
Empirical Analysis of the Impact of Financial Sector Reforms on Savings Mobilization in Nigeria

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This paper examines whether Nigeria witnessed considerable savings mobilization amidst financial sector reforms from 2007 to 2015 using the estimation method of Autoregressive Distributed Lag. Unlike previous papers in this area that mostly focused on interest rates liberalization thesis, this paper goes deeper by looking at financial reforms across money, capital and foreign exchange markets. The estimation results show that there are still structural rigidities in the money, foreign exchange and equity markets nexus. In that, the following variables that proxy financial sector reforms namely treasury bill yield, interest rate spread, market capitalization ratio and currency in circulation ratio (which proxy technological modernization of payment systems) all went against a priori expectation. However, financial reforms had one success story in credit/loans advances to private/public sectors (financial deepening) which posted its correct economic sign. In sum, except for the financial deepening variable it can be safely concluded that financial reforms in Nigeria is yet to positively impact savings mobilization. The regulatory and reform authorities must show effectiveness in reforms implementation.

Keywords: savings ratio, financial reforms, FSS2020, Lekki financial hub

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1. Introduction

Goldman Sach in 2001 predicted that Nigeria along with Egypt would be among the next eleven countries with the potentials to emerge from backwardness behind the BRICs block. One key area to make this happen is in reforming the financial sector to create a precondition for economic growth. Financial sector reforms refer to the process or change in financial institutions and regulatory frameworks to increase their effectiveness and efficiency in providing modern financial services. The latest Nigeria financial reforms plan is the Financial System Strategy 2020 (FSS 2020). The reforms go beyond just the mere liberalization of the sector (often discussed as post-SAP) to include the introduction of new financial products to deepen the sector and strong corporate governance among others. Adeyemi (2007) noted that during the 18-month DMBs consolidation period, the capital market received a boost with a total of N406billion raised as at 31st December, 2005. The consolidation drive also brought in a staggering \$3billion into the sector, \$500million being FDI, the highest ever inflow of FDI into the non-oil sector in a year. Furthermore, presumable progress was recorded in Deposit Money Banks (DMBs) ownership structure having so far undergone different stages from being government to family controlled and then to owner GMDs. Reforms in his regard made the Central Bank of Nigeria (CBN) introduce term limits, which ended up making DMBs owners to simply take turns. However, Osagie (2009) argued that bank ownership structure was not the problem to the sector's development.

Following in the footsteps of Asian cities like Singapore, Seoul and Hong kong that have in recent times transformed to international financial hubs motivated Nigeria to put forward the FSS2020 plan in what Osagie (2009) termed "desire for bigness" to transform Lekki in its financial capital Lagos into Africa's financial hub. Supposedly, financial reform typically comprises several key phases, which take considerable number of years to actualize and Nigeria have in the past tinkered with some financial reforms, however observers continue to ponder if these various reforms have at all led to sufficient deepening and development of the financial markets to increase savings that should power economic growth. Although banks underwent major recapitalization, by international standards their balance sheets are still undercapitalized to undertake the challenges of financing an economy the size of Nigeria. For instance, it still takes the CBN to provide intervention funding to critical sectors like the power sector. On the other hand, is the lingering issue of banks not having the balance sheet and/or expertise to manage foreign reserves, as it will deteriorate its capital adequacy ratio and/or increase nonperforming assets.

Moreover, the FSS plan cannot be delink from prevailing macroeconomic risks, evident by unceasing negative real interest rates on savings and unending double-digit inflation that discourages savings mobilization. Furthermore, there is the low patronage of money market assets like treasury bills by nonfinancial parties that should have ensured portfolio diversification and the serious problem of escalating poverty with bidirectional causality to savings. Kama (2006) summed it up that, Nigeria's desire for its financial sector to be the economy's backbone is often interrupted by its vulnerability to systemic distress, macroeconomic volatility and inevitable policy somersault especially when there is a change of government.

Apart from frequent debates about the best sequencing of the various reform elements, another pertinent challenge policymakers' face is the courage to risk some instability during the reform period, which could generate political backlash and possibly lead to abandonment of the reforms altogether. Clearly, the corollary is the classic 'catch 22' case of having to decide whether or not to allow short-term instability at the expense of long-term financial sector narrowness and fragmentation, loss growth and even distress.

