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Financial system development and poverty in Nigeria

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Abstract
The study examined financial system development and poverty as major economic development policies in countries especially the Nigeria's case. The study give answers to the above employing econometric methods of Augmented Dickey further, Philip-Person and Elliott Rothenberg and stock unit root test techniques for testing of stationary of the variables in the model. In addition, auto regressive distributed lag bound test for co-integration and error correction model are adopted. In this regard the study makes use of rate of poverty as proxy for dependent variable and broad money supply to the ratio of gross domestic credit to private sector to gross domestic ratio, liquid liabilities and interest rate spread as proxies for financial system development as independent variables. The result indicates a long-run and short-run relationship between financial system development and poverty in Nigeria. The result also shows that bread money supply to gross domestic product ratio has a negative and insignificant impact on poverty in the long-run in Nigeria. Again, there is a negative and insignificant impact on poverty in the short-run in Nigeria. It also shows that credit to private sector to gross domestic product ratio has a negative and insignificant impact on poverty in the short-run. Liquid liability has positive and insignificant impact on poverty in the short-run in Nigeria. Interest rate spread has a positive and insignificant impact on poverty in Nigeria, in the long-run and short-run respectively. The study recommends that financial system regulatory authority has to liberalize the financial system basically the banking sub-sector as to expand the source of financial deposits and also to encourage competitiveness within the spread in the system and also that the monetary authority need to formulate favourable policy for the real poor to have access to financial system without with stringent collaterals.

Keywords: financial system development, augmented dickey

Introduction

Financial system development, and poverty reduction are major trend for economic development policies in countries. Modern economies require economic theories to give answers to such problem through economists and policy makers. There have been some policies by countries of the underdeveloped world especially the third world countries. In respect of this there has been an increased role of financial system growth for the processes for the reduction of poverty level. In the view of Akporto (1990) the concensus for such level of development is the incessant underdevelopment of the third world countries basically those of the sub Saharan Africa because of underdeveloped financial system and high rate of poverty and that such under developed financial system and economic growth, permeates negatively the impact of both micro and Macro-Economic policies to reduce poverty in most of these countries. This inform recent reports that countries that have developed financial system are effective and efficient in mobilizing funds for the growth of investment and hence attracts investments to these economies by investors. Investment risks become less leading to lower costs of capital cum the risk of investment. A well enhanced financial system fasts tracks high and sustainable economic growth and development (Okute, 2012). Any difficulty experienced by any country in her financial system administration will also experience difficulty in her level of economic growth and development. The successes of financial sector reforms all over the world in providing developmental roles have been premised on the enhancement of financial sector reforms (Johnson and Sundararajan, 1999). These are conditioned upon, market-based procedures for monetary control, financial market competition, market based interest-rate investment growth, and the relaxation of restriction on capital flows. These, so relaxed, creates efficiency and the facilitation of optimum economic growth and poverty reduction. These global experiences have in recent times drawn Nigeria's case on her financial sector reforms. Some times between 2007 and 2009 there was an unprecedented financial heat through global recession. In Nigeria, the stock market, the banks, the oil and gas sectors were all affected. The government and Central Bank intervented through punitive measures in other to instill confidence and sanity in the financial sector. The financial system seems shallow and lowers credit creation to the private sector for investment purposes. The poors find it difficult to access credit. Financing for rural micro, small and medium entreprises have less opportunities, have less access to financial markets and which restrain sustainable rural development. Nigerian scholars started becoming emphatic about the issue. Soludo (2007), sees it that income distribution is so skewed that the country is one of the most unequal societies in the world with about 50 percent of the population having only 8 percent of the national income. It is therefore, of note, that a well-developed financial system be made imperative for all sectors of the economy for growth and development in other to reduce poverty. However, the financial system in the country has witnessed different phases. The pre and independent era of 1950 to 1970 with records of now money deposit banks and the central bank. The structural adjustment period of 1986 for real financial sector transformation agenda, the extensive financial reforms of 1987 culminating from SAP for deregulation of foreign exchange (Ikedhi, and Alawode, 2002) and far more reforms since democratic 1999 for pension fund 2004, Bank Consolidation policy 2005, insurance, 2007 and more. These are forms of financial reforms to engender efficient financial system necessary for domestic savings and investment in attendance for economic growth and development that shall reduce poverty in the economy. However, the financial sector in the country remains disconnected with the real sector of the economy. The high priority sectors of the economy i.e the economic drivers are not efficient and effectively serviced. According to Yusuf, Malarvizhi and Kim (2013) irrespective of the measures put in place, the financial sector for reforms don't translate into meaningful economic growth and poverty reduction. By the record of NBS (2010), the poverty rate steadily soars with upward trend between 54.4 and 69 percent between 2004 and 2010 respectively.

