Finance – Growth Nexus in Nigeria: Fragility and Development Effects

Korede Ajogbeje, M.Sc
Department of Economics, University of Ibadan, Ibadan, Oyo State,Nigeria

doi: 10.19044/esj.2016.v12n7p381 URL:http://dx.doi.org/10.19044/esj.2016.v12n7p381

Abstract

The study investigates the effects of financial fragility and financial development on economic growth in Nigeria between 1982 and 2012. The augumented dickey fuller (ADF) unit root test and the Johanson cointegration tests were respectively used to establish the stationarity and long run properties of the variables. The results show that financial development, proxy by credit to private sector as a percentage of GDP has a positive significant effects on output, as expected. As regards the fragility effects, the result revealed that the effect of financial volatility on economic growth is negative. Financial fragility was refined in the contexts of unsound banking system and unstable financial market, which were proxy by interest rate volatility and exchange rate volatility respectively, thus have negative significant effects on output. It is thus recommended that policy maker's efforts aimed at increasing growth should work more on developing the financial sector and dampening the volatile nature of financial series. The pairwise granger causality result also reveals that there is a unidirectional causality running from financial fragility to gross capital formation.

Keywords: Financial fragility, financial development, Economic growth

Introduction

A chunk of economic issues, both theoretical and empirical, revolves directly or indirectly around the growth phenomenon, and even the greater portion of these are concentrated on studying the relationships between financial development and economic growth and development (Levine 1997, Rousseau and Wachtel 1998, Levine, Loayza and Beck 2000, George et al 2013, Deltuvaite and Sineviciene 2014). Microeconomic studies are not carried out in isolation, they are carried out for macro purposes and macro policy making. Take for instance, the study of household consumption survey are carried out, not just for micro purpose, but determining the aggregate consumption level of households in the economy at large that

forms the consumption part of the National Income accounting or Gross Domestic Product (GDP) computation, which is a very robust variable to proxy economic growth and it is being used extensively in the literature for such purpose. Resource allocation, which is a core goal in economics, is also not carried out in isolation, as the reason for such allocation is to enhance and accelerate the rate of growth in the economy. Therefore, growth study is a core economic study, which is one of the reasons why growth issues have received so much attention from scholars in the field of economics. Growth has been studied extensively with different variable(s) and indicator(s) in economics. Growth has also been studied with energy issues, such as energy consumption and economic growth, which studied the relationships that exists between energy consumption and economic growth and most conclusions in this aspect have been that there exists a bi-directional relationship between energy consumption and economic growth (Lee 2005, Yuan et al 2007, Menyah and Rufael 2010). However, growth study has been conducted more with finance study in the literature, than any other areas across countries and regions. The reason is partly because of the strong role that the financial sector plays in economic development and the economic system at large.

On the other side of this work is the finance study, which for the purpose of this work is narrowed down to studying financial fragility and financial development. These two, alongside financial liberalisation are the major aspects of finance that are being looked into in studies involving finance-growth nexus.

The financial sector experienced crises recently in 2008 leading to an economic recession, which affected the world economy, including Nigeria. Exchange rate volatility is a good indicator of financial fragility, and as at the time of writing this work, the naira exchange rate is very volatile and depreciates further in comparison to her foreign counterparts, especially the US dollar, which is as a result of the continuous fall in the price of crude oil in the international market. This affects and will continue to affect Nigeria mainly because her economy only stands on one leg, which is crude oil. Thus, the question in the face of every minded economist is, how bad will this exchange rate volatility and devaluation policy affect the nation's economic growth? This, thus motivated a study like this to look into how financial fragility proxy by exchange rate volatility, which presently is caused by over dependence of the Nigerian economy on crude oil, will have effects on the nation's economy. This will help to know how a monoculture economy negatively transmits on economic growth through the financial system, and also provide policy makers insights on how to address such occurrence in the future. Thus, such a financial fragile effects of the 2008 financial crises and recent exchange rate volatility will definitely have a

story to tell on the nation's economy. This study thus uses two indicators; exchange rate volatility and interest rate volatility, to proxy financial fragility, to depict the two aspects of financial fragility; unsound banking system and unstable financial market (Swet and Swank, 2000) and its impact on economic growth. This will thus divert from the conventional usage of just a proxy to look at two different paths through which financial fragility tells on the economy.

