggregate credit) consistently causing household consumption in each of the models. This confirms the causal relationship already established between financial deepening or financial development and poverty reduction (Gazi, Muhammad, Mohamed and Teulon, 2013; Ogwumike and Salisu 2012). Again, under each of the models, financial deepening causes the financial inclusion variant (Sharma 2016) with a bi-directional

causality between financial deepening and mobile payment. Under the ATM model, financial deepening has the highest causality having uni-directional causality with domestic capital (GFCF), household consumption (HHC) and financial inclusion (ATM). We also observe causality flowing from domestic capital (GFCF) to ATM under this model.

4.0 Conclusion

Financial deepening and financial inclusion as components of financial development need to be separated. Our study confirms that both could have different effects on domestic capital (GFCF) at the same time. In the case of Nigeria, while financial inclusion under all the models has had negative effects, financial deepening has had mixed effects. Financial deepening and financial inclusion under the ATM model established to be the best have contributed to the decline in savings and investments within the period of study. The only hope for domestic capital is household consumption that has upturned from resulting in a major decline to contributing positively to domestic capital. In all, the causality flowing from financial deepening to domestic capital (GFCF), household consumption (HHC) and financial inclusion (ATM) under the ATM model makes a case for the finance- led capital formation.

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THE NEXUS BETWEEN CHIEF FINANCIAL OFFICER, CHIEF EXECUTIVE OFFICER STRATEGIC PARTNERSHIP, AND DEMOGRAPHIC VARIABLES TO FIRMS' FINANCIAL PERFORMANCE IN NIGERIA

By

Idowu Eferakeya[3]

Abstract

The need for chief financial officer (CFO) to be part of firms' strategic management and form strategic partnership with the chief executive officer (CEO) to improve firms' financial performance is receiving more attention by studies. In recognition of this fact, this study examined the effect of CFOs and CEOs strategic partnership and demographic variables similarity on firms' financial performance in Nigeria. Survey research design was used, and data were gathered from firms listed on the Nigerian Stock Exchange that have both CFO and CEO positions using the questionnaire instrument. Data were analyzed through multiple regression estimation tools which assisted to test the effect of CFOs and CEOs strategic partnership, and demographic variables' similarity on firms' financial performance. The findings show that, CFOs and CEOs strategic partnership, education and tenure similarity have positive significant effect on financial performance while age and gender similarities do not. In addition, the interaction of CFOs and CEOs strategic partnership with education and tenure similarities have positive significant effect on firms' financial performance while age and gender similarities have

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negative insignificant effect on firms' financial performance. The results have implications for firms' strategic management illuminating the benefits of having CFO and CEO with comparable education and tenure similarities in a firm. In this regard, firms desirous to recruit CFO should consider the issue of education and tenure similarities as these are important factors capable of fostering better synergy and strategic partnership that can have positive effect on firms' financial performance.

Keywords: *Chief financial officer, Chief executive officer, Strategic partnership, Firm financial performance*

1.0 Introduction

The depth of workplace complexity and competition is exerting significant demands for and expectations of finance leaders to be central and helpful in guiding organizations to navigate the increasingly difficult and volatile nature of the everchanging business world. This has opened a vista of interrogations into corporate and business management at the top level of management with specific focus on the chief financial officer (CFO) as a strategist needed to be in strategic partnership with the chief executive officer (CEO) for better organizational performance. Such top managerial position on financial matters is strategic to organizational performance, more so, when it is known to be the guardian of the financial health and oversees development, maintenance and implementation of financial control frameworks of the organization. Apart from this financial gate keeper role, it is expected of the CFO to actively participate in directing the firm towards goal and objectives achievement. In this sense, the CFO is expected to increase support for strategic and operational decision-making partnering capacity. The partnership is hoped to bring about strategic value-addition and foster

cohesive teamwork, spirit of oneness, opportunity to harness accumulated valuable experiences, capacity, and competencies to bring about better firm financial performance.

Prior to this thinking, CEOs were considered to be an all-knowing personality with vast knowledge and wealth of experience in strategic corporate and business management ideas. Though vested with diverse powers and enormous responsibilities, CEO is equally confronted with some knowledge limitations that may hamper managerial and strategic capacity. Knowledge deficiency sometimes occur hence protagonists argue that CEOs are unlikely to perform optimally in terms of technical knowledge in finance and related matters, timely business information processing and decision–making; such would likely have negative effect on firm's capacity to deliver better financial performance. In this light, devolvement and redistribution of managerial roles at the top hierarchy of management particularly to the CFO aside from its traditional stewardship responsibility enable optimal financial performance.

In the light of managerial expectations from CFO and the context influence from economic situations, political challenges, competitors, investors and key stakeholders' demands, the CFO role is being shaped to provide strong support for CEO to engender organizational performance. The aforementioned clearly underscored bigger roles the finance office is expected to play in strategic decision occasioned by environmental changes and upheavals that have imposed new and emerging challenges. This is important, especially, as it stretches beyond the hitherto fiduciary roles of the finance function such as provision of taxation, auditing, internal control and financial reporting. This accounts for more significant roles and responsibilities to be bestowed on the CFO in order to assist the CEO immensely with the increasing demands of strategy and strategic management.

While greater emphasis continued to trail the importance of CFO in contemporary business management, Hiebl (2013) observed that CFOs role in some organizations are still focused mainly on traditional management tasks. Does it mean that the new roles of CFOs are mere appropriations that would not add value or create value to the organizational performance? Would it lead to role conflict with the CEO? What precisely would it be? An academic x-ray on these salient questions revealed that strategic partnership between CFOs and CEO has received scanty research attention despite the research publications about the CFO's position in recent times. However, most of these studies failed to examine the CFOs role and the synergy with the CEO but devote more attention on CFOs education and career issues (Collier & Wilson,1994), CFO's accounting practice (McCracken & Salterio,2007). On the contrary, beyond the traditional role of CFOs, management critics have argued that the CFO's involvement in management decision making process could deteriorate a firm's organizational performance (Indjejikian & Matejka, 2006). They also tend to be risk averse and are likely to support decrease investment in research, development of new projects and advertising (Winston, 2014). The seemingly contrasting views have necessitated ongoing debates culminating in competing views.

Studies about the effect of CFO and CEO strategic partnership and demographic variable on financial performance of firms are well documented particularly in advanced countries. In Nigeria, the CFO's position as a member of the firm strategic management was first observed with multinational corporations, presently both private and publicly listed companies began to appoint CFOs as part of the strategic management team. The inclusion of the CFO has altered the structure, composition and functionality of the strategic management team which is likely to have consequence on firm financial performance. However, it is worthy to note that

limited researches have been conducted to examine CFO and CEO strategic partnership, demographic variables' similarity and the mediating effect of demographic variables similarity on firm financial performance through CFO and CEO strategic partnership. The seemingly paucity of research works on these variables in Nigeria provides an overriding reason and motivation for the study. Consequently, this seeks to:

1. Establish the effect of CFO and CEO strategic partnership and demographic variables' similarity on firm financial performance;
2. Analyse the mediating effect of demographic variables on the relationship between CFO and CEO partnership and financial performance; and
3. Determine the direct, indirect and spur effects of demographic variables' similarity effect on Firms' financial performance through CFOs and CEO strategic partnership.

2.0 Literature Review

2.1 Importance of CFO in Organizational Structure to Strategically Support the CEO

Chief Financial Officer (CFO)

The CFO is an important officer in the strategic team of an organization. According to Friedman (2014), the responsibility of the CFO is to oversee and manage an organization's financial and reporting systems. He has a fiduciary duty towards the shareholders and board of directors and reports directly to the chief executive officer. The officer does not only generate financial data but turn those data into useable information. The information are presented in thorough manner based on rigorous fact-based information on how and where value can be created in a firm

(Heigrick & Struggles, 1998). The CFOs financial knowledge and professional competence places him in a vantage position to be able to provide information about strategic forces that underlie economic profit creation to CEO including how to manage such forces (Zorn, 2004).

Chief Executive Officer (CEO)

The CEO is the main driver of the organization with power and authority. The officer is saddled with the onerous responsibility of managing the firm resources within the dynamic context of the firm's environment to create value for shareholders (Shaw, 2012). In carrying out his responsibility, the CEO exercises decision-making power of an organization (Kaplan, 2012), alongside other members of the board of directors. He is accountable to shareholders and plays an important role to protect and grow shareholder's value. By virtue of this position, the CEO acts as an agent to shareholders (Hambrick & Quigley, 2014).

2.2 CFO and CEO Strategic partnership and financial performance

The growing importance of CFO position and responsibilities in organization setting to strategically support the CEO in partnership has been stressed in several literatures; such as the studies of Skaerbaek and Tryggestad (2010) and Tulimeiri and Banai (2010). In particular, from the analysis seen in the study of Zorn (2004), there seems to be the need for significant redistribution of managerial role in firms to CFOs as a strategic response to the evolving business environmental challenges spurred by interactions of a multiplicity of factors. This call for greater relevance of building financial considerations into strategic managerial and decision-making structures of a firm (Zorn, 2004).

A collaborative study between CFO Research Service and KPMG (2011) stressed the point that bigger roles are being appropriated for the finance function in recent times compared to five years ago. As a follow up, Egon Zehnder International (2008) suggested that it is important for CEOs to outsource more of its strategic responsibility to CFOs who ordinarily are concerned with the responsibilities of budget planning and control. In sync, Favaro (2001) argue that CFOs would give proper guidance to line managers which would contribute to a firm's goal and with better management (Dalton,1999) would generate more value for the firm.

Han, Zhang and Han (2015) assert that two reasons are outstanding why CFO's strategic partnership with CEO is important and would have a positive influence on organizational performance. To them, from the literature, CFOs are seen to have unique knowledge and competence that contributes significantly to a firm's strategic decision-making processes. The CFOs can present thorough and rigorous fact-based information of how and where value can be created in a firm and where it would occur in the future (Heigrick & Struggles, 1998). CFOs can as well provide information about strategic forces that underlie economic profit creation to CEO and how to manage such forces (Zorn, 2004). According to Tulimeiri & Banai (2010), based on the CFO understanding of the economics underlying business, he can offer better perspective of how to properly organize a business to meet necessary and required requirements. The CFO is capable of offering a framework that defines both the upper and lower limits of a firm's financial requirements. With such framework in place, then a strategic course can be undertaken and its feasibility appraised. In this way the CFO can make available better insights on how to measure or evaluate progress of such strategic course and define requirements to change the course when the need arises on the basis of results or projections of the plan (Favaro,

2001). CFOs involvement in strategic management can bring about increased successes in corporate strategy formulation and implementation with attendant consequence on firms' financial performance (Heigrick & Struggles, 1998).

Shared leadership is a prime concern when considering the strategic partnership between the CFO and the CEO. According to Denis, Langley & Sergi (2012), plurality of leadership at the top echelon of management would lead to superior leadership effectiveness. With shared leadership among top executives of firms, it would lead to promotion of commitment, morale and integration of ideas and experiences which are beneficial to firms' financial performance (Alvarez & Svejenova, 2005). According to Hambrick & Cannella (2004), by having a shared leadership between the CFO and the CEO, this would make the CEO to be more focused on his external roles and devote more effort to environmental scanning, learn from outside parties and satisfy external resource providers. Strategic partnership between the CFO and the CEO would improve leadership and relationships as well as create benefits to engender positive firms' financial performance (Han, Zhang & Han, 2015).

Empirical studies have also provided some results which tend to support and disagree with some of the postulations in the literature on the relational effect of the CFO and CEO strategic partnership on firm performance. The study of Han, Zhang & Han (2015) reported that the strategic partnership between the CFO and CEO has a positive influence on firm financial performance. Arising from the above submissions from the literature, the study proposed that:

H1: CFO and CEO strategic partnership has positive effect on firm financial performance.

Age and Financial Performance

The age of a top management staff and experience has been reported to have influence on company performance (Baysinger & Hoskisson, 1990). Older CEOs tend to have a good understanding of a firm than young CEOs due to factors related to experience. The higher the experience of top management officers the more effective they engage in decision making process (Sitthipongpanich & Polsiri, 2015). Experiences of older executives make them more conservative as they approach retirement thereby focusing on projects that produce previous performance (Gibbons & Murphy, 1992), while younger CEOs are prone to short-term performance to build reputation (Hirshleifer, 1993).