However, in Nigeria Studies have been carried out to determine and evaluate the behaviour of financial system development on poverty. On the study of financial system development on poverty Okitton and Thomas (2000) found a negative contribution of the system. Also, Oguntuase and Omololu (2010) had the same negative impact while Broderick and Roland (2002) exhibited a weak correlation between financial system development and poverty in Nigeria. These and some review of other literatures show that most conscious efforts do not consider some proxies of financial system development and poverty, the reason that most of them only adopted credit to private sector and broad money supply. However this study is bridging the gap by proxying financial system development with interest spread and liquidity liabilities to determine the impact of poverty in Nigeria. Hence the work starts with the introduction in section one. Section two deals with theoretical and empirical literature, section three for methodology, section four for data presentation and analysis while section five takes on to summary, conclusion and recommendation.

Theoretical and Empirical Literature

Theories are needed and also relevant for studies to expand the relevance of investigation under study. In this regards some theories are added to the study.

Financial Liberalization Theory

One of the theories on financial liberalizations is Mckinnon and Shaw (1973). This study sees financial liberation as the rate of government intervention with financial markets as a major constraint to growth. The hypothesis of the analogy is that the role of government in controlling interest rates and credit processes to priority sectors of developing economies can inhibit the mobilization of savings savings and hence inhibits the holding of financial assets, capital formation and economic growth. To this analogy, deposit interest rates ceiling discourages financial saving indirectly, and also causes excess liquidity outside the banking system. And also, that, persuasive government intervention and involvement in the financial system through regulatory and supervisory network through interest rates and allocation of credits do distort markets. In essence therefore government intervention affect savings and investments decisions. More so, the major critique of the aforementioned theory comes from the imperfect information paradigm whose school of thought disproportionates the proposition of McKinnon and Shaw (1973). It examines the problem of financial development in the context of information asymmetry and costly information that results in credit rationing. Asymmetric information leads to two serious problems which are adverse section and moral hazard. This is conditioned upon the information asymmetries of higher interest rates that submits to financial reform and liberalization policies. These policies in particular exacerbate risk taking throughout the country and hence threaten the stability of the financial system which can easily lead to financial crises. However, some Neo-structuralist economists like Van Winbergen (1983) and Taylor (1983) Criticized the financial liberalization theory that it would slow down economic growth.

Human Capital Theory of Poverty

One basic determinants of poverty is theory. This theory is a theory of earnings. The theory was first developed by Becker (1975). The theory makes emphasis on individuals decision making in terms of human capital development especially on education and training and life time earnings. The individuals levels of investment in education and training and related to their expected returns from investment and training are treated in terms of expected return from investment. Also, that both trainings entail costs both as direct expenses and forgone earnings only the investment period, therefore only individuals who are compensated sufficiently with higher life time earnings that choose to invest. And also that those who work less in the labour market with fewer labour market opportunities are less likely to invest in human capital. These are likely to be women and the minorities. In this scenario therefore both the women and the minorities may be likely to be in poverty as they earn lower earnings. It therefore explains the patterns of individuals lifetime earnings. According to Becker (1975), the pattern of individuals earning start out low when the individual is young and increase with age at least at the retirement period. There is therefore depreciation in average earnings near retirement (Ehrenberg and Smith, 1991).

At certain stage, poverty entred is difficult to exist. This can be related to the way earnings are achieved. This takes to the relationship between earning age and poverty. Bane and Ellwood (1986) stated that any sizeable portion of poverty spells starts when a young man or woman gets out of the parents home. And that this is an event linked with further education or training. The source further states that this poverty spells are relatively short with an average duration of less than three years. However, the main critique of this theory comes from Citro and Michael (1995) stating that it is more of human capital investment of labour market earnings than human capital theory of poverty and also that earnings are one main determinants of poverty.

Empirical Literature

Empirical literature is treated in relation to the study under review. This is a case of is the relation to or with the subject of the study; Financial System Development and Poverty. Hence these evidences abound in the literature.

Benjamin and Tom (1999) studied the behaviour of financial system development and poverty reduction in Nigeria between 1970 and 1998. Using bank deposit credit to private sector and broad money supply as proxies for financial system development the study indicates a direct relationship with poverty reduction. The study used econometric instruments of Augumented Dickey Fuller (ADF), Unit root test and Vector Autoregression (VAR) technique. The result shows that financial system development has direct and indirect relationship with poverty reduction. And also that financial system development has a negative and significant relationship with poverty in Nigeria. Bassey and Akan (2001) studied the relationship between financial system development and the incidence of poverty in Nigeria between 1980 and 2000. Using poverty headcount index as proxy for poverty and interest rate spread cum credit to private sector to GDP ratio as proxies for financial system development Philip, Perron Unit root test technique was used for test of stationarity. The line up of other technique is Johasen cointegration and error correction mechanism (ECM). The result of this study indicates that interest spread has negative and significant impact on poverty while credit to private sector indicate negative and significant impact on poverty in the country.

Clark, Xu and Fou (2002) investigated an empirical test of alternative theories on financial system development and income inequality using 91 countries data with 1960 and 1995. The result indicated that a negative relationship exists between financial system development and income inequality rather than an inverted U-shape relationship. And also that the impact of financial system development on income inequality is smaller in countries with larger modern sectors, giving supports to the Kuznets based theory.