Theoretical and empirical *a priori* expectations support that financial development has positive impacts on economic growth. Although, Nigeria's financial system tends towards being more developed, which has been the effect of financial development experienced overtime on the economic growth of the nation? Findings from works like this will help to know in a country like Nigeria, in a quest to increase growth, if more emphasis can be laid on developing the financial sector.

In the light of the above, the objectives of this study are to examine and understand the financial development-fragility-growth relationship in the Nigerian economic context between 1982 and 2012. In a concise note, the study addresses the effects of financial fragility and financial development on economic growth and also studies the link between financial indicators and growth indicators.

The outline of the rest of this paper is as follows: section two consists of the literature review, which entails both the theoretical and empirical reviews. Section three addresses the methodology while the fourth section reveals the estimated result, while section five of the paper gives the conclusion and the policy implication of the study.

Literature review

In the light of literature, authors who address the issue of finance-growth nexus mainly look at the relationships that exists between economic growth and any of the main three aspects of finance namely; financial development, financial fragility and financial liberalisation. Major emphasis has been laid on the issue of financial development and more on liberalisation, but less attention has been devoted to the concept of fragility of the financial system, and how it relates to financial development and economic growth. This study therefore takes up the task to look at finance-growth relationship, in the context of fragility, development and growth. For the purpose of this section, there comes a need to review both the theoretical and empirical aspects of the subject matter.

Theoretical Review

Financial fragility can be said to be how susceptible the financial system is to financial crises or negative external shocks. Zwet and Swank

(2000) puts it that a financial system can be characterised as fragile when the *banks are unsound* or the *financial markets are unstable*, or both. Thus, the two main types of financial intermediaries are pointed out here; banks and financial market, which deals with short-term and long-term financial instruments respectively. Banks serve as agents between the surplus savers and the deficit savers. Financial markets are organisations or institutions, such as mutual funds that provide their services directly on the financial market. Therefore, based on this, a good and robust indicator of financial fragility must capture these two sides of the coin. However, there exists a connection line that links the banking system and unstable financial markets, which make them go hand in hand. The presence of bank runs can lead to quality flights by both the domestic savers and foreign investors; this will thus have an adverse effect on the stability of both the stock market and foreign exchange market. Also, the risk embedded in the instability of the financial market dwindle the profitability and sound health of the banking system.

The World Economic Forum, in its Financial Development Report 2011, defines financial development as *'the factors, policies, and institutions that lead to effective financial intermediation and markets, as well as deep and broad access to capital and financial services'*. Levine (1999) also defined financial development as *'the ability of the financial system to research firms and identify profitable ventures, exert corporate control, manage risk, mobilize savings and ease transactions'*. In a broad sense, financial development can be defined as a nation's decision to develop its financial sector through the promotion of its financial activities, such as increase in stock market activities, increase in banking activities, liberalisation of the financial system, etc. It includes the legal, institutional and regulatory framework that allow expansion through credit extension. As FitsGerald (2006) puts it that *'financial development involves the establishment and expansion of institutions, instruments and markets that support this investment and growth process'*. Thus, it can be said to be a good strategy to reduce poverty and stimulate economic growth. The financial sector performs key functions in the economy, amongst which are; funds or savings mobilisation, investment allocation, corporate governance and control, diversification and risk management, amongst others. All growth models emphasise the need for capital accumulation as a prerequisite for enhancing growth. This accumulation by through generation of local savings by the banking system, which thereafter allocates the funds in productive investment in the local economy, thereby enhancing the growth. All these channels are carried out by the financial sector, thus making the sector the engine room of economic growth. However, there are three broad commonly used indicators to proxy financial development. They are;