Studies have shown that age of top management staff has significant positive effect on corporate financial policy choices, corporate performance and agency cost of a firm (Fujianti, 2018). For instance, Carter, Souza, Simkins & Simson (2010) argued that older CEOs are more rational because of their experience. The authors in their study found that age has a significant positive effect on company performance. Darmadi (2011) provided evidence that age of board members who are less than 50 years was found to be positive and significant with company performance. Similar findings about the significant positive effect of top management on company performance are also reported by other studies. Such studies include Kokeno & Muturi (2016), Peni, (2014); Krishnan & Park (2005), Smith, Smith & Verner (2006) and Fujianti (2018).

However, some other studies have argued otherwise and reported contrary findings. For instance, Mohamed, Baccar, Fairchild &

Bouri (2012) argue that age of CEO can reduce optimism and probability while Horvath and Spirollari (2012) reported that age of older board of directors have negative effect on company performance. Kusumastuti, Supatmi & Sastra (2007) on the other hand, did not find evidence of relationship between the age of directors who are forty (40) years or older and firm performance. Similarly, Wicaksana (2011) could not find evidence of age effect on market performance of a firm. Bertrand & Schoar (2003) however opine that the age of company executive may have positive or negative impact on company performance. Drawing from the foregoing, the study proposed that:

H2: Age similarity of CFO and CEO has a positive effect on firm financial performance

Gender and Firm Performance

According to Ghofur & Sulistiyono (2012), gender refers to role, attribute attitude or behaviour differentiation which grow and develop in a society that is considered to be socially appropriate to men and women. Studies have shown that the relationship between gender and company performance are mixed. For instance, Cambell & Minguez-Vera (2008) found a positive and insignificant relationship between percentage of females who are board members and company financial performance in Spain. Krishnan & Park (2005) found a positive relationship between percentage of women in top management team and organizational performance. The same finding of positive relationship between gender and performance was reported by Smith, Smith & Verner (2006) and Julizaerma & Sori (2012). A positive relationship between proportion of female officers and abnormal returns of firms doing business in complex business environment was reported by Francoeur, Labelle & Sinclair-Desgagne (2008). Female directors' presence on the board of Norwegian companies

was found to increase board efficiency through reduction of conflicts (Nielsen & Huse, 2010). A positive relation was found to exist between the proportion of females on Fortune 1000 companies' board and firm value (Carter, Simkins & Simpson, 2003). Both Peni (2014) and Smith, Smith & Verner (2006) in their respective studies found that a positive relation exist between female CEOs and higher return on asset (ROA). On the other hand, abnormal shareholder returns were observed to be marginally significantly higher with female CEOs compared with their male counterparts in the study of Marcel & Brooks, (2016).

On the contrary, some studies have shown that the presence of females in top management is negatively associated with performance. For instance Fujianti (2018) reported that a negative and insignificant relation exist between gender and return on asset while Dezso & Ross (2008) found no evidence of relationship between gender and company performance. Haslam, Ryan, Kulich, Trojanowski & Atkins (2010) also found no relationship between women's presence on company boards and accounting performance but found that a negative relation exist between women's presence on company boards and stock valuation performance. However, Huang (2012) found a negative and insignificant effect of gender on corporate responsibility of a firm. From the foregoing, the study proposed that:

H3: Gender similarity of CFO and CEO has positive significant effect on firm financial performance

Tenure in Firm and Firm Performance

Tenure in firm refers to the length a given person occupies a position as a manager in a firm (Fujianti, 2018). The longer the tenure of a CEO the more it assist to build high reputation which may lead to greater commitment to the firm (Sitthipongpanich & Polsiri, 2015).Tenure of a CEO creates managerial incentives that

help to maximize firm value. It also serves as a signal in stock markets. A longer tenure indicates high credibility of CEO certification (Fujianti, 2018). The author further reported in the study that tenure of top management staff has positive and significant influence on company performance. Similarly, Van Ness, Miesing & Kang (2010) reported that the average term of board members has significant positive impact on company performance. In a similar way, Mohamed et al (2015) reported that CEOs term of office has positive and significant effect on market to book value and return on asset, proxies used to measure firm performance. Accordingly, the study proposed the following hypothesis:

H4: Tenure in firm similarity of CFO and CEO has positive effect on firm financial performance.

Education and Firm Performance

Educational attainment remains a precursor for improved managerial performance. It is an important factor used in considering an employee for remuneration, placement and promotion. Impressive educational level is significant in raising a manager's prestige enabling him to take optimum decision making (Certo, 2003). Prior empirical studies have reported the significance of top management staff educational level to firm performance. For instance, Rajagopalan & Datta (1996) findings show that CEO educational level is related to company performance. Kokeno & Muturi (2016) in their study of CEO characteristics and firm performance reported that CEO education background had a significant positive effect on firm performance. Cheng, Chan, & Leung (2010) find that board of director's educational level was significantly positively associated with some measurements of firm performance such as are, market to book value, EPS, ROA and abnormal stock return.

The study of Darmadi (2013) of CEO and other members of board of director's education level and firm performance, reveal that the educational qualification of the CEO and members of board of director is significant to firm performance. Huang (2013) obtained evidence that the CEO educational level (particularly those with master's degree) is strongly related to environmental performance ranking during the study of 392 firms from 2005 to 2010. Using data from S&P 500 firms obtained from 437 CEOs for a period of 1992 to 2005, Kaczmarek, Kimino, & Pye (2014) found that firms managed by a CEO with educational level related to engineering had better firm performance compared with firms managed by CEOs with educational background in functional areas. The study of Saidu (2019) on CEO characteristics and firm performance based on data generated from firms listed on the Nigerian stock exchange show that the CEO educational level improved firm profitability as well as stock performance.

Conversely, some studies found negative and no relationship between CEO educational background and firm performance. For instance, Fujiani (2018) studied top management characteristics and company performance and found that a negative insignificant relationship exists between the educational level of CEO and company performance. On the other hand, Gottestman & Morey (2010) could not find any relation between CEO level of education and firm market-based performance measured by Tobin's q. Similar finding was reported by Lindorf & Johnson (2013) when they investigated CEO business education and firm performance. On the basis of the foregoing, the study hypothesized as follows.

H5: Education similarity of CFO and CEO has positive effect on firm financial performance

Demographic Relational Variables Effect on Firm Performance through CFO and CEO Strategic Partnership

Demographic characteristics of top managers have attracted significant research attention following the article of Pfeller (1983) on organizational demographics and the upper echelon theory developed by Hambrick & Mason (1984). According to Nielson (2010) using demographical characteristics as proxies for psychological activities tend to have significant effect on the relational pattern among top managers. In this circumstance the financial performance outcomes can be associated with the demographic characteristics with emphasis on similarity or dissimilarity of top managers.

Diversity and heterogeneity among top management executives according to Elron (1998) has been seen to be a source of veritable advantage to firms by increasing adaptability and innovation. For effective collaboration to be effective O'Reilly, Snyder & Boothe (1993) opine that a certain level and amount of demographic similarity is required. In another strand of argument Han, Han & Brass (2014) contend that heterogeneity was found to be a source of deterrent which has led to difficulties relating to knowledge integration and separation. However, questions still trail the assertion that diversity or heterogeneity background of managers is found to be advantageous to firms (Neilson, 2010).

Mathieu, Heffner, Goodwin, Salas & Cannon-Bowers (2000) believed that demographic similarities of CFO and CEO such as age, gender, tenure and education seems to have effect on the strategic partnership between the CFO and CEO. They argue that the different functional backgrounds including demographic similarities of the CFO and CEO creates an environment which enable them to develop shared mental framework of teamwork which is capable to stimulate and facilitate their collaboration and communication. Such functional background and differences in

demography relating to the CFO and CEO appears to make them have different cognitive schemas with respect to corporate goals, values and strategies. However, lack of common language and knowledge about other's expertise tends to hamper the interaction between the CFO and CEO (Han, Zhang & Han, 2015).

On the other hand, Wagner, Pfeffer & O'Reilly (1984) argue that if CFO and CEO have similar demographic background and are from the same cohort, even when they have common experiences in a variety of work-related or non–work related activities, it would lead to a shared understanding and belief structure. Providing more clarification, Zenger & Lawrence (1989) are of the opinion that when a CFO and a CEO joins an organization at the same time, they are likely to develop common knowledge about the organization's events and strategies in realizing the set out goals. The resulting shared understanding would assist to facilitate their communication and as well make the CFO's strategic partnership with the CEO a huge success.

Another perspective is the political viewpoint. This viewpoint from which one is inclined to believe that a positive effect of CFO and CEO demographic similarities matter in the strategic partnership between the CFO and the CEO. In the words of Westphal & Zajac (1995) the political viewpoint of demographic similarity can provide a critical base for forming coalition. Tsui & O'Reilly (1998) however, contend that even when the CFO and the CEO share similar demographic characteristics, they are more likely to have greater attraction, affection and trust towards each other. As such they are more probable to treat each other as members of the same group who have shown increased willingness to co-operate. Arising therefore from the above arguments, demographic backgrounds seem to have effect on the strategic partnership of the CFO and CEO.

Empirical evidence has shown mixed results about the effect of demographic variables on strategic partnership of the CFO and CEO. Dalton (1999) study showed that about forty percent (40%) of CEOs fired their CFOs on the basis that they lacked some critical characteristics in terms of leadership, integrity, strategic vision and communication skills. From the perspective of the CFOs, a study conducted by Banham (2010) reported that many of the CEOs appear to be maverick, in that, they alone establish the firm strategic direction and expect other senior managers just to get on board without debate. Menz (2012) investigation on the dyadic relationships between top management team (TMT) members and the CEO, reported that top executive effectiveness is dependent on the quality of the relationship with other top executives.

Han, Zhang & Han (2015) reported some evidence when they examined the effect of relational demographic variables on the strategic partnership of the CFO and CEO in China. Results show that similarities in the CFO's and CEO's educational level and tenure in the firm have positive significant effect on the CFO's strategic partnership with the CEO .On the other hand, similarities in gender and age have no significant effect on the CFO's strategic partnership with the CEO. In terms of the mediating effects of these demographic variables on firm performance through the strategic partnership of the CFO and CEO, the study reported that the similarities of educational level and tenure in the firm of the CFO and CEO have an indirect positive effect on firm financial performance, while age and gender do not have any significant effect on firm financial performance. Accordingly, the study proposed the following hypothesis.

H5: There is a positive mediating effect of demographic variables' similarity of age, gender, tenure in firm and education on the

relationship between CFO and CEO strategic partnership and financial performance.

3.0 Methodology

In order to examine the effect of CFOs strategic partnership with CEOs on firms' financial performance, the study adopted cross sectional survey research design. The design was considered appropriate as it allows for proper identification of the sample, and the suitability of the data collection instrument. The sample consisted of seventy listed firms in the Nigeria Stock Exchange that has positions for CFOs and CEOs as shown in their annual reports, as such, convenient sampling method was employed.

Given the fact that the study is poised to find the effect of CFO and CEO strategic partnership, demographic variables' similarity and their interactions on financial performance, data concerning financial performance were obtained from the sampled firms' annual reports and accounts. Financial performance was measured by return on asset (ROA). The variables under study informed the development of the questionnaire. Seventy copies of the validated questionnaire were sent out and fifty-eight were retrieved at the cut-off date set, representing eighty-three (83%) percent response rate. In drafting the questions on CFO, Zoni and Merchant (2007), Delery and Doty (1996) items were employed. The approach enabled logistic regression tool to be deployed and dummy independent variables coded 1 or 0 from the responses on questionnaire returned.

Financial performance was proxy by return on assets (ROA) measured by dividing net profit by total assets obtained from the sampled firms' annual reports. This approach was used by Han, Zhang & Han (2015) and Zattoni, Gnan & Huse (2015) when they studied the effect of top management on firm performance. The computed return on asset was lagged by one year simply because

there could be probable reverse causality where financial performance could impact on the level of CFOs and CEOs strategic partnership.

3.1 CFO's and CEO's Strategic Partnership

This variable was measured based on data obtained from questionnaires distributed. The CFOs were asked to indicate the extent to which they were directed by the CEOs to be involved in the following functional areas. (a) the firm corporate strategic planning activities (b) communication of the firm's strategic objectives and goals to both internal and external stakeholders, (c) inclusion of the firm strategic plans into operating budgets and (d) the firm's strategic performance management. The CFOs response were measured with a five-point Likert scale based on no involvement at all scored zero to greatly involved scored five. The average (mean) of the data was used to measure the extent of strategic partnership that existed between the CFOs and CEOs.