Beck, Demirgut-Kunt and Levine (2004) studied the relationship between financial development and poverty reduction between 1980 and 2000. Taking a study of 58 developing countries, the study is of the view that financial system growth reduces poverty beyond the effect of it on aggregate growth. It was found out that with well instituted financial intermediaries, the ratio of private credit to GDP experience faster reduction in both poverty and income inequality by boosting the income of the poor. Hondroyiannis, Lolos and Papapetrou (2005) carried out a study on the effect of financial development on economic growth and poverty reduction in Greece with the instrument of Johansen and Juselius cointegration and Granger causcelity tests as analytical instruments. The cointegration result indicates that there is a long relationship between banking development which is proxied by credit to private sector while ration of bank credit extends to industries as to GDP. Also that stock market development is measured by stock market capitalization and the ratio of stock capitalization of industrial shares as to GDP and economic growth, with bi-directional causality development measures. And finally that, finance has a weak effect on economic growth in Greece with banking developments being more important for growth than stock market development.

Quartey (2008) carried out a study on financial development, savings mobilization and poverty reaction in Ghana. Making use of economic analytical techniques, the study indicates that financial sector development has a positive impact on poverty reduction, though, that financial intermediaries have not channeled savings to the pro-poor sectors, financing, high default rate, lack of collateral and also lack of proper business proposals Odhiambo (2009) studies the inter-temporal causal relationship between financial development and poverty reduction in Kenya. The study gives answer to the Kenyan financial development whether there is a spur to poverty reduction employing a private causality model of the cointegration error mechanism. The result indicates that financial development, proxied by savings rate, has a causal relation between it and poverty reduction in Kenya. And also that there is a bi-directional causality between savings and poverty reduction. Abidoye and Fowowe (2011) investigated the effect of financial development through the measures of private credit on growth of poverty and inequality in sub-sahara African countries. The result of the study shows that private credit hasn't significant influence on poverty in the countries under study. Also that the empirical results indicate, macro economic variables such that low inflation and trade openness are inimical to poverty reduction.

Audu and Okumoku (2013) carried out a study on the impact of financial development on economic growth and their effects on poverty in Nigeria. Carrying out the study with Augmented Dickey Fuller Unit root test approach, Johansen cointegration technique and Error Correction Mechanism for analysis, the study revealed that a long-run positive relationship exists between financial development proxied by ratio of money supply to GDP, ratio bank deposit to GDP, natural logarithm of granted credits of banks to private sector, rate of credit issued to non-financial private firms to total domestic credit and real interest rate and economic growth proxy by natural logarithm of GDP.

Leila (2014) studied the relationship between financial system development and poverty reduction in eight MENA countries of (Algeria, Egypt, Iran, Jordan, Mauritania, Morrocco, Tunisia and Yemen) between 1990 and 2012. The study was carried out with Vector Auto Regression (VAR) technique as an economic tool for cointegration test. The result of the study indicates that financial system development favours the poor. The result also indicates that the ratio of domestic credit to the private sector as percentage of GDP is significantly positive for Algeria, Iran, Jordan and Tunisia. However, the ratio of financial system development to liquid liabilities (M3) as a percentage of GDP is significant to the entire sample. The result suggests an access to credit by the poor which remains a challenge.

Dauda and Makinde (2014) examined the nuxus between financial sector development and poverty reduction in Nigeria using Vector Autoregressive (VAR) approach between 1980 and 2010. Broad Money Supply and Credit to private sector are used as proxy to financial sector development. The result indicates that the relationship between financial sector development and poverty reduction is negative while credit to private sector fails to cause a reduction in the incidence of poverty in Nigeria.

Miled and Rejeb (2015) studied the contribution of 596 microfinance banks for poverty reduction in 2011 using 1132 microfinance institutions in 57 developing countries between 2005 and 2011. The study indicates that countries with higher microfinancial institution gross loan portfolios per capita had lower poverty levels and higher levels of income per capita. The study also indicates that price stability and economic growth contributes to poverty reduction.

Forgot and Paul (2016) studied life circle hypothesis as a theoretical background. Using Johansen cointegration, the study investigated the relationship between financial sector development and savings mobilization in South Africa with 1980 and 2012. The result of the study investigated the relationship between financial sector development and savings mobilization in South Africa with 1980 and 2012. The result of the study indicates that, there is a long run relationship between savings, interest rates, and financial sector development and also that South Africans are not borrowers the reason that; income effect overwhelms substitution effect.

Oladele and Makwe (2018) investigated the relationship between financial sector development, economic growth and poverty reduction in Nigeria. Total insurance income, total deposit money, bank assets, total market capitalization and broad money supply proxied for financial sector development. Using econometric technique of Augmented Dickey Fuller (ADF), Philip Perron (PP unit root test) techniques, Johansen cointegration technique and Error correction Mechanism (ECM) the results shows a positive and significant relationship between financial sector development, proxy by total insurance income, deposit money banks assets, stock market capitalization and economic growth in Nigeria except that broad money supply showed a negative but significant relationship with economic growth.

