

# Treasury Single Account and Banks' Stability in Nigeria

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**Abstract:** *The introduction of treasury single account (TSA) in Nigeria is supposed to boost government revenue and more importantly, reduce the funds available to the deposit money banks (DMBs). Consequently, the policy is capable of affecting the stability of the DMBs. Therefore, this paper analysed the difference between the adoption of TSA and the stability of Nigerian DMBs using data obtained from the annual reports and accounts of the nine (9) selected listed DMBs. The stability of DMBs was proxied with profitability (ROA), capital adequacy ratio (CAR), liquidity ratio (LDR), non-performing loan ratio (NPLR), asset growth rate, (AGR), deposit growth rate (DGR) while the adoption of TSA was based on the pre- and post-adoption periods of the policy. The study employed a paired-sample t-test to analyse the formulated hypotheses. The main findings are that there is a significant variance between pre- and post-TSA implementation on CAR, NPLR, LDR, ROA and DGR of Nigerian DMBs. NPLR [t-cal = 10.544; p <0.05], CAR [t-cal = 17.657; p <0.05], LDR [t-cal = 9.308; p <0.05], ROA [t-cal = 10.493; p <0.05], AGR [t-cal = 11.224; p <0.05] and DGR [t-cal = 15.232; p <0.05]. It is therefore recommended that banks should uphold the core financial intermediation role of deposit mobilisation and its allocation to remain liquid and profitable as well as to be able to maximise the wealth of their shareholders.*

**Keywords:** TSA; Banking Sector; Banks' Stability; DMBs.

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## Introduction

The functionality of the banking subdivision is crucial to the progress and expansion of any country all over the world. Specifically, the sector plays a financial intermediation role in any economy by ensuring that the entities with surplus funds can make these funds accessible to individuals who might have more potentially productive avenues to invest the funds through the facilitation of financial intermediaries. Furthermore, banks are the bedrock of financial revolution and efficiency in any economy (Agbo, Jugu & Okwoli, 2017). In Nigeria, the banking industry is subject to some of the strictest control and regulation within the nation perhaps because they are indispensable to any meaningful economic growth. However, the sector has experienced a series of reforms and policies from 1952 till date and as a result, many banks have gone under due to their inability to meet the requirements of the reforms (Sabo, Muhammad & Ka'oje, 2019).

Consequently, the stability of Deposit Money Banks DMBs in terms of their volume of deposit among other things is germane for any meaningful economic transformation to take place in any country. Before the introduction of the Treasury Single Account (TSA) in Nigeria, DMBs in the country had been generating a lot of revenue as a result of unethical dealings of the banks with various government agencies and parastatals. According to Moses, Ehalaiye, Maimako and Fasua (2017), DMBs in Nigeria have been operating numerous bank accounts for government Ministries, Departments and Agencies (MDAs). Hence, the TSA policy was introduced to pull out the alleged public sector funds from the banks. The banks benefited from the act by using the generated revenue to finance their operations. Subsequently, the agencies and parastatals remit into government coffer what they consider appropriate thereby creating Illegal Avenue for some unscrupulous individuals to enrich themselves via the so-called 'national cake'. The above activities have seriously affected national planning and development in the country for many years as a result of inadequate investment thereby leading to mass unemployment.

However, to curb the activities of these corrupt individuals which had affected the operations of government at all levels, the presidency in 2015 implemented the TSA policy thereby mandating all government agencies and parastatals to shut down their accounts with DMBs and transfer such funds to the Central Bank of Nigeria (CBN) via the federation account. A year after the implementation of TSA in Nigeria, a sum of 1.553 trillion naira which is equivalent to 7,776844133.6154 USD was transferred to the TSA account with the 'CBN' (CBN, 2016). TSA is a centralised framework of government bank accounts that provides a comprehensive overview of the government's cash reserves. The concept behind the TSA is rooted in the principle of merging cash and treasury functions. This means that the system entails a single bank account or a connected group of accounts through which governments manage all their financial inflows and outflows (Pattanayak & Fainboim, 2010). On the other hand, the stability of DMBs is seen and measured in this study in terms of the volume of deposits available, asset base and loan facilities which would allow the banks to adequately discharge their role in the country.

