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Poverty Reduction in Nigeria: Is Financial Deepening Beneficial?

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Abstract
This study investigated the impact of Financial Deepening in reducing Poverty in Nigeria. Human Development Index was used as proxy for reducing Poverty due to its multidimensional nature while the ratios of Credit to the Private Sector, Broad Money Supply and Market Capitalization to GDP were used to proxy financial deepening. Data sourced from Central Bank of Nigeria Statistical Bulletin (2015) and World Development Indicators published by the World Bank from 1981 to 2015 were used to analyze this relationship by adopting the multilinear econometric model and using the Error Correction Model. It was found that there is a unidirectional causality running from financial deepening to Poverty Reduction. The study concluded that financial deepening is beneficial in reducing poverty in Nigeria. The study therefore recommended that Policy Makers should embark on a policy of financial inclusion and financial intervention programmes in Nigeria.
Keywords: Financial Deepening, Poverty Reduction and Human Development Index

1. Introduction

Providing a better standard of living for citizens has been a serious concern for countries all over the world. Nations of the world especially developing economies strive to achieve improvement in the wellbeing of their citizenry by embarking on intervention programmes that will lead to the reduction of poverty through well articulated monetary and fiscal policies, one of which is the financial deepening of the financial sector. It is generally believed that with access to finance in an atmosphere of freedom, people will find what to do, be creative to earn and improve their living. According to Sen, (1999) development is about creating freedom for people and removing obstacles to greater freedom. Greater freedom enables people to choose their own destiny. Obstacles to freedom, and hence to development, include poverty, lack of economic opportunities, corruption, poor governance, lack of education and lack of health.

Financial Deepening according to Shaw (1973) cited in Obonyo (2014) "is the increased provision of financial services with a wider choice of services geared to all levels of society. It generally means an increased ratio of money supply to GDP or some price index. It refers to liquid money. The more liquid money is available in an economy, the more opportunities exist for continued and sustainable growth. It is the accumulation of financial assets at a faster pace than the accumulation of non-financial wealth and total output."

Evidence from the literature suggest that "by mobilizing savings, facilitating payments and trade of goods and services, and promoting efficient allocation of resources, the financial sector is seen as playing a critical role in facilitating economic growth and, directly through broadening access to finance and indirectly through growth, contributing to poverty reduction." ADB (2009). In other words, financial deepening has the capacity to reduce poverty in two different ways - through the indirect channel of economic growth and through the direct channel of access to finance by the poor and the vulnerable in the society (Claessens and Feijen, 2006 cited in ADB, 2009).

By effectively providing these services, financial deepening will bring benefits to the poor through the transmission mechanisms of extending credit to the private sector, the poor and the vulnerable in the society measured by CPS/GDP, increasing Broad money supply (M2) measured by M2/GDP and Capital Market Development measured by MC/GDP ratio.

According to Obonyo (2014), one of the key features of financial deepening is that it accelerates economic growth by expanding access to finance for those who do not have adequate finance. But in a poorly developed financial system, it is only incumbents who have access to financial services through relationship banking and they could finance their growth through internal resource generation, whereas the rest of the population is marginalized. Financial institutions are better placed to assess and award credit to new business initiatives and through this process, poverty reduction takes place as more poor people get involved in productive business ventures.

However, economists differ in their views regarding the role of finance in poverty reduction as a function of economic development. Schumpeter (1911), Shaw (1973) argue that it is the financial sector that causes economic growth and development of the real sector leading to the supply hypothesis while Robinson (1952) argue that it is the development of the real sector that causes financial deepening (the Demand-following hypothesis). And Lucas on the other hand asserts that "the role of finance in economic development has been significantly overrated" implying that finance is not the only factor influencing economic development.

In Nigeria, government has been carrying out policies and developmental programmes that are tailored

towards poverty reduction or eradication. The financial sector on the other hand has also made an appreciable significant improvement over the years. Credit to the Private Sector rose from 8.57 billion Naira in 1981 to 18,674 billion Naira in 2015 and Broad Money Supply rose from 14.47 billion Naira in 1981 to 18,901.30 billion Naira in 2015 while Market Capitalization increased from five billion Naira in 1981 to 17,003.4 billion Naira in 2015 (CBN Statistical Bulletin, 2015). Akinlo (2014) graphically argued that this development in the financial sector was brought about by the creation of an enabling environment which witnessed increased number of financial institutions including the Deposit Money Banks (DMB) and their net work of branches and specialized banks for Agriculture, Industry and Commerce. Other Poverty alleviation programmes such as the SMEs loan, Agricultural Development Programme (ADP), National Directorate of Employment (NDE), the Directorate of Food, Road and Rural Infrastructure (DFFRI), Better Life for Rural Women, and National Microfinance Policy and Regulatory Framework (NMPRF). All these programmes were all put in place to tackle Poverty by providing access to finance. But Dabwor & Abimiku (2016) noted that despite all these efforts, the absolute poverty level in Nigeria has persistently remained above 50% in spite of the nation's enormous wealth.

1.2 Statement of the Problem

From the above definition of Financial Deepening it implies that the more liquid money that is available in an economy, the more opportunities exist for continued and sustainable growth. And evidence from the scripture suggested that Nigeria has witnessed a significant growth in the financial deepening variables with improved credit to the private sector to GDP ratio, increased money supply to GDP ratio and improved market capitalization to GDP ratio.

