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Financial Internet Quarterly 2021, vol. 17 / no. 3, p. 1-13

10.2478/fiqf-2021-0015

Financial Internet Quarterly

TREASURY SINGLE ACCOUNT AND FINANCIAL INTERMEDIATION IN NIGERIA

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Abstract

In the wake of dissenting views on the import of the implementation of the Treasury Single Account (TSA) in Nigeria, the researchers consider it wise to empirically examine the impact of TSA on funds availability for lending to the economy. The research is meant to evaluate and predict what Nigeria should expect in the era of TSA using existing data. Annual financial data of secondary origin, obtained from Central Bank of Nigeria Statistical Bulletin spanning 1975 and 2015 are used in the study. Financial intermediation is represented by Total Credit to the economy (as explained variable) while Total Credit to Private Sector (TCPS), Total Federal Government Revenue (TFREV), Deposit Interest Rate (DPRT), Prime Lending Rate (PLR), Cash Reserve Requirement (CRR) and Liquidity ratio (LIQR) are explanatory variables. TFREV is a direct representation of TSA in the model. The data are analysed using Ordinary Least Square technique of multiple regression. The results clearly show that TFREV assumes a positive and statistically non-significant relationship with TCR. TCPS and DPRT also exhibit a positive relationship with TCR. PLR, CRR and LIQR exhibit negative relationship with TCR, all in line with the expectations of the study. Consequently, the researchers recommend that since government revenues support banks' lending and increase their liquidity, movement of these funds from commercial banks will exert negative impact on bank liquidity and their ability to grant loans and subsequently heightens the lending rate; therefore, a distributed or liberal form of TSA model should be adopted for the safety of our banking industry.

JEL classification: E51, G21, G28

Keywords: treasury single account, financial intermediation, total federal government revenue

Received: 30.05.2021 Accepted: 04.09.2021

Cite this:

Michael E. I., Umoren N. J. (2021) Treasury single account and financial intermediation in Nigeria. Financial Internet Quarterly 17 (3), pp. 1-13.

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Introduction

The ability of commercial banks (DMBs) to create money or credit depends to a large extent on the amount of funds at their disposal. The amount of funds at their disposal is a function of how much has been mobilised, mopped up, received or collected from the depositors (surplus units). This process is called indirect finance and because it requires some form of intermediaries to smoothen the process, it is therefore called financial intermediation. Financial intermediation has to do with the movement or transfer of funds from surplus economic units which may comprise individuals, firms, and government agencies to the deficit economic units which may also comprise individuals, firms, and government agencies of the economy for investment and production which would enhance the productive capacity and overall output and employment. Financial intermediation is a major role of the "financial system", which, according to Ekezie (2006) involves the coming together of financial institutions and agents and the specification of rules and regulations that will enable approved regulators to regulate interactions between and among the institutions and the rest of the world in order to foster economic growth and development of a nation. Financial intermediation has two sides – the supply side and the demand side. The supply side which is known as the surplus economic units are the creditors who provide the needed funds and the demand side also known as the deficit economic units are the borrowers who require the funds for productive and investment purposes.

The amount of funds that can be mobilised from the surplus economic units depends on some economic factors that are of interest to both the depositor and the financial intermediaries/institutions (FIs) and also the amount of funds that can be given out by the FIs to the deficit economic units is a function of the monetary policies of the country involved. The suppliers of funds get returns on the funds in the form of interest (deposit) rate and the users of funds pay some cost (interest) to obtain it from the financial intermediaries. Olowe (1998) affirms that interest is the payment made for the use of money. The difference between what the intermediaries collect from the users of funds and what they (the intermediaries) pay to the suppliers of funds is called the spread. The requirements of the creditors and that of the borrowers from the FIs are always at variance. The creditors require high rate of return and short term investment whereas the borrowers require low cost of funds to enable them run a profitable business, and for the long term. These opposing anticipations require the FIs to be deft in handling their requests and harmonising their interests while ensuring a reasonable return.

Banks bridge the gap between the needs of lenders and borrowers by performing a transformation function. These functions include: size transformation; maturity transformation; and risk transformation (Casu, Girardone & Molyneux, 2006). According to Kashyap et al., (2002) as cited in CBN (2013), deposit-taking and lending by banks are closely related and both activities share similar transaction costs and are meant to reflect the liquidity transformation function of banks. In Nigeria, financial intermediation is the responsibility of licensed financial institutions and financial markets with regulators appointed to oversee the operations and enforce compliance with the enabling laws. The financial institutions include banks and non-bank financial institutions. While banks provide funds for short term use, financial markets provide both short term (money market) and long term funds.

This study was motivated by the policy of the Federal Government of Nigeria directing all Ministries, Departments and Agencies (MDAs) to close all their revenue accounts with deposit money banks and rather be lodging all their revenues in a single account domiciled with the Central Bank of Nigeria (CBN). This idea of accounting is known as Treasury Single Account (TSA). According to the CBN (2016), the Treasury Single Account (TSA) initiative is the operation of a unified structure of Government Bank Accounts, in a single account or a set of linked accounts for all government payments and receipts. The TSA is primarily designed to bring all government funds in bank accounts within the effective control and operational purview of the Treasury, in order to: enthrone centralised, transparent and accountable revenue management; facilitate effective cash management; ensure cash availability; promote efficient management of domestic borrowing at minimal cost; allow optimal investment of idle cash; block loopholes in revenue management; establish an efficient disbursement and collection mechanism for government funds; improve liquidity reserve; and eliminate operational inefficiency and costs associated with maintaining multiple accounts across multiple financial institutions.

