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The Treasury Single Account System and Financial Stability in Nigeria

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Abstract

This study investigates the effect of the treasury single account system on financial stability in Nigeria. Specifically, we hoped to find out if speculation of government regarding government debt and stock market performances are met. The study utilized data published in the Central Bank of Nigeria statistical bulletin for a period of 2011-2020. The time series data collected were analyzed using descriptive and inferential statistics. The findings revealed that the TSA system had a negative impact on government debt performance, with significant negative impact on advances from commercial banks and external debt finance charges. However, it had an insignificant negative impact on overdraft from Central bank of Nigeria (CBN). In the case of stock market performance, it was revealed that the TSA system had a significant negative impact on stock market liquidity and stock market size. It is therefore concluded that, as speculated, the TSA system improved government debt performance as it reduces it, but adversely affects the stock market performance. The study therefore recommended that in the adoption of the TSA system, the government must salvage the financial system from shock by readjusting its fiscal policies.

Keywords: Financial stability; government debt; market capitalization; Nigeria; treasury single account system

Introduction

Over the years, the Nigerian economy has deeply relied on revenue generated from the sale of crude oil for the running of government activities, and this has brought reckless spending and mismanagement of public funds in governance (Adetula, Adegbenjo, Owolabi, Achugamonu, & Ojeka, 2017). Before 2015, several government agencies in Nigeria were self-sufficient to collect money on behalf of the federal government and they had the freedom to expend part of it since they only needed to remit only a portion of the declared amount (Adetula, Adegbenjo, Owolabi, Achugamonu, & Ojeka, 2017). Governments have been operating multiple accounts for revenue collection and spending, contrary to the provision of S.80 (1) of the Constitution of Federal Republic of Nigeria, 1999 (as amended) which stated that all revenues, or other monies raised or received by the Federation (not being revenues or other monies payable under this said constitution or any Act of the National Assembly into any other public fund of the federation established for a specific purpose) shall be paid into and from one Consolidated Revenue Fund of the Federation. It was opined those reasons for such constituted provision was to curb corruption, embezzlement, and misappropriation of funds among others.

Government, in a bid to push for more transparency and accountability through the mixture of monetary and fiscal policies, introduced the Treasury Single Account (TSA) system in 2015, and this policy have received applaud of scholars both in academic and professional sphere ever since (Ofurum, Oyibo & Ahuch, 2018; Ahmed-Gamgum & Ahmed, 2018; Igbekoyi & Agbaje, 2017; Okerekoti & Okoye, 2017; Kanu, 2016; Adeolu, 2015). The submission of the various studies is that TSA is an international best practice in monetary and fiscal policy making for economic development. It also improves government revenue and economic growth (Oyedokun, 2016), and introduces efficiency into overall management of public finances. It was submitted that this will lead to effectiveness of government in actualization of government overall policy goals and objectives (Okechukwu, Chukwurah, Daniel & Iheanacho, 2015; Obinna, 2015).

Kanu (2016) and Chukwudi, and Harrision (2018), in separate studies, stated that the commercial banks will be tremendously affected by the TSA policy, as this would cause insufficiency of available cash in the banking system, resulting in a surge in monetary rates during

the period. This is because banks would look for other sources of funds to cover their poor liquidity position. Ndubuaku, Ohaegbu and Nina (2017) posited that, in the event of sourcing, banks interbank rates are mostly affected as this is usually increased due to the liquidity problem. The significance of the banking sector activities to the overall economy cannot be overemphasized. Kanu (2016) and Mbotto, Offiong & Ibor (2017) conclude that the banking sector is the engine room of any nation, and, as such, the economic status of any nation depends on the stability of the banking sector.

In as much as the banking sector is a vital aspect of the country's financial stability, as emphasized in previous studies, a deeper assessment of the stability of the capital market during the introduction of TSA is important. Most studies conducted on treasury single account system have concentrated on its impact on bank liquidity, revenue generation drive, promotion of transparency and accountability, and sealing of financial leakages and loopholes (Kanu 2016; Ndubuaku, Ohaegbu, & Nina, 2017; Ogbonna & Amuji, 2018). Although the findings of these studies have contributed to revealing the significance of the system, there is still a need to determine how it impacts the activities of the stock market and the ability of the government to manage its debts.

