

Determinants of Private Domestic Savings in Nigeria (1981- 2015).

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Abstract

This study empirically evaluates the determinants of private domestic savings in Nigeria (1981- 2015). Secondary data were sourced from CBN statistical bulletin and bureau of statistics. Hypotheses were formulated and tested using vector error correction model (VECM) and the test for stationarity proves that the variables are integrated in 1(1) order which implies that unit roots do not exist among the variables. There is also long-run equilibrium relationship between the variables and the result also confirms about 29 percent short-run adjustment speed from long-run disequilibrium. The coefficient of determination indicates that about 78 percent of the variations in private domestic savings are explained by changes in its determinants in Nigeria. The results show that per capita income and financial inclusion are major determinants of private domestic savings in Nigeria. The study therefore recommends that concerted and well articulated efforts should be made to make available and affordable credits to productive investments like small scale industries/businesses as they constitute an integral part of the growth and transformation process of an agro based economy like that of Nigeria this will induce employment, increase financial access and income of the various economic agents which will have a spillover effect on private savings. Secondly, since Per capita income and financial inclusion are the important factors that influence private savings in Nigeria, policy makers can promote growth of per capita income by improving productivity of workers and greater effort should be geared towards sustaining or improving on the financial inclusion strategies.

Keywords: Financial Deepening, Financial Inclusion And Savings

INTRODUCTION

BACKGROUND OF THE STUDY

Saving represents a decision not to consume income. Three key motives leading to such a decision include retirement, precautionary, and bequest. There is also target saving for the acquisition of tangible assets. The saving motives are not mutually exclusive. In both developed and developing countries, private saving is critical as it allows households to smooth consumption in the face of volatile incomes besides supporting investments in human and physical capital.

Saving is considered as an important source of financing investment in any country, and a tool for achieving macroeconomic stabilization. A country with low domestic saving rates always achieves low

levels of economic growth. Furthermore, lack of domestic finance leads the country to rely on foreign finance, which might cause external shocks

Adewuyi, Bankole, & Arawomo (2007) argued that a sufficiently strong saving performance is an important precondition for achieving economic growth, macroeconomic balance and financial and price stability. The relationship has become even more crucial with the studies confirming that despite the occasional importance of international flows of capital, the most important factor for a country's investment and economic growth is indeed its own saving.

Domestically generated savings are composed of household savings, corporate savings and government savings. Increases in public sector savings through higher taxes lead to decrease in household and corporate savings and consequently a decrease in productive investments. The marginal propensity for the government to spend is high due to its inability to resist political pressure to spend; hence it may not be relied upon to generate national savings directly. The households and the firms have a crucial role to play in savings generation (Mbuthia, 2011).

Aggregate saving and investment in any economy are dependent on a number of interdependent variables. For economic planning purposes, it is important that economic planners have a true and fair idea about the quantum of saving and investment, the behavior of people towards saving and investment and the method by which saving can be improved for investment decisions (Adelakun, 2015)

There are different motivations to save: life-cycle (to provide for anticipated needs), precautionary, independence, inter-temporal substitution (to enjoy interest), improvement (to enjoy increasing expenditure), enterprise, bequest, avarice and down payment (Karlan and Morduch, 2010). According to the Consultative Group to Assist the Poor (2010), numerous reasons, including low and irregular income and lack of access to financial services, have been posited to contribute to sub-Saharan Africa's (SSA) low formal savings rate. Access to financial services, including deposit or savings accounts, remains a privilege for most of the population (Mutasim and Omran, 2016)

Saving can therefore be vital to increasing the amount of capital available. Meanwhile increased saving is a necessary but not a sufficient condition for investment. Of course, Savings is a strategic variable in the theory of economic growth hence its role as a determinant of economic growth has been emphasized by classical economists like Adam Smith and David Ricardo. In many developing economies particularly Africa, saving and investment are necessary engines for capital formation hence economic growth.

Savings provides developing countries (including Nigeria) with the much-needed capital for investment which improved economic growth. Increase in savings leads to increase in capital formation and production activities that will lead to employment creation and reduce external borrowing of government. Low domestic saving rates may maintain low-growth levels because Harrod Domar model suggested that savings is an important factor for economic growth. Malunond (2007) asserts that depending on foreign sources to finance, investment makes the country highly sensitive to external shocks.

Therefore, domestic savings will continue to be a priority as a source of investment financing in order to minimize vulnerability to international economic fluctuations. (Imoughele and Ismaila, 2014). Economic conditions and policies are the key determinants of the level of savings and the stability of the financed system drives its mobilization. Financial sector fragility can impair the effective and efficient mobilization

of savings which of course aid economic growth of Nigeria. For example, the low banks branch network/spread system not only discourage savings but also impair economic growth and distorts the government aim of enhancing the banking habit of the people (Okere and Ndugbu,2014)

In Nigeria, domestic savings increase continuously in absolute terms from 1981 to 1994 with a continuous increased value of #6562.60million and #8062901.35million respectively (see appendix1). The value decreased to #108490.3million in 1995 and continuously increased to #8062901.35million in 2012. In terms of the growth rate, national savings has being fluctuating and declining. For example in 1982 the growth rate was 14percent and 13

It further soared to 34.03 percent in 1987 and decreased to 2.4 percent in 1989, it rose to 54.3percent in 1993, but it fell to -2.2 percent in 1995. The growth rate of domestic savings stood at 38.8 percent, 21.6 percent and 23.4 percent in 1998, 2004 and 2012 respectively (see appendix 1).

