Abuja Journal of Economics & Allied Fields, Vol. 10(4), March, 2022
Print ISSN: 2672-4375; Online ISSN: 2672-4324

Assessment of the Effects of Financial Development on Poverty Reduction in Nigeria

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Abstract

This study examines the effect of Financial Sector Development on Poverty Reduction in Nigeria. The study used annual time series data from 1980 to 2018 with Poverty as the Dependent variable while the ratios of credit to the private sector, total micro-credits and stock market capitalization to GDP are the proxies of financial development. Government expenditure is used as a control variable. Autoregressive and distributive lag model (ARDL) was employed as estimation techniques. The study revealed that credits to private sector, stock market capitalization and poverty reduction are cointegrated implying that financial sector development has a long run relationship with poverty reduction but money supply has only a short run effect on poverty reduction. Government expenditure does not have significant effect on poverty reduction both in short and long run. The study also recommends for the need for government to facilitate the development of the financial sector by setting appropriate regulatory and macroeconomic policies that will bring about improvement in institutional quality, and avoid instability in the sector.

Keywords: credit to the private sector, financial development, micro-credits, poverty reduction

JEL Classification*:* G21, G23, I32

1. Introduction

Financial sector serves as an intermediation channel through which surplus spending units lend money to deficit spending units. The sector increases productivity by increasing level of investment in human and physical capital (Juzohong, 2009). The development of financial sector comes in two ways, either by increasing and enhancing the intermediary function or through credit expansion or boom. It is worthwhile to note that the linkage between financial development and poverty reduction can be direct or indirect. Financial development can lead to poverty reduction since access to finance for the poor can be widened through offering of credits (Hafiz, Abdul, Arif and

Awais, 2011 and Juzohong, 2009). One of the instruments of financial development that could directly reduce poverty is micro credits. This tremendously influences wellbeing since beneficiaries from this credit scheme are mostly low-income earners or rather small-scale entrepreneurs and rural communities who are predominantly rural households. On the other hand, the indirect channel comes through the "trickle-down" effect where the financial development depicts a positive impact on economic growth which normally leads to reduction in poverty.

Financial development can only lead to poverty reduction by establishing strong inter-sectoral linkages with the other sectors including the government sector. Expressly, government investments have a spillover effect on poverty. Moreover, government needs to introduce effective policies that will tackle corrupt practices as to a large extent; these practices have an adverse effect on the contribution of financial development to poverty reduction in the country. Despite various programmes by successive governments in Nigeria to trim down poverty, abject poverty is still evident as the economy has been experiencing high poverty level (NBS, 2016). These programmes include the creation of Bank of Agriculture, Small and Medium Enterprise Equity Investment Scheme (SMEEIS), Rural Banking Programmes, Microfinance Scheme, Banking Reforms, National Poverty Eradication Programmes (NAPEP) etc.

Data on key financial development measures increased substantially through 1980 to 2019. For instance, in 1981 credit to the private sector as a percentage of GDP stood at 6.15%, 6.78% in 1990, 9.29% in 2000, 18.96% in 2010 and 17.63% in 2019 while in 1981 money supply as a percentage of GDP stood at 10.39%, 9.59% in 1990, 12.44% in 2000, 20.01% in 2010 and 23.52% in 2019 (CBN, 2020). Comparatively, despite the significant increase in the financial development measures, the proportion of Nigeria's population living below the poverty line significantly increased between 1980 and 2018. A survey conducted by the Nigeria Bureau of Statistics NBS, (2012) shows that the Nigeria's poverty profile increased from 54.4% in 2004 to 69% in 2010 and World Bank, (2014) shows that poverty level increase from 35% in 2011 to 33.1% in 2013 and 2014 indicating that poverty has been on the increase in Nigeria but dropped only between 2011 and 2014. Moreover, according to the World Bank (2020), the poverty and inequality of Nigeria as released by NBS, shows that in 2019, 40% of the total population or almost 83 million Nigerians live below the poverty line.