With this evidence from the literature, this study wonders if, Nigeria's level of financial deepening has achieved any significant reduction in poverty.

Again, there are different arguments in the literature regarding the influence of finance on poverty leading to the supply-leading hypothesis, demand-following hypothesis and the feedback hypothesis. And the concern of this study is which of these hypotheses is empirically supported in Nigeria?

1.3 Objectives of the Study

The main objective of this study is to evaluate the impact of financial deepening on Poverty Reduction in Nigeria. The specific objectives include:

1. To investigate the relationship between Credit to Private Sector to Gross Domestic Product and Poverty Reduction in Nigeria.
2. To determine the effect of Broad Money Supply to Gross Domestic Product on Poverty Reduction in Nigeria.
3. To examine the relationship between Market Capitalization to Gross Domestic Product and Poverty Reduction in Nigeria.

1.4 Research Questions

1. To what extent does Credit to the Private Sector to Gross Domestic Product (CPS/GDP) impact on Poverty Reduction?
2. What is the relationship between Broad Money Supply to Gross Domestic Product (M2/GDP) and Poverty Reduction?
3. What is the effect of Market Capitalization to Gross Domestic Product (MC/GDP) on Poverty Reduction in Nigeria?

1.5 Research Hypotheses

$H0_1$: Credit to Private Sector to Gross Domestic Product (CPS/GDP) has no significant effect on Poverty Reduction.

$H0_2$: There is no significant impact between Broad Money Supply to Gross Domestic Product (M2/GDP) and Poverty Reduction

$H0_3$: Market Capitalization to Gross Domestic Product (MC/GDP) has no impact on Poverty Reduction

2. Literature

2.1 Conceptual Framework

The World Bank (1932), as cited in Nzotta & Okereke (2009)" contends that financial deepening encompasses the increase in the stock of *financial assets*. From this perspective, financial deepening implies the ability of financial institutions in general, to effectively mobilize and allocate financial resources for development. This view accepts the fact that a financial system's contribution to the economy depends on the quality and quantity of its services and the efficiency with which it performs them."

A solid and well-functioning financial sector is a powerful engine behind economic growth and

development. It generates local savings, which in turn lead to productive investments in local business. Financial sector development also entails establishing robust financial policies and regulatory framework. The absence of adequate financial sector policies could have disastrous outcome, as illustrated by the global financial crisis. Financial Deepening has the capacity to reduce poverty in two different ways - through the indirect channel of economic growth and through the direct channel of access as illustrated below:

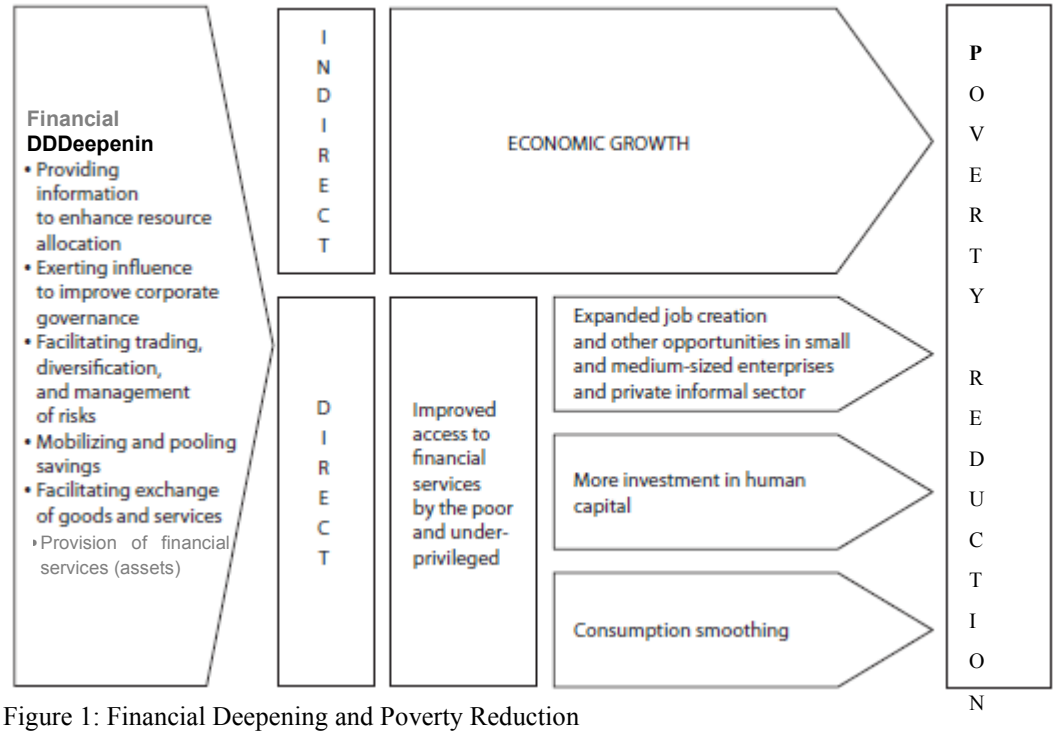

Figure 1: Financial Deepening and Poverty Reduction
Source: *Adapted from Claessens & Feijen (2006) with modification.*

The financial sector as described in the World Bank (2004) report is all the wholesale, retail, formal and informal institutions in an economy offering financial services to consumers, businesses and other financial institutions. In its broadest definition, it includes everything from banks, stock exchanges, and insurers, to credit unions, microfinance institutions and money lenders. And there are many different ways in which the financial sector can be said to 'develop or deepen'. For example: the efficiency and competitiveness of the sector may improve; the range of financial services that are available may increase; the diversity of institutions which operate in the financial sector may increase; the amount of money that is intermediated through the financial sector may increase; the extent to which capital is allocated by private sector financial institutions, to private sector enterprises, responding to market signals (rather than government directed lending by state owned banks), may increase; the regulation and stability of the financial sector may improve; Particularly important from a poverty reduction perspective, more of the population may gain access to financial services. (World Bank Report, 2004).