Nigeria still has some teething problems to resolve from the deepening of its stock market to attract oil/gas and telecoms firms shares listing, lifting restrictions on capital accounts convertibility, creating a stable transparent foreign exchange market, restructuring the mortgage industry, streamlining the numerous regulators in the financial industry and reducing operating cost for industry operators among others. Nonetheless, the present link between the financial sector and the real sectors of the economy remain very weak. The policy quandary facing Nigeria is the problem of fostering growth and development in the face of falling savings from internal and external sources. Failing savings do not necessarily mean a lack of savings culture as even the poor do save as evidence in Ethiopia when old bank notes were redeemed for new ones in 1976, it was found that almost 100million Ethiopian Birr turned up in the rural villages. Therefore, failure to keep reforms on course further widens the savings-investment gap and escalates fiscal debts.

Given the above stated background, the basic objective of this paper is to investigate the impact of financial sector reforms on aggregate savings in Nigeria. This paper is justified for two main reasons. First, the study seeks to provide empirical evidence on the controversy surrounding the role of financial reform in the literature. For instance, the 1990s financial crises in Asian economies (weakness of risk management to protect against international vulnerabilities) have questioned the rationale for financial reform in developing countries such as Nigeria. Second, financial reform has been a recurring phenomenon in Nigeria after the SAP era, albeit in different guises. It will interest academicians and

policymakers to know if all these reforms have touched on a key macroeconomic variable like aggregate savings, which is a key factor in intermediation. Only in this, we can begin to conclude that these reforms are bearing fruits.

This paper undertakes its analysis from the period 2007 up to 2015 because implementation of phase 1 of the FSS 2020 began in June 2007. It takes financial sector reforms to include the money market, capital market and the foreign exchange market in Nigeria. Therefore, to properly capture reforms, this paper uses aggregate savings of time and savings deposits for private/public sectors in deposit money banks, which is different from the savings from national accounting - which is merely a residual of consumption. This research work is divided into five parts. The introduction, presents the background of the study; the statement of problem; the objectives of the study, the research hypotheses and the organization of the study all form part one. This is followed by literature review as part two and research methodology is part three, while part four is the presentation and analysis of regression results. Part five shows the research findings and recommendations.

2. Literature Review

Having a robust and modern financial sector is imperative to long-term growth and development. The system in Nigeria has undergone remarkable changes in terms of ownership structure of banks, the regulatory framework and size of institutions. The current Nigeria financial system has expanded to include banks, capital market, insurance firms, pension asset managers and other financial institutions complete with their regulators. For more than two decades after independence (pre-SAP), Nigeria's financial system was repressed, evident by ceilings on interest rates and credit expansion, selective credit policies, high reserve requirements. This situation inhibited the functioning of the financial system and especially constrained its ability to mobilize savings for onward productive investment (Ikhide & Alawode, 2001). SAP brought about a liberated financial market however not without its critics who observed that the program only ensured short-term internal and external balance with trivial systemic restructuring for long-term growth. For that reason the Economic Commission for Africa devised the Africa Alternative Framework to SAP (AAF-SAP) to ensure adjustment with transformation to be crafted into national plans (United Nations Economic Commission for Africa, 1991).

In the late 1980s and 1990s, a great wave of financial liberalization occurred in developing countries as part of a general move towards free markets mostly prescribed by the IMF. Hanson (2006) intimates that financial liberalization was

pursued in a bid to save costs and the growing difficulties of using capital controls in an increasingly globalised world. While McKinnon (1973) and Shaw (1973) championed the view that state intervention in financial markets is repressive and retrogressive, others worry it will obstruct economic growth from the resultant instabilities to the financial system instead arguing for a strong role for government intervention (Keynes 1936; Krugman 1986; and Singh 1997). Interestingly, most emerging markets have come to realize the development finance role of their central banks and even enshrine it into law. In March 2010, the CBN in accordance to Section 31 of their 2007 Act provided about half a trillion Naira facility for investment in emergency power projects through debentures issued by the Bank of Industry at a concessionary interest rate of not greater than 7 percent with a tenor of 10 to 15 years. If successful, this move will help stabilize macroeconomic conditions and even provide the supporting structures for successful financial reforms.

Thus far, while the literature exposition sees financial reform and development as controversial, Singh (1993) somewhat tried to find a middle ground in its attempt to allow the “good side” of financial development while excising out the “bad side”. He concentrated his research on stock markets and wondered whether developing countries should bother about them considering its destabilising animal spirit tendencies towards price volatility and speculations as seen in developed markets. Hence, he went on to conclude that, if developing countries do have a choice, they should attempt rather to foster bank-based financial systems than try to deepen stock markets.