The commencement of TSA in Nigeria is presumed to boost government revenue and more importantly, reduce the funds available to the DMBs. Thus, the policy is capable of affecting the stability of the DMBs. Agbo, *et al* (2017) posited that Nigerian DMBs are faced with the problems of demanding competitors, weakening liquidity, regulatory requirements as well and government financial reforms among which is the TSA policy. The aforementioned challenges most especially the issue of TSA is likely to adversely influence the stability (in terms of the volume of deposit) of DMBs in Nigeria arising from the withdrawal of public funds from their custody. Consequently, the poor performance of DMBs in terms of the volume of deposits available among other things would remarkably affect the stability of the banks in rendering the financial intermediation role and this would in turn affect economic development. Furthermore, DMBs in Nigeria lost a substantial amount of money due to the operations of TSA by the

federal government. At that time, public funds constituted a large percentage of deposits in Nigerian DMBs to the tune of 2.2 trillion naira (Okerekeoti & Okoye, 2017). Therefore, anytime this huge amount of money is domiciled in the banking system, the system is liquid. However, the system suffers for it when such fund is taken out of the sector to meet the purpose for which it was transferred (Sabo, *et al.*, 2019). However, the influence of such a huge amount of money when it leaves the banking system is catastrophic and as such would affect the stability of the DMBs.

Surely, the literature is abounding in terms of research on TSA. However, the focus of those studies is quite different. For instance, Oguntodu, Alalade, Adekunle and Adegbie (2016) examined the nexus between TSA and the Nigerian economy. Muraina, 2018; Sabo, *et al.*, 2019 investigated the effect of TSA on DMBs' liquidity in Nigeria. Similarly, Agbo, *et al.*, 2017; Olaoye and Talabi (2019) investigated the impact of TSA on the performance of DMBs in Nigeria. From another dimension, Okpala, Akinyede and Worimegbe (2019) measured the impact of TSA on the failure of financial institutions in Nigeria while Moses, *et al.* (2017) investigated the consequences of the TSA on the wealth of Nigerian DMBs' shareholders. Furthermore, it should be noted that most of these studies came up with contradictory findings perhaps, because of their scope and focus.

Therefore, it is against this backdrop that this study addresses the identified gap by examining the difference between the adoption of TSA and the stability of DMBs in Nigeria. It should be noted that stability in this study goes beyond banks' liquidity. Other constructs included in the concept of stability in this study are deposit growth rate, asset growth rate, return on asset, loan-to-deposit ratio, capital adequacy ratio and non-performing loan. Therefore, the paper is structured thus; the introduction takes section one, the literature review takes the second section, section three is methodology, the analysis and findings take the fourth section and section five ends the work with the conclusion and recommendations.

## Literature Review

Incremental theory by Lindblom (1959) and stakeholders' theory by Freeman (1984) formed the theoretical bases of this study. According to incremental theory, human beings are very complex and this complexity is surrounded by many intractable problems. However, resources and skills are scarce and needed to solve these problems occasioned by their complexity. Ogbonna and Amuji (2018) buttress this argument by concluding that it is apparent that human challenges are surrounded by disagreement in every aspect in so a way that the social problems cannot be addressed in a specific manner satisfactorily. In trying to proffer alternative solutions to these diverse social problems.

According to Lindblom (1959), there is a need for government intervention beyond the analytical tool by stating that bounded rationality through its different agencies should also be deployed to address the problem facing human existence. The bounded reality according to Olaoye and Talabi (2019) is a united framework that aids the curtailment of complexities of humans as regards illicit acts such as corruption. They went on to elaborate that, in essence, the intricacies of practical limitations are intricately linked to the effectiveness of the Treasury Single Account (TSA). The primary objective of the TSA is to guarantee financial transparency and integrity among public officials, along with the equitable distribution of government revenue. This to them, therefore makes an incremental model of public policy a significant model in explaining the relevance of TSA in addressing a series of societal problems such as corruption, and leakages that militate against the government in generating sufficient revenue in fulfilling its fundamental objectives of public goods delivery.

However, researchers like Ogbonna and Amuji, (2018) have argued against TSA as it erodes the liquidity of DMBs and harms their capability to perform their main role of financial

intermediation of funds efficiently towards propelling the economy to growth and its subsequent development as most of the public funds are forcefully pooled out from the banks. However, to this study, this argument is not sufficient to defeat the implementation of TSA; rather, it will make banks meticulous, efficient and highly geared in delivering their fundamental function of financial intermediation of funds as the undue access to government revenue will be eroded by TSA.