2.2 Theoretical Framework

Dushimumukiza (2010), argues that the 'supply-leading' hypothesis posits a unidirectional causation that runs from financial deepening (financial sector development) to economic development implying that new functional financial markets and institutions will increase the supply of financial services. This will definitely lead to high but sustainable real economic growth. This hypothesis performs two roles namely to transfer resources from low growth sectors to high growth sectors and to promote entrepreneurial response in the later sector.

Earlier scholars such as Schumpeter (1912), Goldsmith (1969), Shaw (1973) and McKinnon (1973), emphasized the importance of the financial system in economic growth. Hicks (1969) argued that the industrialization process in England was promoted by the development of the financial sector which increased the access of the government and people to funds that were used to finance capital projects which led to the development of the economy. This view was also supported by King and Levine (1993).

On the other hand, the 'demand-following' hypothesis posits a unidirectional causation from economic development to financial development. This implies that it is the increasing demand for financial services by the real sector that leads to the aggressive expansion of the financial system as a result of the growth in the real sector of the economy. Robinson (1952) declares that "where enterprise leads finance follows." According to this view, economic development creates demands for particular types of financial arrangements and the financial

system responds automatically to these demands. Previous studies that support this hypothesis include Gurley and Shaw (1955, 1967), Goldsmith (1969) and Jung (1986).

2.2.1 Theory of Financial Deepening and Poverty Reduction Link

As noted above, the issue of finance-Poverty Reduction through economic development link has received much attention in the literature with divergent views. But there are two channels through which financial sector deepening can impact on Poverty reduction. First is the indirect channel through economic growth and the second is the direct channel through gaining access to financial services

A deep and mature financial system will lead to greater availability of financial services to all levels of society, lead to the increase in money being intermediated (the ratio of money supply to GDP) and increased access to finance. By mobilizing savings, facilitating payments and trade of goods and services, and promoting efficient allocation of resources, the financial sector is seen as playing a critical role in facilitating economic growth which in turn will reduce poverty. (ADB, 2009).

More so, as the financial system performs its function of intermediation, businesses are able to access finance including the SMEs and the Micro businesses especially in the rural areas. For example, in the present economic situation of Nigeria, many people have gone into agro allied businesses such as fishing etc. thereby providing employment for them. And the SMEs are known to be labour intensive units employing more people than the bigger factories. It therefore implies that as more businesses access finance, there is room for growth and for more people to be employed thereby reducing poverty.

2.3 Empirical Review

Empirical literature on the relationship between financial deepening and Poverty Reduction are few but many researchers have considered this relationship under financial deepening and economic growth nexus.

Dabwor & Abimiku (2016) studied Poverty Incidence in Nigeria: Does Financial Deepening Matter? They used the Classical Ordinary Least Square Regression (OLS) on three equations for Rural, Urban and National levels of poverty and found out that poverty is still endemic in Nigeria but financial deepening guarantees financial inclusion to Nigerians and by extension reduces poverty.

Obonyo (2014) studied financial deepening, Savings Mobilization and Poverty reduction in Kenya. Using M2/GDP as financial deepening indicator and the Johansen Cointegration model and Granger Causality Test, he found that first, financial deepening granger causes both savings and poverty reduction in Kenya. Second, the effect of financial deepening on poverty reduction in Kenya was positive, though not significant, and that there was a long run relationship between financial deepening, savings mobilization and poverty reduction and by implication to unemployment reduction.

Odhiambo (2010a) focused on the Kenyan economy to analyze the relationship between financial deepening, savings and poverty reduction. He used time series data between 1968 and 2006 and the dynamic trivariate granger causality model based on error correction mechanism. His main findings were that there is a distinct causal flow from financial deepening to both poverty reduction and savings, and that there is bi-directional causality between savings and poverty reduction implying unemployment reduction as well.

Odhiambo (2010b) investigated financial deepening and poverty reduction in Zambia. He used the Autoregressive Distributed Lag Bounds Testing procedure on three proxies of financial development, Broad Money Supply ratio to GDP (M2/GDP), Domestic Credit to Private Sector to GDP (DCP/GDP) and Deposit Money Bank Assets and found out that when Broad Money Supply ratio (M2/GDP) is used as a proxy for financial Sector development, poverty reduction seem to cause development of the financial sector. But when Direct Credit to the Private Sector and Deposit Money Bank Assets (DMBA) are used financial development seems to cause poverty reduction and by extension unemployment reduction.

3.0 RESEARCH METHODOLOGY

3.1 Research Design

The research design adopted for this study is the quasi experimental design because it seeks to explore the causal effect of financial sector deepening on unemployment. According to Nwankwo (2013) a quasi-experimental design allows for the evaluation of the effect of independent variable(s) on a dependent variable without random assignment.