Several studies have examined both theoretical and empirical link of financial development to poverty reduction. Specifically, in the case of Nigeria, these studies have examined the effects of financial development on economic growth and poverty reduction (Odhiambo, 2009; Rudra, 2010; Samson and Elias, 2010; Dandume, 2014; Donghuyun and Kwanho, 2015). However, they concentrated more attention on the bank measures of financial development ignoring micro-credits and other variables from non-bank's sub-sectors despite the fact that they are very crucial in capturing financial development. Thus, this constitutes a wide gap in the literature as such more studies are required in this area. This paper therefore, employed both bank (Credits to the Private Sector and Micro-Credits) and non-bank (Stock Market Capitalization) measures of financial development in its analysis as well as extending its scope to 2018. In light of the foregoing, the study has addressed the following research question: Does financial development have any significant effects on poverty reduction in Nigeria? Thus, the objective of this paper is

to evaluate the effect of financial development on poverty reduction and examine the direction of causality between poverty reduction and financial development.

2. Literature Review

Financial Sector Development: A Conceptual Review

There is no single definition as to what constitute financial development. Rather, scholars have advanced different aspects as to when financial development is said to have occurred. To Levine (2005), occurrence of financial development come when the effect of imperfect information, transaction costs are lessened by the financial instruments, markets and intermediaries. This definition is limited to information asymmetry making it narrow in explaining the actual functions of financial system to the economy. Other scholars have developed broader definitions that explicitly bring out the meaning of financial development. For instance, Merton (1992), Merton and Bodie (2004) in Levine (2004) defined financial development in terms of improvement in the key functions the economy can derive from the system. Some of these functions include among others producing and processing of information about possible investments, monitoring of individuals and firms through good corporate governance and facilitation of exchange of goods and services.

From the foregoing definitions, financial development is a situation, where the financial sector offers effectively intermediary functions and enhances the banking habit of the public through significant reduction of information asymmetry and restoration of public confidence in the financial institutions. Since, what constitute financial sector consists of whole sales and retails, both formal and informal institutions rendering financial services which include commercial banks, stock market exchange, microfinance banks, mortgage banks, development banks, insurance firms, discount houses and so on (DFID, 2004).

2.1 Poverty: A Conceptual Review

One of the oldest and unresolved social problems of human society is poverty (Yakubu and Abbas, 2013). In every society, there are groups of people who are well to do consider to be rich and those who lack considered as poor. According to United Nations Development Programme UNDP (2006) poverty has been conceptualized within four different clusters. These clusters are seen from the perspectives of income and consumption tying poverty with inability to meet the basic needs of consumption, poor shelter or poorly equipped shelter without the needed furniture together with lack of some audio-visual materials that can help in making people well informed about the opportunities available in the society.

The Organization for Economic Cooperation and Development OECD (2013) opines that in most societies the notion of what constitutes poverty varies greatly as such, it is hard to arrive at one definition that encompasses the full meaning of poverty. However, some perspectives of the concept have emerged. Ebong (2013) defined poverty in terms of income/consumption perspective, the basic needs perspective and capability perspective as well as incapacitation in terms of human resource formation. Poverty can be absolute or relative, meaning that poverty in one place may not be poverty elsewhere. However, in absolute term, inability to satisfy the basic or minimum needs economic or social like food needs, medical and shelter is poverty irrespective of one's geographical environment.

In the context of this research, poverty is conceptualized in terms of income/consumption perspective as it is generally believed and observed as well that low level of income is the major and most

visible symptom of poverty. It is also based on the level of income that poverty line is constructed to determine a minimum level of income below which a person is considered to be absolutely poor. Also, the study lays more emphasis based on the Nigeria's context as relative poverty relate more to developed countries because absolute level of poverty in those countries has been wiped out (Brian-Vincent, 2009). Poverty is also multidimensional relating to income, deprivation, culture and even the psychology of people.