2.1 Financial Reforms in other Countries

The financial reforms debacles in the Latin American countries of Argentina, Chile, and Uruguay in the 1970s are well documented. They liberalized too quickly incognizant of debilitating macroeconomic conditions of high inflation, balance of payments problems and unstable foreign exchange markets culminating in poor regulatory oversights leaving all three with widespread bank failures. By contrast, overall assessment of reforms in recent times has been in favor of gradual liberation with an eye on macroeconomic stability as it was in the Asian countries of Korea, Indonesia, and Malaysia.

Fisher (1993) noted that the principal failure of financial reforms (particularly in Latin America) was the persistent high real interest rate throughout the reform period. Sadly, this is attributed to popular thinking that marginal propensity to save is highly elastic to interest rate effect than to income. However, countries with low income per capita want to hear nothing of this, as it is only normal for

households to first seek increase incomes in order to attain a decent consumption threshold. Of importance is factoring in demonstration effect in consumption for high urban poor countries and high financial illiteracy for heavily populated rural countries before canvassing savings mobilization. As was the case in Latin America, high real interest rates did not rouse up savings let alone increase capital stock, as capital flows from abroad was more of portfolio investments, which is very destabilizing at the slightest diffidence.

Notwithstanding, the literature on financial liberalization in terms of the nexus between bank ownership structure and savings mobilization is ambiguous. A case in point is China's banking system which is heavily State controlled unlike in the West. Nevertheless, it is administered well to provide the liquidity for which they are now the growth engine of the world as Yang (2012) observed. During the 1980s and 1990s, China's marginal propensity to save was about 0.4 for its huge population and by 2008 it moved to 0.6. Such feat did not occur by happenstance but by concerted financial system planning that was religiously executed. Other contentious issues in financial reform are the effect of high interest rates on savings, which is controversial as the interest effect could reduce marginal propensity to consume along with aggregate demand. Conversely, other dimensions of financial liberalization, such as increased access to consumer credit or housing finance could excessively increase consumption appetite thereby reducing private savings rather than increase them (Muellbauer & Murphy, 1990; Jappelli & Pagano, 1994).

2.2 Theoretical Literature

2.2.1 Relationship between Savings and Investment

In discussing intermediation, Shaw (1973) & McKinnon (1973) model argues that savings precedes investment. However, this theory is often misconstrued to mean that savings beget capital accumulation. As mostly seen in narrow financial environments of developing countries, ex post, savings and capital accumulation are miles apart. Even in periods of considerable savings when capital accumulations do occur it is tortuous and paltry. Thus, the deposit multiplier breaks down due to banks inability to identify, rank and fund bankable projects. This directly leads to the second problem with the McKinnon/Shaw model's related assumption that deposits create loans. In the fractional reserve-banking model, loans create deposits through the deposit multiplier and not the other way round. This fallacy gives credence to the ignorant overaggressive drive for deposit by Nigerian banks.

In further exploring the theoretically ambiguity of financial liberalization-interest rate-savings nexus, one can juxtapose increase household access to mortgages with private savings and see that the later reduces rather than increase. However, the long-term effect of liberalization on savings may differ substantially from the short-term effect (Bandiera, Jr., Honohan, & Schiantarelli, 1998).

2.3 Empirical Literature

A review of relevant research in multicountry analysis elicited different results. Using a mixture of developing and developed 36 countries sample from 1860 to 1930, Goldsmith (1969) found that as financial institutions' assets grow per capita income also grows and concluded that periods of rapid growth was connected to financial development. Fry (1980) investigated seven Asian countries financial sector reform and discovered that economic growth has direct link to interest rate on deposit. To him, it vindicated the McKinnon-Shaw thesis, which advocated for higher interest rates as a means of mobilizing savings for investment. Moreover, King & Levine (1992) gave evidence that a causal relationship runs from financial development to growth analyzing a cross-section of 80 countries from 1960-89. Conversely, Bloch & Tang (2003) employed two methods (country specific and cross-country time-series) for 75 countries mostly emerging market economies. Their results lacked robustness showing only one country had a positive correlation between private credit to GDP and GDP growth whereas, 21 countries showed a negative correlation at the conventional 5% level casting huge doubt on financial development and economic growth positive relationship.