financial depth, bank ratio and financial activity. Financial depth reflects the size of the financial sector and it measures the ratio of liquid liabilities of the financial system to the gross domestic product (GDP). Liquid liabilities are measured using either, M1 (narrow definition of money), M2 (broad definition of money) or M3 (broader definition of money). Thus, in relation to financial depth, some researchers use the ratio of M2 to GDP (Anwar and Cooray 2012), some others uses M3 to GDP (Dawson 2008), especially in an economic context where money is principally used as a store of value. Some researchers also prefer to use the ratio of the difference between M3 and M1 to the GDP (Yilmazkuday 2011). However, financial depth, as a measure of financial development does not measure the quality of the financial services, it only depicts it quantitatively. The second proxy to measure financial development is the bank ratio. This is the ratio of bank credit to the sum of bank credit and domestic assets of the central bank. This method stresses the importance of commercial banks in comparison to central banks in excess resources allocation. The weakness with this method is that there are other financial institutions, other than banks that undertake financial functions. Therefore, using the bank ratio does not capture the financial system as a whole. The third proxy employed in the literature is financial activity, such as the ratio of private domestic credit provided by deposit money banks to the GDP (Cole et al 2008); the ratio of private domestic credit provided by deposit money banks and other financial institutions to the GDP (Andersen and Tarp 2003); and the ratio of credit allocated to private enterprises to total domestic credit (Rossseau and Wachtel 2011). These measures capture both the size and quality of services provided by the financial system. The focus in this area was originally on banks. However, more attention is now being paid to examining the effects of stock market as well.

Economic growth which is one of the macroeconomic objectives serves as a steady increase in the aggregate output of a nation overtime. A nation is growing economically when her production aggregate or output increases steadily. It is usually measured using the Gross Domestic Product (GDP), which is the summation of all monetary value of goods and services produced within a country, by both her citizens and foreigners. Mathematically, it can be obtained by summing the household consumption (C), firms' investment (I) and government's expenditure (G). From this point, it can be gathered that an increase in any of these, i.e, C, I and G over the year without a decrease in another will lead to economic growth. Therefore, any growth enhancing policy must address increment in at least one of these aspects of growth. Recent growth theories took their departure from the Solow growth theory and they all emphasised the need for capital accumulation, even though not a sole sufficient prerequisite for economic growth. Other factors enshrined in growth theories as growth propellers

include; labour, knowledge and human capital. It is also worth noting that economic growth is a base for economic development as a nation cannot attain the stage of economic development without first attaining the stage of economic growth.

Empirical Review

Large volumes of literature have studied the relationship between financial development and economic growth, with different views as to the nature of the relationship. A larger percentage of the literature in this regards finds a strong positive and significant relationship between financial development and economic growth, that a well-developed financial system can triggers economic growth, this can be said to be the growth enhancing effects of financial development.

Studies such as Fry, 1997; Rajan and Zingales 1998; Levine, Loayza and Beck, 2000, among others support this link. Several studies also assert that there are variations of the growth effects of financial market development across various countries (Manning, 2003; Rousseau and Wachtel 2011; Yu et al, 2012). They also stressed that these growth effects depends on the nation's level of economic development. The base of this relationship is that the more developed a financial system is, the more efficient it will be in allocating resources to different sectors of the economy, this will foster investment and encourage long run development.

Financial development can also positively affect growth through the energy link. As the financial market develops, more funds and credit available to individuals and firms, which will give them the financial ability to purchase energy consuming gadgets, equipments and plants, thus increasing the overall energy consumption in the economy. Studies such as Lee (2005), Yuan et al (2007) and Menyah and Rufael (2010), find that energy consumption granger causes economic growth. Hence, it can then be hypothesised that financial development can trigger economic growth through the energy link. Thus, it can be consistently said that financial development is an engine of economic growth.

On the other side of the story that addresses this issue is the financial crises literature which finds a negative effect of financial development on economic growth. This literature posits that increased monetary aggregates can cause unduly large expansion of credit. This may lead to over-lending, which might increase the rate of moral hazard and adverse selection, weaken proper monitoring of credit facilities and the likes, which will eventually have negative effects on economic growth. Studies, such as Kaminsky and Reinhart (1999) and Gourinchas, Landerretche and Valdes (2001) confirmed this effect.