This study is therefore conducted to investigate the impact of the treasury single account system on financial stability in Nigeria, with a focus on the government public debts and market capitalization. This will help to further evaluate TSA's negative impact on bank liquidity to see how it impacts other determinants of financial stability in an economy.

The study is divided into five sections. The introductory section to reveal the motivation of the study has been done; the other sections comprise the review of literature, data and methods, data analysis, and discussion of findings with a conclusion and recommendations.

Literature Review and Hypothesis Development

Bashir (2016) described TSA as a public accounting system under which all government revenues, receipts, and income are collected into one single account, usually maintained by the country's central bank with all payments made through the same channel. According to Yusuf (2016) and Eme, Chukwurah, & Iheanacho (2015), TSA is a unified structure of government bank accounts enabling consolidation and optimal utilization of government cash resources. Although government has always maintained a unified account prior to TSA, the channel of collection is domiciled in the bank accounts maintained by the ministries, departments and agencies, which have resulted in unaccounted funds, idle funds and loss of funds to misappropriations. Pattanayak and Faiboim (2011) described federally collected revenue under the treasury single account system as comprehensive inclusion of all government funded entities including the autonomous and stability government bodies as well as extra budgetary funds and special accounts. This ensures that TSA covers, as far as possible, all relevant cash reserves of the government. This includes all cash flows related to government revenue, expenditure donor financing, debt issuance and amortization (including those associated with external debts).

According to the European Central Bank (2012), financial stability is defined as the condition in which the financial system is able to withstand any external shock as well as having the ability to reduce any disruption in the financial intermediation that are significantly severe to impair the smooth allocation of savings to profitable investments. The World Bank (2018) added that financial stability requires the absence of system-wide episodes in which the financial system function is unable to function well or plunged into financial crises. For a system to maintain financial stability, the system will absorb the shocks primarily via self-corrective mechanisms, preventing adverse effects on the real economy or other financial systems. The implications of financial instability are banks' reluctance to finance profitable investments. Asset prices will also begin to deviate excessively from their intrinsic values and delays in payments, which leads to bank runs, hyperinflation, or stock market crashes.

The measure of the financial stability of a country stems from various indices and parameters. This study, however, views financial stability from the perspective of the ability of the government to finance its debt and the capitalization of the capital market. These areas of focus were selected because they formed part of the justification for TSA as posited in the Central Bank of Nigeria publication. The publication claimed that the TSA system would lead to mopping up funds in a single purse to help the government finance its domestic debts instead of seeking external loans to do so. This study investigates the stock market because of its significance to economic growth and the impact of the policy introduction on the banking sector, which is a major player in the capital market.

Theoretical Underpinning

This study is hinged on the public governance theory. Although governance has been viewed largely from the private sector, the advent of new public management in the 80's has changed the narratives of public sector administration. The success rate of the ideologies of governance in the private sector and the similarities of these ideologies with the context of this study have given them impactful relevance. OECD (2004) defined public governance as the structures, rules, procedures and mechanisms used for proper steering and controlling of corporations. Almquist (2012) stated that governance in the private sector is concerned with the influence of the owners on the management using the regulations of the legal statute of the firm.

Public governance refers to the formal and informal arrangements that determine how public decisions are made and how public actions are carried out from the perspective of maintaining a country's constitutional values when facing challenging problems and environments (OECD, 2011). Antiroikko, Bailey and Valkama (2011) described public governance as the steering of the collective interest in a polycentric multi-sectoral stakeholder context to pursue the collective interest. The main assumption of this theory is that it links public governance, investment, and development. In ensuring good governance, government must ensure that the impact of its policies on key components of the economy are evaluated to promote accountability and responsiveness. In a study on the review of public governance in the public sector Alqooti (2020) found that public governance has a significant impact on stewardship and rule of law principles for reducing total violations.

Public governance theory is relevant in discussion of the treasury single account system implemented by the Nigerian government, because it is a mechanism of control adopted by the government. It is a public financial management approach used to manage government funds with the goal of reducing the loss of funds and misappropriations by channeling government revenue collection to a single point. The other component of governance that relates to development reviews the impact of the policy on economic development and sustenance of the economy. There is need for governments to consider the impact of policies on its economic development and performance evaluation organs in the economy, as these are part of its economic development and accountability functions, which are the core mandates of the public governance theory.