3.2 Source of Data

The data used for this study is obtained from the Central Bank of Nigeria Statistical Bulletin 2015 and from the World Development Indicators published by the World Bank.

3.3 Model Specification

This study adopted the multi-linear econometric model of Odhiambo (2010b) with modification to analyze the effect of financial deepening on Poverty Reduction in Nigeria. Instead of the Deposit Money Bank Assets he

used, this study employed Market Capitalization to GDP ratio (MCGDP) with two other variables Credit to Private Sector to GDP (CPSGDP) and Broad Money Supply to GDP based on the Ordinary Least Square (OLS) method due to its Best Linear Estimator (BLUE) possession.
This is expressed in its functional form as follows:
HDI = f(CPSGDP, M2GDP, MCGDP) ---------- (1)
Where;
HDI = Human Development Index
CPSGDP = Credit to Private Sector to GDP ratio
M2GDP = Broad Money Supply to GDP ratio
MCGDP = Market Capitalization to GDP ratio
The above functional equation is further stated in econometric form as presented below:
$HDI_t = \beta 0t + \beta 1 CPSGDP_t + \beta 2 M2GDP_t + \beta 3 MCGDP_t + Ui$ --------- (2)
Where:
Ui = Error Term
$\beta 0 - \beta 3$ = the Parameters
A prior Expectation = $\beta 1, \beta 2, \beta 3 < 0$
(implying that $\beta 1, \beta 2, \beta 3$, will reduce Poverty)

3.4 Analytical Procedure

The focus of this study is to establish the relationship between Financial Deepening and Poverty Reduction in Nigeria and to determine the direction of causality based on the above discussed theoretical postulates. To achieve this, this study adopted the Error Correction Model with the following procedure:
Augmented Dickey Fuller (ADF) Test
Johansen Cointegration Test
Error Correction Model (ECM)
Time series data from 1981 – 2015 was used in the estimation. Their properties were examined to avoid spurious results occasioned by the non-stationary of the time series data.

4.0 Presentation of Data

Table 4.1: Thirty five years statistical data of human development index and financial depending variables

obs	HDI	CPSGDP	M2GDP	MCGDP
1981	0.3960	9.1	15.3	5.30
1982	0.3560	10.6	15.6	4.95
1983	0.3250	10.6	16.1	5.17
1984	0.3630	10.7	17.3	4.73
1985	0.3910	9.7	16.6	4.90
1986	0.3930	11.3	17.7	5.05
1987	0.3802	10.9	14.3	4.25
1988	0.3705	10.4	14.6	3.80
1989	0.3780	8.0	12.0	3.35
1990	0.4380	7.1	11.2	3.45
1991	0.3280	7.6	13.8	4.23
1992	0.3480	6.6	12.7	3.56
1993	0.3890	11.7	15.2	4.36
1994	0.3840	10.2	16.5	4.74
1995	0.4520	6.2	9.9	6.20
1996	0.3930	5.9	8.6	7.09
1997	0.4560	7.5	9.9	6.73
1998	0.4390	8.8	12.2	6.58
1999	0.4550	9.2	13.4	6.41
2000	0.4660	7.9	13.1	7.04
2001	0.4630	11.1	18.4	9.61
2002	0.4450	11.9	19.3	9.81
2003	0.4450	11.1	19.7	13.71
2004	0.4630	12.5	18.7	18.51
2005	0.4660	12.6	18.1	19.85
2006	0.4770	12.3	20.5	27.58
2007	0.4810	17.8	24.8	6.38
2008	0.4870	28.6	33.0	3.94
2009	0.4920	36.9	38.0	2.84
2010	0.5000	18.6	20.2	1.82
2011	0.5070	16.9	19.3	1.63
2012	0.5140	20.4	19.4	2.06
2013	0.5210	19.7	18.9	2.38
2014	0.5250	19.1	19.9	1.90
2015	0.5270	19.8	20.1	1.81

Sources: Central Bank of Nigeria Statistical Bulletin (2015)
World Development Indicators Published by World Bank

4.1 Unit Root Test

Prior to cointegration and any other econometric analysis, it is important to establish the stationarity of the data to be used. None of the variables was stationary at level. All variables became stationary at first differencing, that is I(1) as presented below:

Table 4.2 – Order of integration of the variables

Variables	P-value @ Level	P-value @ First Differencing	Order Of Integration, I(d)
HDI	0.8333	0.0000	I(1)
CPSGDP	0.3266	0.0000	I(1)
M2GDP	0.2542	0.0001	I(1)
MCGDP	0.2188	0.0000	I(1)

Source: Author's Computation with E-view 7 at 5% critical value.

4.2 Johansen Cointegration Test

After establishing the stationarity properties of the time series and obtaining the optimal lag length, Johansen Cointegration test was conducted. Both the Trace Test and the Max-eigenvalue result indicated 2 cointegrating equations at 5% level of significance implying that all the variables in the model all converge to a long run equilibrium meaning that all the variables move together in the long-run.

4.3 Error Correction Model (ECM)

The ECM result presents both the short run and the long run dynamics.

