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TREASURY SINGLE ACCOUNT AND BANK DEPOSITS BEHAVIOURS AND ECONOMIC GROWTH PATTERN IN NIGERIA

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ABSTRACT

This paper aims to ascertain the behaviours and relationship existing between Treasury Single Account (TSA) and cash balances of deposit money banks (DMBs) in Nigeria and the effect of this behaviour and subsisting relationship on Nigeria's economic growth. Quarterly data on the TSA and composite cash balances were tested for stationarity (unit root) using the Augmented Dickey Fuller test, and analysed using the Kendall tau_b correlation technique, the Granger Causality model, and the both variables and loans and advances by DMBs (LSA) regressed on real Gross Domestic Product (GDP) using the Ordinary Least Squares (OLS) model. Research results show that there exists a positive and significant relationship between the TSA and composite bank balances of DMBs (BNKBL), and both have a positive long-run relationship with RGDP after the initial implementation shock on bank balances on DMBs and RGDP. The Granger causality test results further shows that TSA and loans and advances by the DMBs to the economy causes changes in RGDP but the TSA does not cause changes in bank balances of DMBs in Nigeria in the long-run.

Key words: *Bank Cash balances, Bank deposits, Economic growth, Loans and advances, Treasury single account,*

1.0 INTRODUCTION

Reforms in public sector financial management culminated in policy design to accumulate all federal revenues and those of ministries, departments and agencies (MDAs) in a unitary account for effective monitoring and control of outflows, and inculcation of financial prudence in Nigeria's public sector cash management. This policy decision in 2014 was implemented in 2015 resulting in the transfer of federal government deposits from deposit money banks (DMBs) to a dedicated account with the Central Bank of Nigeria (CBN). Subsequent revenue collections by the DMBs on behalf of the federal government and MDAs are transferred to the dedicated account with the CBN called the Treasury Single Account (TSA) at the close of business of that day. The establishment of the TSA by Nigeria is another by countries around the globe after Ethiopia, the United Kingdom, Sweden, India and France. Such public sector reforms according to Peterson (2011) are common in Africa. The resultant effect of this is increased aidflows into these countries (Kerosi, 2017).

The TSA is seen by Pattanayak and Fainboim (2010) as a unified structure of government accounts enabling consolidation and optimum utilization of government financial resources. Kerosi (2017) noted that this account separates control of cash at the transaction level and the overall cash management, and maximizes opportunity cost associated with cash management. All government payments and receipts are made from this account. Fears were expressed in business and financial circles in Nigeria (Badejo, Oluwaseyi and Taiwo, 2017; Ohaegbu and Nina, 2017; Kanu, 2016; and Tari, Pwafeyeno and Minnesi, 2016) of the negative effect of the withdrawal of government deposits on the liquidity of DMBs on its implementation. Daniels (2017) argued that this action should make DMBs to aggressively source idle cash outside the banking system increasing financial inclusion. Olowokure and Adetoso (2017) observed that the introduction of the TSA has a negative relationship with financial corruption in MDAs with the DMBs paying the price for easing fraudulent activities of the MDAs in Nigeria. Either way, the liquidity of banks is negatively affected, limiting credit advancement to the economy, stifling economic growth while the size of the TSA is improving.

Arguments are rife in public sector finance literature (Peterson, 2011; Pattanayak and Fainboim, 2010; and Kerosi, 2017) that the funds in the TSA will flow back to the banks seems economical with reality as such seems a mirage. Arguments of reduction in corruption (Fatile and Adejuwon, 2017; Kanu, 2016; andTari, Pwafeyeno and Minnessi, 2016) with the introduction of TSA is countered by the recent negative report of Transparency International (TI) of the increasing high level of corruption since 2015 after its introduction in Nigeria. The seeming inverse (countercyclical) relationship between TSA cash balances of banks increases idle cash with the CBN which yield no income. The DMBs with minimal cash balances and large number of viable businesses to finance which they seem not to be able to meet affects growth of the Nigerian economy. Kerosi (2017) argued that the elimination of the fragmented system of handling government cash by individual government units/agencies reduces overall cost of government cash management. The expected savings to government with the TSA seems minimal in relation to the national negative effects of the withdrawal of these deposits from DMBs with spiral negative effects on economic growth: reduced business financing, inhibited industrial capacity expansion, stunted employment and income growth.