TSA System and Government Debt Performance

The International Monetary Fund and World Bank (2020) described debt as a financial claim that requires payment of interest and/or principal by the debtor to the creditor at a future date. The mechanism surrounding debt is that there is provision of economic value to a deficit (debtor) by the surplus (creditor) with the contractual arrangement of flow of payment of the economic value and interest at future instalments. The ability of debtor to continue to meet with the financial obligation in the financing of the debt obligations determine its performance. For any government, the main source of funds is from taxes. If taxes are not enough, borrowings are made to bridge the gap between revenues and expenses (Mwaniki, 2016). The public debt performance of a country is symbolic to economic development because it can influence the level of growth of an economy (Calderon & Fuentes, 2013). In a publication of the International Monetary Fund & World

Bank (2020) it was stated that the public debt vulnerability in low-income developing countries has increased in recent years, reflecting higher public debts and debt service levels changes.

In the case of Nigeria, Ajala, Adesanya & Oyewale (2017) stated that, prior to the TSA adoption, the government was not borrowing to cover deficit. However, national deficiencies were created because the government could not give an adequate account of the total funds it had. This is because the funds were scattered in mostly commercial banks. Most of the time, when the government approached these banks for credit, the same government funds that were trapped in their banks were given as loans and advances to the government, and the government continued to pay interest on such loans. In this era, one of the arguments supporting TSA was that this menace would be curbed as TSA helped the government improve its cash and debt management and to control fiscal and monetary activities to significantly reduce debt servicing costs (Pattanayak & Fainboin, 2010).

In conducting an appraisal of the performance of government since the adoption of the TSA system, Amaefula & Barigbon (2019) studied three government performance indicators: revenue, capital investment and external reserve during the pre-post TSA implementation. The study found a significant negative effect on revenue generation of the federal government capital investment and external reserve. The implication of the finding of this study is that government has not performed better since implementation of TSA. The study also submitted that the country has witnessed an increase in debt profile and depletion of the foreign reserve, as these are the only options for government survival.

Oguntodun, Alalade, Adekunle and Adegbe (2016) assessed the effect of the treasury single account system on the Nigeria economy between 1999 and 2015. The study used gross domestic product to proxy Nigerian economic performance and used money supply, credit with CBN and deposit to CBN as proxies for TSA. The result showed that the treasury single account system has a positive significant impact on the Nigeria economy. This was also found in studies conducted by Ofor, Omalika and Okoli (2017) and Ofurum, Oyibo and Ahuche (2018). However, Kanu's (2016) study of the impact of TSA on the liquidity of banks in Nigeria revealed a negative impact. Similarly, in a study conducted by Ndubuaku, Oheegbu and Nhe (2017) on the impact of TSA in performance of the Nigeria banking sector, using credit to private sector, deposit and loans and advances as proxies revealed that the introduction of TSA significantly reduced credit to the private sector, deposits, loans, and advances.

In a study on the effects of the TSA system on the Nigerian financial system and economic growth, Oloba, Oregun and Nkuma (2017) submitted that TSA does not have a significant negative effect on Nigerian financial institutions. This result is purported by most studies, as the institutions are still stable and buoyant despite the introduction of TSA. It was further stated that the insolvency experienced in the banking sector was necessitated by external factors, apart from the TSA adoption. Although the conclusions of studies on government debt performance varies, most studies focussed on the performance relating to bank credits. There is the need to consider the overall debt performance of government as it relates to both internal and external debt performance since adoption of TSA. This study made attempts to capture variables including advances from commercial banks, overdraft from CBN, government securities, and external debt service charges. The objective is therefore hypothesized thus:

H_{01} : The TSA system does not significantly affect government debt performance in Nigeria
TSA System and Stock Market Performance

Koller et. Al. (2010) define stock market performance as a measure of returns on shares over a period. Levine and Zervos (1996) outlined six stock market performance indicators: stock market size, two measures of stock market liquidity, stock market volatility, and two measures of stock market integration with world capital markets. They claim that, although each of these indicators has shortcomings on their own, together they provide an accurate picture of stock

market performance and the link with economic growth. In this study, the Nigerian stock market performance will be represented by the stock market liquidity and size each year.