It has the advantage of combining both the short run coefficient and the long run coefficient without losing long run equilibrium. The one period lagged Error Correction Term (ECT) is both negative in sign (-0.488332) and is significant with P-value of 0.0108 at 5% level of significance chosen for this study. This regression result validates the cointegration and the long-run equilibrium existing among the variables in the model. It also confirms a causality running from financial deepening to Poverty reduction and this is consistent with the supply-leading hypothesis. The coefficient of the ECT which is -0.488332 suggest that the disequilibrium experienced in the system in the previous period is being corrected at the speed of approximately 49 percent indicating that if there is any disturbance in the short run they will quickly converge back to the long-run equilibrium at the speed of 49 percent.

4.4 Test of Hypotheses

The relationship existing between variables is tested at 5% level of significance using the Ordinary Least Square (OLS) regression analysis.

$H0_1$: CPSGDP has no effect on Poverty Reduction

The ECM regression result revealed that in the short run, CPSGDP with p-value of 0.0439 and t-statistic of (-2.127096) is statistically significant in influencing Poverty. It has a negative relationship with Poverty reduction meaning that a unit increase in the ratio of CPSGDP will lead to a 0.007736 decrease in Poverty which is consistent with the a-priori expectation.

$H0_2$: M2GDP has no significant impact on Poverty Reduction

M2GDP with a t-statistic of 2.068896 and a p-value of 0.0.495 is less than the 5% critical valve therefore it is significant. But it has a positive relationship with Poverty reduction which disagreed with the a-priori expectation.

$H0_3$: MCGDP is not significantly related to Poverty Reduction

The regression result revealed a t-statistics of -1.306489 and a p-value of 0.2038 for MCGDP meaning that it has no significant relationship with Poverty reduction despite its negative relationship that agreed with the a-priori expectation.

4.5 Discussion of Results/Findings

ADF Test: Revealed that all the variables were not stationary at level but they all became stationary at first differencing I(1) to meet the precondition of co-integrating model.

Johansen Co-integration Test: Revealed 2 cointegrating equations at 0.05 levels both in the Trace test and Max-eigenvalue test implying that all the variables in the model are in a long-run equilibrium relationship or association. In other words, they all move together in the long run. This long run relationship allowed the running of the Parsimonious Error Correction Model.

The Error Correction Model (ECM): The error correction term was negative (-0.488332) and significant (P-value 0.0108) validating the long run relationship. The speed of adjustment back to long-run equilibrium relationship is 49% meaning that in the event of any disequilibrium in the system, the variables will quickly converge back to the long-run equilibrium at the speed of 49%. This also suggests that there is a unidirectional causality running from financial deepening to Poverty reduction implying that the financial deepening variables

jointly reduce Poverty.

5. Conclusion and Recommendations

The financial deepening variables, Credit to Private Sector, Broad Money Supply and Capital Market Development were found to jointly reduce Poverty in the Long-run. And this is consistence with the supply-leading hypothesis and with the findings of Dabwor & Abimiku (2016), Obonyo (2014) and Odhiambo (2010a). The study therefore concludes that financial deepening is beneficial in reducing Poverty in Nigeria.

Recommendations

From the above conclusion this study recommends that Policy Makers (the Government and the Central Bank of Nigeria) should pursue the following:

Provide ways of making credit available to the citizenry. They should pursue a policy of financial inclusion to accommodate the poor and the vulnerable either through the Deposit Money Banks or Special Development Banks.

In the case of Broad money supply, they should increase supply with a close watch at inflation. The Bail-out fund routed through the banks in 1999 and in 2011 is supported by this study.

Provide intervention programmes such as Loans to the SMEs, Rural Development Loans, Agricultural Development Loans etc in order to meet the financial needs of the vulnerable in the society.

References

Abdullatif, A.S., Omar, R.B., & Udin, M.B.M. (2017). Theories of poverty to the integrative theory: A comparative analysis: accordance to the situation of Iraq. *Journal of Humanities and Social Science,* 22 (5), 47-50.

Asian Development Bank (2009). Financial Sector Development, Economic Growth and Poverty Reduction: A Literature Review, ADB Economic Working Paper Series, No.173.

Akinlo, A. E. (2014). Policy choices and challenges in expanding access to finance for growth in rural Nigeria, *European Journal of Sustainable Development,* 3 (1),135-144.

Aliero H.M, Ibrahim S.S., & Shuaibu M. (2013). An empirical investigation into the relationship between financial sector development and unemployment in Nigeria, *Asian Economic & Financial Review*, 3(10), 1361-1370.

Claessens, S., & Feijen, E. (2006). Financial Sector Development and the Millennium Development Goals. World Bank Working Paper No. 89, World Bank, Washington, DC.

Dabwor, T., & Abimiku, A.C. (2016). Poverty incidence in Nigeria: does financial deepening matter? *Journal of Economics and International Finance,* 8 (6), 56-65.

Demetriades, P., & Andrianova, S. (2004). *Finance and Growth: What We Know and What We Need to Know.* In Goodhart C. (ed) *Financial Development and Economic Growth: Explaining the Links.* Basingstoke: Palgrave Macmillan, 38

Demirgue Kunt, A., & Levine, R. (1996). "Stock market, corporate finance and economic growth: An overview" *The World Bank Review*, 10(2), 223-239.

Dushimumukiza, D. (2010). *Financial Development and Economic Growth: The case of Rwanda,* A Master of Arts in Economics dissertation to University of Mauritius.

Fitzgerald, V. (2008). Financial Development and Economic Growth; A Critical View: World Economic and Social Survey, in ADB (2004)

Friedman M. and Schwartz A.J. (1963). A Monetary History Of the United States, 1867-1960, Princeton University Press, USA, Dewey Decimal 332.4973.