3.2 Demographic Relational Variables Similarity

In measuring the demographic relational variable similarity of the CEOs and CFOs, the following procedures were applied. Pair-wise comparison procedure used by Han et al (2015) was deployed to analyze the gender similarity. Similarity in gender (same gender) of the CEO and CFO was coded 1 and dissimilarity was coded zero (0). In terms of similarity relating to age, education and tenure in firm of the CEOs and CFOs, the study deployed the procedure used by Tsui and O' Reilly's (1989) and replicated by Han et al (2015). The procedure enable the squaring of the difference occurring between the age, education and tenure in firm values of the CEOs and CFOs resulting in dyadic D- scores. These scores were used to make postulations for an exponential function that took into account the distance score and the variable

outcome. This resulted in obtaining continuous scores on the variable of age, education and tenure in firm.

For more clarity, where a zero (0) difference score occurs for age construct, it shows that the CEO and the CFO were identical in age. Where the difference score is 1, it shows that they have one year difference in age. When the difference is 2, it shows that the difference in age between the CEO and CFO is two years and when it is 4, it indicates that there is four years' difference in age between the CEO and CFO which could be two years in either direction. When this happens, the score was reverse-coded and this process was performed by simply subtracting the reverse coded score from the maximum difference score obtained, the resulting score was interpreted. For instance, if the resulting scores are larger scores it represents more similarity and if they were smaller scores, it indicates little similarity between the CEOs and CFOs in their respective firms.

The data generated for the variables investigated were described by the use of means, standard deviations and correlations which are presented. The extent of effect of demographic variables' similarity mediated by the CFOs strategic partnership with CEO on firms' financial performance was a priority concern of the study To determine the effects, the bootstrapping methodology used by Preacher & Hayes (2004) was employed and the results are presented in Table 6 below.

Three models were constructed. The first model tested the effect of CFOs strategic partnership with CEO and demographic variables' similarity on firm financial performance.

Model 1: The functional form of the model is shown as follows:

$ROA = a0 + a_1CSPCE + a_2 AGS + a_3GES + a_4 TFS + a_5EDS + + E$

Where:

ROA = Firms financial performance

a_0 = Intercept of the equation

a_1 = Coefficient of CFOs strategic partnership with CEOs

CSPCE = CFOs strategic partnership with CEOs

a_2 = Coefficient of age similarity

AGS = Age similarity of CFO and CEO

a_3 = Coefficient of gender similarity

GES = Gender similarity of CFO and CEO

a_4 = Coefficient of tenure similarity

TFS = Tenure similarity of CFO and CEO

a_5 = Coefficient of education similarity

EDS = Education similarity of CFO and CEO

E = Error term

The results obtained from this first model are shown in Table 4 below.

Model 2: The functional form of model 2 is shown as follows:

$ROA = b_0 + b_1 AGS\ CSPCE + b_2 GS\ CSPCE + b_3 TFS\ CSPCE + b_4 EDSCSPCE\ x + E$

Where:

ROA = Firms financial performance

b_0 = Intercept of the equation

b_1 = Coefficient of interaction between age similarity and CFO and CEO partnership

AGSCSPCE = Interaction between age similarity and CFO and CEO partnership

b_2 = Coefficient of interaction between gender similarity and CFO and CEO partnership

GSCSPCE = Interaction between gender similarity and CFO and CEO partnership

b_3 = Coefficient of interaction between tenure similarity and partnership CFO and CEO

TSCSPCE= Interaction between tenure similarity and partnership of CFO and CEO

b_4 = Coefficient of interaction between education similarity and partnership of CFO and CEO

EDSCSPCE= Interaction between education similarity and partnership of CFO and CEO

This second model was used for the Bootstrapping test. It is about the robustness of the relationship of the interaction of CFO and CEO partnership and demographic variables' similarity on firm financial performance. The results are reported on Table 5 below. And are used to analyse hypothesis 6 that was broken down to four hypotheses

3.3 Testing the Robustness of the Model

Testing the robustness of the whole model was very important in order to determine the direct, indirect and spur effects of demographic variables' similarity through CFOs and CEOs strategic partnership on firm financial performance and how the path analysis would look like. The structural equation modelling was performed using AMOS (version 2.0) and the results presented in Table 6.

3.4 Validity and Reliability test of Instrument

In testing the validity and reliability of the data test instrument, the Cronbach's Alpha Criterion was applied. From the test results, it was observed that the alpha values of the variables are as follows: CFOs and CEOs strategic partnership has 0.89; age has 0.76; gender has 0.72; tenure in firm has 0.74 and education has 0.78. The Cronbach's alphas of the variables were greater than the threshold of 0.70. Accordingly, it suggests that the data collection instrument can be relied upon which necessitated the use of the data collected to test the proposed hypotheses.

4.0 Presentation of Results, Findings and Discussions

This section deals with presentation of the study results, findings and discussion. For clarity and easy comprehension, the tabular approach followed by analysis was employed.

TABLE 1:
DEMOGRAPHIC DATA OF THE CFOS IN THE SAMPLE

Demographic variables	Values	No	Percentage	Average
Age	Less than 30 years	4	6.90	42
	Between 31 to 40 years			
	Between 41 to 50 years	20	34.48	
	Above 50 years	19	32.76	
		15	25.86	
Gender	Male	49	84.48	0.84
	Female	9	15.52	
Tenure	Less than 3years	25	43.10	4.76
	Between 4 and 7 years	20	34.48	
	Above 7 years	13	22.42	
Education	HND	5	8.62	2.79
	BSc Degree	10	17.24	

	Master's Degree	35	60.34	
	Doctorate Degree	8	13.80	

Table 1 above shows the demographic data of the CEOs that participated in the survey. For age category, the mean age of the respondents was 42 years. Out of this, four (4) respondents were less than thirty years of age, twenty (20) respondents were between the age of 31 and 40 years, nine (9) respondents were between the age of 41 and 50 years while fifteen (15) respondents were above fifty years of age. Considering the gender variable, the average is 0.84. Out of this, forty-nine (49) respondents were male and nine (9) were female. The average tenure in firm was 4.76. Out of this, twenty-five (25) of the respondents have less than three years tenure in the firm, twenty (20) had tenure in firm between four and seven years while thirteen (13) had above seven years tenure in firm. On education variable, the average educational background of the respondents is 2.74, out of which five (5) respondents had HND, ten (10) had BSc degrees, thirty five (35) had Master's degree and eight (8) had Doctorate degree.

TABLE 2: DESCRIPTIVE STATISTICS RESULTS

Variables	**Means**	**Standard Deviations**
1. Return on Asset	35.24	3.23
2. CFO's strategic partnership with CEO's (CSPCE)	16.20	2.53
3. Age similarity (AGS)	13.5	2.08
4. Gender similarity (GES)	11.3	1.67

5. Tenure in firm similarity (TFS)	23.4	2.57
6. Education similarity (EDS)	12.8	1.91

Source: Descriptive test output, 2018.

From Table 2 above, the means and standard deviations of the variables are shown. A review of the results indicates that return on asset has the highest mean as well as the standard deviation of 35.24 and 3.23 respectively, closely followed by tenure similarity variable having a mean and standard deviation measures of 23.4 and 2.57 respectively. On the other hand, gender similarity variable has the lowest mean as well as the lowest standard deviations of 11.3 and 1.67 respectively.

TABLE 3:
RESULTS OF CORRELATION MATRIX IN MODEL 1

	Variables	**1**	**2**	**3**	**4**	**5**	**6**
1	ROA	1					
2	CSPCE	0.23	1				
3	AGS	-0.22	-0.16	1			
4	GES	0.26	0.06	-0.21	1		
5	TFS	-0.06	0.32	-0.04	0.29	1	
6	EDS	0.30	0.36	-0.20	0.21	-0.15	1

Source: Correlation test output, 2018

The correlation among the variables as shown in Table 3 above shows that none of the correlations was 0.50 or above. The highest correlation was 0.36 which is the correlation between education similarity and CFOs strategic partnership with CEOs followed closely by the correlation of tenure in firm similarity of the CFOs and CEOs. The low correlations that exist between the variables suggest the absence of multi-collinearity when compared with submission of Green (1978) who contends that correlations below 0.75 reveal the absence of multi-collinearity problem. The data was subjected to treatment in order to forestall multi-collinearity problems that may affect the independent variables which can lead to spurious results and consequently inaccurate interpretation

TABLE 4:
RESULTS OF MULTIPLE REGRESSIONS OF CFOS AND CEOS PARTNERSHIP AND DEMOGRAPHIC VARIABLES' SIMILARITY EFFECT ON FIRM FINANCIAL PERFORMANCE (ROA)

Variables	Beta coefficients	T-value	P-values
CFOs and CEOs strategic partnership	0.43	2.57	0.01
Age similarity (AGS)	-0.08	-0.48	-0.12
Gender similarity (GS)	0.10	0.59	0.11
Tenure in firm similarity (TFS)	0.41	2.85	0.00
Education similarity (EDS)	0.45	2.97	0.00

Source: Multiple regression output, 2018

Table 4 reports the results of the effect of CFOs and CEOs strategic partnership and demographic variables similarity on firm financial performance (ROA). The results are used to address hypotheses I to 5 of the study.

The CFOs and CEOs strategic partnership variable has a positive significant effect on return on asset as indicated by its beta coefficient of 0.43, t-value of 2.57 and p-value of 0.01.The result supports hypothesis 1 which infer that CFOs and CEOs strategic partnership has significant positive effect on return on asset. Age similarity variable has a negative insignificant effect on return on asset based on its beta coefficient of -0.08, t-value of -0.48 and p-value of -0.12. The result does not support hypothesis 2 rather, it indicates that age similarity variable has a negative insignificant effect on return on asset. Gender similarity variable has a positive but insignificant effect on return on asset given its beta coefficient of 0.10, t-value of 0.59 and p-value of 0.11.This finding partly support hypothesis 3, that gender similarity has positive effect on return on asset but the effect was insignificant. However, tenure in firm similarity has a positive significant effect on firms' financial performance as revealed by its beta coefficient of 0.41, t-value of 2.85 and p-value of 0.00.This finding support hypothesis 4, that tenure in firm similarity variable has significant positive effect on return on asset. Education similarity has a positive significant effect on return on asset as revealed by its beta coefficient of 0.45, t-value of 2.97 and p-value of 0.00. The finding supports hypothesis 5, that education similarity of the CFO and CEO has significant positive effect on return on asset.

TABLE 5:
RESULTS OF BOOTSTRAPPING TEST OF INTERACTION OF DEMOGRAPHIC VARIABLES' SIMILARITY WITH CFOS AND CEOS STRATEGIC PARTNERSHIP EFFECT ON FIRM FINANCIAL PERFORMANCE.

Demographic Variables Similarity mediated by CFO and CEO strategic partnership	Boot indirect effect	Boot SE	Boot 95%	CI	Boot Z value	Boot p-value
Age similarity X CSPCE	-0.001	0.004	-0.007	0.006	-0.46	0.89
Gender similarity X CSPCE	-0.002	0.003	-0.008	0.007	-0.57	0.86
Tenure similarity X CSPCE	0.005	0.001	0.003	0.008	4.16	0.00
Education similarity X CSPCE	0.003	0.001	0.001	0.007	4.06	0.00

Source: Bootstrapping Output, 2018.

The results on Table 5 addressed hypothesis 6 which is broken down into four hypotheses based on the demographic variables' similarity mediated by CFO and CEO strategic partnership on firm financial performance. The dependent variable is return on asset (ROA). From the table, the result of the bootstrapping method is particularly revealing. The results show as follows:

The CFOs and CEOs' strategic partnership did not mediate any significant effect of age similarity on return on asset (ROA). This is

shown by the Boot Z value of -0.46 and Boot p-value of 0.89 even when the 95% biased corrected confidence interval was from -0.007 to 0.006. As a result, there is no mediating effect of CFOs and CEOs' strategic partnership and age similarity on return on asset. It was observed that there was no significant mediating effect of gender similarity through CFOs strategic partnership with CEOs on return on asset. The Boot Z value was -0.57 and Boot p-value 0.86 even when the 95% biased corrected confidence interval was from-.008 to .007. For this reason, it was concluded that there is no significant mediating effect of gender similarity through CFOs and CEOs strategic partnership on return on asset.