The stakeholder theory was enunciated by Freeman (1984). It emphasises the relationship between an individual or group and an organisation by stating how they affect or are affected by the decision of an organization. An organisation exists in the interest of its different group of stakeholders that affects and is affected by the decision of an entity. The adoption and implementation of TSA can therefore be linked with the stakeholders' theory as its implementation arose from clamor by stakeholders who can influence or being influenced by the achievement of government. Also, deposit money banks can be regarded as stakeholders to the government as the implementation of TSA affects their operation and stability.

Empirical studies have been conducted by researchers in Nigeria following the adoption of TSA. These studies include but are not limited to the work of Ndubuaku, Ohaegbu and Nina (2017) who used data obtained from the annual statistical bulletin of the Central Bank of Nigeria (CBN). The study established a significant positive effect of TSA on banks' credit to the private sector and banks' financial intermediation activities (savings mobilization and loan creation). Olowokure and Adetos (2017) investigated the nexus between TSA implementation and the DMBs' crisis. The authors used the primary source of data obtained from five (5) selected banks. The regression model was used to analyse the data. The findings showed that TSA implementation has a significant influence on the unemployment and liquidity crises of Nigerian DMBs.

Similarly, Andornimye (2017) examined the nexus between the implementation of TSA and the liquidity of Nigerian DMBs using t-test statistics analysis on the data of ten (10) selected DMBs. The result provided evidence in favour of a significant negative effect of TSA on the current ratio, a significant positive influence on deposit mobilization and that TSA has no significant effect on credit creation. Examining the nexus between the adoption of TSA and the performance of selected Ministries, Departments and Agencies (MDAs) in Nigeria, Ofor, Omaliko and Okoli (2017) conducted a survey study. The study employed the Wilcoxon sign test to test the study's hypothesis. Findings from the study showed that the adoption of TSA has influenced the performance of MDAs in Nigeria. Furthermore, it was reported that the adoption of TSA has boosted the financial strength of the MDAs as a result of various loopholes that had been blocked.

Olaoye and Talabi (2019) investigated the effect of TSA on the financial performance of DMBs in Nigeria. Using 2012 to 2014 as pre and 2015 to 2017 as post TSA era, the authors used paired sampled t-tests to analyse the hypotheses. The study's findings showed an insignificant positive difference between profitability measures like ROA, ROE and EPS while profit after tax is found to be negative and insignificantly different. Sabo, Muhammad and Ka'oje (2019) used data spanning from September 2013 to August 2017 while using robust least squares as an analytical tool. The study found a significant positive influence of TSA implementation on the liquidity management of DBMs.

Okpala, Akinyede and Worimegbe (2019) using primary source of data by surveying 450 management staff of selected financial institutions analysed the effect of TSA implementation on financial system failure in Nigeria. Findings showed that TSA has a significant influence on banks' failure. Oyedele, Oyewole and Ayo-Oyebiyi (2019) using a structured questionnaire to elicit information from the Head of Operation, Accountant and Branch Manager of five (5) selected banks in Oyo state of Nigeria found from the OLS estimation technique that the implementation of TSA has significantly led to the closure of banks' branches, high withdrawal

syndrome, liquidity and unemployment crises of Nigerian DMBs. In terms of the period covered, the present study improved the work of Olaoye and Talabi (2019) by considering 2011 to 2014 as pre and 2015 to 2018 post-TSA era.

In the same vein, Echekeba, Obi-Nwosu, Ubesie and Mbanefo (2020) examined the effect of TSA on the performance of DMBs in Nigeria by obtaining data spanning from 2011 to 2018 from the CBN. Findings from the study showed that TSA has a significant positive effect on banks' credit to the private sector. Onodi, Eyisi and Akujor (2020) conducted a study in which the pre-and post-implementation effects of TSA on the performance of Nigerian banks were examined. With the aid of the regression model, the study reported that excessive reliance on government funds by Nigerian banks has a significant effect on their performance proxied with return on equity, return on assets and profit after tax.