2.2 Financial Sector Development and Poverty Reduction

Financial development gives rise to poverty reduction in two ways. The first way signifies direct relationship running from the former to the latter by providing the poor opportunities to secure credits from banks, enjoy insurance services and mortgage financing all of which can affect the income of the poor positively. The second way is through the benefits that can be derived from rise in economic growth resulting from financial development (Holden & Prokopenko, 2001 in Abdelhafidh, 2013). This means, economic growth is enhanced by financial development and trickles down to the poor as a result of increased economic activities triggered by economic growth. This is also known as the indirect channel while the form is known as the direct channel. The usefulness of financial institutions to the poor is derived in form of savings and capital accumulation (Mckinnon, 1973).

This study premised linkage between the financial development and poverty reduction within the framework of Levine (2008) theoretical hypothesis. According to the theory, finance may alleviate poverty and lower inequality through intergenerational mobility. If the poor are offered financial access, then by funding educational and business endeavors, they may escape poverty over a generation. In modeling the theory, Levine (2008) incorporates dynasties and generations and shows how the income of a dynasty may be affected by financial development. The income of a dynasty is affected by its human capital wealth of assets. Human capital is a function of ability and schooling, where both are complimentary inputs in human capital production. The returns to opening a business depend positively on entrepreneurial talent. To become an entrepreneur it requires the payment of a fixed cost.

Also, with market imperfection, poor individuals with great ideas do not receive funding, whilst wealthy rich individuals, with average ideas have their projects funded and remain rich. This situation limit ability to bring efficient innovation in which case equitable income distribution is prevented. With perfect financial markets, no dynasties are cut off from external finance due to greater financial development; the rate of return on savings is purely determined by entrepreneurial ability. This reduces income inequality and the prevalence of poverty. Over several generations, accumulated savings may provide enough wealth so that the poor may be able to self-finance business ventures or even human capital investments.

2.3 Empirical Review

Sule and Momoh (2009) used a time series data from 1980 to 2007 on per capita income as dependent variable, stock market capitalization, price earnings ratio, dividends and listed securities as independent variables. From the cointegration and ECM results to the data there is the existence of long run connection among the variables while number of securities listed and time trend are in the long run inversely related to poverty.

Jegede, Kehinde J. and Akinlabi (2011) examined the empirical relationship between microfinance loan disbursement and poverty alleviation in a survey conducted in 2011.

The method employed in this study is the descriptive survey method with chi-square test, F-test and T-test. The study shows that microfinance have positive impact on poverty reduction through raising the income level of those who bank with them. The conclusion of this study shows that microfinance credit is a viable tool for poverty alleviation.

Taiwo and Ismail (2013) examined the relationship between sustainable financial services and poverty reduction in Nigeria from 1965 – 2010. The model of the study was estimated using Error Correction Model (ECM) to test for the short run dynamism and OLS method of estimation. The study found that financial deepening co-integrates with all the explanatory variables.

Dandume (2014) conducted similar study in this regard with annual time series data on the GDP as a dependent variable, ratios of bank deposit liabilities and credit to the private sector to GDP as well as poverty, trade openness and real interest rate as independent variables. The data is from Nigeria spanning period from 1970 to 2011. Using Two approaches of autoregressive distributive lag and Toda and Yamamoto Granger Non causality, the study found the existence of cointegration among the variables and financial development does not cause poverty reduction However, this study did not include the roles of government spending, investment (FDI), micro credits to the private sector and corruption which are very important factors that affect all the three major variables under study.

Oladoyin and Kayode (2014) using a time series data on head count ratio, per capita GDP, ratio to GDP of the value of credits granted, inflation rate and openness from 1980 to 2010.The study adopted a two-step procedure of estimation technique, vector autoregression (VAR) estimate and impulse-response analysis. They found Financialdeepening (M2) has a statistically significant negative effect on current level of poverty ratio in Nigeria. The results also show that past level of poverty is significant in explaining current level of poverty implying that poverty is affected by the shock to its past while poverty shock to financial deepening as measured by M2 as a percentage of GDP is also significant and positive in the short run but turns negative in the long run. Thus, the study concludes that the relationship between poverty and financial development is negative and credit to private sector has failed to cause a reduction in poverty.