Tenure similarity mediated through CFOs and CEOs strategic partnership has significant effect on return on asset, given the Boot Z value of 4.16 and Boot p-value of .00 even when the 95% biased corrected confidence interval was from .003 to .008. In this case it was accepted that tenure similarity through CFOs and CEO strategic partnership mediated significant effect on return on asset. However, a significant mediation effect of education similarity on return on asset through CFOs and CEOs strategic partnership was found given the Boot Z value of 4.06 and Boot p-value of .00 even when the 95% biased corrected confidence interval was from .001 to .007. On this basis it was accepted that education similarity through CFOs and CEOs strategic partnership has significant effect on return on asset.

TABLE 6:
RESULTS OF AMOS TEST FOR PATH ANALYSIS OF DEMOGRAPHIC VARIABLES EFFECT ON FIRMS' FINANCIAL PERFORMANCE THROUGH CFOS STRATEGIC PARTNERSHIP WITH CEOS AND CFOS.

Variables	Std. Beta	P-value	Direct effect	Indirect effect	Spur effect
Age similarity (AGS)	-0.78	0.372		-	-
Gender similarity (GS)	-0.674	0.312		-	-
Tenure in firm similarity (TFS)	1.86	0.002	1.67	0.19	-
Education similarity (EDS)	2.62	0.009	2.34	0.28	

Source: AMOS Test Output, 2018.

The results in Table 6 are also very informative. It shows that gender and age similarities of the CFOs and CEOs have no indirect effect on return on asset through the CFOs and CEOs strategic partnership. This is however not the case with education and tenure similarities. The education and tenure similarities are shown to have positive indirect effect on firm performance through the CFOs and CEOs strategic partnership given the standardized indirect effect of .28 and .19 respectively in the Table. The results in this Table answers objective three of this paper and are used to construct the path analysis of the research model as indicated below

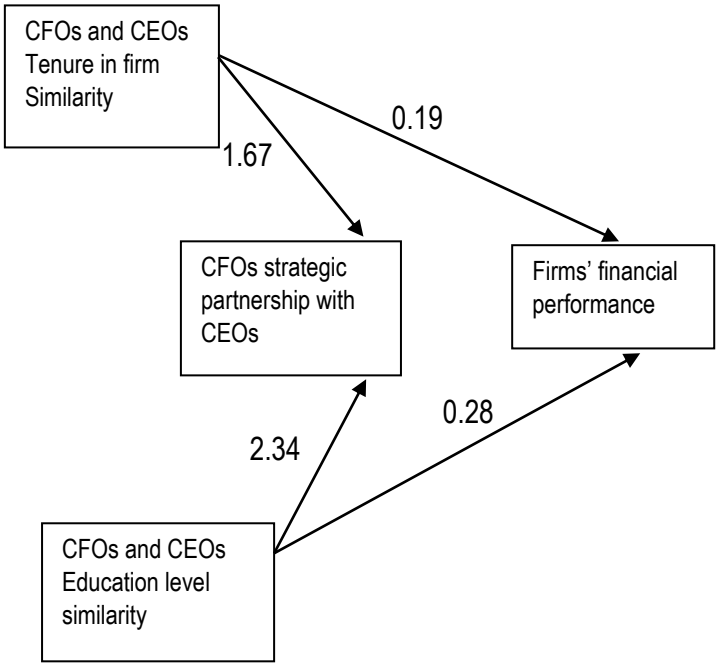

Figure 1: Path Analysis of CFOs and CEOs strategic partnership and Firms' Financial Performance.

Chi Square =3.42, df 3, p=.23, CFI=.94, NFI=.91 IFI=.94, TLI= .91, RMSEA=.00, P<.01

The indices derived from the model tested above infer that there is no significant difference from the data. For instance, the Chi-square value is 3.42, Df=3, p=.23 and RMSEA=.00.The incremental indices of CFI is .94, NFI is .91 and TLI is .91, all of them were greater than the threshold of .90 which indicate that the model is satisfactory as it cannot be improved significantly more than as it is. The Path model results are consistent with the results

provided in the multiple regressions hence hypotheses one (1), four (4), five (5), eight (7) and nine (9) are confirmed.

4.1 Discussions

The results emanating from the study adds to the growing research on the importance of the CFO as a strategic partner to the CEO. It provides empirical support for the increasing function of the CFO as part of the firm's strategic management process. This means that the CFO should be considered as an important strategist who performs not only financial analysis and its implementations but should be seen communicating a firm's strategic objectives to various stakeholders as well. He should be recognized as one responsible for incorporating the firm's strategic plans into the operating budgets and be involved in the firm's strategic performance management. An important lesson is learnt from the results which indicate that the CFO strategic partnership with the CEO is capable of improving firms' financial performance. The study outcomes have added to the knowledge arising from research focused on the relationships between top management staff indicating the significance of the CFO and CEO strategic partnership which is in tandem with the results of Menz (2012) and Han et al (2015).

Importantly, the study shed some light on the need for closer collaboration between the CFO and CEO if firms' financial performance has to improve. The study was able to find a significant effect of CFO and CEO strategic partnership on a firm financial performance. This result is in agreement with the findings of Han et al (2015). Equally found, was that education and tenure similarities of the CFO and CEO have positive significant effect on firms' financial performance but this was not the case with age and gender similarities of the CFO and CEO that have negative insignificant effect on firms' financial performance. These results

support the findings of Han et al (2015). The inference to note here is that top executives knowledge of the firm's working and their ability to process firms' information is backed by the level of education possessed and tenure-ship in the firm. In other words it shows that strategic partnership between the CFO and CEO is more probable on common level of skills acquired shared knowledge and understanding of the CFO and the CEO.

The significant effect of education and tenure similarities on firms' financial performance through mediation role of the strategic partnership between the CFO and CEO found in the study equally confirms the findings of Han et al (2015). The lessons to take-away from this finding suggest that such similarities provide a common knowledge base which is very helpful for both of them to actually learn from each other's area of specialty, develop more understanding, forge better collaboration, and share mental intelligence and theoretical models. Such similarity could improve cognitive knowledge that help mitigate threats often posed by differences in personal backgrounds capable of facilitating better strategic partnership between the CFO and CEO. Overall the results of the study also attest that the CFO strategic partnership with the CEO mediate the effect of demographic variables of education and tenure on firm financial performance. This provides an additional knowledge of the importance of the intervention of demographic variable in the strategic partnership between the CFO and the CEO to stimulate better financial performance. This is particularly important for Human resource professionals and CEOs who are concerned with decision supports in the areas of selecting, training and collaboration with CFOs. This would indeed promote the idea of the need to create a common knowledge base to stimulate and enhance better collaboration.

4.2 Conclusion and Recommendation

Interesting empirical evidence was provided by the study to support the argument that CFOs strategic partnership with CEOs could lead to better firm financial performance taking cognizance of demographic variables. This is buttressed by the findings that similarities in demographical variables of educational level and tenure-ship of the CFOs and CEOs in the firm have significant effect on firm financial performance. As such the study put forward some salient recommendations.

Firms should as a matter of policy recognize the need to expand the strategic roles of the CFO in strategic management. They should also see such role expansion of the CFO to be a strategic partner to the CEO. This form of partnership would provide an ample opportunity for the firm to create a common knowledge base that could be harvested for improved firm financial performance. This would also help to mitigate possible conflicts they may arise between the CFO and the CEO on account of their functional background differences.

The results of the study have some implications to diverse categories of persons. For instance, it would assist firms desirous to recruit CFO to consider the issue of education and tenure similarities with the CEO as factors capable of fostering better strategic partnership. To educational institutions, it would provide them with opportunity to re-evaluate their curricula at the postgraduate levels since they serve as incubators for senior management teams for firms. In addition, it would draw their attention to the need to train post graduate students with finance and accounting backgrounds on the emphasis of ensuring strategic partnership with CEO, should they aspire to become CFOs in firms.

The study recognized some of its limitations. In the first instance, caution need to be exercised should the results are to be generalized. The scope only addressed data obtained and measured from the CEOs standpoint in organizations that have CFOs. There is need to expand the scope to cover data from both the CEOs and CFOs. A study with such a broad scope may provide more reliable data measurements and results concerning the strategic partnership between the CEO and CFO and effect of demographic variables on firms' performance. Future studies should consider these recommendations to provide more enriching information to strengthen the strategic partnership between the CEO and CFO. This is particularly important if firms are to deliver better and improved financial performance to stakeholders.

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IMPLICATIONS OF EXTERNAL PUBLIC DEBT ON EXCHANGE RATE CHANGES IN NIGERIA, 1981 – 2018

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Abstract

This study aimed at determining the implications of external public debt receipts on naira exchange rate changes, on one hand, and the implications of external public debt servicing on naira exchange rate changes, on the other hand. The variables used in the study includes external public debt receipts, external public debt servicing, and exchange rate. The study made use of Ordinary Least Square (OLS) regression and Co-integration test as methodology. The findings of the study showed that external debt receipts and external debt servicing have positive short and long-run relationships with naira exchange rate changes. The policy implication of this study is that Nigerian governments should evolve more efficient external debt management strategies that would ensure that foreign loan receipts secured net off the effects of the servicing obligations in order to enhance the value and exchange rate of the naira. The study concluded that the absence of a balancing-off effect of the variables of EPDR and EPDS on

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exchange rate changes could indicate that other factors besides EPDR and EPDS could have contributed to the instability in the naira exchange rate of the reviewed period. The paper recommended that Nigerian governments should always strive to secure self-liquidating, production/project-based external loans for financing projects; place and enforce embargo on certain classes of foreign loans as well as on the frequency of contracting loans; contract foreign loans with concessionary low interest rates and long maturity periods; promptly and regularly service foreign loans to avoid the burden.

Keywords*: Debt, Exchange, External, Changes, Servicing.*

1.0 Introduction

The public sector, comprising of all organizations not privately owned and operated, but established, run and financed by the government on behalf of the public (Adams, 2013), like the private sector, requires fund for its numerous activities which go beyond its internal revenue generation capacity. The public sector must of necessity borrow to fill the gap between its receipts and expenditure. Public sector debt, both domestic and external, is a stock of liabilities with different tenures accumulated by government operations in the past and scheduled to be fully repaid by government in the future (CBN, 2010). It covers only recognized direct financial obligations of government on which government pays interest on redemption.

Ugwu (2011) noted that public debts help in maintaining economic stability, development of productive enterprises, meeting emergencies, prosecution of war, and meeting current deficits. Internal debts, which are debts raised domestically, do not give rise to net additions to the country's capital formation, rather they

end up diverting funds which naturally would have been available for private sector investment to the public sector. Such debts encourage public sector competition over scarce available local investible funds. In view of the limitations surrounding the use of domestic debts, governments reach out for foreign debts which have the potential of increasing incomes as additional resources are injected into the domestic economy. Foreign or external debts are those debts owed by individuals, firms, or government of one country to residents of another country or international agencies (Black, 2002). According to Anyafo (1996), government debts have the capacity to make foreign exchange resources available for financing imports, supplementing foreign exchange earned from exports of goods and services, supplementing locally raised capital, and are vital for developmental programmes, budgetary and project supports. Ezenwa (2012) opined that foreign debts are needed to cover two types of gaps in the developing process, namely: the foreign exchange gap and the investment-savings gap.

Foreign debts, whether receipts or servicing, affect the economy of Nigeria. External debt receipts are inflows from debt obligations of governments while external debt servicing is the sum of principal repayments and interest payments made to non-residents in respect of debt obligations of governments. Anyafo (1996) asserted that just as external public loans increase national income; their servicing constitutes a major leakage, more so, as the capital repayment and interest due on the loans are on the available foreign exchange.

Over the years, the external debt receipts statistics of Nigerian governments show a rising trend just as the servicing component. As at 1981, the external debt receipts of Nigerian government was $3.13billion. By 1991, the debt figure increased to $28.28billion. It

stood at $25.14billion in 2001. It went down to $5.67billion in 2011 as a result of the debt cancellation of 2005 and rose to $8.82billion by 2013 (CBN 2010; DMO, 2013). The servicing showed a similar trend. As at 1981, the total repayment figure stood at N1, 027.41 million. By 1991 it was N26.4billion. By 2001, a total of N155.4billion was repaid. In 2011, the figure dropped to $351.62million as a result of the debt cancellation of 2005 and further down to $297.33million as at 31st December 2013. The external debt receipt was also $9.71billion in 2014, $10.72billion in 2015, $11.41billion in 2016, $18.91billion in 2017, $25.27billion in 2018 and $27.16billion as at first quarter of 2019 (CBN, 2019; DMO, 2019).