Goldsmith, R. (1969). Financial structure and Development, New Haven, Yale University Press, in DFID, (2004), in ADB (2004).

Greenwood & Jovanovic (1990). Financial Development, Growth and the Distribution of Income, *Journal of Political Economy*, 98 (5,1),1076-1107, in Nzotta and Okereke, (2009).

Gribbons, B., & Herman, J. (1997) *"True and quasi-experimental designs"*. Practical Assessment, Research & Evaluation. 5 (14) in Wikipedia (2016) https://en.wikipedia. org/wiki/ Quasi-experiment

Gujarati, D.N. (1978). Base Econometrics. MC Grae-Hill, New York.

Gurley, J.G., & Shaw, E.S. (1955). Financial Aspects of Economic Development, *American Economic Review,* 45(4), 515-38.

Hicks, John (1969). A Theory of Economic History. Oxford; Clarendon Press.

Jalilian, H., & Kirkpatrick, C. (2001). Financial Development and Poverty Reduction in Developing Countries‖, Working Paper No. 30, IDPM, Manchester University.

Jung, W.S. (1986). Financial Development and Economic Growth. *Economic Development and Cultural Change,* 34, 336-346.

King, R.G., & Levine, R. (1993a). Finance and Growth: Schumpeter Might Be Right. *Quarterly Journal of Economics,* 108, 717-737.

King, R., & Levine, R. (1993b). Finance, Entrepreneurship and Growth: Theory and Evidence. *Journal of Monetary Economics,* 32, 513-542.

Kyei, K. A., & Gyekye, K. B. (2011). Determinants of Unemployment in Limpopo Province in South Africa: Exploratory Studies. *Journal of Emerging Trends in Economics and Management Sciences*, 2(1), 54-61.

Kuznets (1995). Economic Growth and Income Inequality. *American Economic Review*, 45(1), 1-28, in ADB, (2009, p. 11).

Levine, R. (2002). Bank-based or market-based financial systems: which is better? *Journal of Financial International* 11(4), 398-428

Levine R.(1997). Financial Development and Economic Growth: Views and Agenda. *Journal of Economic Literature*, 35,688-726.

Lucas, R.E. Jr., (1988). On the mechanics of economic development, *Journal of Monetary Economics,* 22, 3-42.

Luintel, K., & Khan, M. (1999). A Quantitative Reassessment of the Finance-Growth Nexus: Evidence from a Multivariate VAR‖, *Journal of Development Economics*, 60(2), 381-405.

Lustig, N.O., Arias & Rigolini, J. (2002). Poverty Reduction and Economic Growth: A two-Way Causality. Sustainable Development Department. *Technical Papers Series. Inter-American Development Bank.* Washington.

Mario, R. et al (2011). *Entrepreneurship, Growth and Economic Development, Frontiers in European Entrepreneurship Research,* Cheltenham, UK: Edward Elgar Publishing Ltd.

Masih, A. M. M., & Masih, R. (1997a). A comparative analysis of the propagation of stock market fluctuations in alternative models of dynamic causal linkages, *Applied Financial Economics*, 7, 59-74.

Appendix
Regression Results for the Linear Model

Augmented Dickey-Fuller Unit Root Test on HDI

Null Hypothesis: HDI has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.699255	0.8333
Test critical values:	1% level	-3.646342	
	5% level	-2.954021	
	10% level	-2.615817	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(HDI)
Method: Least Squares
Date: 11/17/17 Time: 23:21
Sample (adjusted): 1983 2015
Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
HDI(-1)	-0.067557	0.096613	-0.699255	0.4898
D(HDI(-1))	-0.400533	0.167426	-2.392292	0.0232
C	0.036003	0.041938	0.858486	0.3974

R-squared	0.218797	Mean dependent var	0.005182
Adjusted R-squared	0.166717	S.D. dependent var	0.032721
S.E. of regression	0.029870	Akaike info criterion	-4.097448
Sum squared resid	0.026766	Schwarz criterion	-3.961402
Log likelihood	70.60789	Hannan-Quinn criter.	-4.051673
F-statistic	4.201148	Durbin-Watson stat	2.237043
Prob(F-statistic)	0.024630		

Augmented Dickey-Fuller Unit Root Test on D(HDI)

Null Hypothesis: D(HDI) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-9.263047	0.0000
Test critical values:	1% level	-3.646342	
	5% level	-2.954021	
	10% level	-2.615817	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(HDI,2)
Method: Least Squares
Date: 11/17/17 Time: 23:22
Sample (adjusted): 1983 2015
Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(HDI(-1))	-1.441382	0.155606	-9.263047	0.0000
C	0.006907	0.005192	1.330273	0.1931

R-squared	0.734598	Mean dependent var	0.001273
Adjusted R-squared	0.726037	S.D. dependent var	0.056594
S.E. of regression	0.029622	Akaike info criterion	-4.141887
Sum squared resid	0.027202	Schwarz criterion	-4.051189
Log likelihood	70.34113	Hannan-Quinn criter.	-4.111370
F-statistic	85.80405	Durbin-Watson stat	2.275336
Prob(F-statistic)	0.000000		