Similarly, Ezinando (2020) examined the effect of federal government deposits in the post-TSA implementation among Nigerian DMBs. In conducting a pre- and post-implementation analysis, the study employed a regression model to test the hypothesis. Findings from the study revealed that the federal government deposits have significantly improved after the implementation of TSA in the country. However, it was reported that the situation was not better before the implementation of the policy. About Nigerian universities, Otse (2021) took a look at the influence of TSA on universities' administration with a particular focus on the universities located in the North Central of the country. Being survey research, the study administered questionnaires among the teaching and non-teaching staff of federal universities that have adopted TSA in North Central. Using the performance ratio analysis, the study's finding showed that the operation of TSA in Nigerian universities has not improved their administration and autonomy while there has been an increase in administration gridlocks.

From Tanzania, Mwambuli and Igoti (2021) used the ordinary least square model to test the effect of TSA on the financial performance of banks in the country. Using a sample of fourteen (14) banks over ten (10) years, the study revealed a significant influence of TSA on Tanzanian banks' financial performance measured via net interest margin. This finding was occasioned by the fact these banks relied heavily on government deposits for their operations. Similarly, Arafa (2021) conducted a study to investigate the influence of TSA adoption on the financial performance of Tanzanian banks. Employing the CAMEL rating to the quantitative data, the finding showed an improvement in the selected banks' capital adequacy and management efficiency after the adoption of TSA.

Using the economics theory and model, Amadi, Adetiloye, Omankhanlen, Amadi and Nwodimmah (2021) researched the stabilisation influences of fiscal policy on the Nigerian banking sector. Using time series data from 1985 to 2019, the study's findings revealed that the fiscal policy variables being operated in the country within the specified period have a strong consequence on the firmness of the Nigerian banking sector. Igbekoyi (2022) studied the impact of the TSA system on the financial stability of Nigeria concerning government debt and stock. The study used time series data from the CBN statistical bulletin from 2011 to 2020. Using regression models, the study's findings indicated that the TSA system had a remarkable and adverse effect on various aspects, including government debt performance, loans obtained from commercial banks, expenses related to external debt financing, liquidity in the stock market and the overall size of the stock market. Conversely, it was shown that the TSA system had a negative but insignificant effect on overdrafts from the CBN. Above all, the author concluded that the TSA system had an improvement in government debt performance and an adverse influence on stock market performance.

Obara, Ordu and Obara (2022) examined the nexus between TSA and economic development in Nigeria. The authors engaged in the pre-and post-trends analysis of government revenue from 2010 to 2019. The trend analysis showed that government revenue in the post-TSA adoption period is reduced when compared to the period before the adoption of the TSA. Furthermore, it

was reported that for meaningful economic development to be attained with the implementation of TSA, certain issues (accounting and ethical) must be dealt with. These include adequate record management, accounting skills and infrastructural on one hand; and entrenchment of trust as well as eradication of fraud and corruption on the other hand.

## **Methodology**

### **Research Design**

The study adopted an *ex post facto* research design due to the secondary nature of the data used in the study.

### **Population, Sample Size and Sampling Technique**

The population of the study is made up of all the fifteen (15) DMBs listed on the Nigerian Stock Exchange out of which nine (9) were selected purposively and based on the availability of needed data for eight (8) years dated 2011 to 2018. That is, 2011 to 2014 for pre-TSA and 2015 to 2018 for post-TSA. The paper adopted a paired samples t-test to analyse the nexus between TSA and Banks' stability in Nigeria.

### **Measurement of Variables**

Bank stability is measured by loan performance, profitability, liquidity, capital adequacy ratio, asset growth and deposit growth. The only independent variable of the study is the TSA which is divided into pre- and post-adoption periods.

#### **Return on Assets (ROA)**

This is one of the dependent variables of the study. Return on asset is a measure of how well managers can utilise the resources of the entity in a manner that creates and maximizes the wealth of the shareholders and as well as ensures the firms' long-term survival. Every business outfit must make a profit to justify the resources dissipated to its operations and to also be able to meet up with loan and interest repayment and pay tax to the government. Shareholders' wealth is also significantly linked to profitability as only a profitable firm can pay dividends and retain parts of its earnings for future firm growth. Researchers like Kajola, Sanyaolu, Alao and Ojurongbe (2019) have used it to proxy profitability in their study.

#### **Capital Adequacy Ratio (CAR)**

The capital adequacy ratio measures the strength of banks capital. It shows the extent to which a bank uses equity capital in financing its assets. It is an important variable of interest for the stability of banks as higher ratios show that the bank is highly capitalized, exposed to low risk of bankruptcy and is more resilient to shock. It is one of the variables of interest to regulators as it shows how safe the money of the depositors is. Researchers like Sanyaolu, Siyanbola, Ogunmefun and Makinde (2019) have used it in their studies.