Sylviane and Kangni (2008) similarly conducted a study also with a panel data from sixty five developing countries for a period of 1980 to 2002. The study used the percentage of the population leaving below one dollar per day as a measure of poverty and as a dependent variable with proxies of financial development as independent variables to establish the relationship in line with the Mckinnon conduit effect. The findings reveal that through the banking services acceptance of deposits, the poor derive the benefits and their well-being is reinforced. However, there is no significant improvement in the well-being of the poor through credits offered to the private sector. The conclusion drawn shows support for the Mckinnon conduit effect and indirect relationship between financial development and poverty reduction.

Rudra (2010) conducted a study with a time series data covering period from 1951 to 2008 in India. Cointegration and Granger causality tests were established from the VAR model and the results indicate the existence of cointegration among all the variables with the direction of causality flowing only from poverty reduction to economic growth and from economic growth to financial development, no causality from financial development to poverty reduction.

Selim, Yiyang and Kevin (2010) in their study conducted over time period from 1993 to 2004 used Head Count Index (HCI) as a proxy of poverty, Credit-GDP ratio and the M3-GDP ratio as proxies of financial development and financial instability. The study employed an efficient panel data estimation technique called fixed effect vector decomposition (FEVD) and pooled ordinary least square method for analysis. The results show that poverty falls as the level of financial development enhances. The study concludes that financial development facilitates poverty reduction while instability is detrimental to the poor.

Abdelhafidh (2013) used a panel data on household final consumption expenditure as a proxy of index of poverty, growth of GDP per capita. INQ is income inequality measured by the Theil index covering period from 1990 to 2011 for a sample of eighty nine countries. Based on three staged least square method the study found the direct channel effect of financial development on poverty is robust while the indirect channel is not.

Leila (2014) studied the nexus among financial development and poverty reduction using ARDL for 8 MENA countries with a panel data from 1990 to 2012. The study employed an auto-regressive distributive lag as the analytical technique. The estimates obtained show cointegration between household final consumption expenditure per capita in the first specification and ratio of domestic credit to the private sector to GDP for Algeria, Iran, Jordan and Tunisia. However, in the second specification, the ratio of liquid liabilities (M3) to GDP is positive and significant for all the countries. The study concludes that that financial development can lead to poverty.

Joyna (2016) in a similar study used data on headcount and cost of basic needs to proxy poverty reduction, GDP per capita, ratios of liquid assets and credit to private sector for period between 1974 and 2013 in Bangladesh. By using OLS and GMM methods of analysis, the study found the impact of financial development on poverty reduction to be positive implying a direct relationship between them. On the other hand instability impacts negatively on the income of the poor.

Johan (2017) investigated whether financial development is conducive in poverty reduction or not. Separating financial development into four categories and using newly available data, he found that both financial deepening and greater physical access is beneficial in reducing the proportion of people below the poverty line. Using alternative measures of financial instability, the results also challenge existing findings that it may increase the incidence of poverty. In addition, the results remain robust even when controlling for mobile money, providing a further valuable contribution to the literature.

3.0 Methodology

Description, Definition and Measurement of Variables

The data for this study were obtained from the Central Bank of Nigeria (CBN) and World Bank Financial Development Data.

Measure of Poverty

Final Households' Consumption Expenditure is used as a proxy of poverty reduction as used by Leila (2014). Thus, this study has employed final households' consumption expenditure (private consumption expenditure) as a proxy of poverty reduction. This is in line with the recommendation or rather definition of poverty by the World Bank that poverty can be measured in terms of ability to satisfy basic consumption needs or Dollar per day.