Some studies have also looked into the link between financial fragility and economic growth. The question here is; what makes the financial market fragile? Some studies, like those we looked at above, have attributed the negative effects of financial market development on economic growth through the fragility process; i.e the financial market might be so large that the financial intermediaries will have no firm grip on the market. Studies like that have indirectly attributed financial development to be the causes of financial fragility. Also, with some facts available, financial liberalisation can be a cause of financial fragility. Between the 1980s and the 1990s, financial liberalisation took place in some countries which within the span of few years lag experienced banking crises. For example, Kenya, Burkina Faso, and Congo DR had banking crises a year after liberalising their financial market. Burundi and Togo liberalised their financial sectors in 1986 and 1989; they experienced banking crises in 1994 and 1993 respectively. South Africa liberalized in 1980, Zimbabwe in 1991, Zambia in 1992; and they had banking crises in 1984, 1995 and 1995 respectively. Nigeria is also not left out, as she liberalized her financial sector in the year 1987 and experienced banking crises four years after in 1991. Some of this banking crisis later led to full fledge systemic crises (Caprio and Klingebiel1996, Lindgren et al, 1996). The conclusion here is not that financial liberalisation is the cause of financial fragility, but that financial fragility is more likely to occur in a liberalised financial system. Findings also show that such fragility is weaker in an environment where there is a strong institutional framework; this thus supports the recommendation by Misati et al (2011) of a 'managed financial openness' policy and institutional reform measures. However, financial development and economic growth has two way effects on each other. Financial fragility has effects on economic growth through 'allocative efficiency', i.e. the extent to which resources flow to the productive sector, as this is the germane function of financial intermediation. Economic growth on the other side will also improve the banking system through the ability of individuals, firms and even the government to service their debt. But its impact on financial market is not really clear, as in the short term these market prices will become more volatile as they tend to the higher growth path of the economy. In the medium and long run, the financial market might become stable as the economy continuously gets stronger.

Methodological strategy

In order to capture the effects of financial development and financial fragility on growth, this study employed a model that is based on the standard Barro growth model; i.e the model used is a modified Barro growth model to suit the purpose of the study in the context of the Nigerian

economy. The Barro growth model has also been used by other authors such as Misati et al (2012) and in a modified form.

The model takes the form;

$$Y_t = \theta + \beta X_t + \lambda FF_t + \pi FD_t + \varepsilon_t \qquad \ldots\ldots. (1)$$

Where $Y_t$is the real per-capita GDP. X_t is a standard control variables in the growth model. *FF* serves as the indicators of financial fragility which includes; exchange rate volatility and interest rate volatility. *FD* is the financial development indicator, which was proxy by credit to private sector as a percentage of GDP.

The control variable used in this study is the gross capital formation, it is used here to capture the role of capital accumulation. From the model explanation, two indicators are used to proxy financial fragility; exchange rate volatility and interest rate volatility. Both depicting the volatility of the two aspects of financial fragility discussed in the literature review which are unsound banking system and unstable financial market. Interest rate volatility is used to capture the unsound banking system while the exchange rate volatility is used to capture the unstable financial market. Of diverse interest rate measures, the lending rate was used. The fluctuations and volatility of this type of interest rate, to the knowledge of the researcher can depict the sound nature of the banking system. The more volatile and fluctuating the lending interest rate of banks are, the more unsound the banking system is. The volatility of the exchange rate is also a very good indicator to proxy the volatility of the financial market. The rate of fluctuations at which a country's currency is being exchanged for its foreign counterparts is also a good indicator to measure the health of her financial system. In a financial fragility and macroeconomic performance study, Zwet et al (2000) also used the exchange rate volatility to proxy financial volatility. The justification for the use of credit to private sector (as a percentage of GDP) as a proxy for financial development is that it gives a robust representation by measuring and capturing both the size of the financial sector and quality of the services provided by the financial system,.