#### **Liquidity Ratio (LR)**

Liquidity shows the short-term strength of banks to meet the short-term maturing commitments as they fall due. High-liquid banks are beneficial to a nation's economy as they can advance more loans to investors, and boost depositors' confidence as their ability of depositors to withdraw their deposits is assured by a high liquidity ratio. Liquidity in this study is a measure of loan to deposit ratio. It shows the extent to which banks use deposit liability to create loan assets. A bank with a high loan-to-deposit ratio means that the bank has a higher proportion of its deposit liability channelled as a loan to borrowers. A higher ratio may indicate banks' ability

to make higher returns which is also accompanied by higher risk as substantial parts of the loan may be nonperforming arising from the inability to properly evaluate the borrowers' ability to repay and poor credit monitoring.

### Non-performing Loan Ratio (NPLR)

This refers to the proportion of bank loans and advances that are nonperforming. A loan is categorized to be nonperforming if the principal and the interest are not paid after 90 days. Nonperforming loan is a great threat to bank stability as they decrease banks' asset and profit which also puts the fund of depositors in danger. A series of past corporate failures of Nigerian banks have been linked to the issue of nonperforming loans.

### Asset Growth (AG)

An increase in bank size enables banks to have more outreach and extend their services to different geographical locations which improve banks' profitability. This is represented by the percentage increase in the worth of total assets from one year to the other.

### Deposit Growth Rate (DGR)

This is the percentage increase in bank deposits from one year to the other. It measures the extent to which a bank can pool more deposits between one year and the other.

### Treasury Single Account (TSA)

This is the only independent variable of the study. TSA is a policy adopted by the Federal Government towards ensuring that all money due to the government is consolidated under one account which enables the Federal Government to know its actual financial resources as against the former where government money is disintegrated into many accounts by DMBs. In this study, it is measured as 1 following TSA adoption and 0 before its adoption.

Table 1 shows the description and measurement of the variables used in the study. These include treasury single account, profitability, capital adequacy ratio, liquidity ratio, non-performing loan ratio, asset growth rate and deposit growth rate.

**Table 1.** Measurement of Variables

Variables	Acronym	Measure
TSA	TSA	1 following TSA adoption and 0 before its adoption.
Profitability	ROA	Profit after tax/ Total asset
Capital Adequacy Ratio (Capital-to-risk weighted assets ratio)	CAR	It is a measure of the financial stability of banks to protect depositors and promote financial health. Capital-to-Risk Weighted Ratio = (Tier 1 + Tier 2 Capital)/ Risk-Weighted Assets. The Central Banks set 10% for regional banks and 15% for internal banks in Nigeria. Under Basel III, it set 8% for banks to maintain.
Liquidity Ratio	LDR	Total loan /Total deposit Liquidity ratio among DMBs in Nigeria ranges between (25 - 30%).
Non-Performing Loan Ratio	NPLR	Non-performing loan/Total loan
Asset Growth Rate	AGR	$\frac{AGR_t - AGR_{t-1}}{AGR_{t-1}}$
Deposit Growth Rate	DGR	$\frac{DGR_t - DGR_{t-1}}{DGR_{t-1}}$

Source: Researchers' Computation (2023).

Table 2 reveals the descriptive statistics of TSA and banks' stability. For NPLR, the pre-TSA mean equals 0.1180 while the standard deviation equals 1.6562, this implies a high variation of

NPRL while post-TSA reveals a mean of 0.0800 and standard deviation of 0.0001, this means that NPRL in the Post-TSA is low compared with Pre-TSA. Meanwhile, for CAR, pre-TSA gives 5.8889 and the standard deviation is 1.2370 while for post-TSA, the mean is 14.027 and the standard deviation equals 1.6298, which means that CAR in the post-TSA is better off than pre-TSA. LDR shows a pre-TSA mean of 0.2489 and a standard deviation of 0.0830 while the post-TSA mean equals 0.3889 and a standard deviation of 0.1237, it implies that LDR after the adoption of TSA is better off than pre-TSA which invariably aid financial inclusion among DMBs.