Having such idle cash with declining economic performance is according to Kerosi (2017) is an archival and museumic economic policy with negative effect on economic growth. With huge cash in the TSA, the government has borrowed N11 trillion (Vanguard, 2018). Prudence in cash management necessitates the use of the funds in the TSA instead of borrowing (Lienert, 2009), and/or loan the cash for economic financing and growth; borrow from abroad at lower interest rate (taking cognizance of the foreign exchange rate) making income on the interest rate differentials and attendant positive effects on cash flow planning.

1.1 Objective/justification for the study

This study aims to ascertain and document the behaviours and relationship existing between the Treasury Single Account (TSA) and cash balances of deposit money banks in Nigeria and its effect on economic growth pattern in the country. Discussions about the TSA are rife in financial, monetary and economic policy literature but empirical evidences establishing its behaviour pattern and relationship with cash balances of DMBs and the effect of this on economic growth patterns in Nigeria seems lacking. This study aims to fill this gap.

1.2 Research hypotheses

The following hypotheses are tested in this study on the assured relationship between identified variables:

(1) H_o: The relationship existing between the behaviours of Treasury Single Account and cash balances of deposit money banks in Nigeria is

not positive.

(2) H_o: The relationship between the behaviour patterns of Treasury Single Account and cash balances of deposit money banks negatively affects economic growth patterns in Nigeria.

2.0 Literature Review

The TSA account structure may be distributed or centralized account structures. Sweden currently operates the distributed bank account structure with government agencies maintaining individual accounts with DMBs, which balances are transferred twice daily into the TSA with the central bank (Pattanaya and Fainboim, 2011; Peterson, 2011). Nigeria currently uses this account structure but transfers to the TSA are made once at the end of the day. The centralized bank account system on the other hand is operated by a centralized authority or regional unit and inflows and outflows from the account are tracked, accounted for and managed using well developed accounting system. There also exists the hybrid bank account system with combined features of the distributed and centralized account structures.

Fragmented public sector accounting systems multiplies cash management cost as idle cash balances in bank accounts often earn little income, and government being unaware of the existence of the cash in ministries and departments incur unnecessary borrowing costs on raising funds to cover perceived cash shortage (Pattanaya and Fainboim, 2011).Kerosi (2017), Pattanaya and Fainboim (2011) and Dener (2007) noted that countries that have implemented the TSA have reported reduced cost of debt servicing. This argument is supported by Daniels (2017).On the proposed introduction of TSA in Kenya, Daniels (2017) argued that it will worsen economic and financial activities in Kenya with the constant issue of treasury bills by the central bank. But Pattanaya and Fainboim (2011) argued that the TSA is a necessary prerequisite for modern cash management. They added that the account enables a country's ministry of finance/treasury to effectively establish oversight and centralized control over the government's cash resources, and that way public financial management systems seem enhanced. Pattanaya and Fainboim (2011) cautioned that improved government cash management should not jeopardize economic growth. This according to them is feasible if retail banking activities of MDAs are left with DMBs with the central bank holding the main deposits. This suggestion requires that the CBN maintains activities in the DMBs to sustain economic activities, improving economic growth. Cost of providing these retail banking services will seem lower with the DMBs occasioned by operating economies of scale, rather than the central bank which may be ill-equipped to render such services with increased operating costs both to the central bank and the MDAs. Migration of these retail services back to the DMBs will leave only the low-volume, high level government accounts within the TSA structure at the central bank (Pattanaya and Fainboim, 2011).

Idle cash hitherto held in multiple accounts of agencies with DMBs were extended to customers for business expansion, improving overall economic growth. Pattanaya and Fainboim (2011) argued that the TSA facilitates better fiscal, debt management, monetary policy coordination, fiscal banking data reconciliation which in turn improves the quality of information about the government's fiscal resources. For a TSA to achieve the forgoing in an economy, they noted that the cash management system of the government must be unified and allow total fungibility of all cash resources, no public sector funds should be outside the oversight of the TSA, and it must have a comprehensive coverage. In the operation of the TSA, Williams (2013) cautioned that governments should be careful as its implementation breeds other forms of corruption with treasury officials being exposed to inducements from aggrieved suppliers.