This laudable policy is fraught with some unintended downsides. Key to this paper is the aspect of financial intermediation that is being influenced by this policy. Moving MDAs' deposits from DMBs to CBN tends to bring about the following intermediation issues;

1) Reduction in liquidity in the banking system,

2) Pressure on the interest rate,

3) Limited credit to the economy,

4) Negative impact on the economy;

5) Surge in money market rates;

6) Loss of jobs in banks;

7) Re-recapitalisation of banks;

8) High Federal Government's (FG) debt profile; and

9) High cost of government debt due to poor cash management, among others.

In line with the seeming challenges of TSA highlighted above, the researchers intend to appraise the impact of Federal Government revenue on financial intermediation in Nigeria in order to project how banks' intermediation will suffer or succeed in the absence of Federal government funds. The appraisal will cover the period between 1975 and 2015.

This study is organised in five sections. Section one which is the introduction encompasses the background to the study. Section two deals with the review of related literature which includes conceptual, theoretical and empirical literature. In section three, the researchers discuss the methodology applied in the study. In section four, results of data analysed are presented and discussed while section five shows the conclusion where recommendations are also made.

Background to the treasury single account in Nigeria

The Federal Government of Nigeria (FGN) commenced the first phase of the implementation of the TSA in January 2012 as part of the Economic Reforms and Governance Project (ERGP), the impact of which was not felt by banks as the mandatory remittance of inflows to CBN was not enforced. Originally, the TSA was intended to ensure the optimum use of cash resources and to reduce government borrowing. The first phase started with the payment element which enabled selected Ministries, Departments and Agencies (MDAs) to draw payments from single account or designated accounts with the CBN. The full implementation of the TSA, which brought in the e-collection segment of the scheme took place in September 2015 (CBN, 2016).

Under the scheme, all FGN Public sector funds were remitted to CBN, with the exception of the National Assembly and Judiciary that belong to different arms of Government. The TSA forms part of the government's public financial management reform programme, through which harmonization of over 5,000 multiple Federal Government (FG) accounts across CBN Branches and DMBs were harmonized into a single account with the bank, known as the Consolidated Revenue Fund (CRF) and connected accounts (CBN, 2016). To the best of my knowledge as an ex-banker, these 5,000 accounts were attached to about 5,000 employees of the various banks involved, as the accounts were harmonised, certainly their major source of deposits vanished, and their jobs put on the line.

The Bank (CBN) collaborated with the Office of the Accountant General of the Federation (OAGF) to ensure that all outstanding MDAs were migrated to TSA, which became fully operational by September 15, 2015 and to continue in the 2016/2017 period.

TSA was expected to bring about the following benefits:

1) Effective implementation of monetary policies, as government funds are consolidated with the CBN, which eliminates DMBs float, Monetary, Credit, Foreign Trade and Exchange Guidelines for Fiscal Years 2016/2017 and consequently reduces costs of liquidity management,

2) Promote transparency and accountability and block leakages in the management of public finance,

3) Elimination/reduction of FG access to Ways and Means Advances which involves printing of high powered money with its attendant inflationary impacts,

4) Facilitation of an efficient payments mechanism, which in turn supports the development and modernization of the payments system,

5) Minimization of volume and cost of borrowing, as all idle funds are consolidated by the government. For instance, the FG borrows from the capital market and incurs costs, despite huge idle credit balances on MDA capital accounts,

6) Make revenue available to FG to utilize for economic development and growth,

7) Ensuring availability of cash to meet obligations,

8) Provide real time information on government cash resources on a consolidated basis and assist in reliable cash flow forecast,

9) Improvement in operational controls during budget execution, as information about cash resources

is readily available,

10) Minimization of float in the system by ensuring that idle funds were utilized,

11) Reduction on banks' fees and charges (CBN, 2016).

Models of treasury single account

As part of the essential requirements of TSA, there are two TSA models:

A situation where the main account and associated ledger sub-accounts (where they exist) are to be maintained in a single banking institution OR,

A situation where the main TSA is maintained in a single banking institution and associated zero balance ledger sub-accounts (ZBAs) (where they exist) are maintained in other institutions from where balances are swept daily to the main TSA in CBN or the appointed main TSA hosting financial institution (CBN, 2016).

In other words, although there are several variants of the TSA structure, they can be broadly grouped into two categories: centralized and distributed TSA architectures. The TSA systems established in most countries fall somewhere in between these two models and involve various types of bank accounts.

A purely centralized arrangement is one in which all revenue and expenditure transactions of the government pass through a single account generally maintained with the central bank,

At the other extreme, a TSA could be virtually operational even though line agencies - down to the lowest level in the organizational hierarchy - are allowed to retain separate transaction accounts in the banking system. However, in the latter case, balances in all transaction accounts should be swept into the TSA main account periodically (Pattanayak & Fainboim, 2010).