Available data also shows that the saving culture in Nigeria is very poor relative to other developing economies. For instance, during the period 1981 to 1990, domestic saving averaged 8.31 percent of GDP and decreased to average of 7.81 percent from 1986 to 1994. However, with the distress in the financial sector of the 1990s, the rate of aggregate saving declined significantly. The distress syndrome resulted in a significant fall in domestic saving in the period 1995 to 2004, with the saving to GDP ratio dropping to 5.63 percent.

Obadan and Odusola (2001) asserted that the low level of savings in Nigeria is as a result of high incidence of poverty and low level of disposable income, under developed savings channels, reflecting underdeveloped capital markets, conspicuous consumption, and unfavourable economic environment characterized by high unemployment and inflation.

However, the average saving to GDP ratio between 2006 to 2015 figure stood at 13.57 percent. This may be attributable to the consolidation and reconstruction of the financial sector in Nigeria. From the foregoing, there is an urgent need to encourage Nigerians to change their current attitude towards saving.

STATEMENT OF THE PROBLEM

Although a vast empirical literature has shed light on various aspects of saving behaviour, several crucial questions remain unanswered with regard to the relevance of policies in raising the saving rate vis-à-vis the non-policy determinants of saving. From the perspective of policies, there is need to know the following: What is the magnitude and direction of these variables on saving? How effective are growth-enhancing policies such as macroeconomic stability and higher income growth in raising the saving rate? What is the effectiveness of financial development in increasing domestic saving? Is there a role for fiscal policy in increasing national saving? What is the impact of interest rate on total saving?

As earlier stated, available data show that the saving culture in Nigeria has been very poor relative to other developing economies like Malaysia, South Korea, Taiwan, Singapore etc. For instance, during the period 1981 to 1990, domestic saving averaged 18.31percent of GDP. However, with the distress in the financial sector of the earlier 1990s, the rate of aggregate savings declined significantly. The distress syndrome resulted in a significant fall in domestic saving in the period 1991 to 1994, with the saving to GDP ratio dropping to 6 percent. By 2004, the figure stood at 6.4 percent. These suggest that in spite of all the efforts

by the regulatory authority to build up the level of savings through relevant policy options, in general, savings appear not to be significantly responsive. The question that demands an answer is: what really determines domestic savings in Nigeria?

The importance of the present paper stems from the fact that increased saving rate is of crucial importance for achieving macroeconomic stabilization, sustainable development and poverty-reducing growth in developing countries. In addition, savings that are generated within the national economy provide the means for the financing of domestic fixed capital formation, which in turn, affects economic growth potential. Understanding of the fundamental determinants of domestic private saving in Nigeria represents critical importance in order to formulate policies to raise the domestic saving rate

OBJECTIVES OF THE STUDY.

The main objective of this study is to find out the major determinants of private domestic saving in Nigeria over the period (1981-2015). The specific objectives include to;

- (a) Determine the effect of per capita income on private domestic saving rate in Nigeria.
- (b) Find out the effect of deposit rate on private domestic savings in Nigeria.
- (c) Determine the effect of financial deepening on private domestic saving in Nigeria
- (d) Establish the effect of inflation on private domestic savings in Nigeria
- (e) Determine the effect financial inclusion in private domestic savings in Nigeria

RESEARCH QUESTIONS

- (a) To what extent does per capita income determine private domestic savings in Nigeria?
- (b) To what extent does deposit rate affect private domestic savings in Nigeria?
- (c) To what magnitude does financial deepening really determine the rate of private domestic savings in Nigeria?
- (d) To what extent does inflation affect the rate of private domestic savings in Nigeria?
- (e) To what magnitude does financial inclusion affect the private domestic savings in Nigeria?

RESEARCH HYPOTHESES.

H0₁: Per capita income does not have a significant impact on private domestic Savings in Nigeria.

H0₂: Interest rate does not have a significant impact on private domestic Savings in Nigeria.

H0₃: Financial deepening does not have a significant impact on private domestic Savings in Nigeria.

H0₄: Inflation does not have a significant impact on private domestic savings in Nigeria.

H0₅: Financial inclusion does not have a significant impact on private domestic Savings in Nigeria.

REVIEW OF RELATED LITERATURE

PREAMBLE

This section reviews existing literature related to the subject matter of this study. Essentially, the reviews are packaged in three separate sub-sections including conceptual review, theoretical review and empirical review. In the course of this review, efforts were made to link the objectives of the study to existing literature to enable us do a detailed discussion of findings in this research

CONCEPTUAL FRAMEWORK

To Nkah (1997), savings is seen as the amount of income per time that is not consumed by economic units. Accordingly, Samuelson et al (1998) defined savings as income minus consumption following from 'the above, savings can be made by individuals (personal or private saving) or by corporate organizations such as firms (corporate savings or retained savings). Personal savings is that part of disposable income that is not consumed, while corporate saving is that part of firm's profit that is not distributed as dividends to shareholders. Therefore, for a country, the total supply of available savings is simply the sum of domestic savings and foreign savings.

