Effect of Treasury Single Account (TSA) on Tax Revenue Collected in Nigeria

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ABSTRACT
The study examined the effect of Treasury Single Account (TSA) on tax revenue collected in Nigeria. Company income tax, value added tax, and petroleum profit tax formed the dependent variables of the study. The study adopted an ex-post-facto research design, covering the period between 2011 and 2019. Secondary data were extracted from the Federal Inland Revenue Service website. Paired Sample T-test technique was used for the data analysis. In line with the specific objectives of the study which was to ascertain the effect treasury single account implementation on company income tax, value added tax, and petroleum profit tax revenue collected in Nigeria, it was revealed that TSA has a positive and significant effect on company income tax and value added tax revenue collected in Nigeria. TSA has a negative and insignificant effect on petroleum profit tax in Nigeria. This implies that TSA implementation has increased company income tax and value added tax collected in Nigeria. It is recommended therefore that the continuous use of TSA should be guaranteed by the government. This is because it led to an increase in company income tax collection in Nigeria. Every factor that works against its continued existence should be subdued. They should ensure that tax authorities continue to comply with TSA rules in remittance of value added tax collected to the consolidated revenue fund. They should ensure that Nigerian National Petroleum Corporation (NNPC) and other oil and gas regulating authorities comply fully to the dictates of TSA.

1. INTRODUCTION

1.1 Background of the Study

Governments worldwide, in their pursuit of socioeconomic development, heavily rely on revenue generation to provide essential public goods and services (Anyawu, 1997; Afuberon & Okoye, 2014). Taxation stands out as a principal and obligatory means of revenue collection, playing a multifaceted role in funding government activities, regulating economic conditions, and addressing issues of income inequality (Anyawu, 1997; Afuberon & Okoye, 2014). In the Nigerian context, the historical dependence on oil revenue has underscored the vulnerability of the country's fiscal framework, necessitating a reevaluation of revenue sources.

The Treasury Single Account (TSA) emerges as a significant financial reform in Nigeria, introducing a consolidated system managed by the Central Bank to streamline government income and expenditures (Sailendra & Israel, 2011; Taiwo, 2016). The primary objectives of the TSA include optimizing cash resources, reducing float costs, and ensuring judicious financial resource management (Sailendra & Israel, 2011; Taiwo, 2016). This reform is particularly timely

given the challenges posed by fluctuations in oil prices, prompting a global shift towards sustainable revenue alternatives (Afuberon & Okoye, 2014).

Despite the perceived advantages of the TSA, its impact on tax revenue collection is a subject of varied opinions and perspectives. Positive appraisals highlight its potential to curb revenue leakages and contribute to economic development, while critiques express concerns and criticisms (Afuberon & Okoye, 2014). In the context of Nigeria's evolving economic landscape, understanding the intricate relationship between the TSA and tax revenue collection becomes pivotal for assessing the reform's efficacy and its role in strengthening the country's fiscal resilience.

This study endeavors to navigate the complexities surrounding the implementation of the TSA, specifically focusing on its effects on tax revenue in Nigeria. Through a comprehensive analysis of data, stakeholder experiences, and prevailing economic conditions, the research aims to shed light on the nuanced dynamics at play (Anyawu, 1997). The findings are anticipated to contribute valuable insights to the ongoing discourse on financial reforms, guiding policymakers and stakeholders in optimizing revenue generation strategies for sustainable development.

1.2 Statement of the Problem

While taxation serves as a fundamental and compulsory means of revenue generation for governments globally, Nigeria has historically grappled with a heavy reliance on oil revenue, contributing to fiscal vulnerabilities. The recent introduction of the Treasury Single Account (TSA) as a financial reform holds the promise of optimizing cash resources, reducing float costs, and enhancing financial resource management. However, the impact of the TSA on tax revenue collection, a vital component of Nigeria's revenue diversification strategy, remains unclear.

The decline in oil prices and subsequent reduction in funds available for distribution among the Federal, State, and Local Governments underscore the urgency of generating adequate revenue from taxation. Despite the potential benefits attributed to the TSA, such as curbing revenue leakages and contributing to economic development, divergent opinions and concerns persist. The effectiveness of the TSA in facilitating an increase in tax revenue remains a subject of inquiry, and a comprehensive understanding of its impact on the revenue landscape is imperative.