Augmented Dickey-Fuller Unit Root Test on CPSGDP

Null Hypothesis: CPSGDP has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.903973	0.3266
Test critical values:	1% level	-3.639407	
	5% level	-2.951125	
	10% level	-2.614300	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(CPSGDP)
Method: Least Squares
Date: 11/17/17 Time: 23:23
Sample (adjusted): 1982 2015
Included observations: 34 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CPSGDP(-1)	-0.215440	0.113153	-1.903973	0.0659
C	3.036222	1.604078	1.892815	0.0675

R-squared	0.101757	Mean dependent var	0.314706
Adjusted R-squared	0.073687	S.D. dependent var	4.410259
S.E. of regression	4.244660	Akaike info criterion	5.786223
Sum squared resid	576.5485	Schwarz criterion	5.876009
Log likelihood	-96.36579	Hannan-Quinn criter.	5.816843
F-statistic	3.625113	Durbin-Watson stat	1.772860
Prob(F-statistic)	0.065939		

Augmented Dickey-Fuller Unit Root Test on D(CPSGDP)

Null Hypothesis: D(CPSGDP) has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.837825	0.0000
Test critical values:	1% level	-3.653730	
	5% level	-2.957110	
	10% level	-2.617434	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(CPSGDP,2)
Method: Least Squares
Date: 11/17/17 Time: 23:24
Sample (adjusted): 1984 2015
Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(CPSGDP(-1))	-1.389161	0.237959	-5.837825	0.0000
D(CPSGDP(-1),2)	0.408634	0.169399	2.412251	0.0224
C	0.417688	0.761378	0.548594	0.5875

R-squared	0.577779	Mean dependent var	0.021875
Adjusted R-squared	0.548660	S.D. dependent var	6.382675
S.E. of regression	4.287996	Akaike info criterion	5.838576
Sum squared resid	533.2205	Schwarz criterion	5.975989
Log likelihood	-90.41722	Hannan-Quinn criter.	5.884125
F-statistic	19.84222	Durbin-Watson stat	2.102329
Prob(F-statistic)	0.000004		

Augmented Dickey-Fuller Unit Root Test on M2GDP

Null Hypothesis: M2GDP has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.078209	0.2542
Test critical values:	1% level	-3.639407	
	5% level	-2.951125	
	10% level	-2.614300	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(M2GDP)
Method: Least Squares
Date: 11/17/17 Time: 23:24
Sample (adjusted): 1982 2015
Included observations: 34 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
M2GDP(-1)	-0.239680	0.115330	-2.078209	0.0458
C	4.259447	2.092436	2.035640	0.0501

R-squared	0.118917	Mean dependent var	0.141176
Adjusted R-squared	0.091384	S.D. dependent var	4.109790
S.E. of regression	3.917508	Akaike info criterion	5.625811
Sum squared resid	491.0999	Schwarz criterion	5.715597
Log likelihood	-93.63879	Hannan-Quinn criter.	5.656431
F-statistic	4.318954	Durbin-Watson stat	1.760821
Prob(F-statistic)	0.045793		

Augmented Dickey-Fuller Unit Root Test on D(M2GDP)

Null Hypothesis: D(M2GDP) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.471094	0.0001
Test critical values:	1% level	-3.646342	
	5% level	-2.954021	
	10% level	-2.615817	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(M2GDP,2)
Method: Least Squares
Date: 11/17/17 Time: 23:25
Sample (adjusted): 1983 2015
Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(M2GDP(-1))	-0.982467	0.179574	-5.471094	0.0000
C	0.133920	0.738434	0.181356	0.8573

R-squared	0.491243	Mean dependent var	-0.003030
Adjusted R-squared	0.474832	S.D. dependent var	5.850186
S.E. of regression	4.239541	Akaike info criterion	5.785479
Sum squared resid	557.1850	Schwarz criterion	5.876176
Log likelihood	-93.46040	Hannan-Quinn criter.	5.815996
F-statistic	29.93287	Durbin-Watson stat	1.992032
Prob(F-statistic)	0.000006		

Augmented Dickey-Fuller Unit Root Test on MCGDP

Null Hypothesis: MCGDP has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.174318	0.2188
Test critical values:	1% level	-3.639407	
	5% level	-2.951125	
	10% level	-2.614300	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(MCGDP)
Method: Least Squares
Date: 11/17/17 Time: 23:25
Sample (adjusted): 1982 2015
Included observations: 34 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MCGDP(-1)	-0.267172	0.122876	-2.174318	0.0372
C	1.656840	1.054595	1.571067	0.1260

R-squared	0.128722	Mean dependent var	-0.102647
Adjusted R-squared	0.101495	S.D. dependent var	4.160075
S.E. of regression	3.943315	Akaike info criterion	5.638943
Sum squared resid	497.5915	Schwarz criterion	5.728729
Log likelihood	-93.86203	Hannan-Quinn criter.	5.669563
F-statistic	4.727657	Durbin-Watson stat	1.967547
Prob(F-statistic)	0.037186		

Augmented Dickey-Fuller Unit Root Test on D(MCGDP)

Null Hypothesis: D(MCGDP) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.287960	0.0000
Test critical values:	1% level	-3.646342	
	5% level	-2.954021	
	10% level	-2.615817	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(MCGDP,2)
Method: Least Squares
Date: 11/17/17 Time: 23:26
Sample (adjusted): 1983 2015
Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(MCGDP(-1))	-1.120992	0.178276	-6.287960	0.0000
C	-0.107617	0.741868	-0.145063	0.8856