Thus, the model in its expanded form takes the following shape.

$$Y_t = \theta + \varphi GCF_t + \delta EXC_t + \rho INT_t + \mu CPS_t + \varepsilon_t \qquad \ldots (2)$$

To produce a better result the model is re-specified to its log linear form as;

$$ln\, Y_t = \theta + \varphi lnGCF_t + \delta lnEXC_t + \rho lnINT_t + \mu lnCPS_t + \varepsilon_t \quad \ldots.. (3)$$

Where θ is the intercept and, $\varphi, \delta, \rho\ and\ \mu$, are the coefficients of gross capital formation, exchange rate volatility, lending rate volatility and credit to private sector as a percentage of GDP. Thus, all the data are transformed to their natural logarithm. An advantage of this transformation is

that it helps for easy comparison and interpretations of the variables relationships.

The data are sourced from both the 2014 edition of the Central Bank of Nigeria statistical bulletin and the World Development Indicators, 2014.

The Unit Root Tests

This test will also be carried out using the Augumented Dickey Fuller (ADF) unit root test. The Augumented Dickey Fuller (ADF), advanced on the Dickey-Fuller (DF) test which is only valid if the series is an AR(*1*). The ADF test constructs a system for higher order correlation through the assumption that the y series follows an AR*(p)* process. The *p* denoting the number of times in which the series will be differenced before it can be stationary. The ADF test is based on estimating the following regression:

$$\Delta Y_t = \beta_1 + \beta_2 + \delta Y_{t-1} + \sum_{i=1}^{m} \alpha \, \Delta Y_{t-1} + \varepsilon_t. \quad \textbf{..... 3.7}$$

Where ε_t is the pure white noise error term, Δ is the difference operator, Y_t is the time series, β_1 is the constant and m is the optimal number of lags of the dependent variable.

This will be carried out as a pre-requisite for the cointegration test, so as to test for the stationarity property of the series, since the series to be used for the cointegration test proposed must be of integrated order one. i.e I(1).

Cointegration Test

The Johansen co-integration test will also be employed to establish the long run relationship since variables are economically said to be co-integrated if they have long term or equilibrium relationship between them.

The starting point of this is to consider a VAR order of *p*:

$$y_t = A_1 y_{t-1} + \cdots + A_p y_{t-p} + Bx_t + \varepsilon_t. \quad \textbf{..... 3.8}$$

Where y_t is a k-vector of non-stationary I(1) series, x_t is a *d*-vector of deterministic variables, and ε_t is the vector of the error terms. The equation can be rewritten as:

$$\Delta y_t = \prod y_{t-1} + \sum_{i=1}^{p-1} \Gamma_i \Delta y_{t-1} + Bx_t + \varepsilon_t. \quad \textbf{..... 3.9}$$

Where:

$$\prod = \sum_{i=1}^{p} A_i - I, \; \Gamma = -\sum_{j=i+1}^{p} A_j$$

The Johansen's method is to estimate the π matrix from an unrestricted VAR and to test whether we can reject the restrictions implied by a reduced rank of π.

Volatility Measurement

The various volatile series of the indicators in this research will be generated using the Generalized Autoregressive Conditional Heteroscedasticity (GARCH) methodology. Literature grouped different volatility measures into two; those that used various modifications of standard deviations and the ones that uses the versions of Autoregressive Conditional Heteroscedasticity (ARCH) and Generalized Autoregressive Conditional Heteroscedasticity (GARCH) techniques. However, a major defect of the various versions of the standard deviation method is that they ignore the stochastic process of generating the series; their measurement of volatility ignore the relevant information about the random process of generating the series in question (Engle, 1982). In order to correct these defects, Engle (1982) introduced the Autoregressive Conditional Heteroscedasticity (ARCH), which was later modified by Bollerslev (1986) to be Generalized Autoregressive Conditional Heteroscedasticity (GARCH).

The GARCH (1,1) model of measuring volatility is as follows:

$$\sigma_t^2 = \gamma + \alpha_1 \varepsilon_{t-1}^2 + \beta_1 \sigma_{t-1}^2 \qquad \textbf{..... 3.13}$$

Where σ_t^2 = Conditional variance of the error term of the series

γ = Mean.