1.3 Objectives of the Study

The main objective of this study is to assess the effect of the Treasury Single Account (TSA) on tax revenue collection in Nigeria. The specific objectives guiding the study are as follows:

i. Ascertain the effect of TSA implementation on company income tax in Nigeria.
ii. Investigate the effect of TSA implementation on value-added tax in Nigeria.
iii. Appraise the effect of TSA implementation on petroleum profit tax in Nigeria.

2. REVIEW OF RELATED LITERATURES

2.1.1 Treasury Single Account (TSA)

The Treasury Single Account (TSA) represents a significant financial reform implemented by governments to streamline the management of public funds (Taiwo, 2016). This reform involves the consolidation of all government bank accounts into a single account, typically held at the central bank. The primary objective of this consolidation is to enhance financial transparency,

optimize cash resources, and improve the overall efficiency of public financial management (Sailendra & Israel, 2011; Taiwo, 2016). By centralizing government funds, the TSA aims to eliminate fragmentation, provide a unified view of the government's financial position, and minimize the risk of revenue leakages (Onyekpere, 2015).

Centralization of funds is a key aspect of the TSA, and it involves concentrating all government revenues and expenditures into a single account, typically managed by the central bank (Sailendra & Israel, 2011). This centralization allows for better control and oversight. By doing so, the government can effectively manage its cash flow, reduce idle funds across various accounts, and optimize the use of financial resources. This is particularly crucial in minimizing the costs associated with maintaining multiple bank accounts and mitigating float costs, such as interest and fees incurred when funds are dispersed across different banks.

Optimizing cash resources is not only a financial consideration but also a strategic move to reduce the government's dependence on borrowing. According to Kanu (2016), the TSA aims to curtail the need for excessive borrowing by ensuring that cash is efficiently managed and used for budgetary needs. This, in turn, contributes to prudent financial resource management, allowing for more responsible fiscal planning and decision-making. Moreover, a unified view of the government's financial position enables better budgeting, forecasting, and allocation of resources, promoting overall fiscal responsibility.

Akande (2016) opine that eliminating revenue leakages is a critical objective of the TSA. By consolidating funds and centralizing control, the reform seeks to close potential loopholes and enhance accountability in the financial system (Afuberon & Okoye, 2014). This is a proactive measure against corruption and mismanagement of government funds, aligning with broader efforts to improve governance and accountability in public financial management.

While the TSA offers several potential benefits, its effectiveness depends on various factors, including the legal and institutional framework in place, the degree of compliance by government agencies, and the efficiency of financial systems (Afuberon & Okoye, 2014). It is essential to consider these contextual factors when evaluating the impact of the Treasury Single Account on public financial management within a specific country or jurisdiction.

2.1.2 Tax Revenue

Tax revenue serves as a fundamental source of income for governments, playing a crucial role in financing public goods and services, infrastructure development, and various government expenditures (Unegbu & Irefin, 2011). Taxation is a compulsory financial obligation imposed on individuals and businesses by the government, and it represents a significant aspect of fiscal policy (Brartia, 2009).

Tax revenue is essential for funding government operations and public services. These funds are used to finance education, healthcare, security, and other essential services that contribute to the overall well-being of society (Anyawu, 1997; Afuberon & Okoye, 2014). The revenue collected through taxes forms a substantial portion of the government's budget, enabling it to meet its expenditure obligations.

Moreover, taxation serves as a regulatory tool that influences economic behavior. Tax policies can be designed to encourage or discourage specific activities. For example, governments may use tax incentives to promote investment, innovation, and job creation while imposing taxes on

certain goods or activities to control consumption or address social issues like environmental concerns.

Tax revenue also plays a crucial role in addressing income inequality. Progressive tax systems, where higher-income individuals pay a higher percentage of their income in taxes, contribute to redistributing wealth and narrowing income gaps within a society (Anyawu, 1997). This aspect of taxation aligns with broader social and economic goals, promoting fairness and social justice.

In the context of Nigeria, tax revenue has historically constituted a relatively small proportion of the total revenue generated, primarily due to heavy reliance on oil revenue (Afuberon & Okoye, 2014). However, declining oil prices and the consequent reduction in available funds have underscored the urgency of diversifying the economy and increasing revenue from taxation.