To maintain liquidity in the banking system, Pattanaya and Fainboim (2011) suggested that a variation of the TSA to allow DMBs to hold unto the cash collections for a few days interest free is essential. They cautioned that such system may not seem transparent and may not clearly show the cost of all revenue collection services provided by the DMBs. Where this is not implementable, 'seed funds' may be provided DMBs to meet liquidity requirements and balances transferred to the TSA at the close of business for the day. On overall microeconomic activities, Williams (2013) noted that the TSA cause delays in payments to suppliers with risks of higher future procurement costs as well as economic damage to their businesses, and potentially the wider economy. On the implementation of the TSA in Nigeria, Ndubuaku, Ohaegbu and Nina (2017) observed its negative effects on overall bank liquidity and total deposit mobilization. Martins (2016) noted that total transfers under the TSA regime as at March 2016 stood at N2.67 trillion representing 15.14% of total deposits of banks of N17.63 trillion at the same date. This loss according to Martins (2016) impacted banks differently in line with the proportion of their statements of financial position hitherto sustained with federal government deposits. Adaramola (2015) noted that the negative affect of TSA on bank liquidity affect interest rate on bank credit which in turn negatively affects business costs and the country's GDP. Thisday Newspaper (2017) noted that though the TSA is beneficial to Nigeria, its drain on the liquidity of DMBs with spiral negative effects on the economy evident.

The TSA may be seen to inculcate transparency and effective revenue management but seems to have strained liquidity flow in the banking system. Martins (2016) observed that since the implementation of the TSA in Nigeria, DMBs have lost huge deposits and incomes which seem to threaten their operations. The implementation, Martins (2016) added, has brought unintended consequences never anticipated by the government. These include deposit depletion, bank asset quality decline, decrease in revenues and liquidity stress. Estimating the loss to DMBs by the TSA, Martins (2016) noted that at the yield of 14% on treasury bills, the interest on the amount transferred from DMBs to the TSA which would have been invested in treasury bills is about N374 billion. The attendant loss of jobs by dedicated bank staff for government customer accounts who are laid off by the DMBs with the TSA has a spiral negative effect on total disposable income, consumption and GDP. Wema Bank Plc (2016) disclosed that it lost N50 billion to TSA in the first three months of implementation of the account. On implementation of the TSA, DMBs with investments in treasury bills had to liquidate them to comply with the TSA policy, worsening their stock of liquid assets.

3.0 Methodology

Research design

The research design for this study is the ex-post facto design in which the effect of the behaviours and relationship between TSA and cash balances of deposit money banks on economic growth patterns in Nigeria are examined.

Source, validity and reliability of data

Secondary data for this study were obtained from the Statistical Bulletin, 2016 and Quarterly Report of the CBN, 2017 Q1, Q2, Q3, Q4. This bulletin and Reports are the official documentsfor financial, fiscal and economic data published annually and quarterly by the Central Bank of Nigeria

(CBN). Thus data for this study are valid and reliable.

Data analysis technique/Model description/justification

The Kendal tau_b correlation technique is used to ascertain the relationship existing between TSA and cash balances of DMBs in Nigeria. Economic growth (measured by real gross domestic product, RGDP) is regressed on the TSA, cash balances of DMBs, and loans and advances (LOSA) by DMBs to the economy using the ordinary least squares (OLS). The Granger Causality test aids in ascertaining the cause-effect relation between variables: TSA on bank cash balances (BNKBL), bank cash balances on loans and advances (LOSA) by banks, TSA on RGDP and loans and advances of banks on RGDP. The models are ideal for determining correlations, linearity between variables and cause-effect relationship respectively.

The relationship existing between behaviour patterns of real Gross Domestic Product (RGDP), transfers from DMBs to Treasury Single Accounts (TSA), bank balances of deposit money banks after the federal government deposits (BNKBL) and loans and advances by DMBs after the transfer of federal government deposits to the TSA (LOSA) is represented by the function:

$$RGDP = f\{TSA, BNKBL, LOSA\}$$

The regression model for the above function being linear is:

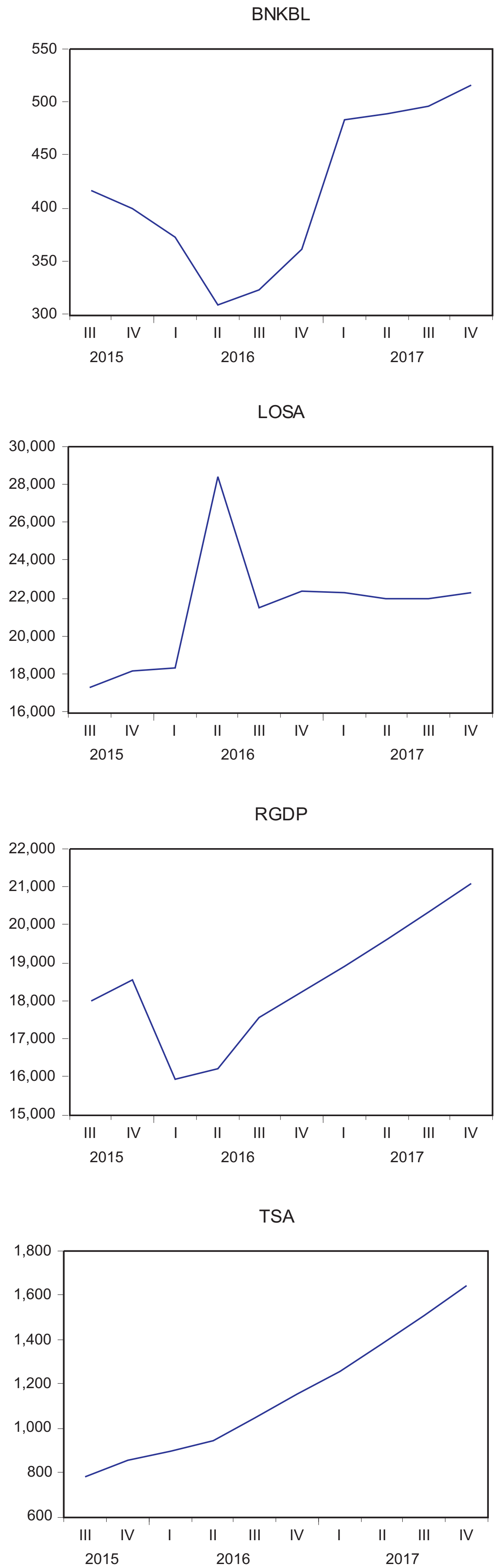
$$RGDP = \alpha + \beta_1 TSA + \beta_2 BNKBL + \beta_3 LOSA + \varepsilon_i$$

Where ε_1 = the unexplained variation in RGDP not caused by the identified equation.

Data presentation and analysis

Quarterly data on RGDP, TSA, BNKBL and LOSA are shown in fig 1.

Fig 1: Quarterly values of RGDP, TSA, BNKBL and LOSA balances



Source: CBN Statistical Bulletin, 2016 and CBN 2017 Quarterly Economic Reports

With the introduction of the TSA at the end of 2015 Q3, the transfer from of federal government deposits at the end of each quarter to the TSA increased from N779.23 billion in 2015 Q3 to N852.09 billion in 2015 Q4. With the increased compliance of MDAs to the directive to TSA policy, the amount transferred in 2016 Q1, Q2, Q3 and Q4 were N894.94 billion, N946.08 billion, N1,046.85 billion and N1150.52 billion respectively (CBN, 2016). Quarterly values for 2017 Q1, Q2, Q3 and Q4 were N1,258.10 billion, N1,375.73 billion, N1,504.36 billion and N1,645.02 billion (CBN, 2017 Q1, Q2, Q3, Q4) respectively (fig 1).

Composite cash balances of DMBs was N417.2 billion in 2015 Q3 declining to N400.4 billion in 2015 Q4 and further to N372.9 billion in 2016 Q1 and N307.21 billion in 2016 Q2. The dawn of the reality of the TSA implementation stirred increase in private sector fund mobilization and increased financial inclusion with resultant increase in composite cash balances of banks to N323.19 billion in 2016 Q3 and N361.04 Q4. This increase was sustained with the composite bank cash balances increasing to N483.22 billion, N488.4 billion, N496.32 billion and N515.45 billion in 2017 Q1, Q2, Q3 and Q4 (CBN, 2017 Q1, Q2, Q3, Q4) respectively (fig 1). Real GDP within the study period increased from N17,976.23 billion in 2015 Q3 to N21,103.13 billion in 2017 Q4 (fig 1). Total loans and advances by DMBs within this period increased from N17,286.7 billion in 2015 Q3 to N22,289.25 in 2017 Q4 (fig 1).