Uori (2020) studied the effect of financial sector development and poverty reduction in Nigeria using time series data. Covering the period 1988 and 2017 the study used United Nations Development Programme (UNDP) measure of wellbeing and Human Development Index (HDI) as proxy for poverty reduction. Employing Johansen cointegration to investigate the presence of long run relationship between the variables, the Augumented Dickey Fuller Stationarity of the variables, The result of the study shows that financial sector development has a positive and significant relationship with Human Development Index (HDI) as a proxy for poverty level. And also that there is a positive and significant relationship between aggregate credit, a proxy for financial sector development and Human Development Index (HDI). And also that a negative relationship exits between aggregate deposit, which is a proxy for financial sector development and Human Development Index (HDI).

Methodology

This session tries to outline the procedural research design to capture the study, hence the expost factor research design which gives room for theoretical and empirical observations. This enables the researcher observe the effects of the explanatory variables on the explained variable. By this therefore, it can be explained if savings facilitate payments or trade of goods and services can promote efficient allocation of resources for the financial system to be seen as playing a critical role in facilitating economic growth which can in turn reduce poverty in an economy. Hence explained or regressed variable of Poverty Rate (POVR) and the unexplained or the regressor variables of Broad Money supply (MS_2), Credit to Private Sector (CPS), Liquid Liabilities (LL), and Interest Spread (INTSP).

Model Specification

The model is mathematically presented below as

$POVR = \propto_0 + \propto_1 MS_2 + \propto_2 CPS + \propto_3 LL + \propto_4 INSTSP + U_t$

Where; POVR = Poverty Rate

$MS2_r$ = Money Supply (Broad)

CPS = Credit to Private Sector

LL = Liquidity Liabilities

INTSP = Interest Spread

$\propto_1$ to $\propto_4$ = Parameter Estimates

u = Residuals, not included in the model but can influence financial system and poverty

Apriority Expectations.

Below are given or stated for; the coefficients of the parameter estimates of the explanatory variables in the model.

$POVR = \propto_0 + \propto_1 MS_2 + \propto_2 CPS + \propto_3 LL + \propto_4 INSTSP + U_t$ $\propto_1 < 0$; $\propto_2 < 0$; $\propto_3 > 0$; $\propto_4 > 0$

As given above; financial system development proxied by broad Money Supply to the Ratio of (MS_2/GDP) and credit to Private Sector Ratio (CPS/GDP) are both expected to have negative impact on poverty.

Secondly that Liquid Liabilities (LL) and Interest Rate Spread (INTSP) which are proxies for financial system development are expected to exert positive impact on poverty.

Sources of Data

The data for this study are secondary source data. They are mainly retrieved from the Central Bank of Nigeria (CBN, Various sources), Nigerian Security and Exchange Commission (NSEC), Nigeria Bureau of Statistics (NBS, Various Sources) World Bank Development Indicators (WBDI) and Journals. These collections are specifically collected, on/for poverty rate, credit to private sector; liquid liabilities, interest rate and broad money supply.

Estimation Techniques

This research adopts the Augmented Dickey Fuller, Phillip-Perron and Elliot Rothenberg and Stock unit root techniques for stationarity test. This is done to determine the presence of long-run and short-run relationship between financial system development proxied by broad money supply to GDP credit to private sector to GDP, liquid liabilities and interest spread and poverty proxied by poverty rate in Nigeria. In addition is Autoregressive Distributed Lag (ARDL) Bound test for cointegration and Error Correction Mechanism (ECM) to determine the parameter estimates of the model.

Unit Root Test

In other to determine whether the study is stationary or non-stationary this work adopts augmented Dickey fuller (1979) Phillip Perron (PP) and Elliot Rothenberg and Stock (ERS) unit root test techniques. This is done to avoid spurious regression and to attain stationarity and an order of integration.

For Stationarity among variable whether they are integrated or not the cointegration is a necessary step to determine whether relationships among the variables for regression can be expressed in a meaningful empirical model. Among the Johansen (1988), Engle-Granger (1987) and Johansen and Jeselius (1990) cointegration technique, this study adopts the Pasaran, Shin and Smith (2001) Auto Regressive Distributed Lag (ARDL) cointegrated technique. This is done to determine if the study will fall into the characteristics that, it can be applied whether there is a mired order of integration ie ‘O’ and ‘I’ for a valid result, (ii) the bound test will reduce the potential problems of autocorrelation and endorgeneity with consistent result as the sample size is small and (iii) that whether the ARDL/Bound test approach requires one equation set up for both long run and short run and not separate unit root test apart from guiding against 1(2) series. (iv) and that a dynamic error correction model can be obtained from ARDL technique just through a simple linear transformation.

Error Correction Mechanism

In most cases, error correction models are specified through short run dynamics after the test for unit root and cointegration. Hence the Parsimonious Error Correction Model is conducted to determine parameter estimates of the models. By the Granger Representative Theory (GRT) where two or more variables are cointegrated then their relationship can be termed as Error Correction Model (Engel and Granger, 1987). This is used to check up and down relationship between the dependent and independent variables for a long run relationship.