For Nigeria, Olomola (1997) used OLS to study the relationship between financial deepening (financial sector deregulation) to real private sector investment for 1960-96 and found a positive and significant relationship, meaning aggregate savings grew in that period. The author concluded that improved financial intermediation would help bridge the gap between domestic saving and investment in Nigeria. It was a different result for Essien & Onwioduokit (1988) although employing a different methodology of error correction model with quarterly data for 1987-93. They found no long-run equilibrium relationship between savings mobilization and its various financial liberalization determinants. Ikhide and Alawode (2001) use discriminant analysis to discover that the health of Nigeria's banking sector performance deteriorated after the adoption of financial reforms and identified wrong sequencing of reforms as the culprit. Okpara's (2011) assessed the impact of banking sector reforms on the performance of the banking system in Nigeria in four time periods viz. 1959-86, 1987-93, 1994-98 and 1999-03. The author found that of all reforms since 1959, only the financial

liberalization of 1987-1993 impacted most on bank performance and financial deepening variables. While that of 1999-2003, which had the adoption of distress resolution program and universal banking impacted significantly on few bank variables like cash reserve ratio and loan to deposit ratio.

2.4 Gap in Literature

Most studies done in the financial liberalization literature use only money market variable, this suffers from the problem of omitted variable bias as it ignores the capital and foreign exchange market as a measure of financial liberalization (Bandiera, Jr., Honohan, & Schiantarelli, 1998). This study will not just extend to recent years but will also incorporate omitted variables. Another issue this paper will seek to better is the problem of comparing (or dividing into two) pre-SAP and post-SAP years causing unbalanced data. This in itself skews results in favor of post liberalization years where data is longer. Furthermore, data from most previous literature did not capture loans to SMEs and to rural customers, which is address with revised data from CBN. Capital widening as used in previous studies has to go beyond just loans to the private sector but also incorporate the public sector knowing the interventionist roles of sub nationals of developing countries like Nigeria. Aggregate savings here is taken as a relative measure rather than an absolute measure as found in most works and the credit to private/public sector to the GDP ratio as a better proxy of financial deepening than broad money supply to GDP (a monetization variable) as used in most works.

3 Methodology

3.1 Data Sources/Description

Measuring the effects of reform is extremely important if policy is to be well design and implemented. High frequency monthly data was used to capture reforms from the so-called Soludo recapitalization era. The indicators considered were gotten from CBN databank.

3.2 Model Specification

The model specification uses the linear function to examine the relationship between the dependent variable (Aggregate savings ratio) and the independent variables of Financial Sector Reform (FSR).

The model is expressed thus:

$$\text{SAVR} = f(\text{FSR}) \quad (1)$$

$$\text{SAVR} = f(\text{CPPR}, \text{IRS}, \text{ERS}, \text{CICR}, \text{MKTCAPR}, \text{TB}) \quad (2)$$

$$\text{SAVR} = b_0 + b_1\text{CPPR} + b_2\text{IRS} + b_3\text{ERS} + b_4\text{CICR} + b_5\text{MKTCAPR} + b_6\text{TB} + U_t \quad (3)$$

Where:

SAVR = Savings to GDP ratio

CPPR = Credit to private/public sector to the GDP, a proxy for financial deepening

IRS = Interest rate spread

ERS = Exchange rate spread

CICR = Currency in circulation to money supply, a proxy for payment system advancement

MKTCAPR = Market capitalization (equities) to GDP

TB = Treasury bills (92 days) yield (%)

The a priori expectations are:

$$\beta_1 > 0, \beta_2 < 0, \beta_3 < 0, \beta_4 < 0, \beta_5 < 0, \beta_6 > 0$$

The choice of model will be an Autoregressive Distributed Lag (ARDL) model otherwise called Bounds test as proposed by Pesaran, Shin, & Smith (2001). Its mathematical representation is given below;

$$y_t = \beta_0 + \beta_1 y_{t-1} + \dots + \beta_k y_{t-p} + \alpha_0 x_t + \alpha_1 x_{t-1} + \alpha_2 x_{t-2} + \dots + \alpha_q x_{t-q} + \varepsilon_t \quad (4)$$

Regression analysis was done using EViews version 7.1 software.

4 Results and Discussion

The empirical analysis will begin with a test for stationarity test in the series.