However, domestic savings could be further broken into two components, which include government or public sector savings and private domestic savings. Government savings originates from surplus budgeting, but very few countries make part of their public sector savings from savings or profit of the government owned enterprise. There are also two aspects of private domestic savings, which include corporate savings and household savings. Again foreign savings also come into two basic forms such as; official foreign savings or foreign aid, and private foreign savings.

Following McKinnon (1973) and Shaw (1973) argued that for the typical developing country, the net impact of a change in real interest rate on saving is likely to be positive. This is because, in the typical developing economy where there is no robust market for stocks and bonds, cash balances and quasi-monetary assets usually account for a greater proportion of household saving compared to that in developed countries. In addition, in an environment where self-financing and bank loans constitute the major source of investment funds, accumulation of financial saving is driven mainly by the decision to invest and not by the desire to live on interest income.

Given the peculiarities of saving behaviour, in addition to the fact that the bulk of saving comes from small savers, the substitution effect is usually larger than the income effect of an interest rate change. Lewis (1955) noted that people would save more if saving institutions were nearer to them than if they were farther. As a result, a negative relationship is assumed to exist between population per bank branch and household financial saving. However, whether increased financial intermediation itself significantly increases the overall propensity to save depends also on the degree of substitution between financial saving and other items in the household's asset portfolio.

Thirlwall (2002) identified three basic types of domestic private savings, namely: voluntary, involuntary, and forced savings. Voluntary savings relate to the voluntary abstinence from consumption by private persons, out of personal disposable income, and by companies out of profits, and the government. However,

voluntary savings depend on the capacity to save and the willingness to save. The capacity to save depends on three main determinants: the level of per capita income (PCI); the growth of income, and the distribution. The willingness to save depends, in turn, on: the rate of interest; the existence of financial institutions; the range and availability of financial assets, and the rate of inflation.

According to Keynes (1936), the major determinant of both country's level of consumption and savings, is that country's national income. He therefore opined that the higher the income, the high the level of consumption and saving. He equally maintained that-even at the individual level, a person's income daily determines to a large extent his consumption and savings. Keynes recognized this when he found a positive relationship between consumption and person's disposable income That is,

$$C = F (Y_d) \text{ and}$$

$$S = Y - C$$

Where;

C = Consumption

Y_d = disposable income

Y = consumer's level of income.

However, according to Macklinon (1973), savings is not determined by income as postulated by Keynes (1936), but, it is determined by real interest rate. In his analysis, he viewed low interest rate as a cause of low savings, which means that firm business enterprises, are discouraged to invest funds through the formal banking system. He equally admitted that-high real interest rate is seen as a strengthening factor to both market institution and the level of savings.

Financial Inclusion will help pave way for sustainable economic development by providing financial services to individuals and communities that traditionally have limited or no access to the formal financial sector as evidenced in Nigerian rural dwellers.

THEORETICAL FRAMEWORK

Savings as a subject has received immense publishing from different authors and schools of thought. Savings and consumption are normally considered together in most of the theories of savings, due to the fact that if a household makes a decision to consume, it is in effect making a decision not to save the consumed amount (Mbutia, 2011). Several models are used to explain motivations to save: life-cycle (to provide for anticipated needs), precautionary, independence, inter-temporal substitution (to enjoy interest), improvement (to enjoy increasing expenditure), enterprise, bequest, avarice and down payment (Karlán&Morduch, 2010).

Absolute Income Hypothesis (Keynesian Theory)

Aggregate consumption has featured in macro-models since (Keynes, 1936) and is especially important for growth in a transitional economy. Household's current consumption expenditure is a positive function of real current disposable income. As the income increases, the increment is partly consumed and partly saved for purposes of financial security in periods of unemployment, illness, death of bread winner or for investment so as to enhance future income. The absolute income hypothesis is a short run theory and makes

the assumption that marginal propensity to consume (MPC) is between zero and one. MPC declines with increase in income, implying that marginal propensity to save increases as income increases. The implication of this is that low income families save a lower percentage of their income as compared to high income families.

Relative Income Hypothesis

Duesenberry (1949) contended that the utility of consumers depended not so much on their absolute income (Keynes' view), but rather on their relative income, both current income relative to previous income and current income relative to income of others in society with whom the consumer feels in competition with. According to relative income hypothesis, a household's consumption expenditure is a function of the relative income of the household. When a household's income falls, the household dis-saves or borrows in order to prevent a large fall in their living standards and also to maintain their living standards at par with their peer groups. This is an important distinction between absolute income hypothesis and relative income hypothesis. The short run APC is greater than the long run APC according to relative income hypothesis. This implies that the short run average propensity to save is smaller than the long run average propensity to save.

According to the relative income hypothesis an increase in income is always proportional to the increase in household consumption expenditure irrespective of whether the increase in income is small or large.

The Life-Cycle Model (LCM)

The life-cycle hypothesis is the principal theoretical underpinning that has guided the study of savings behavior over the years. It is the theory upon which this paper is based. Each of the determinants of saving is articulated in the context of the life-cycle hypothesis.

Income

The principal assumption of the life-cycle hypothesis is that an individual seeks to maximize the present value of lifetime utility subject to the budget constraint. The budget constraint is equal to the current net worth plus the present value of expected income from work over the remaining working life of the individual.