Data Presentation, Analysis and Discussion of Finding

Table 1: Regression Table for Financial System and Poverty Reduction in Nigeria

Year	MS2/GDP (%)	CPS/GDP (%)	INTSP (%)	LL (%)	POVR (%)
1980	28.62522	21.34851796	3165	18.17	43.65
1981	10.9388	11.32778916	3.200833334	18.2	41.15
1982	11.19984	14.44248539	1.9375	20.18	46.31
1983	11.99003	17.45371241	2.565	20.56	40.79
1984	12.80806	18.37191949	1.9875	21.189	41.65
1985	12.32653	16.99403553	0.316666667	22.489	62.12
1986	11.91441	18.40229105	0.724166667	19.87	70.64
1987	11.80946	16.47497328	0.874166667	24.154	65.14
1988	12.16855	16.08023937	3.666666667	21.167	69.15
1989	10.45432	11.09302044	5.766666667	22.1879	67.76
1990	11.63537	12.46650622	5.516666667	22.89	68.71
1991	13.39988	11.9663647	5.125	24.187	70.87
1992	14.24738	18.88140925	6.716666667	38.183	68.18
1993	15.78772	22.32446576	8.408333333	33.186	76.15
1994	15.09194	24.82563926	7.391666667	29.186	71.17
1995	10.28194	15.30081937	6.7025	28.109	70.1
1996	9.063329	9.081574591	6.7775	30.114	70.16
1997	9.725269	8.280034611	10.62583333	30.124	81.04
1998	10.93903	10.66542625	8.075833333	31.651	82.06
1999	12.76339	11.52807815	7.479166667	21.2882	71.17
2000	14.66963	6.683114588	9.583333333	22.98	69.18
2001	15.90097	11.50781745	8.1825	22.93901	66.15
2002	13.527	12.1158728	8.100833333	22.75451	71.16
2003	13.02659	13.66949603	6.496666667	20.66499	72.1
2004	11.75879	7.536790108	5.482493721	17.30593	78.51
2005	11.30051	5.480949287	7.415833333	20.1896	74.12.
2006	11.72897	3.023979903	7.141666667	14.06822	76.12
2007	19.29109	11.59484025	6.650833333	21.16857	70.18
2008	23.81187	16.3927308	3.268333333	12.25469	68.17
2009	25.14416	21.54528573	6.0325	5.568354	74.13
2010	21.35585	19.09268819	11.06416667	7.302487	76.46
2011	22.47905	22.35248962	10.3275	17.03532	75.17
2012	24.92823	20.87422105	8.386666667	16.31329	70.19
2013	25.44805	21.85249979	8.7775	31.07068	76.21
2014	22.31285	21.64574509	7.210833333	34.23155	74.12.
2015	21.45136	23.1437028	7.700833333	32.13277	74.18
2016	24.72304	26.55513027	9.37281483	34.1765	76.19
2017	22.58031	23.33387929	7.998847229	32.1674	76.739
2018	23.53219	21.20339018	7.203184882	34.1675	75.1816
2019					
2020					

Table 2: Descriptive Statistics

	POVR	MS_2	CPS	LL	INTSP
Mean	63.51873	16.05490	15.81831	23.47632	6.241556
Median	70.8700	13.39988	16.39273	22.48900	6.777500
Maximum	76, 00000	28.62522	26.55513	38.18300	11.06417

Minimum	40,79000	9.063329	3.023980	5.568354	0.316667
Std Dev.	10,86445	5.687645	5.878847	7.491515	2.813683
Skewness	-1.624342	0.689978	-0.194751	-0.168200	-0.519935
Kurtosis	4.651909	1.969117	2.129673	2.767415	2.454698
Jarque-Bera	21.58446	4.821378	1.477519	0.872931	2.240359
Probability	0.000021	0.089753	0.477706	0.872931	0.326221
Sum	2672.231	626.1409	616.9139	915.5765	243.4207
Sum Sq. Dev.	4485.378	1229.274	1313.312	2132.666	300.8388
Observations	41	41	41	41	41

Source: E-view 9.0 computer output.

The observations for each variable from the above table is 41 years indicating the maximum level of poverty incidence as 70 percent while the minimum level of poverty for that period is 40 percent. The proxied mean value of financial system development such as broad money supply - MS_2 – GDP ratio, credit to the private sector GDP ratio, CPS, Liquid liability ratio, LL, and interest rate spread (INSTP) are 16.05, 15.51, 23.47 and 6.24 respectively. The maximum values for the same variables are 28.62, 26.55, 38.18 and 11.06 respectively. The minimum values are for MS_2, CPS, LL and INTSP are 9.06, 3.02, 5.56, and 0.31 respectively. The poverty variable exhibits a positive momentum indicating an increasing tendency. Infact it shows positively. The values of the other variables do not exhibit much difference from zero. The variable poverty is leptokurtic. The kurtosis values for it is greater than 3.0 and hence is excess. By this position it has a more peak top than the normal distribution. Kurtosis values for MS_2, CPS, LL, and INTSP are less than 3.0. it means they are platykurtic meaning their peaks are flatter than the normal curve. The p-values for Jarque-Bera statistics for poverty is less than 0.05. By this nomenclature its distribution is abnormal.

That of MS_2, CPS, LL and INTSP are all greater than 0.05 critical value, hence their distributions are normal.