ε_{t-1}^2 = Squared error term in the previous time period, and

σ_{t-1}^2 = Conditional variance in the one time lag period.

This is in conformity to the way Zwet et al (2000) and Loayza et al (2005) treated the variables they used to proxy financial fragility.

Estimated results

Table 1: Unit Root Result.

	LEVELS		FIRST DIFFERENCE		
	CONSTANT	**CONSTANT & TREND**	**CONSTANT**	**CONSTANT & TREND**	**DECISION**
GDP	8.6079 (1.0000)	1.0000 (1.0000)	−1.3358 (0.5991)	−3.4095* (0.0690)	I (1)
GCF	−4.7565** (0.0006)	−3.5998* (0.0463)	−5.0270** (0.0003)	−5.7052** (0.0003)	I (1)
EXC	−0.0299 (0.9486)	−2.1180 (0.5161)	−5.2253** (0.0002)	−5.2143** (0.0011)	I (1)
INT	−3.2307 (0.0276)	−4.1761 (0.0148)	−5.4062** (0.0001)	−5.7095** (0.0003)	I (1)
CPS	−1.8530 (0.3491)	0.2938 (0.6534)	−5.5163** (0.0001)	−4.7865** (0.0034)	I (1)

The numbers are the t-statistics while the ones in parenthesis are the probability values
** and * donate significance at 1%, and 5%.
Source: **Author's Estimation**

The unit root test result is presented in the table 2 above. The variables are shown in their natural, and the result shows that all the variables are stationary at their first difference form at the 0.05 significant level.

As reported in table 4, the co-integration result shows that there exists one co-integration equation among the variables used, judging from the Trace and Maximum Eigenvalue results. Meaning that although the variables are not stationary at level form, but stationary at first difference, thus possess the tendency of a long run relationship. The Johansen co-integration test thus confirms that there truly exists a long run relationship among the variables.

Table 2: Johansen Cointegration Result

Unrestricted Cointegration Rank Test (Trace)				**Unrestricted Cointegration Rank Test (Maximum Eigenvalue)**			
Hypothesized No of CE(s)	Eigenvalue	Trace Statistics	Probability**	Hypothesized No of CE(s)	Eigenvalue	Maximum Eigen Statistics	Probability**
None *	0.7860	73.2374	0.0260	None *	0.7860	44.7048	0.0018
At most 1	0.3377	28.5326	0.7901	At most 1	0.3377	11.9502	0.9347
At most 2	0.2849	16.5824	0.6707	At most 2	0.2849	9.7248	0.7700
At most 3	0.1938	6.8576	0.5943	At most 3	0.1938	6.2476	0.5817
At most 4	0.0208	0.6100	0.4348	At most 4	0.0208	0.6100	0.4348

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

Table 3: Statistical Output for Long run Log-linear Regression Model

Dependent Variable = $lnGDP_t$

VARIABLES	$Coefficient$	$Std.Error$	$t-stat$	$p-value$	DW	R^2
$Constant$	5.3845	0.4004	13.4480	0.0000**	1.2162	0.84
$lnGCF_t$	-0.1975	0.0928	-2.1278	0.0430*		
$lnEXC_VOL_t$	0.1137	0.0359	3.1631	0.0039**		
$lnINT_VOL_t$	-0.1175	0.0312	-3.7650	0.0009**		
$lnCPS_t$	0.3552	0.0871	4.0790	0.0004**		

** and * donate significance at 1% and 5% respectively.
***Source:* Author's Estimation.**

The result of the long run relationship among the variables is reported in table 5. The report shows that gross capital formation (% of GDP), and interest rate volatility have significant negative relationship with output, while exchange rate volatility and financial development measured by credit to private sector have significant positive relationship with economic growth. A look at the fragility indicators revealed that both exchange rate volatility and interest rate volatility have opposing impacts, approximately in the same magnitude, on economic growth. The result revealed that higher interest rate volatility would dampen economic growth. This is theoretically plausible, as fluctuations of interest rate will not encourage investors, and therefore have a negative effect on outputs. Thus, an unsound banking system negatively affects economic growth. As revealed, exchange rate volatility does not have the capacity to negatively affect output growth. Credit to private sector (as a % of GDP), which is a proxy for financial development, has the highest coefficients among all the variables, and as expected, it positively impact outputs. The explanation for this is not far fetch. As more credit is allocated to the private sector, investment capacity of the real sector will be boosted, leading to output growth.