Growth

The life-cycle model predicts that an increase in the rate of growth of income per capita will lead to an increase in the aggregate saving rate. This is because it increases the lifetime resources and saving of the younger population relative to that of the older one (see Modigliani, 1970; Madison, 1992; Bosworth, 1993; and Carroll and Weil, 1994). However, controversy is still raging as to its structural interpretation, since some see it as evidence that saving drives growth through the saving-investment link and others as evidence that it is growth that drives saving.

Interest Rate

The life-cycle model predicts that a higher interest rate increases the current price of consumption vis-à-vis the future price, thus leading to an increase in saving. This is the substitution effect. If on the other hand, the household is a net lender, an increase in interest rate will increase lifetime income, and so increase consumption and reduce saving. This is the income effect. Thus, saving will have a positive relationship with interest rate only when the substitution effect surpasses the income effect. Some authors, including McKinnon (1973), Shaw (1973) and Athukorala et al (2004) have argued that the relationship between real interest rate and saving is positive for a developing economy. They hinge their argument on the fact that the financial markets of these countries are not well developed. In an environment where self-financing and bank loans make up the bulk of investment funds, accumulation of financial saving is determined more by the desire to invest than the desire to live on interest income. As a result, the greater part of household saving will be in the form of cash and near-money assets. Thus, the substitution effect will usually be much greater than the income effect of an interest rate change.

Inflation and Macroeconomic Uncertainty

The impact of inflation on saving in the life-cycle model is through its role in determining the real interest rate. This is based on the assumption of the absence of real balance effect of inflation and the non-existence of money illusion in people's saving behaviour. This relates to the role of inflation in determining saving. In the standard LCM, the only impact of inflation on saving is through its role in determining real returns to saving (the real interest rate). This postulate is based on the implicit assumptions of inflation neutrality (the absence of money illusion) in saving behavior and the absence of the real balance effect of inflation.

Financial Development

Until recently, financial development was assumed to enhance the saving rate. Financial deepening relates to the overall increase in the ratio of money supply to GDP or some price index and is a measure of how much opportunity for continued growth exists in an economy.

It consists of elimination of credit ceilings, interest rate liberalization, easing of entry for foreign financial institutions, enhanced prudential guidelines and supervision, and the development of capital markets. Loayza et al (2000) find that financial development has led the private sector to increase the durable goods component of their assets. The effect of financial development on saving rates can be separated into a direct short-run impact, which is usually negative, and an indirect long-run impact, which is generally positive. However, whether increased financial development itself significantly increases overall propensity to save depends on the extent of substitution between financial saving and other items in the household's asset portfolio.

EMPIRICAL REVIEW.

Many studies have been carried out to examine the determinants of savings. For example, (Imoughele 2014) evaluated the determinant of private savings in Nigeria (1981- 2012). The study used cointegration and Error Correction Mechanism to determine the relationship between private savings and internal and external factors. Their results show that income per capital, inflation rate, term of trade and financial deepening are significant determinants of private savings in Nigeria.

Antai et al, (2015) worked on the Estimation of the Short Run and Long Run Determinants of Domestic Savings Rate in Nigeria (1970-2008) Using a vector and error correction model (VEC), their paper showed that Nigeria's national savings rate decisions are positively influenced by per capita income and economic growth, and negatively influenced by financial sector development and bank density index. And savings interest rate, openness to trade, terms of trade, and inflation are not significant determinants of savings rate in Nigeria, given the historical data set.

Adelakun, (2015) Investigated the Determinants of Savings and Investment in Nigeria. The study made use of time series data spanning twenty-nine years using error correction model. The result showed a positive relationship between savings, investment and economic growth in Nigeria. Of the determinants of savings considered in the study, inflation rate contributes negatively to saving, while interest rate positively affect saving.

Uremadu (2007) investigated the core leading determinants of financial savings in Nigeria using ordinary least square (OLS) econometric framework. The results shows positive and significant influence of gross domestic product per capita, interest rate spread, broad money supply, and debt service ratio on savings while real interest rate and domestic inflation rate have negative influence on the level of savings.

Gobna and Nuruden (2009) employed error correction analysis to ascertain the long run determinants of savings in Nigeria during the period 1981 to 2007. The findings showed that financial deepening, bank density, real interest rate inflation and real income per capital are the major determinants of savings in Nigeria.

Wafure (2012) used co-integration and Error Correction Mechanism to determine the relationship between financial sector reforms and private savings. The estimated results showed that lagged value of private savings, consumer price index, savings deposit rate, Income per capita showed a significant and inverse impact on private savings while financial liberalization and income growth have direct and significant impact on private savings but wage rate and foreign savings were insignificant.

The study of Okere and Ndugbu (2014) on Macroeconomic Variables on Savings Mobilization in Nigeria using Ordinary Least Square and cointegration to determine the effect of the selected macroeconomic variables on savings mobilization in Nigeria. The result of the overall statistic showed that there is a positive and significant impact between the selected macroeconomic variables and domestic savings mobilization in Nigeria. But specifically, financial deepening seemed to have a greater impact on savings mobilization in Nigeria. Inflation and exchange rate revealed an inverse relationship with domestic saving mobilization in Nigeria.