Treasury single account coverage

Delineating the boundary of a TSA is an important issue and needs to be carefully considered in light of each country's institutional and legal/regulatory framework. In defined circumstances, there could be a case for maintaining some bank accounts that cannot be fully integrated into the TSA. For example, there are situations where geographical factors or the non-availability of banking facilities preclude the use of a TSA. At a minimum, the TSA should cover all central government entities and their transactions. These include accounts managed by social security funds and other trust funds, extra-budgetary funds (EBFs), and autonomous government entities, and loans from the multilateral institutions and donor aid resources. A TSA could also be extended, in theory at least, to include sub-national levels of government and other public institutions through the use of correspondent accounts (Pattanayak, 2010).

Review of related literature

In this section of the study, the researchers considered and reviewed literature in the area of Treasury Single Account (TSA) and financial intermediation in the Nigerian economy. In making credit available, banks are rendering a great social service, because through their action production is increased, capital investments are expanded and a higher standard of living is realized (Adekanye, 1986).

It was reported by Odunsi (2017) that the Accountant General of the Federation, Mr. Ahmed Idris, said that the Federal Government has recorded over N7 trillion in the Treasury Single Account (TSA) within six months of its operation. For the researchers, this statement implies that the above sum has been reduced from the funds available for lending to private sector and other borrowers for economic growth. That is why the benefits so highlighted are to the government (the public sector) and not to the private or core private sector. These gains that accrue to government become the pains that the private sector is passing through. This policy appears to be government centred and hence, tends to limit financial intermediation. According to CBN (2015) while analysing financial/banking system developments in its 2015 annual report, "the banking system's capacity to finance the economy rose slightly, with the aggregate credit to GDP ratio at 22.7 per cent from the 21.4 per cent in 2014. However, the ratio of private sector credit to GDP fell slightly to 19.7 per cent from 20.1 per cent in 2014, signifying substantial growth of net claims on government, which crowded out credit to the private sector." This is not sufficient to conclude just after three months into the TSA era but provides a useful insight to support the anxiety nursed by the researchers as the bane of this era if conscious effort(s) are not made to checkmate it.

Meanwhile, some analysts feared that the TSA policy could lead to another round of bank failure as the policy is capable of posing serious cash crunch and li-

quidity challenges to the banking sector (Imandojemu, 2016). According to Okwe et al., (2015) the implementation of TSA affected the liquidity level in the banking system, creating a surge in money market rates as banks scrambled for funds to stabilise their liquidity positions. Besides, the Nigerian banking industry on an aggregate basis would be affected in terms of deposits and funding cost structure.

Adegbite (2015) posited that the TSA is a masterstroke policy which is more than simply closing down accounts. It is the most potent anticorruption weapon by any government, given that it is a two-edged sword that would checkmate corruption in government and also a brilliant policy that will help sanitise the banking sector. Soludo (2015) stated that TSA is a great initiative; but that the past should not be followed by allowing government funds to be redundant in the Central Bank and that for an economy like Nigeria, that is desperately in need of stimulation, pilling up idle cash balance at the CBN does not constitute sound economics.

Eme, Chukwurah and Iheanacho (2015) posit that the order on TSA, which came into effect on August 11, 2015marks the beginning of unified accounting by MDAs for both government revenues and expenditures and that the situation that existed before now was clearly against the requirements of the Nigerian Constitution as contained in Sections 80 and 162, hence, a flagrant breach of the constitution. They expressed satisfaction that the disrespect for the Constitution would now be history. As Yusuf (2015) puts it, “Bank treasurers complained that the implementation would adversely affect liquidity in the banking system and end up putting pressure on interest rates and availability of credit to the economy”.

Financial intermediation in Nigeria

In the majority of instances, financial intermediation is meant to engender economic growth and development in any economy. That is why an efficient and robust financial system is a precondition, else, we talk about direct finance – where there are no intermediaries and the parties depend on luck and chance to recover their funds/monies. It is against this backdrop that financial intermediation was introduced to take care of the risks inherent in direct finance, though, at a cost. The vehicles of financial intermediation are financial intermediaries (FIs) and financial markets. It is through the mechanism of (FIs) and financial markets that funds are transferred and allocated to the most productive opportunities of the economy.

Sheriff and Amoako (2014) posit that the supply of loanable funds is largely determined by the total volume of deposits mobilized by the banking sector and that increase in the supply of funds should reduce lending rates. According to Yakubu (2014), available literature reveals that there is a general agreement that banks intermediation brings about economic growth and that the role extends to other sectors of the economy including agriculture, manufacturing and other productive sectors.

Theoretical and empirical literature

In this sub-section of the paper, theories of financial intermediation and work done by other researchers on financial intermediation, TSA and other related topics will be reviewed.

CBN (2013) posited that a number of theories explain the role of financial intermediation. These theories include the theories of asymmetric (imperfect) information and agency, all of which lead to market imperfections and thus transaction costs. The rationale for the existence of intermediaries such as banks is that they can reduce information and transaction costs that arise from information asymmetry between lenders and borrowers. The modern theory of financial intermediation is hinged on two arguments namely; intermediaries’ (such as banks) ability to provide liquidity and their ability to transform the risk characteristics of assets. Thus, banks for example are able to act as coalitions of depositors that provide households with insurance against idiosyncratic shocks that adversely affect their liquidity positions (Diamond & Dybvig, 1983). The agency argument for the role of intermediaries’ activities is in the creation of value arising from the qualitative asset transformation; in a situation where the supply and demand for credit for example, cannot be fully met in the market.”