The significance of stock market performance to economic development has been pointed out in previous studies conducted in different countries. In Nigeria, Najeb (2013) explored the causal link between stock market performance and economic growth. The study explored the submission of various authors regarding the role of the stock market in improving liquidity, aggregating and mobilizing capital, observing managers, and exerting corporate control by providing risk-pooling and sharing services including interest levels. The study found that a positive relationship exists between the stock market and economic growth, both in the short run and in the long run. In similar studies conducted by Alajekuw & Achugbu (2011), it was posited that market capitalization has a strong positive correlation with stock market turnover ratio. The implication of this finding is that liquidity has the propensity to spur economic growth in Nigeria; and that market capitalization influences market liquidity. Ewah, Efang, and Bassey (2009); Alajekuw and Achugbu (2011) and Audu (2020), in separate studies, corroborated these findings, confirming that capital market remains one of the mainstreams in every economy and that it has power to influence economic growth.

From a different perspective, Olokoyo and Ogunnaike (2011) studied the relationship between the stock market crisis and Nigeria's economic growth. The study considered major indicators of the performance of the stock market, including market capitalization. The study found that the stock market crisis had a highly significant effect on Nigeria's economic growth. McMillian & Thupayale (2011) studied the volatility in African stock markets, taking into consideration the periodic shifts in mean level of volatility, where regime shifts are determined endogenously. The study revealed that there was persistence and long memory in volatility, and they are overestimated, even when regime shifts are accounted for. The study therefore submitted that there is need to consider the effects of regime changes when estimating the African stock market, as it would generate an improved volatility forecasting performance for some African stock markets.

The premises of previous studies have emphasised the significance of the stock market to economic development, which translates into the stability of a nation's financial system. Considering the submission of McMillian & Thupayale (2011), it can be viewed that the adoption of the TSA system in Nigeria is akin to a change in regime, because it is a system that is different from existing financial management practice in Nigeria. There is, therefore, a need to investigate the impact of the TSA policy on the performance of the stock market. Previous studies that could be viewed as looking in the direction of the capital market focused majorly on the banking sector. The advent of TSA in Nigeria saw many studies investigating how the policy would affect the well-being of Nigerian banks. Many studies investigated the financial performance (profitability) of the banks (Ogbonna & Amuji, 2018; Ndubuaku, Obaegbu & Nina, 2017; Onodi, Eyisi & Akuyor, 2020; Ezinando, 2020; Echekoba & obi-Nwosu, 2020). Others studied the TSA system's impact on the liquidity of the banks (Kanu, 2016; Olowokure & Adetos, 2017; Ajetunmobi, Adesina, Faboyede & Adejana, 2017; Omaliko & Okpala, 2020). Most of these studies showed a negative relationship/effect between TSA adoption and the various levels of performance of the banks. The justification of the concentration of the previous studies stems from the link of reliance of the sector on the deposit from government revenue as liquidity base and capital strength.

The banking sector has high dominance in the capital market and the activities of the sector have influencing power on the overall performance of the market. However, Ranganatham and Madhumathi (2006) argued that, irrespective of the economic situation, some industries will be expected to perform better and share prices, and thus companies in these industries may not decline as much as those in other industries. The study, therefore, points out that proper identification of economic and industry-specific factors influencing share prices helps investors to identify shares that suit their expectations or investment strategies. Based on this premise, it would be pessimistic to conclude that the reaction of the commercial banks to TSA adoption may speak for

the whole market. There is need to investigate the capital market to determine whether the TSA system has impacted its performance, especially as it relates to its liquidity and size. The hypothesis is therefore stated thus:

H₀₁: TSA system does not have significant effect on stock market performance in Nigeria

Data and Methods

The study used longitudinal research design. The time series data used for this study was collected from the Central Bank of Nigeria (CBN) Bulletin covering a period of 2011 to 2018. The base year 2011 marks the period when there was the first push for TSA adoption. Data from this period will help to explain the empirical justification for the move for adoption of TSA. The time frame covers 4 years pre-adoption and 4 years post-adoption. Data collected was tested for stationarity, multicollinearity, integration, normality and all necessary statistical tests before it was used for the study, and regression analysis was done to test the stated hypotheses. The regression analysis was done based on the analytical models specified in equations i and ii. The model was specified to show the interactions between TSA and financial stability. The model was specified in line with the model specified in studies conducted by Mwaniki (2016) and Alajekuw and Achugbu (2011). The existing models were slightly modified to suit the objective of this study and the assumptions of the underpinning theory. The summary of the description of the variables and measurements are shown in table 1. The functional model is stated thus:

$$FS = f(TSA)$$

$$GDP, SMP = f(FCR)$$

Where:

GDP= Government Debt Performance

SMP= Stock Market Performance

FCR= Federally Collected Revenue

The functional model is broken down into the individual hypothesis of the study to examine each component of financial stability as stated thus:

$$GDP=f(FCR)$$

$$ACB_t, ODC_t, GOS_t, EDSt = \alpha + \beta_1 FCR_t + \varepsilon \dots \dots \dots \text{equation i}$$

Where:

ACB= Advances from commercial banks

ODC= Overdraft from CBN

GOS= Government Securities

EDS= External debts service charge

FCR= federally collected revenue

α = Intercept

β = Coefficient of the explanatory variable (slope)

ε =Represents the error term in the model

A priori expectation:

Based on the submission of existing literatures, it is expected that $\beta_1 < 0_1, < 0_2, > 0_3, > 0_4$,

$$SMP=f(FCR)$$

$$SML_t, SMSt = \alpha + \beta_1 FCR_t + \varepsilon \dots \dots \dots \text{equation ii}$$

Where:

SML= Stock market liquidity

SMS= Stock market size

FCR= federally collected revenue

α = Intercept

β = Coefficient of the explanatory variable (slope)

ε =Represents the error term in the model

A priori expectation:

With the shocks experienced in the banking sector as major players in the capital market and the findings of previous literatures it is expected that:

$$\beta_1 < 0_1, < 0_2,$$

Table 1 Summary of variables, measurement and sources

	Description	Measurement	Source
Federally collected Revenue	All government funds from government funded entities as well as autonomous and statutory government bodies. All tax and non- tax revenue of government	As published in the CBN Statistical bulletin	Ajetunmobi, Adesina, Faboyede and Adejana, (2017)
Government Debt Performance (GPD)			
Advances from Commercial banks (ACB)	This is described as the loans and advances assessed by the federal government from the commercial banks in a given year	Natural Log of Advances from Commercial Banks	Mwaniki (2016)
Overdraft from CBN (ODC)	This is described as the loans and advances in the form of overdrafts assessed by the federal government from the commercial banks in a given year	Natural Log of Central Bank Overdraft	Mwaniki (2016)
Government Securities (GOS)	The securities of government in the form of bonds and treasury bills. This study is, however, limited to the treasury bills	Natural Log of Treasury Bills	Mwaniki (2016)
External debt service charge (EDS)	This is described as the government expenditure on servicing external debts each year	Natural Log of External Debt Stock	Mwaniki (2016)
Stock Market Performance (SMP)			
Stock market liquidity	Liquidity is used to refer to the ability of investors to buy and sell securities easily. It is also a measure of the value of securities transactions relative to the size of the securities market.	It is measured using the value traded ratio and turnover ratio. This ratio equals the total value of shares traded on the stock market divided by market capitalization.	Alajekuw and Achugbu (2011)
Stock market size		The total value of all listed shares each year	Alajekuw and Achugbu (2011)

Source: Author's Compilation (2020)

Data Analysis and Discussion of Findings

Descriptive Statistics of Variables

It is imperative to understand the characteristics of variables prior to the model estimation. This section reports the descriptive statistics of the variables. It shows the normality of the

variables and dispersion of the variables in respect to their means. Descriptive statistics of all the variables used in the study are reported in Table 2. The model variable is comprised of ACB (Advances from Commercial Banks), ODC (Overdraft from CBN), GOS (Government Securities), EDS (External debts service charge), SML (Stock market liquidity), SMS (Stock market size). The mean of the ACB was 7.569, with a minimum value of 6.4626 and a maximum of 7.9800. This implies that the variables are well distributed and less dispersed. The variable of FGD and GOS had a mean of 8890.743 and 8.6104 respectively. SML of the firm had the highest level of dispersion with value of 2235.255, with kurtosis of 2.1169 and skewness of 0.2801.