Table 4: Granger Causality

Pairwise Granger Causality

Null Hypothesis:	Obs	F-Statistic	Prob.
LEXC_VOL does not Granger Cause LGCF	26	4.21750	0.0136
LGCF does not Granger Cause LEXC_VOL		0.15097	0.9766
LINT_VOL does not Granger Cause LGCF	26	4.09915	0.0151
LGCF does not Granger Cause LINT_VOL		0.79327	0.5709
LCPS does not Granger Cause LINT_VOL	26	2.55695	0.0727
LINT_VOL does not Granger Cause LCPS		2.05065	0.1292

The result of the granger causality test is presented in table 6, which shows three unidirectional causality among the variables of study. It can be observed that both exchange rate volatility and interest rate volatility granger causes gross capital formation. Gains from interest rate fluctuations can be a major factor that moves investors. When the lending interest rate fluctuates downward, investors are encouraged to borrow, thus increase the gross capital formation. This is coupled with the fact that the volatile nature of the interest rate averages less than 20%, which is still manageable for investors to borrow. The volatile nature of exchange rate can also be hinged upon by arbitrageurs and other players in the exchange rate market to granger cause the nation's gross capital formation. Thus, the fragility of the financial sector

granger causes the gross capital formation. The ratio of the credit to private sector (as a % of GDP) also causes interest rate to be volatile.

Conclusion and policy implications

The objective of this study is to look at the impacts of financial fragility and financial development on economic growth in Nigeria over the period of 1982-2012. The study analysed the long run impact of finance on growth.

The co-integration test proved that there exists a long run relationship among the variables – Output, capital formation, exchange rate, interest rate and credit to private sector. The results also show that exchange rate volatility and financial development had positive significant effect on economic growth, while gross capital formation and interest rate volatility has negative significant effect on output.

The recommendation and policy implication from the findings above is that government's policy aimed at increasing growth should also work more on developing the financial system, which is a major factor in determining growth. As the study finds that a 1% increase in the credit to private sector will increase GDP by approximately 0.36%. But this can only achieve its aim through efficient allocation of financial resources by the financial market. Since resource allocation is more efficiently carried out by the private sector, the increasing growth rate in the gross domestic product (GDP) experienced in the country in the past few years can thus be linked to the privatisation policy earlier embraced by the nation since 1999.

Also, a fragile banking sector does have a negative impact on economic growth, as this is a disincentive for foreign investors to invest in the local market. It is thereby recommended that policy makers, especially the apex monetary institution, should apply more effort in stabilising the financial system. More efforts can thus be paid towards this aspect as a trigger of economic growth.

Finally, a closer study of this work reveals that growth is boosted through a higher higher credit to private sector. Other factors that affect growth, do have their impact on it through the credit channel, as the financial system allocates credit efficiently. Therefore, it is emphasised that policy makers should focus more attention on financial development as a tool for economic growth.

References:

Adu, G., Marbuah, G., and Mensah, J.T. (2013). Financial development and economic growth in Ghana: Does the measure of financial development matter? *Review of Development Finance* 3(2013) 192-203.

Andersen, T. B. and F. Tarp. (2003). "Financial Liberalization, Financial Development and Economic Growth in LDCs." *Journal of International Development* 15 (2): 189-209.

Anwar, S. and A. Cooray. (2012). "Financial Development, Political Rights, Civil Liberties and Economic Growth: Evidence from South Asia." *Economic Modelling* 29 (3): 974-981.