Measures of Financial Development:

A. **Bank Measures:**

i. **Ratio of credit to private sector to GDP (CPS)** measures the capacity of the financial sector ability to source productive investment and ensure that risk is properly managed as used by Samson and Elias, (2010), Anne and Kevin (2013) and Dandume (2014).

ii. **Ratio of Total Micro Credits to GDP (TMC).** Total Micro Credits in this study refers to the credits offered by the rural banks, community banks and micro finance banks as used by Nwakanma, Nnamdi and Omojefe (2014) in their study.

B. **Non Bank Measure:**

iii. **Ratio of Stock Market Capitalization to GDP**: According to Rajan and Zingales (1998) financial development can be measured by the ratio of Stock market capitalization to GDP. Ratio of Stock market capitalization to GDP (SMC) measures the size of stock market and it is equal to the value of listed shares divided by GDP. Fantessi and Kiprop (2015) also applied this ratio in their study.

Control Variable

i. **Government Expenditure:** This has been used as a control variable in the model as employed by Abdelhafidh (2013). The ratio of government expenditure to GDP will stand as the size of government or public sector in the economy. The importance of government expenditure in the model of this study is evident especially when one considers how the banking sector was affected by implementation of treasury single account.

Model Specification: Effects of Financial Development on Poverty Reduction

This study focuses only on the direct channel which assumes that financial development has a positive relationship or impact on the income of the poor. The model here was modified from the work of Sylviane and Kangni (2008). For the model, the study focused on two indicators of financial development (bank and nonbank indicators) and also considered government expenditure as a control variable as follows:

$$\Delta LPR_t = \beta_0 + \sum_{i=1}^{n} \propto_i LPR_{t-1} + \sum_{i=1}^{n} b_i LCP_{t-1} + \sum_{i=1}^{n} c_i LTMC_{t-1} + \sum_{i=1}^{n} d_i LMC_{t-1} + \sum_{i=1}^{n} \mu_i LGE_{t-1} + l_1 LPR_{t-1} + l_2 LCPS_{t-1} + l_3 LTMC_{t-1} + l_4 LMC_{t-1} + l_5 LGE_{t-1} + \varepsilon_t \ldots\ldots (1)$$

Where; β0= the intercept while, $\propto_i$,b_i, c_i, d_i, μ_i are the slopes (short run coefficients) of the ARDL model. They are the parameters capturing the short run dynamics. Thus, in the ARDL, the error correction model (ECM) is denoted by $\beta_0 + \sum_{i=1}^{n} \propto_i LPR_{t-1} + \ldots + \sum_{i=1}^{n} \mu_i GE_{t-1}$ in equation (2). Still in the equation, the cointegratin part is denoted by $l_1 PR_{t-1} + \cdots + l_6 GE_{t-1}$representing long run relationship. Where, l_2, l_3, l_4 and l_5 are the long run coefficients while, ε_t = the error term.

Methods of Analysis

This section consists of estimation diagnostic tests and data estimation techniques.

Estimation Diagnostic Tests

This study conducted multicollinearity test to trace whether or not, there is existence of correlation between the predictor variables in its models. Multicollinearity occurs when there is high correlation (linear dependency) between any two variables in the same model. This commonly happens when a

regression model is made up of several independent variables. Post estimation diagnostic test was also performed using Normality and stability tests.

Unit Root Test

Most financial time series are not stationary and using them like that could result to a problem of spurious regression result. According to Granger and Newbold (1974), prediction based on spurious regression is misleading and unreliable. To avoid the problem of spurious regression, unit root tests were conducted on the time series data since the mentioned problem arises basically when such tests are not conducted to ascertain the stationarity of the data.

ARDL Bound Cointegration Test

F-test was used to determine the existence of co-integration among the variables. This is achieved by examining the critical values obtained from the Pesaran Critical table based on I(0) and I(1). The results of the computed F- test is used to determine whether there is long run co-integration by comparing the two sets of critical values extracted from the Pesaran critical tables which are based on 1(0) and 1(1).