The Jarque-Bera test for normality showed that ACB, EDS, FGD, GOS, and SMS are not normally distributed, while ODC and SML are normally distributed. Any distribution with kurtosis ≈ 3 (excess ≈ 0) is called mesokurtic. A distribution with kurtosis < 3 (excess kurtosis < 0) is called platykurtic. Compared to a normal distribution, its tails are shorter and thinner, and often its central peak is lower and broader. A distribution with kurtosis > 3 (excess kurtosis > 0) is called leptokurtic. Compared to a normal distribution, its tails are longer and fatter, and often its central peak is higher and sharper. Kurtosis is a measure of distribution of the variable. It measures the amount the degree of probability in the tails of the distribution. In line with this fact, all the variables report kurtosis greater than 3. This implies that they are leptokurtic, and their tails are longer and fatter and often their central peak is higher and sharper.

Table 2: Descriptive Statistics

	Mean	Median	Max.	Min.	Std. Dev.	Skewness	Kurtosis	Jarque-Bera	Probability
ACB	7.569435	7.795662	7.980024	6.462671	0.463455	1.601954	4.283660	47.65124	0.000000
EDS	1180.990	1001.040	2161.370	527.1800	540.1746	0.610306	2.043921	9.615916	0.008165
FGD	8890.743	9655.795	11116.85	5616.400	1859.453	0.528675	1.831796	9.930756	0.006975
GOS	8.610454	8.684136	9.202372	7.783420	0.404405	0.645498	2.886778	6.717954	0.034771
ODC	20.62465	20.54829	21.97222	18.61034	0.804641	0.294639	2.201491	3.939461	0.139494
SML	10579.80	10664.14	13609.47	6532.580	2235.255	0.280137	2.116960	4.374662	0.112216
SMS	9.242470	9.271723	9.518521	8.784557	0.227143	0.65909	2.610933	7.555896	0.022870

Source: Author's Computation (2020)

Correlation Matrix

The essence of the correlation prior to estimation of model is to detect the likelihood of multicollinearity. The multicollinearity problem has a devastating effect on the standard error of the variables. It usually leads to incorrect inferences. The correlation results in Table 3 show that the variables are not strongly correlated with each other. The correlation analysis shows that low levels of correlation were observed among the explanatory variables. This implies the low

likelihood of encountering multicollinearity problems which may understate or overstate the standard errors and thereby lead to incorrect inferences about the behavior of the variable.

Table 3: Correlation matrix

Probability	ACB	EDS	FGD	GOS	ODC	SML	SMS
ACB	1.000000						

EDS	0.468008	1.000000					
	0.0000	-----					
FGD	-0.589628	-0.643061	1.000000				
	0.0000	0.0000	-----				
GOS	0.459919	0.840390	-0.724356	1.000000			
	0.0000	0.0000	0.0000	-----			
ODC	0.145163	0.224564	-0.150689	0.244913	1.000000		
	0.1772	0.0354	0.1611	0.0215	-----		
SML	0.394958	0.547399	-0.211998	0.583257	0.181228	1.000000	
	0.0001	0.0000	0.0474	0.0000	0.0911	-----	
SMS	0.400352	0.559271	-0.259033	0.649322	0.194066	0.992765	1.000000
	0.0001	0.0000	0.0148	0.0000	0.0700	0.0000	-----

Source: Author's Computation (2020)

Unit Root Test Result

In Table 4, the Levin, Lin and Chu test was adopted to confirm the stationarity condition of the variables. The result of the test showed that all the variables were stationary at level.

Table 4: Unit Root Test

	LLC (Levin, Lin & Chu t*)		Order of Integration	Remarks
	Statistics	P-value		
ACB	-12.231	0.000	I(0)	Stationary at level
EDS	-2.411	0.007	I(0)	Stationary at level
FGD	-1132.97	0.000	I(0)	Stationary at level
GOS	-68.700	0.000	I(0)	Stationary at level
ODC	-9.216	0.000	I(0)	Stationary at level
SML	-8.169	0.000	I(0)	Stationary at level
SMS	-10.1711	0.000	I(0)	Stationary at level

Source: Author's computation (2020)

Treasury Single Account System and Government Debt Performance in Nigeria

To determine the effect of the treasury single account system on government debt performance in Nigeria, as shown in table 5, the study proxied debt performance with advances from commercial banks (ACB), overdraft from CBN (ODC), government securities (GOS), and external debts service (EDS). The model coefficient of determination was captured by the R-squared and adjusted R-squared. The result of R-squared of the model revealed that 69.1% of the ACB variation was captured by the explanatory variables, and 68.4% was captured by the variables, after adjusting for the loss in degree of freedom. Also, the model of ODC accounted for 51.1%, the GOS model showed 60.3%, and the EDS model accounted for 58.9%, respectively. The f-statistic of the model shows that the model was statistically significant, and the coefficients are different from zero.