Data analysis

Prior to estimating the equations required, we determine the order of integration of each variable fitted in the equations. The Augmented Dickey-Fuller (ADF) technique under the assumption of intercept is used for this purpose. The results of the ADF test are presented in table 1.

Table1: ADF Test result on the Series of RGDP, TSA, BNKBL, LOSA

VariableSeries	ADF- Stat	5% Critical Value	Remark
D(RGDP)	-0.271121	-3.259808	stationary atevel
D(TSA)	-3.9522325	-4.450425	stationary at order 1
D(BNKBL)	-0.470370	-3.259808	stationary atevel
D(LOSA)	-2.830267	-3.259808	stationary atlevel

Source: Result output

We examine the proportion of disequilibrium that can be corrected in case of sudden shocks or charges in the long run. Result of this test is shown on table 2.

Table 2: Short Run Dynamic Relationship and Adjustment Parameter results

Descrptor	Coefficient	Std-error	T-stat	P-value
ECM(-1)	-0.0984	0.04567	-2.15468	0.0326
D(TSA(-1))	-1.576159	0.398802	-3.952232	0.0289

Source: Result output

Table 2 shows the ECM parameter as -0.0984 corresponding to p-value of 0.0326. Since the p-value is less than the alpha value at 5 percent and the ECM parameter is negative, we infer that any 9.84 percent disequilibrium in the long relationship between real GDP, treasury single account (TSA), can be corrected within a period of one year. Also, this shows evidence that long run influence or causality is flowing from TSA to real GDP. Thus real GDP can be predicted based on the variation in this variable.

The OLS result is shown on table 3.

Dependent Variable: RGDP

Method: Least Squares

Sample: 9/01/2015 12/01/2017

Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	12823.62	3425.043	3.744076	0.0096
BNKBL	8.752382	7.130811	1.227403	0.2656
TSA	3.301099	1.904195	1.733592	0.1337
LOSA	-0.084462	0.121684	-0.694107	0.5136

R-squared	0.842596	Mean dependent var	18438.64
Adjusted R-squared	0.763894	S.D. dependent var	1649.701
S.E. of regression	801.6023	Akaikeinfo criterion	16.50028
Sum squared resid	3855398.	Schwarz criterion	16.62131
Log likelihood	-78.50138	Hannan-Quinn criter.	16.36750
F-statistic	10.70614	DurbinWatson stat	2.470867
Prob(F-statistic)	0.008010		

The resultant OLS regression equation from the analysis is:

$$RGDP = 12823.62 + 8.75BNKBL + 3.30TSA - 0.085LOSA + \mu_1$$

Since the coefficient of 8.75 for BNKBL and 3.30 for TSA (table 3) with RGDP are positive, we reject H_o of hypothesis 2 and accept the H_a i.e.The relationship between the behaviour patterns of Treasury Single Account and cash balances of deposit money banks positively affects economic growth patterns in Nigeria.

Table 4: Kendal tau_bCorrelations coefficient

			BNKBL	TSA
Kendall's tau_b	BNKBL	Correlation Coefficient	1.000	.467
		Sig. (2-tailed)	.	.060
		N	10	10
	TSA	Correlation Coefficient	.467	1.000
		Sig. (2-tailed)	.060	.
		N	10	10

The Kendal tau_b correlation coefficient between the TSA and BNKBL is positive at 0.467. Thus we reject H_o of hypothesis 1 and accept H_a i.e. the relationship existing between the behaviours of Treasury Single Account and cash balances of deposit money banks in Nigeria is positive.

The Granger causality test table F-statistic at v_1=n-1 and v_2=n-1 at 5% significance level is 3.79.

4.0 Research results and policy implications of findings

The sudden transfer of public sector deposits to the TSA had an initial policy shock on cash balances (BNKBL) of DMBs with a sharp decline from 2015 Q3 until 2016 Q2 with a steady increase from then to 2017 Q4 while TSA increased steadily from 2015 Q3 to 2017 Q4. This sharp decline in BNKBL did not negatively affect loans and advances granted by DMBs as there seemed to be no loan recalls. The non-granting of more credits to businesses and the manufacturing sector negatively affected business growth, employment, consumption, savings and RGDP with instant negative RGDP growth until 2016 Q3. While the relationship between TSA and BNKBL was negative in the short-run, their long-run relationship is positive. The Kendal tau_b results show this relationship between both variables with a positive coefficient of 0.467, positive at 10%.