The exchange rate indicates the price of one country's currency in relation to another country's currency. With the US dollar as the intervention currency in the market (CBN, 2010), the naira-dollar exchange rate shows the rate at which one unit of the dollar exchanges for a given units of the naira. Iyoboyi and Muftau (2014) noted that the exchange rate is an important endogenous factor that affects economic performance due to its impact on macro variables such as outputs, imports, export prices, interest rates and inflation. Depending on whether it is a fixed or flexible system, the exchange rate can be a useful factor in balance of payments adjustments, managing crises associated with pressure for currency revaluation, freeing of internal policy objectives, ability to adjust to external shocks, maintenance of foreign exchange reserves, driving of investments, and handling of speculation and level of discipline in economic management (Biz/ed, 2014).

Borrowing and lending result in capital movement between countries with some interesting implications on the exchange rate. Jhingan (2003) has shown that short-term and long-term capital movements tend to appreciate the value of the currency of the

capital-importing country by moving the exchange rate in favour of the capital-importing country. This happens because capital inflows trigger off a rise in the demand for the currency of the capital-importing country thereby shifting its currency's demand curve upward to the right and causing the exchange rate to be determined at a higher level, given the supply curve of the foreign exchange. External debt servicing, as an outflow, should produce a reverse effect. The questions are: how did the naira-dollar end-point official cross exchange rates fluctuate (appreciate or depreciate) in relation to the external public debt receipts and servicing for the period under review? What are the implications of the mounting external debt receipts and servicing on naira exchange rate changes? This study seeks to resolve the above issues.

External debt receipts of the public sector generate capital inflows that should ordinarily appreciate the value and exchange rate of the borrowing country, at least in the short run. Servicing of such debts, on the other hand, constitutes capital outflows that should produce the opposite effect on the value and exchange rate of the naira. Black (2002) pointed out that capital movement in the form of external debt receipts and servicing form part of the capital account of the balance of payments of countries. The effect of capital inflows should, all things being equal, have a neutralizing effect on capital outflows, and hence result in a more stable naira exchange rate.

Available records from Central Bank of Nigeria (CBN) and Debt Management Office (DMO), however, show that the naira exchange rate for the period under review was not quite stable. Studies carried out by Ajayi and Jongmoo (1993), Alam and Taib (2013), Draz and Ahmad (2014), Masaku (2014), Sulaiman and Azeez (2012), & Udoka and Anyingang (2010), which were aimed

at establishing a cause-effect relationship between public sector debt and exchange rate did not offer satisfactory explanation on the implications of the critical components of external debt receipts and servicing on exchange rate changes. This study attempts to fill this gap by delving into the implications of external debt receipts and servicing on naira exchange rate changes.

2.0 Review of Related Literature

2.1 Concept of External Public Debt

The gap between revenue and expenditure creates the need for borrowings. Individuals, organizations and governments borrow to fill this gap. The CBN (2010) defines public debt (domestic and external) as a stock of liabilities with different tenure, accumulated by government operations in the past and scheduled to be fully repaid by government in the future. Public debt owed by the government and their agencies to residents of the country is domestic public debt, while that owed to residents of another country is foreign or external public debt. Anyanwokoro (2004) distinguishes public debt from national debt, which, as a component of public debt, is the total outstanding contractual obligations of the mainstream government at various levels, exclusive of debts of government-owned institutions, agencies or parastatals. The outstanding payments on contractual obligations of the three tiers of government, namely, federal, state and local government, public corporations and parastatals make up the public debt of a country.

Nigerian governments borrow domestically through the financial markets by issuing treasury bills, federal government bonds, treasury certificates, promissory notes, treasury bonds, and development stocks (CBN, 2010). As these sources do not usually yield the desired amount of fund needed to take care of multiple

government activities, governments turns to external sources, classified by the Debt Management Office (DMO) into multilateral, bilateral, and commercial sources.

Nigerian governments borrow externally for various purposes. As Jhingan (2004) puts it, public debts are needed to finance deficit budgets, execute wars, cushion the effects of natural calamities, fund economic development plans, public enterprises and utilities as well as stabilize the economy. In line with the above driving factors, Nigerian governments' debts over the years were motivated by certain needs. In 1958, the government borrowed US $28 million to finance the construction of railway lines under its development programme. In the post-independence period, government borrowed to fill the deficit occasioned by the political crisis, which degenerated to a bloody civil war. The need to rehabilitate and reconstruct infrastructure damaged during the war time necessitated the borrowings of the early 1970s. The Nigerian economy got to its crisis point during the period of the global oil glut of the late 1970s, which pushed the government into debt to survive the deficit in the economy. In the quest for what was termed need for rapid economic development, the then 19 state governments joined the Federal government to accumulate more foreign debts. In the 1990s and 2000s, governments' external borrowings became instrument for managing the economy. In recent times, the downward movement in the oil revenue coupled with the need to fight poverty, unemployment, insecurity, and provide infrastructure for economic development, have resulted in more external debts.

To address the issue of mounting external public debts, the Federal government set up the Debt Management Office (DMO), (a semi-autonomous establishment under the Presidency), in 2000, to centrally coordinate the country's debt recording and

management activities, including debt service forecasts, debt service payments and advising on debt negotiations as well as borrowings (DMO, 2014). Before then, the task of managing the external debt of the nation was shared between five specialized departments in the Federal Ministry of Finance and three in the CBN. Ahmed (1986) notes that external debt management involves a conscious and carefully planned schedule of the acquisition, deployment and retirement of loan acquired either for development purposes or to support the balance of payments.

According to Anyanwu (1993), external debt management strategies applied by these authorities included: limiting the size of debts, limiting debt service payments, refinancing of short-term trade debts, debt rescheduling, new loan facility agreement, debt-equity swap, structural adjustment programme (SAP), and debt cancellation.

2.2 Concept of Exchange Rate

Exchange rate is the price of a country's currency in terms of another country's currency (Ahuja, 2013). Moffatt (2005) views exchange rate as the current market price for which one currency can be exchanged for another. The exchange rate determines how much a country's currency is worth in terms of another country's currency. According to Ahuja (2013), a country may operate the floating or fixed exchange rate system. The floating or flexible exchange rate system allows a currency to adjust freely as determined by the demand for and supply of foreign exchange. The fixed exchange rate is determined by the government through the Central Bank which buys and sells the required quantities of foreign exchange in order to eliminate excess demand or supply. Musgrave and Musgrave (2014) have shown that the exchange rate system operated by a country can affect the stability of the country's economy. Depending on the elasticity involved, the

value of the naira relative to foreign currencies affects the balance-of-payments, the level of domestic inflation, savings, investments, and ultimately, the economy.

Nigeria operated the fixed exchange rate system prior to 1986. During this period, government used series of exchange control regulations, such as the Defence (Finance) Regulation of 1939, Exchange Control Ordinance of 1950, Exchange Control Act of 1962, Exchange Control (Anti-Sabotage) Decree of 1977, which was revised in 1984, to manage the exchange rate of the naira. With the introduction of the Structural Adjustment Programme (SAP) in 1986, Nigeria switched over to the flexible or floating exchange rate system. According to CBN (2014), the main objectives of exchange rate policy in Nigeria include; to preserve the value of the domestic currency, maintain a favourable external reserves position and ensure external balance without compromising the need for internal balance, and the overall goal of macro-economic stability.

2.3 Relationship between the Variables of External Public Debt and Exchange Rate.

External public debt has as its basic components, receipts and servicing. What relationship exists between these components of external debt and exchange rate? Jhingan (2003) noted that short-term and long-term capital movements influence the exchange rate. Begg (1991) pointed out that external debts form a substantial component of the money stock of less developed countries, like Nigeria. External debt receipts constitute capital inflows that increase government's ability to spend on capital (for project-tied loans) and recurrent needs of the economy. Capital inflows tend to appreciate the value of the currency of the capital-importing country while depreciating the value of the currency of

the capital-exporting country. This appreciation in the value of domestic currency which is made possible because of increase in the demand for the currency of the capital-importing country shifts the demand curve of the domestic currency upwards to the right, thereby taking the exchange rate to a higher level, in favour of the capital-importing country, given the supply curve of the foreign exchange. External debt servicing, on the other hand, results in capital outflows which tend to have a reverse effect on the value and exchange rate of the domestic currency.

FIGURE 1:
RELATIONSHIP BETWEEN EXTERNAL PUBLIC DEBT AND EXCHANGE RATE IN NIGERIA FROM 1981 TO 2018.

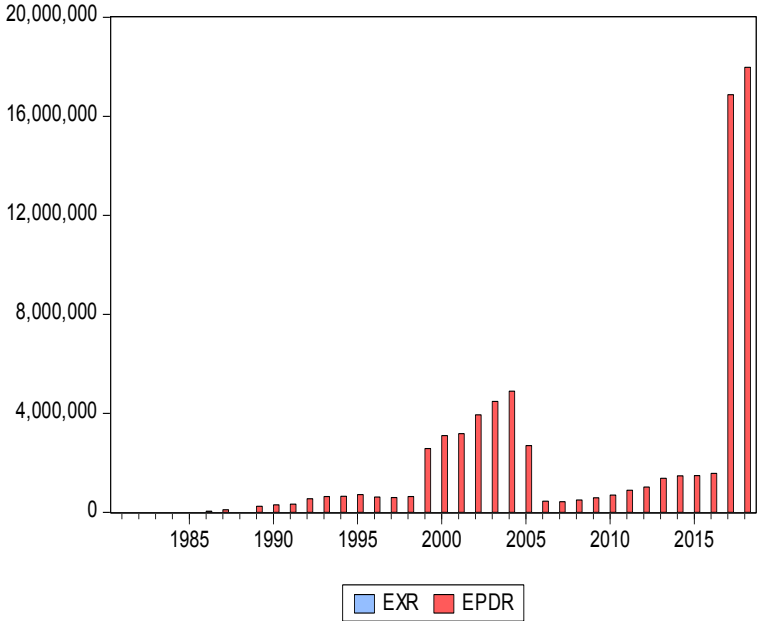

Figure 1 above shows the trend of the relationship between external public debt receipt and exchange rate changes from the year 1981 up till 2018. We observed that exchange rate has not match with the external public debt over the years under study. Also, those periods (that is, between the early 1999 to 2017) were marked by various unstable macroeconomic policies and political instabilities which discouraged the inflow of foreign direct investments in Nigeria as a result of high exchange rate.

2.4 Empirical Review

A review of previous attempts at establishing the cause-effect relationship between the variables of external public debt and exchange rate fluctuation presents some interesting results. Ajayi and Jongmoo (1993) carried out a study to verify the effect of foreign debt on currency values. The study adopted a model using combined monetary and asset perspectives of exchange rates, which included foreign debt, to estimate the impact of foreign debt on currency values. The study, which was based on a sample of less developed countries, revealed negative effects in 12 countries in the sample. The study suggested that foreign debt has an important negative effect on currency values. Foreign debt appeared to be generally linked to capital flight and trade deficit, resulting in a depreciation of domestic currency, though in the case of the exceptions such as Israel and Singapore, foreign debt implied excess demand for domestic assets from foreign investors, which can have a negative effect on exchange rate.

Udoka and Anyingang (2010) undertook a study to appraise the relationship between external debt management policies and economic growth in Nigeria, from 1970 to 2006. The study formulated one null hypothesis to determine the effect of external debt on gross domestic investment, exchange rate, fiscal deficit, and terms of trade. Ex-post facto research design was adopted

and Ordinary Least Square (OLS) multiple regression technique was used to analyze data gathered for the study. The result of the findings revealed that GDP, exchange rate, fiscal deficit, London Interbank official rate, and terms of trade were the major determinants of external debts in Nigeria.

Alam and Taib (2013) investigated the relationship of external public debt (EPD) with budget deficit (BD), current account deficit (CAD), and exchange rate depreciation (ERD) by empirically analyzing panels of a group of six "debt-trapped countries (DTC)" and eight "non-debt-trap countries (NDTC)". The study applied the panel OLS regression with fixed and random effects modeling (FEM and REM, respectively) to show a positive relationship of EPD with BD, CAD, and ERD with varying strength of relationship in DTCS and NDTCS. It further showed that a strong coefficient of EPD, BD and ERD indicated an explosive borrowing, a higher demand of EPD and heavy utilization of foreign exchange while a lower coefficient of EPD, BD and ERD indicated less borrowing, less demand of debt and less utilization of foreign exchange. A lower coefficient of CAD suggested that borrowed funds were not directed towards, adjustment in current account in NDTCs, signaling a prudent public debt management in NDTCs compared to DTCs.