The statistical presentation of the regression result revealed that TSA had negative effect on advances from commercial banks ($t = -6.291, p < 0.05$). It was also revealed that TSA exhibited a weak statistical effect on overdraft from CBN. In the case of government securities, the result showed that TSA had a significant negative effect ($t = -6.466, p < 0.05$); while external debt service charges also had negative relationship with TSA ($t = -4.741, p < 0.05$).

Table 5: Treasury Single Account System and Government Public Debt in Nigeria

	ACB		ODC		GOS		EDS	
	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value	Coeff.	t-value
C	17.510	11.078	24.614	7.607	17.453	12.758	10.522	5.339
FCR	-1.096	-6.291	-0.439	-1.233	-0.975	-6.466	-10.301	-4.741
R-Squared	0.691		0.515		0.603		0.589	
Adj.R-Squared	0.684		0.505		0.596		0.581	
F-statistics	11.3516		19.7918		14.109		17.184	
P(f-statistics)	0.0000		0.0000		0.0000		0.0000	

Source: Author's computation (2020)

Treasury Single Account System on Market Capitalization

To investigate the effect of the treasury single account system on stock market performance, this study adopted the seemingly unrelated regression model (SUR) to accommodate the simultaneous impact of the TSA system on the dependent variables, by taking into consideration the contemporaneous of the error residual of the model. In Table 6, the f-statistic of the model shows that the model is statistically significant, and the coefficients are different from zero. The R-squared of the two models show that the explanatory variable accounted for more than 40% of the variation in both SMS and SML.

The TSA system induced stock market liquidity of the stock market negatively -12.019 ($t = -2.212, p < 0.05$). This implies that the TSA system affected the volatility of shares. However, the impact was more on bank shares. Our data shows that people tended not to trade on the share of bank when the TSA system was introduced. This was expected, because banks no longer had access to government money. This finding is unfortunate and will surely lead to value reduction in the overall capital market and the beginnings of economic recession. TSA also exhibited a significant relationship with the stock market size of the banks: -0.166 ($t = -2.664, p < 0.05$). The variable coefficient (-0.166) shows that it induces the stock market size of banks negatively.

Table 6: Treasury Single Account System on Market Capitalization

	SML		SMS	
	Coeff.	t-value	Coeff.	t-value
C	21.479	2.389	10.752	11.847
FGD	-12.019	-2.212	-0.166556	-2.664
R-Squared	0.415		0.428	
Adj.R-Squared	0.404		0.417	
F-statistics	10.501		10.191	

P(f-statistics)	0.0000		0.0000	
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Source: Author's computation (2020)

Discussion

The findings reveal that the TSA system had a negative impact on government debt performance, with significant negative impact on advances from commercial banks, and external debt finance charge. However, it had an insignificant negative impact on overdraft from the Central Bank of Nigeria (CBN). The implication of these findings is that the implementation of the TSA system significantly reduced advances from commercial banks and reduced overdraft from CBN, but is it not significant. In the case of stock market performance, it was revealed that the TSA system had a significant negative impact on stock market liquidity and stock market size. This implies that the implementation of TSA reduces the liquidity and size of the stock market. The findings of the study have nullified the hypothesis earlier stated, as it was revealed that TSA system significantly affected the government debt and stock market performance, although the effect is negative.

The findings of this study are already prevailing, as existing studies have posted that the withdrawal of funds from banks will lead to liquidity problems, which will force banks to increase interest rates, which will result to inflation, reduction in productivity and lower profit margin (Ighosew & Ofor, 2017; Saleh, 2015; Uzor, 2015; Balogun, 2015; Muraina, 2018). The strength of the banking sector in the Nigerian stock market is responsible for the major impact that the adoption of the TSA system has had on the stock market liquidity and size. It was also submitted that the liquidity problem will be more evident and impactful on banks that have used the government funds in their cover to advance loans. In the event of call back, they will not be able to access the customers but will be forced to access funds from other sources, which will continue to strain the economy (Scannews, 2013).