Caprio, G., Klingebiel, D., (1996). Dealing with bank insolvencies: cross-country experience, Policy Research Working Paper No. 1620. The World Bank, Washington, DC.

Cole, R. A., F. Moshirian, and Q. Wu. (2008). "Bank Stock Returns and Economic Growth." *Journal of Banking and Finance* 32 (6): 995-1007.

Dawson, P. J. (2008). "Financial Development and Economic Growth in Developing Countries." *Progress in Development Studies* 8 (4): 325-331.

Deltuvaite, V., and Sineviciene., L. (2014). Investigation of relationship between financial and economic development in the EU countries. *Procedia Economics and Finance* 14(2014) 173-180.

Financial Development Report (2011) of The World Economic Forum.

FitzGerald. V. (2006). Financial development and economic growth: A critical View. Backgroung paper for *World Economic and social survey 2006.*

Fry, M. J. (1997). 'In Favour of Financial Liberalization', *Economic Journal*, 107, 754-70.

Gourinchas, P. O, Oscar L, and Valdes. R (2001). "Lending Booms: Latin America and the World," *Economia*, 1 (2), pp. 47–100.

Kaminsky, G, and Reinhart. C (1999), "The Twin Crises: The Causes of Banking and Balance of Payments Problems," *American Economic Review*, Vol. 89, No. 3, pp. 473–500.

Lee, C.C. (2005). Energy consumption and GDP in developing countries: A cointegrated panel analysis. *Energy Economics*, 27: 415-427.

Levine, R. (1997). Financial development and economic growth: Views and Agenda. *Journal of Economic Literature* XXXV: 688-726.

Levine, R. (1999). Law, finance, and economic growth. *Journal of Financial intermediation* 8(1-2); 8-35.

Levine. R., Loayza. N, and Beck. T. (2000). Financial Intermediation and Growth: Causality and causes. *Journal of Monetary Economics* 46: 31-77.

Lindgren, J., Garcia., G., Saal, M. (1996). Bank soundness and macroeconomic policy, No. 215, IMF, Washington, DC.

Manning, M. J. (2003). "Finance Causes Growth: Can we be so Sure?" *Contributions to Macroeconomics* 3 (1).

Menyah. K and Rufael. Y. (2010). Energy consumption, pollutant emissions and economic growth in South Africa. *Energy Economics* 2010; 32: 1374-82.

Misati R. N, Nyamongo E M. (2012). financial liberalization, financial fragility and economic growth in sub-Saharan Africa. *Journal of Financial Stability* 8(2012) 150-160.

Rajan, R. J. and Zingales, L. (1998). 'Financial Dependence and Growth', *American Economic Review*, 88, 559-586.

Rousseau, P. L., and Wachtel. P (1998). Financial intermediation and Economic Performance: Historical Evidence from Five Industrialized Countries. Journal of Money, Credit and Banking 30(4): 657-678.

Rousseau, P. L. and Wachtel. P. (2000). "Equity Markets and Growth: Cross-Country Evidence on Timing and Outcomes, 1980-1995." *Journal of Banking and Finance* 24 (12): 1933-1957.

Rousseau, P. L. and Wachtel. P. (2011). "What is Happening to the Impact of Financial Deepening on Economic Growth?" *Economic Inquiry* 49 (1): 276-288.

Yilmazkuday, H. (2011). "Thresholds in the Finance-Growth Nexus: A Cross-Country Analysis." *World Bank Economic Review* 25 (2): 278-295.

Yu, J. -S, Hassan. M. K, and Sanchez. B. (2012). "A Re-Examination of Financial Development, Stock Markets Development and Economic Growth." *Applied Economics* 44 (27): 3479-3489.

Yuan J, Zhao, Yu S, Hu Z (2007). Electricity consumption and economic growth in China: Cointegration and co-feature analysis. *Energy Economics*. 29:1179-1191.

Zwet A. V. D, Swank J. (2000). Financial fragility and macroeconomic performance; A comparison of emerging and highly developed countries. DBN Staff Reports 2000, No. 52. De Nederlandische Bank.