R-squared	0.560523	Mean dependent var	0.007879
Adjusted R-squared	0.546347	S.D. dependent var	6.325408
S.E. of regression	4.260402	Akaike info criterion	5.795296
Sum squared resid	562.6818	Schwarz criterion	5.885993
Log likelihood	-93.62238	Hannan-Quinn criter.	5.825813
F-statistic	39.53844	Durbin-Watson stat	1.989553
Prob(F-statistic)	0.000001		

Johansen Cointegration Test

Date: 11/17/17 Time: 23:15
Sample (adjusted): 1984 2015
Included observations: 32 after adjustments
Trend assumption: Linear deterministic trend
Series: HDI CPSGDP M2GDP MCGDP
Lags interval (in first differences): 1 to 2

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.674466	75.10181	47.85613	0.0000
At most 1 *	0.595281	39.18861	29.79707	0.0031
At most 2	0.254059	10.24258	15.49471	0.2625
At most 3	0.026611	0.863094	3.841466	0.3529

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.674466	35.91320	27.58434	0.0034
At most 1 *	0.595281	28.94603	21.13162	0.0033
At most 2	0.254059	9.379489	14.26460	0.2559
At most 3	0.026611	0.863094	3.841466	0.3529

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

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

HDI	CPSGDP	M2GDP	MCGDP
10.49813	-0.122167	-0.064228	0.166371
41.84431	-1.292355	1.082938	-0.417071
-2.718504	-0.206358	0.394256	0.039972
17.70338	0.134769	-0.147734	-0.012357

Unrestricted Adjustment Coefficients (alpha):

D(HDI)	-0.001716	-0.006538	0.001049	-0.003886
D(CPSGDP)	2.714015	-0.156099	0.175992	-0.040445
D(M2GDP)	2.774080	-0.268227	-0.514370	0.027426
D(MCGDP)	-0.685307	2.495858	-0.924359	-0.226006

1 Cointegrating Equation(s): Log likelihood -137.1016

Normalized cointegrating coefficients (standard error in parentheses)

HDI	CPSGDP	M2GDP	MCGDP
1.000000	-0.011637	-0.006118	0.015848
	(0.00984)	(0.01080)	(0.00413)

Adjustment coefficients (standard error in parentheses)

D(HDI)	-0.018011
	(0.05685)
D(CPSGDP)	28.49207
	(4.35128)
D(M2GDP)	29.12264
	(4.95691)
D(MCGDP)	-7.194441
	(8.94548)

Johansen Cointegration Test

2 Cointegrating Equation(s): Log likelihood -122.6286

Normalized cointegrating coefficients (standard error in parentheses)

HDI	CPSGDP	M2GDP	MCGDP
1.000000	0.000000	-0.025464	0.031455
		(0.00524)	(0.00530)
0.000000	1.000000	-1.662433	1.341183
		(0.17583)	(0.17801)

Adjustment coefficients (standard error in parentheses)

D(HDI)	-0.291572	0.008659
	(0.22575)	(0.00679)
D(CPSGDP)	21.96020	-0.129827
	(17.8235)	(0.53631)
D(M2GDP)	17.89886	0.007744
	(20.2200)	(0.60842)
D(MCGDP)	97.24299	-3.141812
	(28.7117)	(0.86393)

3 Cointegrating Equation(s): Log likelihood -117.9388

Normalized cointegrating coefficients (standard error in parentheses)

HDI	CPSGDP	M2GDP	MCGDP
1.000000	0.000000	0.000000	-0.536855
			(0.13229)
0.000000	1.000000	0.000000	-35.76156
			(8.71481)
0.000000	0.000000	1.000000	-22.31835
			(5.29439)

Adjustment coefficients (standard error in parentheses)

D(HDI)	-0.294425	0.008442	-0.006556
	(0.22599)	(0.00687)	(0.00603)
D(CPSGDP)	21.48177	-0.166144	-0.273976
	(17.7850)	(0.54080)	(0.47490)
D(M2GDP)	19.29718	0.113888	-0.671441
	(19.6978)	(0.59896)	(0.52598)
D(MCGDP)	99.75586	-2.951064	2.382441
	(27.4784)	(0.83555)	(0.73374)

Dependent Variable: D(HDI)
Method: Least Squares
Date: 11/17/17 Time: 23:31
Sample (adjusted): 1984 2015
Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.007430	0.005469	1.358404	0.1870
D(CPSGDP(-1))	-0.007736	0.003637	-2.127096	0.0439
D(CPSGDP(-2))	-0.000138	0.003868	-0.035770	0.9718
D(M2GDP(-1))	0.007427	0.003590	2.068896	0.0495
D(M2GDP(-2))	0.000141	0.003993	0.035335	0.9721
D(MCGDP(-1))	-0.001856	0.001421	-1.306489	0.2038
D(MCGDP(-2))	-0.000272	0.001452	-0.187433	0.8529
ECT(-1)	-0.488332	0.176718	-2.763346	0.0108

R-squared	0.333279	Mean dependent var	0.006313
Adjusted R-squared	0.138819	S.D. dependent var	0.032583
S.E. of regression	0.030237	Akaike info criterion	-3.947159
Sum squared resid	0.021943	Schwarz criterion	-3.580725
Log likelihood	71.15455	Hannan-Quinn criter.	-3.825697
F-statistic	1.713870	Durbin-Watson stat	2.388387
Prob(F-statistic)	0.153210		