Methods of Data Analysis

This study used Autoregressive Distributed Lag Model (ARDL) and Granger Causality Test as its methods of analysis.

RESULTS AND DISCUSSION

The multicollinearity tests results are shown in tables 4.1

Table 4.1: Pairwise Correlation

	LOG(CPS)	LOG(TMC)	LOG(MC)	LOG(GE)
LOG(CPS)	1.000000	0.563694	0.627274	0.690661
LOG(TMC)	0.563694	1.000000	0.172173	0.367711
LOG(MC)	0.627274	0.172173	1.000000	0.539368
LOG(GE)	0.690661	0.367711	0.539368	1.000000

Source: Author's computation using E-views 10, 2020.

Tables 4.1 shows the results of the pairwise correlations among the variables under study. The results indicate absence of multicollinearity in all the variables. Thus, there is no evidence of the existence of severe multicollinearity. This again indicates absence of multicollinearity among the variables of interest.

Unit Root Test

The unit root tests were assessed using intercept and trend models at both level and first Difference. The result of the unit root test is shown in table 4.2:

Table 4.2:Unit Root Tests

	ADF		PP		
Variables	**Level**	**1st Difference**	**Level**	**1st Difference**	**Stationarity**

LPR	-3.366121**	-9.625403***	-3.546121**	-9.297257***	I(0)
LCPS	-1.840210	-4.782057***	-1.033220	-14.17608***	1(1)
LTMC	-2.044194	-4.785420***	-2.004322	-6.704843***	1(1)
LMC	-0.707817	-5.686348***	-0.654440	-5.454786***	1(1)
LGE	-6.967543***	-6.347146***	-5.566551***	-8.919805***	1(0)

***, ** and * indicate 1%, 5% and 10% levels of significant respectively.

Source: Author's computation using E-views 10, 2020.

Tables 4.2 presents the results of the ADF and PP tests at levels and first Difference. The results revealed that all the variables were integrated at first difference I(1) except (LPR) and (LGE) which were integrated at levels I(0). This result shows that only the log of final households consumption expenditure (LPR) and log of Government expenditure are stationary at levels while the remaining variables are stationary at the first difference I(1).This implies that none of the variables is integrated at second difference I(2). Hence, it satisfies the condition for Autoregressive Distributive lag model (ARDL) Bound Cointegration tests.

ARDL Bound Test

This paper employed Autoregressive Distributed lag Model ARDL developed by Pesaran (2001) to analyze the effect of financial development on poverty reduction in Nigeria. This technique can be applied on time series data whether they are stationary at level I(0) or at first difference I(1) of fractionally co integrated. It is important to note that the pre- conditions for employing ARDL technique are that the dependent variable must be non-stationary at level and none of the variables should be integrated at second order (I(2)) in the ADF test. The ARDL model is sensitive to the lag length which was selected on the basis of Akaike information criteria (AIC) for this study.

The ARDL bound co-integration test results are presented in table 4.3. In the table, the F-statistics is 3.558793 and is greater than upper critical value at 5% and 10% levels of significance. This result suggests that we can reject the null hypothesis of no long run relationship. By implication, this result is indicative of the fact that the co-integrating form and long run coefficients can be evaluated and ARDL (short run) be estimated.

Table 4.3: ARDL Bound Co-integration Test

F-Statistics: 3.558793	
Critical Value Bounds	
Sgf.	**Lower Bound I(0)** **Upper Bound I(1)**

10%	2.2	3.09
5%	2.56	3.49
2.5%	2.88	3.87
1%	3.29	4.37

Source: Author's computation using E-views 10, 2020.

Estimation of Short Run Results

The results of the ARDL Bound co-integration tests indicate the presence of co-integration among the variables. Hence ARDL short and long run can be estimated. The short run results are presented in table 4.4 below.