The existence of financial intermediation can be explained by five theories. The theories relate to: delegated monitoring; information production; liquidity transformation; consumption smoothening; and the role of banks as a commitment mechanism (Casu, 2006). In this paper, the theories of asymmetric information, delegated monitoring, liquidity transformation, agency and commitment mechanism are relevant.

Mauraina (2018) investigated the effect of TSA on Deposit Money Banks’(DMBs) liquidity performance in Nigeria. Correlational research design was adopted in the analysis of data collected from the CBN Statistical

Bulletin between 2012 and 2017 in order to test pre and post implementation periods of the TSA. They used DMB liquidity ratio as the dependent variable while Federal Government's Deposits (FGD) at the DMBs was used as independent variable. Findings from the study showed that FGD had a positive and significant effect on DMBs' liquidity position in the Pre-TSA era but a negative and significant effect on DMBs' liquidity performance in the Post-TSA era. They recommended a hybrid TSA model in order to boost the DMBs' liquidity position in the country.

Ivungu et al., (2020) in their examination of the effect of TSA on corruption in the Nigerian public sector so as to assess how TSA impacted the Corruption Perception Index (CPI) in Nigeria, used data obtained from Transparency International for the period 2012 to 2014 (pre –TSA adoption) and 2016 to 2016 (post-TSA adoption) with data of 2015 as the base year in their analysis. Findings from the study revealed that there is no significant difference in the mean of corruption perception index (CPI) before and after TSA adoption in Nigeria. Their conclusion is that TSA has not significantly reduced corruption in the Nigerian public sector.

The assessment of the implementation effect of TSA on the economy of Nigeria: The perspective of Banking Sector by Ilori et al., (2019) using a descriptive approach, revealing that TSA has led to a drastic reduction in corrupt practices and monetary misappropriation. Echekoba et al., (2020) assessed the effect of TSA in Nigerian Banks' performance using an ex post facto research design. They regressed federal government deposit on credit to the private sector and found that federal government deposit has significant influence on credit to the private sector.

Imandojemu (2016) examined the nexus between the full implementation of the Treasury Single Account (TSA) system and economic emancipation in Nigeria. They used data sourced from the CBN Statistical Bulletin employing an explorative analysis method. Findings indicated that the full implementation of TSA is capable of rejuvenating the drive for economic emancipation in Nigeria. The researcher recommended policy reforms to serve as an operational framework for the full implementation of TSA, being one of the pre-conditions of optimal resource utilization and economic autarky.

Bakare, Isaac and Samuel (2015) examined the extent to which banks' credit affects economic growth in Nigeria. They used secondary data obtained from the Central Bank of Nigeria statistical bulletin for a period of 24 years from 1990 to 2013. Variables used in the study were Gross Domestic Product as proxy for economic growth while inflation rate, credit to the private sector and credit to the public sector were independent variables. All variables used were stationary at first difference. The result showed that the lagged value of credit to the public sector relates positively thought in a non-significant manner with GDP and the lagged value of credit to the private sector is positively and significantly influencing economic growth in Nigeria. Meanwhile, lagged value of inflation shows a negative and significant relationship with economic growth. The recommendation was that to stem the rate of misappropriation of government funds by public officers, government should ensure that auditing of their financial statement is done as and when due.

Yakubu (2014) in their assessment of the impact of commercial banks credit on economic growth in Nigeria using data covering the period ranging from 1992 to 2012, used commercial bank credit to the private sector of the economy to estimate its impact on Nigeria's economic growth. Ordinary Least Square regression technique was adopted in analysing the data. The result showed that commercial bank credit has significant effect on economic growth in Nigeria. In line with the results obtained, it was recommended that banks should enhance and sustain their credit culture while effort should be intensified to have a comprehensive legal framework that will continue to assist in monitoring the performance of credit to the private sector and guarantee recovery of delinquent loans. Sharing of information on bad debts would prevent other banks from being a victim to the same debtor customer.

Ekpenyong and Acha (2011) investigated the role of banks in economic growth. Bank deposits and bank credit to the private sector were used as independent variables to represent financial intermediation and real gross domestic product (RGDP) represented economic growth. Regression results revealed bank intermediation function contributes to economic growth in Nigeria. It was recommended that banks should expand credit to the private sector.

Anthony (2012) investigated the determinants of bank savings in Nigeria and its impact on Nigeria's economic growth from 1970 - 2006. Distributed Lag-Error Correction Model (DL-ECM) and Distributed Model were adopted. Results revealed that Interest Rate Spread (IRS), GDP per capita (PCY), Financial Deepening (FSD) exhibit a positive relationship with private domestic savings and that private domestic deposit negatively relate with Real Interest Rate (RIR) and Inflation Rate (INFR). The researcher recommended that government should intensify efforts to reduce unemployment and consequently improve per capita income in the economy.

Bassett et al., (2013) posited that identifying macroeconomic effects of credit shocks is difficult because many of the same factors that influence the supply of loans also affect the demand for credit. Using bank-level responses to the Federal Reserve's Loan Officer Opinion Survey, they constructed a new credit supply indicator: changes in lending standards, adjusted for the macroeconomic and bank-specific factors that also affect loan demand. Tightening shocks to this credit supply indicator led to a substantial decline in output and the capacity of businesses and households to borrow from banks, as well as widening of credit spreads and an easing of monetary policy.