Unit Root Test

In the discussion under methodology, it is reported that the study will pass through stationarity test and hence the employment of Augmented Dickey-Fuller (ADF) test, Phillip-Perron (PP) test and the Elliot Rothenberg and Stock (ERS) tests at 0.05 levels of significance. The various results are presented below.

Table 3: ADF Unit Root Test Result

Variables	ADF Statistics (at levels)	1% Critical Value	5% Critical Value	ADF Statistics at First Difference	10% Critical Value	5% Critical Value	Order of Integration
POVR	-2.535664	-4.219126	-3.533083	-4.983512	-4.243644	-3.544284	1(1)
MS_2	-2.246779	-4.226515	-3.536601	-8.678874	-4.226815	-3.536601	1(1)
CPS	-1.588456	-4.243644	-3.544284	-5.681421	-4.243644	-3.544284	1(1)
LL	-1.985697	-4.219126	-3.533083	-6.811151	-4.226815	-3.536601	1(1)
INTSP	-2.72118	-4.219128	-3.533083	-6.491739	-4.234972	-3.540328	1(1)

Table 4: PP Unit Root Test Result

Variables	pp Statistics (at levels)	1% Critical Value	5% Critical Value	pp Statistics at 1st Difference	1% Critical Value	5% Critical Value	Order of Integration
POVR	-2.1414058	-4.219126	-3.533083	-12.2194	-4.226815	-3.536681	1(1)
MS_2	-5.447182	-4.219126	-3.533083	-14.1207	-4.226815	-3.536681	1(0)
CPS	-2.414947	-4.219126	-3.533083	-9.76007	-4.226815	-3.536681	1(1)
LL	-2.025152	-4.219126	-3.533083	-6.80981	-4.226815	-3.536681	1(1)
INTSP	-2.685565	-4.219126	-3.533083	-12.3571	-4.226815	-3.536681	1(1)

Source: Author's Computation

Table 5: ERS Unit Root Test Result

Variables	ERS Statistics (at levels)	1% Critical Value	5% Critical Value	ERS Statistics at First Difference	1% Critical Value	5% Critical Value	Order of Integration
POVR	-2.296186	-3.770000	-3.190000	-4.464623	-3.770000	-3.190000	1(1)
MS_2	-2.748516	-3.770000	-3.190000	-3.693626	-3.770000	-3.190000	1(1)
CPS	-1.447596	-3.770000	-3.190000	-4.557473	-3.770000	-3.190000	1(1)
LL	-2.070404	-3.770000	-3.190000	-7.005912	-3.770000	-3.190000	1(1)
INTSP	-2.829493	-3.770000	-3.190000	-6.648634	-3.770000	-3.190000	1(1)

Source: Author's Computation

The above tables shows the behaviour of the unit root. They indicate that all the variable are not stationary at level for the Augumented Dickey Fuller (ADF) but are stationary at first difference. And that apart from broad money supply to GDP (MS_2/GDP) all the variables are stationary at first difference for the Phillip-Perron (PP). MS_2 is stationary at level for PP but not stationary at level for ADF and the ERS statistics. Considering the Elliot, Rothenberg and Stock unit root test, all the variables are not stationary at level but stationary at first difference while the Augumented Dickey-Fuller (ADF) is good but has low power for unit root close to one, the Elliot Rothernberg and Stock is inconsistent asymptotically and hence may not be good for time series data less than fifty (50). However, some researchers permits thirty (30) and above. However, being this, it is believed that the variable broad money supply to GDP (MS_2/GDP) is stationary at fewer as it is 1(0) series while POVR, LL, CPS and INTSP are stationary at first difference because they are 1(1) series. Author regressive Distributed Lag (ARDL) Bound Test Co-integration: Analysis For Financial System Development and Poverty. The above, shows the interplay between financial system development and poverty in Nigeria. It is an examination of the behaviour of financial system development in relationship with poverty in Nigeria. To have a meaningful empirical model as shall be estimated, co-integration test is examined to determine whether there is any long run relationship between financial system development variables and incidence of poverty in Nigeria. In this regard the Pesaran, Shin and Smith (2001) ARDL-Bound Test for cointegration is determined.

Table 6: Autoregressive Distributed Lag (ARDL) Bound Test Result. Null Hypothesis: No long-run relationship exist

Test Statistic	Value	K
F-Statistic	5.988841	4
Critical Value Bounds		
Significance	1(0) Bound	1(1) Bound
10%	2.45	3.54
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

Source: E-view 9.0 Computer Output

This result indicates that there is a stable long-run relationships between financial system development and incidence of poverty in Nigeria. The results show a F-Statistics of 5.98884 for the ARDL/Bound F-Statistics test. This is significantly greater than the upper critical bound value at 5 percent probability level. It shows that there is a long run relationship between the aforementioned variables in the Nigerian economy hence, the procession for the estimates and examination of the long-run parameters.