Recent study of Mutasim (2016) investigated the Determinants of Saving Rate in Sudan, (1990-2013) taking into consideration real disposable income, real deposit rate, and age dependency ratio as explanatory variables. The OLS technique is adopted for conducting the regression analysis. The main results obtained

signified that age dependency ratio reduces the saving rate, while real deposit rate and real disposable income impact positively. Each of the explanatory variables is statistically significant at 1% level. The saving rate in Sudan during the period under study is found to be more responsive to age dependency ratio followed by real deposit rate, and lastly real disposable income.

Also the study of Onwuasoeze and Kirori (2016) that investigated the determinants of private savings in Kenya over a period of 21 years from 1993 to 2013 considered the independent variables to include dependency ratio, per capita income, financial deepening, inflation rate, and real interest rate. The model was subjected to diagnostic tests for OLS estimation. All the other determinants of the private saving considered in the study were statistically significant according to theoretical expectations except for the real interest rate which was statistically insignificant.

SUMMARY AND RESEARCH GAPS

A review of previous literature in the preceding section shows that studies that have been carried out in Nigeria on savings using time series data approach have majorly focused on macro-economic variables such as Inflation, interest rates, Per Capita GDP and they have showed mixed results. For example the study of Adelokun, (2015), Wafure (2012), Okere (2015), Uremadu (2007) etc. Few studies have also focused on financial deepening as a determinant of saving and no study has ever looked the financial access (financial inclusion). Furthermore, a close scrutiny of all the study variables shows that there is a disparity between the different findings of the different variables and hence the study aims at filling this gap.

RESEARCH METHODOLOGY

Preamble

Research methodology shows the steps taken by the researcher to arrive at the results (Nnamocha, 2005). The methodology deals with model specification, data requirements, sources of data and method of data analysis.

Research Design.

This study utilized the Ex post facto design. It is a quasi-experimental study examining how an independent variable, present prior to the study in the participants, affects a dependent variable. An ex post facto research design is a method in which groups with qualities that already exist are compared on some dependent variable

Sources of Data

The data for this study is secondary and was collected from the National Bureau of statistics and Central Bank of Nigeria (CBN) statistical bulletin from 1981- 2015. This study looks at the inputs and output of the banking sector and how this relationship affects the entire economy of Nigeria.

The definition of inputs and outputs for the banking sector are derived from the intermediary role that banks play in the economy.

Method of Data Analysis

The analytical framework of this study includes pre estimation analysis such as descriptive statistics and stationarity test. This is to reveal the behaviour of the data on the variables. The stationarity test will investigate the stationarity of the variables; non stationarity could lead to spurious regression results. Such spurious relationship between/ among variables may be evident in time series data that exhibit non-stationary. The test for the presence of long-run equilibrium relationship is carried out based on the Johansen’s (1991) multivariate cointegration technique. The error correction model (ECM) is applied to tie the short-run dynamics of the co-integrating equations to their long-run statics dispositions.

Model Specification

The model encompassed the determinants of private domestic savings. Empirical implementation of the model made use of the domestic private savings data covering 34 years (1981-2015). The model encompassed **The Life-Cycle Model (LCM)** and **Absolute Income Hypothesis (Keynesian Theory)** as well as more recent and less conventional models. Particularly, the study has adopted and modified the work of Nwachukwu (2007) (the growth rate of disposable income and the real interest rate on bank deposits, Fiscal balance and the degree of financial depth in Nigeria.) to come up with a more robust model in explaining the determinants of private domestic savings in Nigeria

In line with the above discussion, the model adopted by this study is specified as follows:

$$\text{Private domestic savings (PDS)} = f(\text{PCI, INF, BDR, FID, FCL}) \dots\dots\dots (i)$$

This can be stated in a mathematical or statistical function as:

$$\text{PDS} = \alpha_0 + \alpha_1 \text{PCI} + \alpha_2 \text{INF} + \alpha_3 \text{BDR} + \alpha_4 \text{FID} + \alpha_5 \text{FCL} \dots\dots\dots (ii)$$

However, this equation (ii) can now be stated in econometric form to account for the stochastic variables

$$\text{PDS} = \alpha_0 + \alpha_1 \text{PCI} + \alpha_2 \text{INF} + \alpha_3 \text{BDR} + \alpha_4 \text{FID} + \alpha_5 \text{FCL} + \mu \dots\dots\dots (iii)$$

Where:

PDS = Private Domestic Savings

PCI= Per Capita Income

INF = Inflation

BDR = Bank Deposit Rate

FID = Financial Deepening (Proxy of ratio of broad money supply to GDP)

FCL= Financial Inclusion

μ = Stochastic variable

$\alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5$ = Coefficients

The appriori expectation is that all the independent variable; PCI, INF, BDR, FID, and FCL will have a direct relationship with the dependent variable PDS.

This is thus stated; $\alpha_1, \alpha_4, \alpha_5, > 0, \alpha_3, \geq 0, \alpha_2 < 0$.

DATA PRESENTATION, ANALYSIS AND INTERPRETATION OF RESULTS

The analytical framework of this study consists of six basic steps carried out on the models specified above. They include; presentation of data descriptive statistical analysis, unit root test, diagnostic test, ordinary least square regression method, vector error correction mechanism (VECM), co-integration test.