Masaku (2014) investigated the effect of Kenya's external debt on exchange rate changes. A correlation design was selected for the study and SPSS was employed to analyze data, using descriptive statistics, correlation and regression techniques. Population and subsequent sample size was 360 data points covering a period of 40 years, from 1971-2010, with nine variables. The dependent variable used was external debt while the control variables were GDP, interest rate, inflation rate, terms of trade, net foreign assets, exchange rate, and government expenditure. The study found that

there was a general upward trend in both external debt and exchange rate changes. The study further revealed that external debt, interest rate and not foreign assets had a positive and significant effect on exchange rate. On the other hand, inflation rate and FDI inflows had negative and significant effects on exchange rate. External debt accounted for 63% of the foreign exchange volatility. The study concluded that Kenya's external debt positively and significantly affected her exchange rate changes.

Draz and Ahmad (2014) investigated the impact of external debts and world oil prices on Pakistan's rupee exchange rate, comparing the findings with Nigeria. The study applied OLS regression model with lag variables and Granger causality test in analyzing data gathered for the period 1965 to 2009. The result showed that external debt had significant influence over Pakistan's rupee's exchange rate while no such evidence was found for the world oil prices. These outcomes were said to have varied from previous studies and their results obtained for Nigeria.

Quilent (2015) empirically investigated the effects of external public debt on real effective exchange rate (REER) volatility under the complete float regime for period 1993 to 2013 using quarterly data. REER index was constructed using US Dollar and British Pound Sterling. The REER volatility was measured using the standard deviation of the second order of the moving average. A linear model was developed and exchange rate volatility was regressed against inflation, interest rates, and GDP growth rate, money supply to GDP ratio and external debt to GDP ratio using Ordinary Least Square technique. The results showed that external debt to GDP ratio had negative and significant effect on REER volatility while interest rates had positive and significant effect. Inflation, GDP growth rate and money supply to GDP ratio

were found not to have any significant effect. High and unsustainable external public debt was evidenced to lead to high REER volatility in Kenya. It was recommended that monetary authorities should ensure debt sustainability indicators such as external debt to GDP ratio are at low levels and pursue strategies that reduce excessive accumulation of external public debt.

Nwanne and Eze (2016) investigated the relationship between external public debt servicing and receipt and exchange rate using Ordinary Least Square (OLS) multiple regression. The findings of the study showed that external debt receipts and external debt servicing have positive and negative short and long-run relationships with naira exchange rate changes. The study concluded that whereas external public debt receipts affect exchange rate positively, external public debt servicing affects exchange rate negatively. It was noted that Nigerian government should evolve more efficient external debt management strategies that will ensure that foreign loan receipts secured net off the effects of the servicing obligations in order to enhance the value and exchange rate of the naira.

Victoria, Emmanuel, Obinna, Esther and Akinde (2016) assessed the impact of public debt on external reserve in Nigeria. The objectives of this study included the assessment of the trends and relationship between public debt and external reserve in Nigeria, using the Johansen co-integration and FMOLS technique on the secondary data from 1981 to 2013. The result revealed that public debt has a positive and significant effect on external reserve stock in the long run suggesting that the nation's debt crisis can be attributed to both exogenous and endogenous factors such as the nature of the economy, economic policies, high dependence on oil, and swindling foreign exchange receipt. It was recommended that the federal government should employ more superior method

to negotiate for fixed interest payment and varying amortization schemes, as well as seek multiyear rescheduling rather than year by year basis.

The study by Zakaree, Ibrahim and Blessing (2017) examined the impact of public external debt on exchange rate in Nigeria. Using the Ordinary Least Square, on the secondary data sourced from the CBN and DMO among other sources, findings revealed that all the dependent variables, that is, external debt, debt service payment and foreign reserve proved to be statistically significant in explaining exchange rate fluctuation in Nigeria within the period of observation, with debt service payment having the strongest effect (Coeff: 0.4443). Based on the finding, they recommended that government should ensure that all public borrowing, where and when necessary, be directed towards productive economic activities which can generate returns to service and pay up the debt at maturity.

Paul (2017) investigate the impact of external debt on economic growth of Nigeria. Data for the study were collected from secondary sources. The variables on which data were collected included; Gross Domestic Product, External debt services, external debt stock, external reserve, and exchange rate. The scope of the study covered the period from 1985 to 2015. Data were analysed using the ordinary least square regression, ADF unit root test, Johansen cointegration and error correction test. Findings revealed that debt service payment had negative and insignificant impact on Nigeria's economic growth while external debt stock had positive and significant effect on Nigeria's growth index. The control variables: external reserve and exchange rate have positive and significant effects on growth. The ADF unit root test shows that all the variables are not stationary at levels but at first difference. Johansen co-integration test shows long-run

relationship between external debt and growth index (GDP). It also showed that the variables have at least one common stochastic trend driving the relationship between them. The causality test indicated unidirectional causality between external debt and GDP. From the findings, the study recommended that government should apply external loans to infrastructural development; improve business environment through legislation; initiate proper debt management policies and substitute external borrowing for human capital development.

Kouladoum (2018) analyzed the effect of external debt on the real exchange rate in Chad from 1975 to 2014. The generalized method of moment is used. Findings showed that external debt positively and significantly affected the real exchange rate at 5% significant level. Moreover, debt servicing affected the real exchange rate negatively and significantly. The study recommended a budgetary policy that reorient its debt towards economic sectors that are able to boost economic growth and reinforce the strategies needed to contribute and re-equilibrate industrial activities.

Ameet, Niaz, Khalid, and Mahammad (2019), analyzed the effect of external debt on the real exchange rate in Chad from 1975 to 2014. The generalized method of moment was used. Findings showed that external debt positively and significantly affect the real exchange rate at 5% significance level. Moreover, debt servicing affects negatively and significantly real exchange rate. The main recommendation goes to Chadian government, it should adopt a budgetary policy, in such a way to reorient its debt towards economic sectors that are able to boost economic growth and reinforce the strategies needed to contribute and re-equilibrate industrial activities. We, therefore, hypothesize that

Hypothesis One

H_{01}: There is no significant impact of external public debt receipt on naira exchange rate in Nigeria

H_1: There is significant impact of external public debt receipt on naira exchange rate in Nigeria

Hypothesis Two

H_{02}: There is no significant impact of external public debt servicing on naira exchange rate in Nigeria

H_1: There is significant impact of external public debt servicing on naira exchange rate in Nigeria

2.5 Theoretical Framework

There exist theories that seek to explain the relationship between the variables of components of external public debt and exchange rate fluctuation. The theoretical framework of this study shall, however, be based on the monetary model of exchange rate determination and the monetary approach to international capital movements, which are considered to be more relevant to the variables and focus of the study.

2.5.1 Monetary Model of Exchange Rate Determination

The monetary model of exchange rate determination was developed by notable scholars, prominent among who is Michael I. Mussa. Mussa in his 1976 and 1984 seminal work on "Theory of Exchange Rate Determination" applied the monetary model to show that the current exchange rate is a function of the current stocks of domestic and foreign money and the current determination of the demands for these monies, including domestic and foreign incomes and interest rates. According to

Mussa (1984), since an exchange rate is the relative price of one nation's money in terms of the money of another nation, it is natural to think of an exchange rate as determined, at least primarily, by the outstanding stocks of these monies and by the demands to hold these stocks.

The monetary model assumes that there is a stable money demand function in each economy; that purchasing power parity holds in the long-run; that the existence of flexible prices implies that there will be full employment; that there is perfect capital mobility with a single domestic and a single foreign bond (debt) which are perfect substitutes for one another; and that the role of expectation of future economic conditions in determining the current exchange rate is not explicitly revealed (Sodersten and Reed, 1994; Mussa, 1984). Sodersten and Reed (1994) affirmed that the monetary models of determination of a floating exchange rate emphasized the role of the demand for and supply of money. In other words, the demand for and supply of foreign currency relative to that of the domestic currency determine how the exchange rate between countries behave.

2.5.2 Monetary Approach to International Capital Movement

Attempts to explain the factors that influence international capital movements resulted in three theories, namely: the flow theory, the stock theory and the monetary approach to capital movements. While the first two theories focus on the role of interest rate differential between countries as principal factor that influences international capital movements, the monetary approach concentrates on the factors that may cause a change in foreign currency reserves, and hence the money supply.

According to Sobersten and Reed (1994), the monetary approach, which was popularized through the 1976 seminal works of

scholars like Frenkel, Johnson and Mussa, argues that money supply and demands are strong forces in determining a country's external position, as indicated by the change in the country's foreign currency reserves. The model concludes, that starting from an initial equilibrium position, an increase in the demand for money (or an increase in its supply) will lead to a balance-of-payments (BOP) surplus or vice versa, which will in turn affect the exchange rate either positively or negatively. This is so because a favourable BOP enhances the value of the domestic currency and its exchange rate while an unfavourable BOP does the opposite.

The monetary approach assumes that there is a stable money demand function, that prices are flexible and markets operate perfectly so that there is always full employment and thus a given level of output, and that there is purchasing power parity (PPP).

3. Methodology

Secondary data were obtained from CBN bulletins and DMO statistical publications. Data collected has been analyzed and tested using the parametric statistical techniques of multiple regressions (Ordinary Least Square) and Co-integration with the aim of establishing the short-run and long-run relationship between these variables.

For the analysis, the following general equation for OLS and Co-integration test has been adopted:

$$Yt = \beta o + \beta_1 x_1 t + \ldots + \beta n x nt + \mu t \text{ and}$$
$$\Delta yt = \beta_1 + \beta_{2\Delta} x lt \ldots \beta n \Delta x nt + \delta Ut - 1 + \varepsilon t \quad \ldots 1$$

where:

yt	=	the dependent variable
β_0	=	the intercept term
β_1	=	the regression coefficient

xt	=	set of explanatory variables and
μt	=	the error term

The fore-going presentation is been re-specified as shown below to capture the objectives of the study:

EXR	=	F (EPDR, EPDS)
Where:		
EXR	=	the naira exchange rate
EPDR	=	the external public debt receipts, and
EPDS	=	public debt servicing (used as proxy for external public debt servicing).

4. Result and Analysis
Interpretation of Empirical Results

TABLE 1: ORDINARY LEAST SQUARE RESULT

Dependent Variable: EXR				
Method: Least Squares				
Sample: 1981 2018				
Included observations: 37				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	34.40269	10.83205	3.176009	0.0036
EPDS	3.465244	6.93E-05	3.520299	0.0015
EPDR	1.754355	7.34E-06	2.435229	0.0003
R-squared	0.808635	Mean dependent var		73.54904
Adjusted R-squared	0.773537	S.D. dependent var		60.77004
S.E. of regression	44.09337	Akaike info criterion		10.50226
Sum squared resid	54438.31	Schwarz criterion		10.64103

Log likelihood	-159.7851	Hannan-Quinn criter.		10.54750
F-statistic	14.49206	Durbin-Watson stat		1.425520
Prob(F-statistic)	0.000000			

Source: Authors Computation using E-view 7.0

From the OLS result, it could be seen that there is a positive relationship between exchange rate (EXR), external public debt receipts (EPDR) and external public debt servicing (EPDS), which implies that as public debt receipts and servicing increase, exchange rate increases over time. The result shows that there is a direct/positive relationship between EXR and EPDR, that is, 1 unit increase in EPDR will lead to 1.754355 unit increase in EXR. There is also a direct/positive relationship between EXR and EPDS which implies that, unit increase in the will lead to 3.465244 unit increase in EXR. The Co-integration test indicates that there is a long-run relationship between the dependent variable (EXR) and the independent variables (EPDR and EPDS) within the period reviewed (1981-2013).

Hypothesis One

H_{01}: There is no significant impact of external public debt receipt on naira exchange rate in Nigeria

H_1: There is significant impact of external public debt receipt on naira exchange rate in Nigeria

In this study, external public debt receipt was used as independent variable. As shown in table 1 above, the variable, external public debt receipt (EPDR) appeared in our Ordinary Least Square (OLS) estimated with a positive sign of 1.754355 and T. Statistics of 2.435229 which is significant coefficient in line with P-value of 0.0003.