Table 7: Long-Run Coefficient

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MS2	-0.305386	0.440135	0.693846	0.4942
CPS	-0.267205	0.357533	-0.747359	0.4618
LL	0.196240	0.196772	0.997299	0.3282
INTSP	0.553717	0.591050	0.936837	0.3578
C	63.358831	5.585003	11.344458	0.0000
Cointeq = POVT – (-0.3054*MS -0.2672*CPS + 0.1962*LL + 0.5537*INTSP + 63.3588) R^2 =0.828184, R^2 (Adj) = 0.73446, DW = 1.95				

Source: E-view 9.0 Computer Output

The result of table 4.7 indicates that R-square (R^2) is 0.828184 with an adjusted R-squared coefficient of 0.734466. This indicates that the explanatory variables explain about 73 percent variation in the study and that the remaining 27 percent is explained by variables not included in the specified model. The Durbin Watson (DW) is 1.95 indicating an absence of autocorrelation. Broad money supply to GDP (MS_2/GDP) which is proxied for financial system development shows a negative coefficient and statistically insignificant. However, this sign is in consonance with the apriori expectation for the variable. In major terms, it has a coefficient of -0.3054 with a p-value of 0.4942 indicating its insignificance. This has an economic implication that broad money supply to GDP ratio (MS_2/GDP) affects poverty negatively but the effect is not pronounced during the period under review. This insignificant impact of broad money supply MS_2/GDP on poverty may be due to the fact that the money supply in the economy ended-up in the hands of the few-rich rather than the many-poor due to high rate of interest rate and demand for collateral in the financial market and this has made it hard for the indigent to access credit in the market.

Credit to private sector to GDP (CPS/GDP) has a negative coefficient of -0.267205 showing its statistical insignificance. This also negates its aprori expectation. It is an indication of negative relationship between financial system development proxied by credit-private sector to GDP ratio and poverty in Nigeria. Also, this does not have a noticeable impact on the incidence of poverty in the country because of low level of credit to the sector indicating that the poor are not really given access to credit in the system.

Followed by the above, liquid liabilities (LL) has a positive coefficient of 0.196240. Though also statistically insignicant but has a positive apriori expectation. This indicates that a percentage increase in liquid liabilities increases poverty incidence by 0.2 percent in the Nigeria economy. Interest rate spread (INTSP), a proxy for financial system development, has a positive coefficient of 0.553717 but statistically insignificant with p-value of 0.3578. This result shows that it is positive but having an insignificant impact of interest rate spread on poverty in Nigeria. This is also tantamount to constraining the poor to access credits and which deteriorate investments, and economic growth.

Table 8: Long-Run Coefficient

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(MS2(-1)	-0.574254	0.616574	0.931363	0.3606
D(CPS)	-0.176148	0.242584	-0.726134	0.4745
D(LL)	0.129366	0.133943	0.965829	0.3434
D(INTSP)	0.365024	0.412619	0.884651	0.3848
CointEq(1-)	-0.659225	0.132012	-4.993690	0.0000

Source: E-view 9.0 Computer Output

In the short run analysis broad money supply MS_2/GDP ratio is negative but having statically insignificant impact on poverty in Nigeria. It has a negative coefficient of -0.574254 with a p-value of 0.3606. it implies that broad money supply to GDP in the short run also affect poverty negatively and therefore also causes reduction in poverty level in Nigeria during the period under review. Both the short run report and that of the long seems exhibiting same effect (negative) on poverty reduction in the Nigerian economy.

Credit to private sector to GDP/CPS/GDP) is negative in the short-run. It has a statistically insignificant impact on poverty incidence in Nigeria. It indicates 0 – 0.176148 with a p-value of 0.4745. Liquid Liabilities on the short-run has a positive and insignificant impact on poverty in Nigeria. It has a positive coefficient of 0.129366 with a p-value of 0.3434. This indicates that a one percent increase on Liquid Liabilities ratio will lead to a 0.13 percent increase in incidence of poverty in the short run. The result is the same in the long run impact of Liquid Liabilities on poverty incidence in Nigeria. Also in the short-run, interest rate spread (INTSR) has positive and insignificant impact on the incidence of poverty in Nigeria. Also it has a positive coefficicent of 0.365024 with a p-value of 0.3848. The signs in both the long and short run are the same. The increase in interest rate spread by one percent brings about increase in poverty rate by 0.4 percent in the short run. The Co-int Eg (-1) in the short run adjustment coeffiecient is rightly signed and is statistically significant. The model has valid error correction mechanism. Here the speed of adjustment is 0.66 percent, indicating that about 66 percent of the discrepancy between the short-run and the long run is adjusted within one year. This indicates that the long run equilibrium will go back to its steady state with ease in the case of any shock. Conclusively on this, there is therefore the indication that in both the long and short runs, there exist the same sign for the variables and that there is consistency in the impacts of the regressors on the regressand in Nigeria.

Post Estimation Diagnostic Tests

1. Residual Normality Test Result.

Table. 4.9: Normality Test Result.

An estimated residual normality is determined through jaque-Bera analysis. By this test there is the indication that the estimated residuals have normal distribution, the reason that the Jaque-Bera p-value is greater than 5 percent critical value. This verifies that the null hypotheses of residual normality is determined at 5 percent probability level. Hence, the estimated residuals are normally distributed.