**Table 2.** Descriptive Statistics of Treasury Single Account and Bank Stability

Variables	Period	Mean	N	Std. Dev	Std. Error Mean
NPLR	Pre-TSA	0.1180	36	1.6562	0.0142
	Post-TSA	0.0800	36	0.0001	0.0128
CAR	Pre-TSA	5.8889	36	1.2370	0.2062
	Post-TSA	14.027	36	1.6298	0.2716
LDR	Pre-TSA	0.2489	36	0.0830	0.0138
	Post-TSA	0.3889	36	0.1237	0.0206
ROA	Pre-TSA	0.1493	36	0.0854	0.0142
	Post-TSA	0.3508	36	0.0767	0.0128
AGR	Pre-TSA	1.3436	36	0.7689	0.1282
	Post-TSA	3.3325	36	0.7288	0.1215
DGR	Pre-TSA	1.4779	36	0.8458	0.1410
	Post-TSA	4.9989	36	1.0931	0.1822

Source: Researchers' Computation (2023).

ROA shows a pre-TSA mean of 0.1493 and standard deviation of 0.0854 while for post-TSA mean equals 0.3508 and standard deviation of 0.0767, it means that ROA improves in the post-TSA than pre-TSA. AGR shows a pre-TSA mean of 1.3436 and a standard deviation of 0.7689 while the post-TSA mean equals 3.3325 and standard deviation = 0.7288, this suggests that, the mean of AGR increases after the adoption of TSA. DGR reveals a pre-TSA mean of 1.4779 and a standard deviation of 0.8458 while the post-TSA mean equals 4.9989 and a standard deviation of 1.0931. This result indicates that DGR among the DMBs improves in the post-TSA adoption which invariably enhances bank stability.

Table 3 reveals the paired sample test of Non-Performing Loans, the results showed  $t\text{-cal} = 10.544$ ;  $p < 0.05$ , this implies that there is a significant difference in the Non-Performing Loans of pre- and post-TSA. However, we reject the null hypothesis ( $H_0$ ) and accept the alternative hypothesis ( $H_1$ ) that there is a significant difference in NPL after TSA adoption.

**Table 3.** Paired Sample test for Non-Performing Loans Rate (NPR)

	Paired Differences					T	Df	Sig. (2-tailed)
	Mean	Std. Dev.	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pre-TSA - Post-TSA	0.038	2.20389	0.56904	7.22048	4.77952	10.544	35	0.000

Source: Researchers' Computation (2023).

Table 4 reveals the paired sample test for Capital-to-risk weighted assets of the Deposit Money Banks. Our result indicated  $t\text{-cal} = 17.657$ ;  $p < 0.05$ , which means that there is a significant difference in the ratio of capital adequacy after the adoption of TSA. From the foregoing, it is evidenced that there is a significant difference between CAR and TSA adoption.

**Table 4.** Paired Samples Test of Capital Adequacy Ratio

	Paired Differences					T	Df	Sig. (2-tailed)
	Mean	Std. Dev.	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pre-TSA - Post-TSA	8.138	2.0860	0.34767	6.84471	5.43307	17.657	35	0.000

Source: Researchers' Computation (2023).

Table 5 depicts the paired sample test for the Loans-to-Deposit ratio of Deposit Money Banks. The result showed  $t\text{-cal} = 9.308$ ;  $p < 0.05$ , which means that there is a significant difference in the ratio of Loans-to-Deposit Ratio before and after the adoption of TSA. From the foregoing, it is established that there is a significant difference in the Loans-to-Deposit Ratio after the adoption of TSA.

**Table 5.** Paired Samples Test for Loans-to-Deposit (LDR)

	Paired Differences					T	Df	Sig. (2-tailed)
	Mean	Std. Dev.	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pre-TSA - Post-TSA	0.14000	0.15470	0.02578	-0.29234	0.18766	9.308	35	0.000

Source: Researchers' Computation (2023).

Table 6 shows the paired sample test for Return on Asset of Deposit Money Banks. The result showed  $t\text{-cal} = 10.493$ ;  $p < 0.05$ , which means that there is a significant difference in Return on Assets (ROA) before and after adoption of TSA. Therefore, it has been shown that there is a significant difference in ROA after the adoption of TSA.

**Table 6.** Paired Samples Test for Return on Asset (ROA)

	Paired Differences					T	Df	Sig. (2-tailed)
	Mean	Std. Dev.	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pre-TSA - Post-TSA	0.2015	0.11522	0.01920	24049	0.16252	10.493	35	0.000

Source: Researchers' Computation (2023).