4.1 Unit Root Test Results

In order to determine the stationarity of the series, the Augmented Dickey Fuller Unit root test is employed to determine if the series are stationary or not.

Unit Root Test Using Augmented Dickey Fuller (ADF)

Table 1

UNIT ROOT TEST TABLE (ADF)								
<u>At Level</u>								
		SAVR	TB	CICR	CPPR	ERS	IRS	MKTCAPR
With	t-							
Constant	Statistic	-2.1371	2.1358	-4.8389	-2.4173	-1.9299	-1.6428	-0.9955
& Trend	<i>Prob</i>	0.5184	0.5192	0.0008	0.3684	0.6312	0.7685	0.9392
		NS	n0	***	NS	NS	NS	NS
<u>At First Difference</u>								
		d(SAVR)	d(TB)	d(CICR)	d(CPPR)	d(ERS)	d(IRS)	d(MKTCAPR)
With	t-							
Constant	Statistic	-6.2234	7.9056	-11.9886	-7.0919	-6.4012	14.4307	-11.2179
& Trend	<i>Prob</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
		***	***	***	***	***	***	***

Notes: (*)Significant at the 10%; (**)Significant at the 5%; (***) Significant at the 1%. and (NS) Not Significant
*MacKinnon (1996) one-sided p-values.

Unit Root Test Using Phillips-Perron (PP)

Table 2

UNIT ROOT TEST TABLE (PP)								
<u>At Level</u>								
		SAVR	TB	CICR	CPPR	ERS	IRS	MKTCAPR
With	t-							
Constant	Statistic	-2.5166	-2.0214	-4.8068	-2.0749	-0.7939	-2.2574	-1.0056
& Trend	<i>Prob</i>	0.3197	0.5822	0.0009	0.5529	0.9621	0.4526	0.9378
		NS	NS	***	NS	NS	NS	NS
<u>At First Difference</u>								
		d(SAVR)	d(TB)	d(CICR)	d(CPPR)	d(ERS)	d(IRS)	d(MKTCAPR)
With	t-							
Constant	Statistic	-8.7628	-7.9248	12.6036	-6.8975	-6.3286	14.7316	-11.1381
& Trend	<i>Prob</i>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
		***	***	***	***	***	***	***

Notes: (*)Significant at the 10%; (**)Significant at the 5%; (***) Significant at the 1%. and (NS) Not Significant
*MacKinnon (1996) one-sided p-values.

4.2 ARDL Model

Autoregressive Distributed Lag (ARDL) models otherwise called Bounds test will be employed to extract both long-run and short-run relationships as the unit root test in table 1 and 2 above shows the series are all I(1) except the variable CICR however none are I(2). The model is also appropriate as the sample size is small. It is only necessary to find the optimal lag selection to aid the analysis. The VAR model for the lag selection test is made to contain differenced series at levels and lag to bring dynamism to the model.

Optimal Lag Selection

Table 3

Lag	LogL	LR	FPE	AIC	SC	HQ
0	135.9648	NA	0.003764	-2.752114	-2.206109*	-2.532495
1	136.1864	0.338817	0.003838	-2.733797	-2.159055	-2.502620
8	146.8672	6.486906	0.003569	-2.820406	-2.044505	-2.508317
9	152.6841	7.801423*	0.003195*	-2.933743*	-2.129105	-2.610095*
10	152.8297	0.191863	0.003270	-2.913640	-2.080265	-2.578433

* indicates lag order selected by the criterion
 LR: sequential modified LR test statistic (each test at 5% level)
 FPE: Final prediction error
 AIC: Akaike information criterion
 SC: Schwarz information criterion
 HQ: Hannan-Quinn information criterion

From table 3 it can be seen that lag 9 is chosen by most of the criteria. Then it is then important to check if the error term fulfils the assumption of independent distribution. Table 4 below agrees that at lag 9 the residuals suffer no autocorrelation.

LM Test for Residuals**Table 4**

VAR Residual Serial Correlation LM Tests		
Null Hypothesis: no serial correlation at lag order h		
Date: 01/24/17 Time: 03:55		
Sample: 2007M01 2015M12		
Included observations: 95		
Lags	LM-Stat	Prob
1	0.004798	0.9448
2	2.092121	0.1481
8	0.001167	0.9728
9	1.049756	0.3056
10	0.693077	0.4051
Probs from chi-square with 1 df.		