Ogiriki and Andabai (2014) examined the relationship between financial intermediation and economic growth. Using secondary data obtained from the National Bureau of Statistics and CBN Statistical Bulletin for the period spanning 1988 and 2013. Vector Error Correction Model technique was employed. Unit root test was conducted and the result implied the absence of unit roots among the variables. The existence of long -run equilibrium relationship between economic growth and financial intermediation was confirmed and the speed of adjustment required to catch up with long run equilibrium was established. Proper regulation and control of the activities of financial intermediaries as a panacea for a sound financial system was recommended. Also, banks should not be allowed to possess excess liquidity in order not to trigger inflationary tendencies in the economy.

Eriemo (2014) investigated the macroeconomic determinants of bank deposits in Nigeria. Analysis of the effects of macroeconomic indicators on the performance of banks as regard deposit mobilization and its determinants was done. Data spanning the period between 1980 and 2010 were used in the study. The parsimonious Error Correction Mechanism result revealed that the variables selected (bank branches, bank investment, the general price level and interest rate) greatly influenced the level of bank deposits in Nigeria. The Johansen cointegration test and Vector Error Correction Mechanism indicated a long run relationship among the variables and satisfactory speed of adjustment of short run disequilibrium. In an attempt to improve the deposits of banks the influences of the variables chose for the study should be considered.

Methodology

This is a predictive research aimed at using government revenue to look into the future of bank lending in the era of TSA in Nigeria. In this segment of the paper, the researchers describe the processes that are used in data collection and model specification among other major highlights.

Secondary data research design which is also known as ex post facto design is used in the study. Annual financial data spanning 1975 and 2015 and obtained from CBN Statistical Bulletin of various years are used. Ordinary Least Square (OLS) technique of multiple regression was used in analysing the data using econometric statistical software called Eviews.

In order to ease analysis of the data obtained for the study and capture all the selected variables, we specified our model taking into consideration the theory of asymmetric information which leads to transaction costs. Financial intermediation is represented by Total credits to the Economy (TCR) while Total Credit to Private Sector (TCPS), Total Federal Government Revenue (TFREV), Deposit Interest Rate (DPRT), Prime Lending Rate (PLR), Cash Reserve Requirement (CRR) and Liquidity Ratio (LIQR) are explanatory variables. DPRT and PLR represent costs of financial intermediation to depositors and borrowers respectively. TFREV is a direct representation of TSA in the model, bearing in mind that TSA represents Federal government revenue for the period of the study, now moved to CBN.

The functional representation of the model is as follows:

$$TCR = f\ (TCPS, TFREV, DPRT, PLR, CRR, LIQR)$$

Where

TCR = Total Credits to the Economy

TCPS = Total Credit to Private Sector

TFREV = Total Federal Government Revenue

DPRT = Deposit Interest Rate

PLR = Prime Lending Rate

CRR = Cash Reserve Requirement

LIQR = Liquidity Ratio

The econometric model of the relationship is shown as:

$$TCR = ß_{0+} ß_1TCPS + ß_2TFREV + ß_3DPRT + ß_4PLR + ß_5CRR + ß_6LIQR + \mu$$

Where

$ß_0$ = Constant

μ = Error Term

A PRIORI EXPECTATIONS OF THE STUDY

Table 3.1 shows the variables and the expected signs of their coefficients in the study.

Table 3.1: A Priori Expectations of the Study

Variables	TCPS	TFREV	DPRT	PLR	CRR	LIQR
A priori sign	+	+	+	-	-	-

Source: Author's Expectation.

DISCUSSION OF RESULTS

In this section of the study, results of unit root test, multicollinearity test, CUSUM test of stability, results of cointegration based on trace test and max-eigen value test and summaries of long run and short run tests will be discussed.

Table 4.1: Result of Unit Root Test Based On Phillips-Perron Test

Variable	ADF	CRITICAL VALUE @		Order of Integration	P-Value
		1%	5%		
TCR	-5.522929	-4.219126	-3.533083	I(2)	0.0003
TCPS	-4.639567	-4.211868	-3.529758	I(1)	0.0033
TFREV	-6.037568	-4.211868	-3.529758	I(1)	0.0001
DPRT	-7.472098	-4.211868	-3.529758	I(1)	0.0000
PLR	-10.394620	-4.211868	-3.529758	I(1)	0.0000
CRR	-7.129392	-4.211868	-3.529758	I(1)	0.0000
LIQR	-11.020120	-4.211868	-3.529758	I(1)	0.0000

Source: Author's computation using Eviews9.

In order to ascertain the level of stationarity of time series data used in the study, unit root test whose results are shown in Table 4.1 was conducted using Phillips-Perron (PP) at trend and intercept. The result reveals that all variables are stationary at first difference (that is, I(1)) except TCR that is stationary at second difference (that is, I(2)).

Table 4.2: Multicollinearity Test using Variance Inflation Factor (VIF)

Variable	Coefficient variance	Variance Inflation Factor (VIF)
C	713589.900000	NA
TFREV	0.008176	6.373050
TCPS	0.003169	5.639455
DPRT	2739.690000	5.209072
PLR	1985.559000	4.353881
CRR	665.421000	1.740749
LIQR	222.662200	1.395477

Source: Author's computation using Eviews 9.

Also, in order to ascertain whether the variables are highly correlated or not, a multicollinearity test which results are shown in Table 4.2 was conducted and the coefficients of variance inflation factor (VIF) indicates that the variables are free from multicollinearity.