Most studies claim that TSA has a negative impact. However, some scholars, like Chijoke and Orioha (2016), claim that TSA will positively impact the banking industry, as it will be forced to go back to its primary function of financial intermediation between surplus and deficit customers, which will create more wealth and jobs and, in the process, it will make more profit. Although this is the primary function of banks, it is evident in the contemporary business world that banking activities go beyond intermediation between customers, to serving as government tools to promote financial stability by being ready institutions where government can source funds to cushion the burden of deficits in the form of loans and advances. In the event that the banks then rely on government funds to run their business when the reverse should be, then there is bound to be economic instability.

The publication of the World Bank and International Monetary Fund confirms the findings of this study, saying that the public debt level in lower-income economies has risen in recent years, as most are already in debt distress, or at a high risk. The implication of the weakness of the capital market or the banking sector in this distressed economic state is that the government will depend largely on external debts to finance its deficit, because the banks are not liquid enough to finance the deficit of government. This deficiency will lead to a strain in the financial stability of the economy, and a proactive government must look for avenues to minimize this effect.

In 2017, Ighosew and Ofor (2017) evaluated the effect of a TSA system on banks' performances in Nigeria and unveiled a negative impact. Considering the adverse effect of the policy, they recommended that the policy should be revisited by government by going back on total

withdrawal and retaining 50 percent of its funds in the banks, so they could use the funds to couch the liquidity effect. Similarly, Oloba, Orenuga and Nkuma (2017) looked at the effect of the TSA system on the Nigerian financial system and economic growth, using 5 deposit money banks, and recommended that, to couch the effect of cash withdrawal, banks should re-invest the funds taken away from the financial institution into the economy, in the form of capital expenditure, to revitalize the economy from recession. The recommendations on how government will stabilize the economy are numerous and fiscal in nature, and we will give our own recommendations in the subsequent part of this paper.

Conclusion and Recommendations

In this study, we conducted an in-depth investigation on the effect of the TSA system on financial stability in Nigeria. Various studies have evaluated the implications of the TSA system in Nigeria from different perspectives, ranging from revenue generation, reduction of financial fraud and loopholes, and transparency and accountability, among others. Studies conducted on financial stability focus majorly on financial performance and liquidity of the banking sector. The attention on the banking sector is understandable, given the significance of government funds to the liquidity functioning of banks prior to the TSA adoption. It is, however, established that the financial stability of a country goes beyond the health of the banks alone. This study, therefore, further investigated the effects of the TSA system on government debt performance and stock market performance. The TSA system was measured using the federally collected revenue. The government debt performance was proxied with advances from commercial banks (ACB), overdraft from CBN (ODC), government securities (GOS), and external debts service charge (EDS). Stock market performance was represented by stock market liquidity (SML) and stock market size (SMS).

The study found that the TSA system had a negative effect on government debt performance. An individual assessment showed that TSA had a significant negative effect on advances from commercial banks, government securities, and external debt service charges. Overdraft from CBN, however, revealed a statistically weak relationship. When considering stock market performance, the result revealed that the TSA system had a significant negative effect on stock market performance, specifically stock market liquidity and stock market size. Therefore, we conclude that the adoption of TSA system in Nigeria has positively affected financial stability in the area of debt performance but had an adverse effect on the stock market. The shock of the sudden withdrawal of government funds from the deposit money banks has hit a significant part of the Nigerian financial system, and the mopping of government funds in a single account has not fully helped the government perform better with servicing of its debt as speculated.

The study therefore recommends that:

- i. The ripple effect of the TSA system adoption on the deposit money banks has had an adverse effect on the overall financial stability of the nation. Government must therefore be interested in ensuring that Nigerian banks channel their efforts into other avenues (e.g., investments) to cushion the adverse effect of this policy on the banks, and thereby stabilize the economy.
- ii. The Nigerian Government re-adjusts its fiscal policies to incorporate an avenue through which government can inject funds into the banks in the form of investments or facilitate direct investments into the banking sector to revitalize the sector.
- iii. The ideologies of the public governance and new public management must be fully incorporated into the governance system of Nigeria, so some of the adverse effects of bureaucratic governance can be minimized.

- iv. The Nigerian government must salvage the financial system from the shock of the TSA system's adoption by readjusting its fiscal policies and incorporating a sustainable debt management governance strategy.

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