Thus, from all the preceding analysis the ARDL (9,1,1,1,1,1) model will be estimated to determine the relationship of the variables and the result is presented below in table 5.

ARDL Model Result**Table 5**

Dependent Variable: D(SAVR)				
Method: Least Squares				
Date: 01/24/17 Time: 04:42				
Sample (adjusted): 2007M11 2015M02				
Included observations: 88 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.381249	0.264708	-1.440264	0.1551
D(SAVR(-1))	0.097526	0.118464	0.823250	0.4137
D(SAVR(-2))	0.348576	0.095801	3.638542	0.0006
D(SAVR(-9))	0.238182	0.081784	2.912316	0.0051
D(CICR)	-1.808592	0.905069	-1.998292	0.0503
D(CPPR)	0.280703	0.033661	8.339047	0.0000
D(ERS)	-0.001871	0.001601	-1.168459	0.2473
D(MKTCAPR)	-0.008404	0.024061	-0.349274	0.7281
D(IRS)	-0.013042	0.011586	-1.125607	0.2649

Dependent Variable: D(SAVR)				
Method: Least Squares				
Date: 01/24/17 Time: 04:42				
Sample (adjusted): 2007M11 2015M02				
Included observations: 88 after adjustments				
D(TB)	-0.002399	0.006248	-0.383932	0.7024
D(CICR(-1))	-2.255937	0.984853	-2.290634	0.0256
D(CPPR(-1))	-0.045004	0.047053	-0.956448	0.3427
D(ERS(-1))	0.003080	0.001911	1.611190	0.1125
D(MKTCAPR(-1))	-0.031710	0.023409	-1.354627	0.1807
D(IRS(-1))	-0.040657	0.010636	-3.822785	0.0003
D(TB(-1))	-0.003979	0.005936	-0.670326	0.5053
CICR(-1)	1.435385	0.643888	2.229246	0.0296
CPPR(-1)	0.328840	0.045066	7.296862	0.0000
ERS(-1)	-0.005072	0.001397	-3.630001	0.0006
MKTCAPR(-1)	0.018229	0.010704	1.702986	0.0938
IRS(-1)	0.027145	0.008928	3.040319	0.0035
TB(-1)	-0.001079	0.003399	-0.317347	0.7521
SAVR(-1)	-0.897366	0.127987	-7.011393	0.0000
R-squared	0.836777	Mean dependent var	-0.002067	
Adjusted R-squared	0.759315	S.D. dependent var	0.094886	
S.E. of regression	0.046551	Akaike info criterion	-3.037265	
Sum squared resid	0.127850	Schwarz criterion	-2.220870	
Log likelihood	162.6396	Hannan-Quinn criter.	-2.708360	
F-statistic	10.80245	Durbin-Watson stat	1.996740	
Prob(F-statistic)	0.000000			

The long-run variables of the ARDL model above (CPPR(-1), CICR(-1), ERS(-1), MKTCARP(-1), IRS(-1), TB(-1) and SAVR(-1)) totaling 7 are tested jointly to see if there exist any long-run relationship using Wald test.

Wald Test Result

Table 5

Wald Test: Equation: Untitled			
Test Statistic	Value	df	Probability
F-statistic	9.081124	(7, 59)	0.0000
Chi-square	63.56787	7	0.0000
Null Hypothesis: $C(23)=C(24)=C(25)=C(26)=C(27)=C(28)=C(29)=0$ Null Hypothesis Summary:			
Normalized Restriction (= 0)	Value	Std. Err.	
C(23)	1.435385	0.643888	
C(24)	0.328840	0.045066	
C(25)	-0.005072	0.001397	
C(26)	0.018229	0.010704	
C(27)	0.027145	0.008928	
C(28)	-0.001079	0.003399	
C(29)	-0.897366	0.127987	
Restrictions are linear in coefficients.			

The value of F stats is 9.08. Before the F stats is compared with the Bound limits, the number of K (regressors) will be needed. In a $K+1=7$ variables, K is 6. With an intercept and no trend included in the unrestricted ECM, the lower and upper bound of the F stats at 10%, 5% and 1% significant levels are (2.03, 3.13) and (2.32, 3.50) and (2.96, 4.26) according to Pesaran, Shin, & Smith (2001). Therefore, the F stats exceeds the upper bound at 1% sig level, it can be concluded that there exists a long-run relationship among the financial reform variables. Then the next step is to find the long-run elasticities in the model by normalizing SAVR(-1). The long-run coefficients in is normalized with SAVR(-1) and its elasticities result is presented in Table 6 below.