2. Autocorrelation Test

Table 9: Breusch-Godfrey Serial Correlation LM Test Result.

F-Statistic	**0.700133**	**Prob. F (2,23)**	**0.5068**
Obs* R.Squared	2.008557	Prob. Chi-Square (3)	0.3663

Source: E-view 9.0 Computer Output

The Breusch-Godfrey tM statistics value is 2.008557 with a probability value of 0.33663. The empirical chi-square value is greater than the critical value at 0.05 levels of significance. The null hypothesis thus determined at 0.05 levels, hence there is no autocorrelation in the estimated residuals.

3. Heteroskedasticity Test

The result of autoregressive conditional heteroskedasticity test is presented below.

Table 10: The ARCH.

F-Statistic	**1.680982**	**Prob. F (3,28)**	**0.1937**
Obs* R.Squared	4.883774	Prob. Chi-Square (3)	0.1805

Source: E-view 9.0 Computer Output

This result agrees with the acceptance of the null hypothesis at 0.05 levels of significance. Also the probability of the empirical lM statistics and the ob*R-Squared is 4.883774. The mean that there is no evidence to suspect the presence of heteroskedasticity among the estimated error terms is ensured.

4. Model Specification Error Test

The above test is guaranteed through the Ramsey Regression specification Error Test (RESET)

Table 11: Ramsey RESET TEST Results

	Value Df	**Probability**
F-Statistic	6.160393 (3,22)	0.0933

Source: E-view 9.0 Computer Output.

The probability of the empirical f-statistic at 3,22 degree of freedom is greater than the 5 percent critical value. The null hypothesis that the model is correctly specified is thus accepted. It shows that the specification of the model correctly captures the true relationship between financial system development and poverty incidence in the Nigeria economy.

Discussion of Findings

The empirical result of the study indicates a negative and statistically insignificant impact of financial system development. The study is proxied by broad money supply GDP (MS_2/GDP) and credit to private sector to GDP (CPS/GDP) in the Nigerian economy in the longrun and also negative and insignificant impact in the short run.

The mix of liquid liabilities (LL) and poverty incidence in Nigeria is positive and statistically insignificant in both longrun and short run.

The sign of the coefficients in both and the long and short runs are in line with apriori expectations for the variables. It is an indication that liquid liabilities did not reduce poverty in Nigeria during the period under review.

Interest rate spread is found to be positive and having insignificant impact on the incidence of poverty in the Nigerian economy during the period under review. The sign of the variable coefficient, while inline with the apriori expectation also implies that, increase in interest spread exerts positive effect on poverty rate. It indicates that a one percent increase in interest rate will lead to 0.5 percent poverty rate in the long run and a 0.3 percent increase in poverty rate in the short run. Any increase in interest rate discourages borrowing and thus create excess liquidity in the financial system in an economy hence leads to increase in the rate of poverty in that economy. If interest rate is reduced, the real poor can access credit and which will bring about increases in investment and reduction in poverty.

Summary, Conclusion and Recommendation

Summary

The study examines the relationship between financial system development and poverty in Nigeria with the aid of some theoretical literature to expound the relevance of the study such as financial liberalization theory, the human capital theory of poverty on ward to empirical study. The study is critically analyzed through the use of secondary source from annual time series data.

In addition is the employment of Augumented Dickey Fuller (ADF), the Philip Perron (PP) and Elliot Rothenberg and Stock (ERS) unit root test technique for test of stationarity. These determine, in the work, the behaviours of the relationships among variables both in the long and short periods of analysis.

Conclusion

Results form the test of analyses reveals the fundamental cause and effects of the behaviour of the economy as indicated by the econometric results which are scientifically the true source by which any economic studies can give answers to problems of any given economy. The study reveals that financial system development, has a negative and significant impact on poverty in Nigeria during the period under review. The implication is that, the country needs guided development of the financial system in other to stimulate economic growth and development and which in the long run can reduce poverty. And also that a positive relationship between financial system development in proxy of liquid liabilities and interest rate spread indicate that both measures have the potentials to enhance increases in the rate of poverty in an economy. However, the impacts of liquid liabilities and interest rate spread on poverty is an added indication of government inability and lack of interest rate in determining the financial system in Nigeria to make it possible a reduction in interest rate and make way for a greater access to credit for the real poor in the economy. This undermines financial inclusion in the country and therefore needs proper economic measures for high liquid liabilities and interest rate spread in the country for a pro-poor growth system to lift the population of people in Nigeria out of poverty.

Recommendations

Based on the results of the findings, some recommendations are highlighted for policy actions such that the

- Financial system stability should be ensured. That the system requires low interest rate spread and liquid liability ratio.
- There is need for prudential guidelines basically in the areas of reserves and regulatory systems.
- That monetary and fiscal authorities need to stimulate deposit money banks to granting credit facilities to the pro-sectors and the real poor in the economy.
- There should be prudent guidelines on reserves, liquid liability ratio and reserve requirement on the need for the development of the economy.
- Interest rate on loanable fund should be reduced. This will enhance access to financial services by the real poor in other to reduce poverty as access to fund will make most persons have funds for investment.

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