The Augumented Dickey Fuller (ADF) result shows that RGDP, BNKBL and LOSA are stationary at level while TSA is stationary at order 1.

The resultant regression equation:

$$RGDP = 12823.62 + 8.75BNKBL + 3.30TSA - 0.085LOSA + \mu_1$$

has an adjusted R^2 value of 0.76. From the above equation, BNKBL and TSA have positive relationships with RGDP indicating that more funds available with the DMBs facilitates credit advancement for production capacity expansion and business financing, with positive effects on RGDP. The transfer of federal government deposits from DMBs (which are private sector controlled) has completely transferred Nigeria's economic financing to the private sector. The economy is now wholly market-driven with investment and financing decisions strictly based on income decision optimization. The federal government deposits hitherto held in the DMBs seemed a “noise” and a distraction in the monetary and financial system, beclouding the DMBs from focusing on real banking involving deposit mobilization from the non-banking public (as much funds are known to be outside the banking system) increasing financial inclusion.

Nigeria's financial and monetary system seems to have witnessed some sanity as "hangers on" and "predators" behaviours which eroded the core banking functions and operations in the system are now eliminated. The government sector as a regulator is now separated from the financial/banking sector. Financial system regulation can be effectively and efficiently carried out by the Central Bank of Nigeria and the effects of monetary policies distinctly assessed and evaluated for policy review where necessary to achieve the desired policy results.

The minimal attendant costs of public sector cash management of the TSA policy seem to have positively reduced federal government operating expenses. This savings should be ploughed back into financing capital expenditures and recurrent expenditures to provide free health care, qualitative education to improve human capital development, and provide cash to fund increased public sector employment with positive on economic growth.

The implication of the above for policy decisions is that the TSA should be evaluated and monitored regularly to ensure it does not create another avenue for corruption in disbursements from the account which costs, federal government contractors will input into contract costs, inflating them with spiral negative effects on the Nigerian economy. The financial and monetary system regulator, the Central Bank of Nigeria, should increasingly regulate money supply in the economy to ensure optimum cash is available in the financial system to moderate interest rate and boost business growth and production capacity expansion, increasing employment and disable income and overall growth of the economy.

From the Granger causality test result (table 5 in the appendix), the F-statistic between TSA and BNKBL is 3.23823. Since this is lower than the table F-statistic of 3.79, we conclude that TSA does not Granger cause BNKBL as the initial shock of the TSA policy implementation has been reversed through increased financial inclusion. This finding does not support earlier results of Ndabuaku et al (2017) and Martins (2016). The Granger causality F-statistic for TSA on RGDP of 327.949 (table 5 in the appendix) indicates that the TSA causes changes in RGDP. This result is significant at 5%. Loans and advances by banks to the economy also Granger causes changes in RGDP as the calculated F-statistic of LOSA causing changes in RGDP of 646.9926 is greater than the table statistic of 3.79. This is significant at 5%. Thus bank cash balances itself does not improve RGDP but the credit advanced to the economy from the BNKBL is what affects RGDP. Monetary and financial policy makers should ensure that cash in the TSA are loaned to the financial sector through the CBN to boost production and RGDP and not left idle in the dedicated account with the CBN earning no income. The F-statistic for TSA on LOSA of 7.38429 is greater than the table F-value of 3.79 indicating that TSA causes changes in LOSA as prudence in loan evaluation caused by increased marketing to increase private sector deposits and attendant costs results in reduced credit advancements. This short fall in loans and advances by banks can be augmented by increased money supply by the CBN from the TSA.

5.0 Recommendations

To grow the Nigerian economy with the TSA policy with spiral positive effects on all sectors of the Nigerian economy, we recommend that the TSA policy should be sustained with caution to reduce federal government's cash management costs, improve cash flow forecasts, national budgeting, minimize government borrowing, instill core banking operations in the financial system, improve financial inclusion, sanitize the financial system to improve the country's economic growth. Since bank cash balances has recovered from the initial shock of the TSA implementation, the policy should be sustained as banking activities can be carried out by banks in the long-run through increased financial inclusion. Cash short falls in the financial sector should be augmented by increased money supply by the CBN to sustain and increase lending to the economy to grow the economy.

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