Since 5% (0.05) level of significance is greater than the P-value (0.0003), we reject the null hypothesis 0.05 at 5% level of

significance and accordingly accept the alternative hypothesis with conclusion that there is significant and positive impact of external public debt receipt on naira exchange rate in Nigeria. This is an indication that the external public debt receipt have significantly affected naira exchange rate in Nigeria over the years under study.

Hypothesis Two

H_{02}: There is no significant impact of external public debt servicing on naira exchange rate in Nigeria

H_1: There is significant impact of external public debt servicing on naira exchange rate in Nigeria

Arising from table 1 above, since 5% (0.05) level of significance is greater than the P-value (0.0015), we reject the null hypothesis hence there is significant and positive impact of external public debt serving on naira exchange rate in Nigeria. This is an indication that the external public debt servicing has significantly affected naira exchange rate in Nigeria over the years under study.

From the empirical evidence, it can be inferred that the coefficient of regression, which is the coefficient that depicts the estimated coefficient, appears to be good, while standard error and the values of t-statistic have been shown. The results of other important statistical tools applied in this study reveal that the coefficient of determination (R^2), as used to measure the success of the regression in predicting the value of the dependent variables within the sample and test the goodness of fit, is considered high (over 80.86%). The adjusted R-square, the Durbin-Watson statistics and the entire regression test are statistically significant, including the f-test.

All results were obtained empirically, based on availed secondary data, and the test was conducted at five percent (5%) level of significance. The result indicates that the level of Nigeria's external public debt receipts over the years have significant positive effect on naira exchange rate fluctuation. External public debt servicing, on the other hand, has a negative effect on the exchange rate.

5 Conclusion and Recommendations

5.1 Conclusion

The external public debt receipts and servicing of Nigeria and the naira exchange rate over the reviewed period (1981 – 2018) show a rising trend. Apart from 2006 and 2007 when the external loan stock and exchange rate declined as a result of the debt cancellation of 2005, the pre-and post-debt cancellation periods' statistics show an upwards movement for both the external debt stock (receipts and servicing) and the naira exchange rate. This picture shows a positive relationship between the variables of external debt receipts and servicing and the naira exchange rate. This observation agrees with the results of some empirical studies reviewed in this work, which would have been confirmed had this study been empirically carried out using the OLS and Co-integration analytical techniques.

The study, therefore, concludes that EPDR affect significantly and positively the value and exchange rate of the naira, while EPDS affects the value and exchange rate of the naira negatively; both variables have a positive long-run relationship with EXR. The policy implication of this study is that government should evolve more efficient external debt management strategies that would ensure that foreign loans which will not enhance the value and exchange rate of the naira are avoided. This is necessary

because of the vital roles exchange rate plays in the economic growth of a nation. It further implies that the absence of a balancing-off effect of the variables of EPDR and EPDS on exchange rate changes could indicate that other factors besides EPDR and EPDS could have contributed to the instability in the naira exchange rate of the reviewed period.

5.2 Recommendations

Based on the findings of this study, it is recommended that, for a more economy-friendly exchange rate, Nigerian governments should adopt the following measures:

1. Nigerian governments should always strive to secure self-liquidating, production-based/project-tied external loans for financing projects;
2. Embargo on certain classes of foreign loans as well as the frequency of contracting loans should be placed and effectively enforced;
3. Foreign loans with concessionary low interest rates and long maturity periods should be contracted;
4. External loans should be serviced promptly and regularly to avoid the burdensome effect of accumulated compound interests;
5. Misappropriation of external loan resources should be stopped; and
6. Further researches could be carried out to reveal those other factors, if any, beside EPDR and EPDS that could have led to the exchange rate changes of the reviewed period.

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LIQUIDITY AND PERFORMANCE OF THE NIGERIAN STOCK MARKET

By

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Abstract

The paper extends the investigation on the relationship between liquidity and stock returns by examining the influence of market liquidity on stock returns in the Nigerian stock market. Vector auto-regression model was employed in examining the impact of liquidity measures such as the volume of trading and turnover on stock returns for the period 1985-2018. Empirical results suggest that the higher the market liquidity (volume of trading and turnover), the higher the stock index returns. Thus, establishing a positive relationship between liquidity and performance of stock market during the period examined after controlling for market size. This result is not in line with the negative relationship between liquidity and market return as obtained by studies on developed markets.

Keywords: *liquidity, stock returns, turnover, and trade volume.*

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1.0 Introduction

Fundamental factors such as transaction costs, marketability and Liquidity, are significant factors in determining investors' portfolio investment choice in developed markets. Stock returns are affected by liquidity which is recognized to fluctuate based on time. Potential unproductive private sector information, institutional bottlenecks and capital restrictions effects are foreseen in emerging and developing markets. The dynamics of stock liquidity and how it can influence the return of stocks have elicited a new level of interest in modern finance research.

The risk factor in asset pricing model includes illiquidity. The trading of a security to prevent loss or to make profit in a timely manner is often referred to as stock liquidity. Illiquidity has not been considered as a significant factor in conventional asset pricing models based on the assumption that fundamental factors can be used to explain the returns on stock. There is a difference between ask and bid prices in the market in live trading. This happens whenever investors decide to short (long) their stocks, ask (offer) price requires a selling concession (buying premium). Thus, the bid-ask price spread usually reflects the marketability (liquidity) of a stock.

The inability of investors to transfer ownership right of an investment or security can be termed a liquidity risk borne by the investor. This is one of the important features employed by firms in the financial services sector. The value of stocks can be influenced in the negative direction when there is lack of liquidity in the stock market. There has been a significant decrease in asset liquidity of financial corporations arising from the global

financial upheaval in 2007 especially mortgage-based securities accompanied by a decline in their stock liquidity as well (Boehmer, Jones, & Zhang (2009), both emerging and developed markets inclusive. There is a dearth of empirical works of literature that have examined the relationship that exists between stock liquidity and returns in developing markets such as Nigeria (Hearn, 2014). The objective of this paper, therefore, is to bridge this gap and add to financial studies, which had examined the liquidity; market size and stock return relationship in developing markets.

The Nigerian Stock Exchange was founded in 1960 as the Lagos Stock Exchange. In December 1977, it became known as the Nigerian Stock Exchange (NSE) with branches established in some of the major cities of the country. As of June 28, 2016, it has about 180 listed companies with a total market capitalization of over thirty billion United States dollars. The exchange offers a range of financial services from trading and listing, ancillary technology, licensing services, provision of market data services among others. The objective of the study is to analyze the effect of liquidity on stock returns in Nigeria. The remainder of this paper is arranged in the following format. Section 2 reviews the literature. Section 3 includes the methodology for the study. The result and analyses are presented in section 4, and section 5 concludes the research.

2.0 Literature Review

One of the earliest documented theories on the liquidity and return relationship studies was by (Amihud & Mendelson, 1986). In their study of the liquidity and return nexus, they employed GLS and

Ordinary Least Square regression on quoted bid-ask spread (which represent the liquidity variable) to determine the return of stocks on the New York Stock Exchange spanning a period of 1961-1980. Their findings corroborate the "liquidity premium" theory. They indicated that the amortized transaction cost per unit of time diminishes when an asset is held for a long period. At equilibrium assets that are less liquid tend to be held less by investors who desire an investment prospect with a longer duration. As a consequence of this horizon clientele, they suggested that forecasted asset return can be an increasing and concave function of the relative spread.

Similar study on liquidity and stock return by Brennan and Subrahmanyam (1996) indicated that securities which are comparatively not liquid yield a higher rate of return. Using liquidity variables such as lower bid-ask spreads, lower price impact of trade and higher turnover, Baker and Stein (2004) constructed a model to describe how increases in liquidity can be employed to predict lower future returns for aggregate and firm level data. Employing the model, Baker and Stein (2004) proved in their study with the following conclusions that (i) share turnover and aggregate measures of equity issuance are highly related and (ii) share turnover and aggregate measures of equity issuance analyzed using multiple regression both have incremental predictive power for future equal-weighted market returns.

(Acharya & Pedersen, 2005) employing a liquidity-adjusted Capital Asset Pricing Model (CAPM) incorporating liquidity risk in their study suggested that the expected return on a stock is a function of its expected liquidity and covariance's with its own return, liquidity with the market return. Their findings showed further that

when there is a persistent shock on the liquidity of a stock it would result to high-predicted future returns and reduction in its current returns. Employing a CAPM based model in their study, which examined the real measure of systematic risk when liquidity cost is incorporated. Jacoby, Fowler, and Gottesman (2000) concluded that it is a function of the net (after bid-ask spread) returns. They further concluded that a convex and positive correlation exists between future spread cost and expected return when analyzed using the CAPM. In emphasizing the relevance of liquidity as a factor in stock return Domowitz, Hansch, and Wang (2005) using Australian market data in their study indicated the significance of liquidity and liquidity commonalities and their incorporation in asset pricing models.

In their research (Amihud, 2002; Jones, 2002; and Pastor & Stambaugh, 2003) which examined the liquidity and stock return nexus using times series for bid-ask spreads for different markets concluded that a negative relationship exists between a change in illiquidity and realized excess returns. Other developed markets studies carried out by (Brennan & Subrahmanyam 1996; Chordia, Subrahmanyam & Anshuman 2001) on the liquidity and stock return relationship indicates that liquidity still remains a significant factor as well as evidence of the liquidity premium**.** The conclusions in these studies were arrived at after controlling for size, book-to-market, and other variables. However, all these studies on market liquidity examined were carried out in developed markets. These markets are the most liquid and quote driven internationally. The findings from liquidity and stock return studies for emerging markets, are not similar to those carried out in developed markets (Harvey 1995, 2000). The Studies analyzing

the nexus between liquidity and stock returns have produced empirical results which suggest: no relation, positive and negative relation (Rouwenhorst 1999; Bekaert, Harvey & Lundblad 2007).

Empirical studies investigating return and liquidity have employed various kinds of liquidity measures, to examine the link that exists between liquidity and excess stock returns. In one of these studies, Brennan and Subrahmanyam (1996) employed transaction costs as a variable to represent liquidity while trading volume and turnover rate were used to represent the liquidity variable in liquidity and return studies by (Datar, Naik, & Radcliffe, 1998; Hartian & Sitorus, 2015). The findings from these studies suggest a significant influence of liquidity in their investigation of stock return despite employing different liquidity measures, particularly for cross-sectional studies.

In Nigeria, several studies were devoted to finding risks that impact stock returns, but illiquidity as a risk factor has not been widely employed as a measure**.** In one of such studies on the determinants of stock return, Osamwonyi & Evbayiro-Osagie (2012) examined the relationship between macroeconomic variables and the Nigerian stock market index, they observed that macroeconomic variables such as exchange rates, GDP, and fiscal deficits are positively related to stock market index, while money supply is negatively related to the stock market index.

The main motivation for this study is to contribute to existing studies by empirically investigating the liquidity and stock return relationship for securities listed in the stock market.

3. Data and Methodology

In this study the dataset employed are annual times series from the period January 1985 to December 2018 and are all market-based for the stocks under study. It contains trading volume, share turnover, NSE all-share index (ASI) and non-liquidity control variable which is market capitalization of each firm to denote firm size.

Stock Return

The study adopted the NSE all-share index (ASI) as a proxy (endogenous variable) for stock performance and market return of shares listed in the NSE as in Osamwonyi and Evbayiro-Osagie (2012) and Batten and Xuan (2014). The market index is a spot measure, which reflects the overall direction of stocks and the scope of its movements. It shows the changing average value of the share prices of all equities on the stock market. The market index has been employed extensively as a measure to depict how well a stock market is performing.

Stock Liquidity Measures

In examining the link between excess stock returns and liquidity risk there has not been a generally accepted measure because of the ambiguity in its definition as noted by Kyle (1985) thus, “liquidity is a slippery and elusive concept, in part because it

encompasses a number of transactional properties of markets which include tightness, depth, and resiliency." Some studies employed bid-ask spread and trading cost as liquidity measures (Amihud & Mendelson, 1986; Brennan & Subrahmanyam, 1996) but in practice, data on bid-ask spreads and trading costs are difficult to obtain and are not reliable in international markets.

In the Nigerian Stock market, an order system rather than bid-ask spread is in use hence the bid-ask spread is not important. As a result of this challenge in data limitation, trading volume and turnover have been employed as liquidity measures following the studies of Berkman & Eleswarapu (1998), Rouwenhorst (1999), Chordia, Roll & Subrahmanyam (2001), Chordia, Subrahmanyam and Anshuman (2001), Hasbrouck & Seppi (2001), Lesmond (2005), Levine & Schmukler (2006), Nguyen, Mishra, Prakash & Ghosh (2007), Lam & Tam (2011) and Batten & Vo (2014). Following these works, the study employed trading volume and turnover as measures of liquidity.