Table 7 highlights the paired sample test for the Asset Growth Rate (AGR) of the Deposit Money Banks. The  $t\text{-cal} = 11.224$ ;  $p < 0.05$ , which means that there is a significant difference in Asset Growth Rate in the pre and post-adoption of TSA. Hence, it is evidenced that there is a significant difference in AGR after the adoption of TSA.

**Table 7.** Paired Samples Test for Asset Growth Rate

	Paired Differences					T	Df	Sig. (2-tailed)
	Mean	Std. Dev.	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pre-TSA - Post-TSA	1.98886	1.06321	0.17720	2.34860	1.62912	11.224	35	0.000

Source: Researchers' Computation (2023).

Table 8 highlights the paired sample test for Deposit Growth Rate (DGR) of the Deposit Money Banks. The  $t\text{-cal} = 15.232$ ;  $p < 0.05$ , means that there is a significant difference in Deposit Growth Rate in the pre- and post-adoption of TSA. Hence, it is established that there is a significant difference in DGR after the adoption of TSA.

**Table 8.** Paired Samples for Deposit Growth Rate

	Paired Differences					T	Df	Sig. (2-tailed)
	Mean	Std. Dev.	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pre-TSA - Post-TSA	3.5210	1.3869	0.23116	3.99027	3.05173	15.232	35	0.000

Source: Researchers' Computation (2023).

## Conclusion and Recommendation

This study examined the effect of TSA adoption on banks' stability of Nigerian DMBs. Bank stability is measured by Profitability (ROA), liquidity (LDR), non-performing loan (NPLR), capital adequacy ratio (CAR), Asset growth (AGR) and Deposit growth (DGR). Relevant data were sourced from the annual reports and accounts of the nine (9) sampled DMBs listed on the Nigerian stock exchange from 2011 to 2018 separated into pre-TSA adoption (2011 - 2014) and post-TSA adoption (2015 - 2018) eras. The study used descriptive statistics and paired samples t-test to examine the effect of TSA on banks' stability during the pre- and post-TSA adoption eras.

The result of the findings showed that there is a significant difference between pre- and post-TSA non-performing loans of Nigerian listed DMBs. Also, the significant difference between the pre- and post-TSA adoption on capital adequacy ratio showed that TSA is an important driver of capital adequacy ratio. Surprisingly, this variable has not been captured by previous studies concerning TSA adoption. It was also found that there is a significant difference between pre- and post-TSA adoption LDR of DMBs in Nigeria. This finding is in line with that of Andornimye (2017) and Kanu (2016) who reported a significant difference between pre- and post-TSA adoption and liquidity ratio.

As to profitability, the finding showed that there is a significant difference between pre- and post-TSA adoption and ROA. This finding is in disagreement with that of Olaoye and Talabi (2019) who reported a positive but insignificant difference between pre- and post-TSA adoption on profitability. Findings further showed that there is a significant difference between AGR and TSA's pre- and post-adoption. Disappointingly, there is no prior study in Nigeria to support this finding. As to deposit growth, it was found that there is a significant difference between pre- and post-TSA adoption on deposit growth rate in Nigerian DMBs. The finding is in agreement with that of Ndubuaku, Ohaegbu and Nina (2017) who reported the existence of a significant effect of TSA on deposit mobilisation.

The finding implies that there is a significant difference between the pre- and post-TSA adoption and the stability of the Nigerian DMBs. These findings implied that the adoption of TSA has serious implications for the stability of the banking sector. The findings further lend credence to the incremental theory as it states that the adoption of TSA is to ensure financial openness and rectitude among public office holders and the redeployment of government revenue which may in turn reduce the extent through which banks prey on government funds through illegal and fraudulent manners. Despite the contributions of this, it is important to state its limitations to provide a basis for the need for future studies. The main weakness of this study is that the study adopted TSA and bank stability using bank-specific data to proxy banks' stability. The study is also limited to Nigerian clans. It is therefore recommended that future studies address these shortcomings by conducting investigations in Nigeria using macroeconomic variables. Future studies should also focus on other sub-Saharan African countries for ampleness.

It is therefore recommended that DMBs should come up with strategies that will improve their deposit drive by focusing on the bank's main business rather than depending on government deposits. This will in turn make them more stable, resilient and able to withstand shocks which will in turn transform the sector towards efficiency in its intermediation role and create wealth for the shareholders.

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