Normalized Cointegrating Coefficients Results

Table 6

<u>SAVR</u>	<u>CICR</u>	<u>CPPR</u>	<u>ERS</u>	<u>MKTCAPR</u>	<u>IRS</u>	<u>TB</u>
1.000	1.599	0.366	-0.005	0.020	0.030	-0.001

The elasticities result in Table 6 from right to left shows that a 10% increase in government treasury bills yield (TB) will reduce the amount of savings ratio in the money market by 0.01% point. This goes against a priori expectation of a positive effect on SAVR, meaning that banks do not increase the interest rate on savings in line with the risk free money market asset (treasury bills). Instead, the opposite has been the case, which can result to persistent oversubscription of fixed income asset. In addition, a 10% increase in Interest Rate Spread (IRS) in the money market will increase savings ratio by 0.3% against a priori expectation, this could imply that banks are more interested in giving loans when interest on lending is at premium, in turn its positive effect on SAVR is as a result of the deposit multiplier. While 10% increase in Market Capitalization Ratio will increase savings ratio by 0.2% this is against a priori expectation because of margin lending activities. A 10% increase in Exchange Rate Spread decreases SAVR by 0.05% in line with economic expectation, while a 10% increase in Credit to Public/Private sector increases SAVR by 3.66% as expected. Finally, a 10% increase in Currency in Circulation Ratio increases SAVR by 15.9% against a priori expectation, this could be due to occurrence of technical challenges in the payment system. So far, the financial sector variables with elastic elasticities are CPPR and CICR that suggests areas policy should focus on.

The findings of this paper are similar to the conclusions reached by Iganiga (2010), Ogun & Akinlo (2011) and Sharma & Kumar (2013) that financial reform has positive impact on savings. While Chowdhury (2001), Khan & Hye (2010) and Ewetan, Ike, & Urhie (2015) had evidence of a negative impact and Bandiera, Honohan, & Schiantarelli (1998) had inconclusive results.

A diagnostic was done on the ARDL (9,1,1,1,1,1,1) model and was found to be satisfactory, accepting the null of no autocorrelation at 5% level. Furthermore, the model was checked for stability using the CUSUM test and was stable at 5% levels as shown in the appendix.

ARDL Model LM Test

Table 7

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.115626	Prob. F(9,51)	0.3691
Obs*R-squared	14.47520	Prob. Chi-Square(9)	0.1064

5 Conclusion and Recommendations

5.1 Conclusions

In summarizing the regression results, Exchange Rate Spread posted its correct sign of an indirect long-run effect on savings. Money market interest rates also showed evidence of abnormal market settings, meaning that so far financial reforms has failed to reduce interest rate spread. This is also suggested by the fact that bond yield and savings ratio failed to move in tandem, which is evidence of faulty policy coordination.

Cash intensity proxy by CICR is a key reform variable in terms of the cashless economy mantra. The variable posted incorrect economic sign. It shows that the more currency in circulation, the more money will leave the banking system. The CBN is advice to improve on the technical challenges in the use of the electronic payment systems. The variable Credit to Private/Public sector posted its correct sign in line with economic theory that lending increases savings. The CBN must be commended for ensuring financial deepening. Equities market capitalization variable went against economic theory to post a wrong sign. This means as the capital market expands; savings ratio expands whereas both markets ought to be in competition for investible funds. One major reason for this is that the banks are providing margin loans or accounts (demand deposits) for speculation in the capital market as loans create deposits. With the risk of sharp practices and poor regulatory oversights, this can precipitate another stock market crash.

5.2 Recommendations

Successful financial reforms are tied to improve macro conditions, policy consistency, effective regulations and proper sequencing. In sum, this boils down to the effectiveness of the reforms handling institution(s). If Nigeria is to be right on reforms, it is imperative economic managers' are people with the required expertise and not having historians head the CBN as in the past for two key

reasons. Firstly, open economies like Nigeria are susceptible to contagious global systemic risks and secondly, the improvements in use of e-money make money supply targeting cumbersome, as money velocity becomes unstable; for these reasons policy forecasting must be effective.

Author Contributions

Enobong Udoh and Eghosa Osagie both contributed equally in writing the paper.

Conflict of Interest

The authors declare no conflict of interest.

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Appendix A

CUSUM Test