Market Size

The study employed market capitalization as a control variable to measure size of the Nigerian capital market. Some studies which incorporated this measure in their studies include Banz (1981), Fama & French (1992), Berk (1995) and Loukil, Zayani & Omri (2010).

Preliminary Tests

To avoid spurious regressions in the time series data employed and in analyzing empirically stock market liquidity and firm performance, it is mandatory to carry out stationarity and co-

integration tests. Unit root testing of all the variables employed in the model is crucial in VAR analysis. The Augmented Dickey-Fuller (ADF) Unit Root Test was employed. The number of co-integrating vectors in the system needs to be identified before the VAR analysis can be carried out as well. The paper employed the Johansen Co-Integration Test.

Vector Auto - Regression Model

The research employed vector auto-regression modeling in the analysis of the impact of stock market liquidity on the performance of firms listed in the Nigerian Stock market. The study estimates the VAR model using:

$ASI_t: x_{1,t} = c_1 + \phi_{11,1}x_{1,t-1} + \phi_{12,1}x_{2t-1} + \phi_{13,1}x_{3t-1} + \varepsilon_{1t}$ ……1

$TV_t: x_{2,t} = c_2 + \phi_{14,1}x_{1,t-1} + \phi_{15,1}x_{2t-1} + \phi_{16,1}x_{3t-1,} + \varepsilon_{2t}$ ……2

$TN_t: x_{3,t} = c_3 + \phi_{17,1}x_{1,t-1} + \phi_{18,1}x_{2t-1} + \phi_{19,1}x_{3t-1,} + \varepsilon_{3t}$ ……3

$MKTCAP_t: x_{4,t} = c_3 + \phi_{20,1}x_{1,t-1} + \phi_{21,1}x_{2t-1} + \phi_{22,1}x_{3t-1,} + \varepsilon_{4t}$ ……4

Where:

ASI_t is the proxy for stock returns is regressed upon its own lagged variables

TV_t is the trading volume and is regressed upon its own lagged variables

TN_t is turnover and is regressed upon its own lagged variables

$MKTCAP_t$ is market capitalization and is regressed upon its own lagged variables

ϕ_p (i = 0,1,2,3…p) denotes the (k $\times$ k) –parameter matrices with $\phi_p = 0$

c are constants which maybe zeros

ε_t is a white noise

The study employed the ordinary least square method (OLS) to evaluate the regression models. The t-statistic is calculated for each coefficient to evaluate its significance and each equation is regarded as a regression equation. Following the works of Reinsel (1993), the ordinary least squares and the maximum likelihood methods are asymptotic and one can be used in place of the other in some regularity situations, the estimates are asymptotically normal for some regularity situation. The parameters for the stated VAR model can be estimated employing either the ordinary least squares or the maximum likelihood methods.

4. Results and Discussion

Results of the preliminary tests, Descriptive statistics, Augmented Dickey-Fuller (ADF) Test and Johansen Co-integration test are depicted in table 1, 2, and 3 respectively. VAR estimation procedure and Impulse Response for Equation 1 are depicted in table 5 and figure 1. Summary of the results is discussed in the succeeding sections.

TABLE 1: DESCRIPTIVE STATISTICS

	LogASI	LogTV	LogTN	LogMKT CAP
Mean	8.58	11.69	10.31	5.91
Variance	3.6	12.57	12.05	8.
Standard Deviation	1.9	3.55	3.47	2.83
Minimum	4.85	0.	3.33	0.99
Maximum	10.97	15.08	14.67	9.49
Median	9.	12.45	10.98	6.14
Mean Deviation	1.58	2.32	2.96	2.39
Sum	265.85	362.49	288.79	183.23
Skewness	-0.69	-2.27	-0.5	-0.34
Kurtosis	2.12	8.3	1.95	1.77
Obervations	31	31	28	31

Source: Author's Computed from E-view output

Table 1 indicates the descriptive statistics of all the variables employed in this study over the period 1985 through 2015. Return (all-share index) has a mean 8.58. The standard deviation of the return is 1.9, which means the data of return can be 1.9 higher or lower. The minimum value of the return for the Nigerian market for the 31-year is 4.85 and the maximum value is 10.97, the gap between the return value shows that the return variable has a high variation. Next variable is trading volume, which is extracted from the log of the annual trading value.

The mean of trading volume is 11.69 with the standard deviation 3.55. The minimum value of trading volume was estimated at 0, while the maximum value stood at 15.08. Descriptive statistics of the market turnover ratio is estimated as follows: mean of this variable is 10.31 with the standard deviation of 3.55. The maximum value of the market turnover is 14.65 and the minimum value is 3.33. The mean value for market size variable is measured as 5.91 and the standard deviation is 2.83. The minimum and maximum values stood at 0.99 and 0.49 respectively.

TABLE 2: AUGMENTED DICKEY-FULLER TEST

Variables	ADF Test Statistic Value	5% Mackinon Critical Value	Remark	Order of Integration
LogASI	-3.831461	-2.967767	Stationary	I(1)
LogTV	-4.125731	-2.963972	Stationary	I(0)
LogTN	-8.32167	-2.981038	Stationary	I(1)
LogMKT CAP	-4.315935	-2.967767	Stationary	I(1)

Source: Author's Computed from Eview output

From Table 2, the variables of interest were stationary at first difference i.e. I(1) series excluding LogTV which was stationary at level i.e. I(0) as its ADF statistic value is greater than the Mackinnon Critical Value @ 5% at absolute term before differencing.

The next level is the VAR estimation:

VAR estimation

Results of the VAR estimation model is presented in table 3 and appendix 1 and summarized below.

TABLE 3:
SUMMARY OF VECTOR AUTO-REGRESSION ESTIMATES

	LogASI	LogTV	LogTN	LogMKT CAP
LogASIt-1	2.107715	1.362021	1.759131	0.665010
LogASIt-2	-1.111172	-1.045441	-1.126063	-0.499494
LogTVt-1	-0.302886	-0.2977	-0.292615	0.371501
LogTVt-2	0.304296	0.384046	0.277479	0.321662
LogTNt-1	0.153058	0.082064	0.576564	0.339784
LogTNt-2	0.111796	0.108788	0.181357	0.215068
LogMKTCAPt-1	-0.96616	-0.09818	-0.361562	-0.281682
LogMKTCAPt-2	0.540737	0.536096	0.281923	-0.410278
C	0.237475	-1.953179	-2.146094	1.168467
R-squared	0.965362	0.985221	0.989522	0.953603
Adj. R-squared	0.949062	0.978267	0.984592	0.931769
F-statistic	59.22390	141.6642	200.6890	43.67514

Source: Author's Computed from Eview output

Results indicate that the shock affecting lagged LogASIt -1 for market returns has a positive impact on the stock market. This means that the change in stock returns for any previous year will lead to an increase in stock returns in the current year. However, shocks affecting stock returns for the lagged variable LogASIt -2 have a negative impact on the current year stock returns. This implies that an increase in stock returns in any previous two years will lead to a decrease in stock returns in the current year and vice versa for the period 1985 to 2018 in the study. Results indicate that the shock affecting the total volume of stocks traded in the market two years ago have a negative impact on the current stock returns for the Nigerian market. This implies that the change in

trade volume from the previous year would influence the current stock returns inversely. However, shock affecting total volume of stocks traded in the market a year ago has a positive impact on current stock returns in the market. Thus, a decrease in trading volume a year ago will lead to a decrease in current stock market returns.

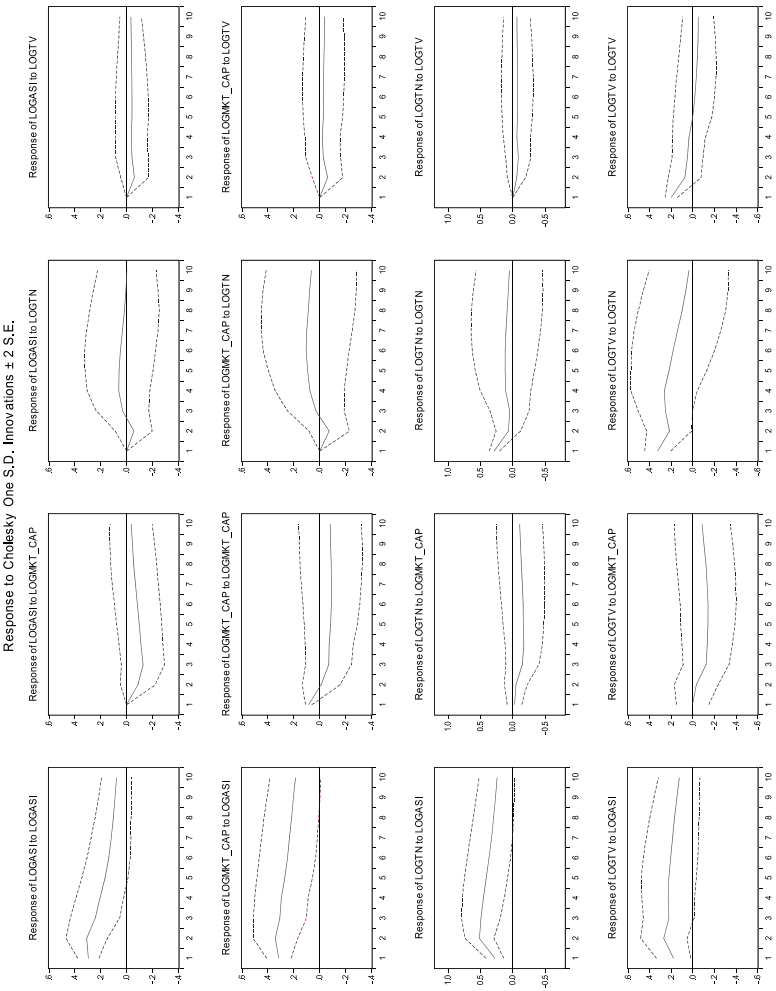
However, the shock affecting market turnover two years ago have a positive impact on the current year stock returns in the market. This indicates that a change in market turnover two years ago due to a shock would influence current market returns either positively or negatively, in the same direction. The shock affecting market capitalization a year ago has a negative impact on the stock market return for the current year. This means that a change in market capitalization a year ago due to a shock would have an inverse effect on the current market return for the current year. Thus, an increase in market capitalization a year ago due to a shock would mean a decrease in stock return for the current year.

Results further indicate that the shock affecting market capitalization a year ago has positive impact on stock market returns, which means that increase market capitalization a year ago would also appreciate stock returns for the current quarter.

Impulse Response

The VAR models were analyzed using the impulse response analyses to enhance robustness. The impact of exogenous effect over the whole process over time is presented in figure 1.

FIG. 1. IMPULSE RESPONSE FUNCTION (IRF) FOR ONE LAG OF ASIT TVT TNT MKTCAPT



Source: Author's generated from Eview output

Fig. 1 shows the impulse response functions (IRF). In Fig. 1 the plot in the first row depicts the response of the stock market performance variable (ASI) to a shock in market capitalization (MKTCAPt), trading volume (TV) and market turnover (TV) respectively, measured in standard deviations terms. It is clear from the first row that the response of the stock market performance variable (ASI) to liquidity market liquidity is positive.

5.0 Summary/Conclusion

For governments in developing economies the significance of liquidity as a factor in stock returns is an interesting and central topic in finance and economics research because of its very serious policy implications. This paper studied the nexus that exists between stock market liquidity and performance of the Nigerian stock market. The study employed two proxies of liquidity: (1) trading volume and (2) market turnover while market capitalization was used as a controlled variable and proxy for market size. Outputs from the vector auto-regression results analyzed indicate that stock return and liquidity variables are positively related. The studies of (Hartian & Sitorus, 2015; Jonathan & Xuan 2014; Jun, Marathe & Shawky, 2003; and Kaniel & Mingelgrin, 2001) which suggest that stock return for developing economies are positively related with market liquidity variables is corroborated by this study. There is a minimal degree of liquidity to become a risk factor when the coalescence between emerging and the developed market is not high. The positive nexus between the liquidity measures used in the study and stock returns might be due to this factor. There are several kinds of literatures, which suggests diversification benefits when emerging frontier markets such as Nigeria are fused with international

portfolio and the global economy. Findings from this paper adds to those studies.

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