Table 4.4: Short Run Results

Dependent Variable=LogPR			
Variable	**Coefficient.**	**t-stat**	**p-value**
LOGPR(-1)***	-0.601921	-3.584605	0.0012
LOGCPS(-1)***	0.313677	2.764517	0.0097
LOGTMC	-0.024537	-0.793361	0.4338
LOGMC **	0.035539	2.380145	0.0239
LOGGE	-0.036903	-0.648985	0.5213
D(LOGCPS)	-0.076018	-0.266725	0.7915
CointEq(-1)***	-0.601921	-4.490713	0.0001

Source: Author's computation using E-views 10, 2020.

Table 4.4 presents the ARDL short run result which reveals that the coefficients of the lagged value of PR (households final consumption expenditure) is negative but statistically significant at 1%, lagged log of credit to the private sector and log of stock market capitalization are statistically significant in the short run at 1% and 5% levels of significance. This implies that a percentage increase in the lagged FHC, lagged log(CPS) and log MC will result to 60% reduction in FHC, 31% and 3.5% increase in FHC respectively. The results do not show any evidence of any significant impact of total micro-credits and government expenditure on poverty reduction. However, the result is indicative of a positive impact of nonbank financial development measure on poverty reduction in the short run.

Estimation of Long Run Results

The results of the estimated long run coefficients for objective 1 are presented in table 4.5.

Table 4.5: Long Run Results for Objective 1

EC = LOG(PR) - (0.5211*LOG(CPS) -0.0408*LOG(TMC) + 0.0590*LOG(MC) – 0.0613*LOG(GE)

Variable	**Coefficient.**	**t-stat**	**p-valu**

LOGCPS***	0.521127	5.102967	0.0000
LOGTMC	-0.040764	-0.876960	0.3875
LOGMC**	0.059042	2.188292	0.0366
LOGGE	-0.061309	-0.650268	0.5205

Source: Author's computation using E-views 10, 2020.

Table 4.5 presents the long run coefficients and shows that coefficients of two out of the three financial development variables in the model are statistically significant at 1% and 5%. This suggests that in the long run credit to the private sector and market capitalization are positively and significantly related to poverty reduction. Thus, the results reveal that a percentage change in the credit to the private sector will account for 52% increase in household consumption expenditure and a 5% increase in stock market capitalization will results into 5.9% increase in PR respectively. However, there is no there is no evidence that government expenditure has a significant effect on poverty reduction.

Post-Estimation Diagnostic Tests

These include the normality test. Serial correlation (LM), heteroscedasticity, and stability test

Table 4.7: Normality Test, Serial Correlation LM Test and Heteroscedasticity Test:

Normality Test		**Serial Correlation LM Test H0: No Serial Correlation**		**Heteroscedasticity Test Ho: Homoscedastic**	
Statistics	**Results**	**Statistics**	**Results**	**Statistics**	**Results**
Skwenes s	**0.069**	**F-Stat**	**1.740751**	**F-Stat**	**1.598505**
JarqueB era	**0.5596**	**Prob.**	**0.1818**	**Prob.**	**0.1820**
Kurtosis	**2.413**				
Prob.	**0.7559**				