Cointegration Test

Cointegration test was conducted to determine if there is any long run relationship among the variables used in the study. The existence of four cointegrating equations in unrestricted cointegration rank trace test (see Table 4.3 in the appendix) and also three cointegrating equations in unrestricted cointegration rank max-eigenvalue test (see Table 4.4 in the appendix) confirm that there is long run equilibrium among the variables. This implies that even series that may be non-stationary tend to move closely together overtime and their difference then becomes stationary (Adenuga, 2009).

Table 4.5: Summary of Ordinary Least Square (OLS) Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1219.711000	844.742500	1.443885	0.1579
TFREV	0.164067	0.090421	1.814478	0.0784
TCPS	0.590303	0.056295	10.485790	0.0000
DPRT	4.210018	52.342050	0.080433	0.9364
PLR	-13.634840	44.559610	-0.305991	0.7615
CRR	-14.993050	25.795610	-0.581221	0.5649
LIQR	-17.304540	14.921870	-1.159677	0.2543

R^2 = 0.961377; Adjusted R^2 = 0.954561; F-statistic = 141.0496; Prob (F-statistic) = 0.000000

Source: Author's computation using Eviews 9.

Based on the OLS results, the estimated equation for the study will appear as follows:

$$TCR = 1219.711 + 0.590303TCPS + 0.164067TFREV + 4.210018DPRT - 13.63484PLR - 14.99305CRR - 17.30454LIQR + \mu$$

In line with Coefficient of Determination (R^2) shown in the OLS result earlier presented, it is clear that the independent variables selected for the study have the capacity to cause 96.14 per cent variations in the dependent variable. On the other hand, only 3.86 per cent of variations in the dependent variable is caused by forces outside the model. This result proves that the model is robust and capable of providing adequate direction and answer (s) to the question being investigated in the study. Besides the R^2, the adjusted R^2 also shows the strength of the model when the number of variables and observations are taken into consideration. In this case, the adjusted R^2 is 95.46 per cent. The probability of F-statistic of 0.000000 shows that the overall model is significant at 5 per cent level of significance.

From the OLS results, all the variables of the study are correctly signed as expected. TFREV, TCPS and DPRT exhibited positive relationships while CRR, PLR and LIQR exhibited negative relationships with the dependent variable (TCR) as expected.

TCPS exhibits a positive and statistically significant relationship with TCR. This implies that N1billion increase in TCPS will result in N0.590303billion increase in TCR. The coefficient of DPRT indicates a positive and statistically non-significant relationship with TCR; implying that one percentage point increase in DPRT will result in N4.210018 billion increase in TCR. It is worthy of note here that when deposit rate is high, depositors will be encouraged to deposit their funds in the bank and this will increase the stock of funds available for intermediation. In any case, increase in deposit rates will also lead to increase in lending rates so that banks may enjoy reasonable spread.

PLR assumes a negative and statistically non-significant relationship with TCR; implying that one percentage point increase in PLR will result in N13.63484 billion decrease in TCR. This is in line with the a priori expectation of the study. CRR assumes a negative and statistically non-significant relationship with TCR; implying that one percentage point increase in CRR will result in N14.99305 billion decrease in TCR. This is in line with the expectation of the study and monetary policy. LIQR also exhibits a negative and statistically non-significant relationship with TCR; implying that one percentage point increase in LIQR will result in N17.30454 billion decrease in TCR. This, too, is in line with the expectation of the study and monetary policy.

Quite interesting and revealing is the fact that coefficient of TFREV which represents TSA in the study assumes a positive and statistically non-significant relationship with TCR; implying that N1billion increase in TFREV will result in N0.164067 billion increase in TCR. This further proves that Federal Government Revenues (both Oil and non-Oil revenues) over the years support financial intermediation as they increase the stock of money in circulation. This is not doubtful as government revenue left with banks can support their intermediation function. Also, government revenue support government expenditures which are capable of engendering employment and consequently increase bank deposits which ultimately increase total amount of funds available for lending for productive purposes.

Table 4.6: Parsimonious Error Correction Mechanism

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	877.242900	423.435600	2.071727	0.0467
D(TCPS)	3.534116	0.477560	7.400357	0.0000
D(TFREV(-1))	-0.773483	0.500345	-1.545900	0.1323
D(DPRT)	-169.150000	120.589600	-1.402691	0.1706
D(PLR(-1))	-20.486020	95.993640	-0.213410	0.8324
D(CRR)	202.455400	100.710600	2.010270	0.0532
D(LIQR(-1))	-25.938070	38.712340	-0.670021	0.5078
D(ECM(-1))	-0.524170	0.780648	-0.671455	0.5069

Adjusted R-Square = 0.648039; Durbin Watson = 1.505476; F-statistic = 10.99522; Prob(F-statistic) = 0.000001

Source: Author's computation using Eviews 9.

In order to correct the short run disequilibrium indicated by the cointegration test; Error Correction Mechanism (ECM) was applied and the result shown in Table 4.5. The ECM results show that 52.42 percent of the short run disequilibrium will be corrected per annum in order to meet up with the long run equilibrium position. Besides, the ECM results show that the independent variables can explain about 64.8 per cent of variations in the dependent variable. Furthermore, an F-statistic of 10.99522 and Prob (F-statistic) of 0.000001 confirm the overall strength of the model with Durbin-Watson statistic of 1.505476 indicating absence of serial correlation.