DESCRIPTIVE STATISTIC

Table 4.1 Descriptive Statistic Result

	PDS	BDR	FCL	FID	INF	PCI
Mean	2072.166	12.25433	11279.74	17827.15	19.37057	52233.09
Median	200.0651	10.09250	4855.200	4189.250	11.60000	47326.61
Maximum	12008.21	28.02000	82765.00	94144.96	72.80000	85872.49
Minimum	6.562600	6.302815	19.72322	94.32502	5.400000	36583.81
Std. Dev.	3457.948	5.145718	17401.94	28092.36	17.24154	14774.34
Skewness	1.684234	1.262481	2.833429	1.688211	1.599538	0.891072
Kurtosis	4.595928	4.171395	11.34540	4.405487	4.596764	2.516001
Jarque-Bera	20.26144	11.29858	148.3985	19.50612	18.64295	4.973342
Probability	0.000040	0.003520	0.000000	0.000058	0.000089	0.083186
Sum	72525.80	428.9014	394790.7	623950.4	677.9700	1828158.
Sum Sq. Dev.	4.07E+08	900.2660	1.03E+10	2.68E+10	10107.21	7.42E+09
Observations	35	35	35	35	35	35

Source: Result extracted from the Eviews 7 Output.

The result above shows the mean values of the PDS, BDR, FCL, FID, INF and PCI Variables are 2072.166,12.25433, 11279.74, 17827.15,19.37057 and 52233.09 respectively. The median of the series are 200.065, 10.09250,4855.200, 4189.250,and 11.60000, 47326.61and respectively for PDS, BDR, FCL, FID, INF and PCI variables. It should be noted that the median is a robust measure of the centre of the distribution that is less sensitive to outliers than the mean. The maximum values of each of the series in the current sample are 47326.6for PCI, 4855.200for FCL, 4189.250 for FID and 200.065 for PDS respectively. The standard deviations which are a measure of dispersion spread in each of the series are3457.948 for PDS, for 5.145718BDR,17401.94 for FCL, 28092.36 for FID, 17.24154 for INF andfor14774.34PCI. Additionally, the descriptive analysis was also furnished with Skewness and Kurtosis of all the variables of interest. The Skewness measures symmetrical property of the histogram while the kurtosis measures the height and the tail shape of the histogram. The yardstick for measuring the Skewness is how closer the variable is to the zero (0) and for the kurtosis is how closer the variable is to the three (3). Based on this, PCI has symmetrical distribution as opposed to PDS, BDR, FCL, FID and INF that have

relatively asymmetrical distribution. For the kurtosis, all the variables (PDS, BDR, FCL, FID and INF) except PCI can be regarded as leptokurtic because they have values greater than 3. PCI is playkurtic because its value is less 3 (2.516001)

The Jarque-Bera statistic, which is a test statistic for testing whether the series is normally distributed, measuring the difference of the skewness and kurtosis of the series. The probability values of the Jarque-Bera statistic for all the explanatory variables are all significant at a 5% confidence level except PCI that is not normally distributed. In other words, the results indicate that PDS, BDR, FCL, FID and INF are normally distributed but PCI may not be normally distributed at 5% significant level.

UNIT ROOT TEST ANALYSIS

Table 4.2: Augmented Dickey-Fuller (ADF) Root Unit Result

Variable	Test Critical Value@ 5% Level	ADF Test Statistic	Order of Integration	Comment
LOGPDS	-7.437975	-2.957110	1(1)	Stationary
LOGBDR	-8.521614	-2.960411	1(1)	Stationary
LOGFCL	-6.703948	-2.967767	1(1)	Stationary
LOGFID	-6.290356	-2.960411	1(1)	Stationary
LOGINF	-8.009910	-2.960411	1(1)	Stationary
LOGPCI	7.533191	-2.957110	1(1)	Stationary

Source: **Source: Extracted from Eview**

In other to avert the occurrence of spurious results, there is need to test for the presence of unit root in order to ensure that the parameters are estimated using stationary time series data. To achieve this, the Augmented Dickey-Fuller (ADF) is used. The essence of the ADF tests is the null hypothesis of non stationarity. Comparing the ADF test statistics with the 5% critical values, the result of the unit root test reported in table 4.3 above indicated that all the variables are stationary at first differencing. Hence, the series are all integrated serious of order 1(1). This is evidence by the fact that the Absolute Values of the ADF test statistics are all greater than the critical values at 5% level of significance. After stationarizing the variables, the data can then be tested whether these variables are cointegrated or not by applying Johansen Cointegration procedure to test for long – run relationship between the dependent and independent variables.