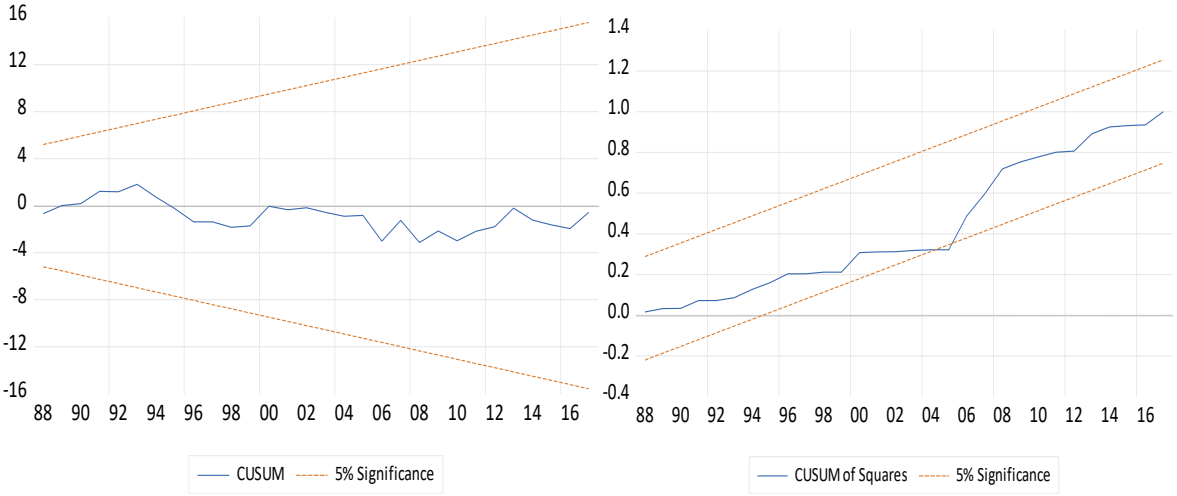
Source: Author's computation using E-views 10, 2020.

The diagnostic tests indicate that the residuals are normally distributed. The F statistics (1.740751) and probability value of 0.1818 indicate that the null hypothesis of no serial correlation cannot be rejected. In the heteroscedasticity test also the null hypothesis of Homoscedasticity cannot be rejected. There is no serial correlation and the series are homoscedastic. The results confirm that the models are well behaved.

Stability Test

Stability tests were conducted for all the models of the study using cumulative sum

(CUSUM) and cumulative sum of squares (CUSUMSQ). These tests are presented in figure I.



Source: Author's computation using E-views 10, 2020.

Figure i: CUSUM and CUSUMSQ

Cumulative sum (CUSUM) and cumulative sum of square (CUSUMSQ) were used to test the parameter stability of the model. This is also based on the null hypothesis that the regression model is correctly specified with stable parameters. The CUSUM and CUSUMSQ graphs are plotted at 5% level of Significance. Since the curves are within the critical band of 5%, it means that the regression model well specified with stable parameters. However, there is slight evidence of instability in the model in 2005 which may be due the shock of 2005 reform in the banking sector. This is shown in the CUSUMSQ of model 3. Thus, based on the plots, one cannot reject the null hypotheses that the models are stable as such the models do not suffer from serious instability over the periods under study

The ARDL bound test revealed the presence of co-integration in the model which led to the estimation of ECM. In the ARDL short run result the previous values of the private sector credit has a significant short run effect on poverty reduction but market capitalization have significant impact on poverty reduction. However, in the long run both private sector credits and market capitalization have significant effect on poverty reduction. This result conforms to the findings of Rudra (2010), Selim, Yiyang and Kevin (2010), Abdelhafidh (2013) and Joyna (2016). Nevertheless, the findings are in contrast with those of Sule and Momoh (2009), Jegede et al. (2011), Oladoyin and Kayode (2014) among others.

Conclusion and Recommendations

The study divulged that the amount of credits to the private sector (CPS) and total micro credits (TMC) have no any significant impact on poverty reduction in the short run. However, the result shows that in the long run credit to the private sector and market capitalization are positively and significantly related to poverty reduction but still with no evidence of a significant relationship between total micro credits and poverty reduction in the long run. The study disclosed that government expenditure has no significant impact on poverty reduction. Thus, more attention should be geared towards creation of enabling investment atmosphere that can result into poverty

reduction rather than depending on government expenditure. This can be achieved by improving access to credits by the private sector with low interest rates. Our stock exchange market should be strengthened by creating awareness to the public of the importance and profitability of the stock market. There is also the need for government to facilitate development of the financial sector through appropriate regulatory and macroeconomic policies that will bring about improvement in institutional quality, and avoid instability in the sector.

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