Conclusion

Treasury Single Account, a recent initiative of the federal Government of Nigeria, which is designed to create one account for all government revenues in a bid to ensure transparent, accountable, effective and efficient management of government funds and reduce domestic borrowing cost, among others, was tested in order to predict the future of banks financial intermediation in Nigeria. All the expectations of the study were met in terms of direction of relationship. Findings from the study reveal that federal government revenue impacts bank lending positively though not significantly. Consequently, removal of government funds from the banking sector portends some negative impact for the sector. Increase in deposit interest rate tends to increase volume of deposits available for lending. Increase in total credits to the private sector will certainly increase the total credits to the economy. Decrease in PLR will encourage borrowers to access loans from banks as their cost of funds will be low and that portends business continuity and profitability. Both CRR

and LIQR are meant to reduce the amount of funds available for lending with a view to enhancing stronger banks through reduction of inherent loans losses which are not foreseeable. This is supported by their negative relationships with the TCR. It is quite clear that only credit to the private sector has a significant relationship with TCR both in the short and long runs.

It is recommended that the federal government should adopt a more liberal TSA model that would not stifle commercial banks in order to secure a better and more liquid financial system. Moreover, banks should increase credits to the real sector for increased activities and consequently increase cash flows for lending rather than wait for government revenue to enhance their intermediation activities.

It is recommended further that future research should be directed at ascertaining the reasons behind government's increased debt portfolio in the wake of Treasury Single Account.

References

Adegbite, O. (2015). Arrival of Treasury Single Account is the Beginning of Wisdom, *Guardian newspaper*, October 2015. Retrieved from https://m.guardian.ng/features/arrival-of-treasury-single-account-is-the-beginning-of-wisdom-1/amp/

Adekanye, F. (1986). Element of Banking in Nigeria. F and A Publishers, Lagos. In: Yakubu, Z., Affoi, A.Y. (2014). An Analysis of Commercial Banks' Credit on Economic Growth in Nigeria. *Current Research Journal of Economic Theory, 6*(2), 11-15

Adenuga, A.O. (2009). Determinants of Remittances in Nigeria from 1970-2006. *Applied Econometrics & Macroeconometric Modelling in Nigeria*. Ibadan: Ibadan University Press.

Akintola, S. (2004). Banks Move Against Soludo. Nigerian Tribune. In: Yakubu, Z., Affoi, A.Y. (2014). An Analysis of Commercial Banks' Credit on Economic Growth in Nigeria. *Current Research Journal of Economic Theory, 6*(2), 11-15.

Anthony, O. (2012). Bank Savings and Bank Credits in Nigeria: Determinants and Impact on Economic Growth. *International Journal of Economics and Financial Issues*, *2*(3), 357-372. Retrieved from www.econjournals.com.

Badun, M. (2009). Financial Intermediation by Banks and Economic Growth: A Review of Empirical Evidence. *Journal of Financial Theory and Practice, 33(*2), 121-152.

Bakare, I.A.O., Isaac, A.A., Samuel, K.H. (2015). To What Extent Does Banks' Credit Stimulate Economic Growth? Evidence from Nigeria. *JORIND, 13*(1). Retrieved from www.ajol.info/journals/jorind.

Basset, W.F., Chosak, M.B., Driscoll, J.C., Zakrajsek, E. (2013). Changes in Bank Lending Standards and the Macroeconomy. Retrieved from www.google.com.

Bencivenga, V.R., Smith, B.D. (1991). Financial Intermediary and Endogenous Growth. *Review of Economic Studies, 58: 195-209*. Availble at: www.google.com.

Casu, B., Girardone, C., Molyneux, P. (2006). *Introduction to Banking.* Harlow: Pearson Education.

Central Bank of Nigeria, (2013). Bank Intermediation in Nigeria: Growth, Competition, and Performance of the Banking Industry, 1990 – 2010. *Research Department, Abuja, Occasional Paper No. 48.*

Central Bank of Nigeria, (2015). Annual Report. Retrieved from www.cbn.gov.ng.

Central Bank of Nigeria (2016a). Monetary, Credit, Foreign Trade and Exchange Policy Guidelines for Fiscal Years 2016/2017. *Monetary Policy Circular*, 41:19-20. Available at: www.cbn.gov.ng.

Central Bank of Nigeria, (2016b). Guidelines for the Operation of Treasury Single Account (TSA) By State Governments in Nigeria. Retrieved from www.cbn.gov.ng.

Diamond, D.W., Dybvig, P.H. (1983). Bank Runs, Deposit Insurance, and Liquidity. *The Journal of Political Economy*, *91*(3), 401-419. Retrieved from: www.gaffeo.altervista.org/set_one.pdf. Retrieved on August 31, 2020.

Echekoba, F.N., Obi-Nwosu, V.O., Ubssie, C.M., Mbanefo, P.A. (2020). Effect of Treasury Single Account (TSA) on Nigerian Banks Performance. *International Journal of Advanced Academic Research (Social and Management Sciences)*, *6*(6), 18-29. Retrieved from www.ijaar.org.

Ekezie, E.S. (2006). *The Elements of Banking: Money, Financial Institutions and Markets.* Onitsha: Africana First Publishers Limited.

Ekpenyong, D.B., Acha, I.A. (2011). Banks and Economic Growth in Nigeria. European *Journal of Business and Management, 3*(4), 129-139. Retrieved from www.iiste.org.