JOHANSEN CO-INTEGRATION TEST

TABLE 4.3 Johansen Co-Integration Test Result

- Sample (adjusted): 1984 2015
- Included observations: 32 after adjustments
- Trend assumption: Linear deterministic trend
- Series: PDS BDR FCL FID INF PCI
- Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized	Trace	0.05		
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.764459	138.6020	95.75366	0.0000
At most 1 *	0.712474	92.33411	69.81889	0.0003
At most 2 *	0.483997	52.44796	47.85613	0.0174
At most 3 *	0.400545	31.27540	29.79707	0.0336
At most 4	0.286406	14.89990	15.49471	0.0613
At most 5 *	0.120306	4.101789	3.841466	0.0428

Trace test indicates 4 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

Source: E-view 7.0 Package

Since the unit root test shows that all the variables are stationary at first order difference 1(1), we therefore test for co-integration among these variables by employing the Johansen co-integration test. The result of the test is shown in table 4.3 below. The result shows that there exist four (4) co-integrating equations at 5% level of significance. This is because the Trace Statistic is greater than critical values at 5%. This shows that there is long run relationship between Private domestic savings and all the explanatory variables. The result indicates that, in the long run; the dependent variables can be efficiently predicted using the specified independent variables. Hence, error correction model can be estimated.

ERROR CORRECTION MODEL (ECM)

Table 4.4. Error Correction Model (ECM) RESULT

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	-32.87944	6.648272	-4.945561	0.0000
LOG(BDR)	-0.790709	0.407215	-1.941750	0.0640
LOG(FCL)	0.379019	0.131091	2.891274	0.0080
LOG(INF)	0.328711	0.187578	1.752394	0.0925
LOG(PCI)	14.38520	2.834734	5.074621	0.0000
LOG(FID)	-0.047381	0.507789	-0.093308	0.9264
ECM(-1)	-0.297347	0.153983	-2.931037	0.0554
R-squared	0.782375	Mean dependent var		1.714520
Adjusted R-squared	0.727969	S.D. dependent var		0.410115
S.E. of regression	0.213902	Akaike info criterion		-0.050918
Sum squared resid	1.098098	Schwarz criterion		0.272886

Log likelihood	7.789226	Hannan-Quinn criter.	0.054634
F-statistic	14.38027	Durbin-Watson stat	1.692169
Prob(F-statistic)	0.000001		

The result shows that the coefficient of error correction mechanism (ECM) is negative -0.2973983 and statistically significant which is necessary condition for the variables to be co-integrated. This shows that about 29.73 per cent disequilibria in Nigeria’s private domestic savings in previous year are corrected for in the current year. Or it reveals that the speed of adjustment between the short-run and long-run realities of the co-integrating equations is 29.73 per cent. Again, the significance of the ECM is an indication and a confirmation of the existence of a long run equilibrium relationship between Nigeria private savings and all the explanatory variables.

Global Statistical Results Analysis

The econometric property of the estimated equation shows that the global utility or the overall goodness of fit is high with an F- statistics of 14.38027. R² is 0.782376 or 78.23% . This implies that, at level series, about 78.23% of the total variations in the private domestic savings (PDS) are explained by the changes in the determinants of savings in Nigeria – BDR, FID, FCL and PCI. The Log-likelihood ratio, Akaike information criterion and Schwarz Bayesian criterion statistic all showed that the model has good forecasting power.

Relative Statistics of the Estimated Model

From table 4.5, the relative statistics of the estimated model shows that the two explanatory variables, financial Inclusion (FCL) and Per Capita Income (PCI) have positive relationship with the private domestic savings (PDS). This means that a 1% increase of PCI and FID bring about 38% and 143% respectively increase in the level of PDS in Nigeria.

Table 4.5 TESTS OF HYPOTHESES.

Variables	T-Statistic	Prob.Value	Observation	Decision
LOGBDR	-1.941750	0.0640	p-value>0.05	Accept null
LOGFCL	2.891274	0.0080	p-value < 0.05	Reject null
LOGFID	-0.093308	0.9264	p-value> 0.05	Accept null
LOGINF	1.752394	0.0925	p-value>0.05	Accept null
LOGPCI	5.074621	0.0000	p-value< 0.05	Reject null

Source: Extracted from Eviews 7.0

This sub-section presents the result of hypothesis testing. Null hypothesis to be tested is that the explanatory variables (BDR, FCL, FID, INF and PCI) used in the model have no significant impact on private domestic savings in Nigeria. If the t-statistic of any explanatory variable is less than p-value at 5% significance, such

variable is said to have significant impact on savings mobilization, and if otherwise it has no significant relationship.

As earlier observed, the F-statistic proved that variables entered have the capacity to determine the level of private domestic savings in Nigeria.

However, we will go on and test for individual contributions of each of these variables.

From the table 4.6 above, it can be observed that deposit rate, financial deepening, inflation and inflation rate do not significantly contribute to private domestic savings in Nigeria while financial inclusion and per capita income significantly contribute to private domestic savings in Nigeria. Alternatively, the five hypotheses can be tested one after the other.

H0₁: Per Capita income does not have a significant impact on private domestic Savings in Nigeria.

Based on the table 4.6 above and the decision criteria, we reject the null hypothesis and accept the alternative hypothesis and conclude that per capita income has a positive and significant impact on private domestic savings in Nigeria. The implication of this result is that the higher the economic position of the household, the higher the level of savings. This finding is consistent with the life –cycle hypothesis, Gobna et al (2009), Imoughele et al (2014) and Nwachukwu et al (2007)

H0₂: Interest rate does not have a significant impact on private domestic Savings in Nigeria.

From table 4.6 above and the decision rule as stated in section three, H₀ is accepted thereby leading to the rejection of the H₁ and conclude that Interest rate does not have a significant impact on private domestic savings in Nigeria

H0₃: Financial deepening does not have a significant impact on private domestic Savings in Nigeria.