Eme, O.I., Chukwurah, D.C., Iheanacho, E.N. (2015). An Analysis of Pros and Cons of Treasury Single Account Policy in Nigeria. *Arabian Journal of Business and Management Review, 5*(4), 20-39. Retrieved from www.google.com.

Eriemo, N.O. (2014). Macroeconomic Determinants of Bank Deposits in Nigeria. *Journal of Economics and Sustainable Development, 5*(10), 49-57. Retrieved from www.iiste.org.

Ilori, F.O., Efuntade, A.O., Jemiseye, A. R., Ilori, A.D. (2019). Implementation Effect of TSA on the Economy of Nigeria: The Perspective of Banking Sector. *European Journal of Accounting, Auditing and Finance Research*, *7*(10), 23-31. Retrieved from www.google.com.

Imandojemu, K. (2016). Treasury Single Account System and Economic Juche: The Nigerian Experience. *Central Bank of Nigeria Bullion, 40*(1), 62-70. Retrieved from www.cbn.gov.ng.

Ivungu, J.A., Ganyam, A.I., Agbo, A., Ola, P.O. (2020). Effect of Treasury Single Account (TSA) on Corruption in the Nigerian Public Sector. *International Journal of Academic Research in Business and Social Sciences*, *10*(3), 43–53. Retrieved from http://dx.doi.org/10.6007/IJARBSS/v10-i3/702.

Kashyap, A.K., Raghuram, G.R., Stein, J.C. (2002). Banks as Liquidity Providers: An Explanation for the Coexistence of Lending and Deposit-Taking. *Journal of Finance, 57,* 33-73.

Mauraina, S.A. (2018). Effect of Treasury Single Account (TSA) on Deposit Money Banks' Liquidity Performance in Nigeria. *International Journal of Family Business and Management,* 1-15.

Odunsi, W. (2017). TSA: Nigerian Government Realises N7trillion. Retrieved from http://dailypost.ng/2017/04/17/tsa-nigerian-government-realises-n7trillion.

Ogiriki, T., Andabai, P.W. (2014). Financial Intermediation and Economic Growth in Nigeria 1988 - 2013: A Vector Error Correction Investigation. *Mediterranean Journal of Social Sciences*, *5*(17), 19-26.

Okwe, M., Nelson, C., Adeoye, T., Ogah, D. (2015). Treasury Single Account: Giving Life to Jonathan's 'Dead Policy Directives'. *Sunday Guardian*, August 16, 52-58.

Olowe, R.A. (1998). *Financial Management: Concepts, Analysis and Capital Investments.* Lagos: Brierly jones Nigeria Limited.

Patanayak, S., Fainboim, I. (2010). Treasury Single Account: Concept, Design and Implementation Issues. *Fiscal Affairs Department, International Monetary Fund (IMF).* Retrieved from www.google.com.

Shaw, E.S. (1973). *Financial Deepening in Economic Development*. New York: Oxford University Press.

Sheriff, I.M., Amoako, G.K. (2014). Macroeconomic Determinants of Interest Rate Spread in Ghana: Evidence from ARDL Modelling Approach. *Journal of Finance and Bank Management,* 2, 115 – 132.

Soludo, C.C. (2015). Is the Nigerian Economy Stupid? A Lecture Delivered at the 8th Annual Lecture of Real News Magazine. In: Imandojemu, K. (2016). Treasury Single Account System and Economic Juche: The Nigerian Experience. *CBN Bullion*, *40*(1), 62-70.

Yakubu, Z., Affoi, A.Y. (2014). An Analysis of Commercial Banks' Credit on Economic Growth in Nigeria. *Current Research Journal of Economic Theory, 6*(2), 11-15.

Yusuf, I. A. (2015). Counting Cost of Treasury Single Account. Retrieved from http://thenationonlineng.net/counting-cost-of-treasury-single-account/.

Appendices

Appendix I

Table 4.3: Results of Unrestricted Cointegration Rank Trace Test

Hypothesised No. Of CE(s)	Eigen value	Trace statistic	0.05 Critical value	P- value
None	0.818662	224.250700	139.275300	0.0000
Atmost 1	0.788860	157.662400	107.346600	0.0000
Atmost 2	0.649140	97.008240	79.341450	0.0013
Atmost 3	0.510590	56.160920	55.245780	0.0414
Atmost 4	0.345742	28.293290	35.010900	0.2179
Atmost 5	0.241454	11.747430	18.397710	0.3282
Atmost 6	0.024558	0.969730	3.841466	0.3247

Trace test indicates 4 cointegrating equations at the 0.05 level

Source: Author's computation using Eviews 9.

Appendix II

Table 4.4: Results of Unrestricted Cointegration Rank Max-Eigenvalue Test

Hypothesised No. Of CE(s)	Eigen value	Trace statistic	0.05 Critical value	P- value
None	0.818662	66.588210	49.586330	0.0004
Atmost 1	0.788860	60.654210	43.419770	0.0003
Atmost 2	0.649140	40.847310	37.163590	0.0180
Atmost 3	0.510590	27.867630	30.815070	0.1100
Atmost 4	0.345742	16.545860	24.252020	0.3704
Atmost 5	0.241454	10.777700	17.147690	0.3295
Atmost 6	0.024558	0.969730	3.841466	0.3247

Max-eigenvalue test indicates 3 cointegrating equations at the 0.05 level

Source: Author's computation using Eviews 9.