From the table 4.6 above and the decision criteria, we therefore accept the null hypothesis and reject the alternative hypothesis and conclude that financial deepening does not significantly impact on private domestic savings in Nigeria.

H0₄: Inflation does not have a significant impact on private domestic savings in Nigeria.

. Here, H₀ is accepted thereby leading to the rejection of the H₁ and conclude that Inflation does not have a significant impact on private domestic savings in Nigeria.

H0₅: Financial inclusion does not have a significant impact on private domestic Savings in Nigeria.

Again, H₀ is rejected thereby leading to the acceptance of the H₁ and conclude that financial inclusion has significant impact on private domestic savings in Nigeria.

In inclusion, from the table 4.6 above, it can be observed that deposit rate, financial deepening and inflation rate do not significantly contribute to private domestic savings in Nigeria while financial inclusion and per capita income significantly contribute to private domestic savings in Nigeria.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

SUMMARY.

In this study, “**The Determinants of Private Domestic Savings in Nigeria**” we investigated the determinants of private savings in Nigeria between 1981 through 2015. The main objective of this study is to find out the major determinants of private domestic saving in Nigeria over the period (1981-2015). The specific objectives include; to determine the effect of per capita income on private domestic saving rate in Nigeria, to find out the effect of deposit rate on private domestic savings in Nigeria and others

In order to achieve the objective of the study, an econometric model was formulated; secondary data was sourced from CBN Statistical bulletin (different series). Private savings was regressed on financial deepening, deposit interest rate, per capita income, financial inclusion and inflation rate. These variables were included in our econometric model based on review of past studies. Prior to the model estimation, time series properties of the data were established using Augmented Dickey-Fuller test for unit roots. All the variables including the private domestic saving, financial deepening and per capita income are found to be stationary at first levels $I(1)$ hence, prompting a test for cointegration. The result from co-integration test showed presence of long run relationship between dependent and all explanatory variables in the model. The Error Correction Model (ECM) was also used to tie the short-run dynamics of the co-integrating equations to their long-run static dispositions. The Error Correction Mechanism was properly and appropriately signed with a coefficient of -0.297347 thus indicating that about 29.73% of disequilibrium is corrected yearly by changes in savings determinants.

The normality test indicates that the parameters are normally distributed given Jarque – Bera values and probability values of all the variables (except PCI) at 5% level of significance.

From the Global Statistical Results Analysis, the coefficients of financial inclusion and per capita income are found to be statistically significant at 0.05 level of significance. Again, the econometric property of the estimated equation shows that the global utility or the overall goodness of fit is high with an F- statistics of 14.38027 and probability value of 0.00001. R^2 is 0.782375 or 78.23% and the adjusted R^2 is 72.7%. This implies that about 78.23% of the total variations in the private domestic savings (PDS) are explained by the changes in the determinants of savings in Nigeria – BDR, FID, FCL and PCI. The Durbin – Watson statistic for autocorrelation was 1.692169. This is closer to 2 than 0, which indicates absence of autocorrelation

The five hypotheses tested revealed that only the financial inclusion and per capita income were statistically significant to determine private domestic savings in Nigeria. This finding implies that the various initiatives

adopted by the Nigeria Central Bank in the last few years to strengthen and further develop financial markets and institutions contributed to an increase the private savings. This finding is in line with life – cycle hypothesis and that of Gobna and Nurudeen (2009) Nwachukwu and Egwaikhide (2007) and Wafore (2012)

The result shows that inflation rate has inverse relationship though insignificant to Nigeria private domestic savings.

The study also revealed the existence a positive but insignificant relationship between interest rate and private savings in Nigeria. The implication of this study is as a result of poor interest rate and the dominants of informal sector in granting credit facility to various economic agents. The positive effect of deposit interest rate shows that high interest rate will encourage people to savings more since they will earn higher return in feature all things been equal.

CONCLUSION

This research work examined the determinants of private domestic savings in Nigeria within the period of 1981- 2015. The significance of the financial inclusion and the per capita income variables in the private domestic savings model is an indication that savings would only increase based on the financial inclusion (the number, the access and cost of product and people integrated in the banking sector) and on the economic position of the household. The implication of this result is that the higher the economic position of the household, the higher the level of savings. Also an enhancement/ improvement in the financial sector is very crucial as it leads to increased private domestic savings mobilization which is needed for investment that will encourage economic development

RECOMMENDATIONS

In the light of the empirical findings, which emerged in this study, the following recommendations are made.

1. Per capita income and financial inclusion are the important factors that influence private domestic savings in Nigeria. Policy makers can promote growth of per capita income by improving productivity of workers.
2. Concerted and well articulated efforts should be made to make available and affordable credits to productive investments like small scale industries/businesses as they constitute an integral part of the growth and transformation process of an agro based economy like that of Nigeria this will induce employment, increase financial access and income of the various economic agents which will have a spillover effect on private savings.
3. The monetary authorities should as matter of urgency roll out plans to combat the current recession in order fight the two evils of inflation and unemployment in the Nigeria economy. Since inflation has negative though insignificant influence on domestic savings in Nigeria.

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