Understanding and optimizing tax revenue collection are crucial for governments to meet their financial obligations, promote economic growth, and ensure sustainable development. It requires a balance between effective tax policies, enforcement mechanisms, and considerations for the economic well-being of citizens.

2.1.3   Company Income Tax

Company Income Tax (CIT) revenue is a critical component of a country's fiscal structure, representing the funds collected from taxing the profits of incorporated entities. This revenue stream is essential for governments to finance public services, infrastructure development, and various government programs. It plays a pivotal role in contributing to the overall revenue pool, supporting economic growth and social welfare initiatives (Bird & Zolt, 2005).

The calculation of CIT revenue involves determining the taxable income of companies and applying the prescribed tax rates. Taxable income is derived by subtracting allowable deductions from the gross income of companies. These deductions typically include operating expenses, depreciation, and other legitimate business expenses. The resulting taxable income serves as the basis for computing the tax liability, and the revenue generated from CIT contributes significantly to the overall budgetary framework (Bird & Zolt, 2005).

Governments often rely on CIT revenue as a stable and sustainable source of income (Ugochukwu & Azubike, 2015). Unlike revenue from commodities or natural resources, which can be subject to price volatility, CIT revenue is more stable and predictable, providing governments with a reliable stream of funds for ongoing operations and planned expenditures (Sawyer, 2013).

According to Appah (2010), the effective administration of CIT revenue requires a balance between encouraging business activities through incentives and ensuring compliance through robust enforcement mechanisms. Governments may implement policies that offer tax incentives to stimulate economic activities, attract investment, and foster innovation. At the same time, enforcing compliance is crucial to maintaining the integrity of the tax system and preventing tax evasion or avoidance (Bird & Zolt, 2005; Sawyer, 2013).

The economic impact of CIT revenue extends beyond its role as a funding source. It influences investment decisions, business strategies, and the overall competitiveness of companies. The level of CIT can affect a country's attractiveness for foreign investment, impacting its economic growth and development trajectory (Sawyer, 2013).

2.1.4   Value Added Tax

Value Added Tax (VAT) revenue constitutes a significant source of income for governments globally, representing funds collected through the taxation of goods and services at various stages of production and distribution. According to Abata (2014), Value-Added Tax (VAT) is a consumption tax where the tax burden is ultimately borne by the consumers. The burden is transferred from the producer to the wholesaler, then to the retailer, and finally to the buyer, who experiences the primary impact of the tax. The revenue generated from VAT plays a crucial role in supporting government activities, public services, and development initiatives (Keen & Lockwood, 2010).

One of the notable features of VAT is its broad-based nature, encompassing a wide range of goods and services. This inclusivity contributes to a more equitable distribution of the tax burden across various economic activities. While essential goods and services may be subject to reduced or zero-rated VAT, non-essential or luxury items often face higher VAT rates. This progressive structure allows governments to tailor VAT policies to promote fairness and meet social and economic objectives (Keen & Lockwood, 2010).

The effectiveness of VAT revenue collection relies on efficient administrative systems, compliance mechanisms, and monitoring capabilities. Tax authorities must ensure that businesses accurately report their VAT liabilities, and enforcement measures are in place to deter tax evasion. Additionally, robust VAT refund mechanisms for eligible businesses contribute to the smooth functioning of the VAT system (Keen & Lockwood, 2010).

2.1.5   Petroleum Profit Tax

The regulatory landscape for Petroleum Profit Tax (PPT) in Nigeria is delineated by the Petroleum Profit Tax Act (PPTA), administered under the jurisdiction of the Federal Inland Revenue Board (FIRS). PPT is imposed on the profits accrued by companies engaged in petroleum operations within the nation (Nwogugu, 2016). These operations, as per the Act, encompass a spectrum of activities, such as the extraction, transportation, and acquisition of petroleum or chargeable oil within Nigeria, excluding refinery processes. Companies are liable for PPT on these operations conducted for their own account as an integral facet of their business activities, inclusive of associated operations and the sale or disposal of chargeable oil on behalf of the company (Nwogugu, 2016).

Fasoranti (2013) underscores that PPT involves the taxation of income specifically derived from petroleum operations. The researcher highlights the paramount importance of petroleum to Nigeria's economy, underscoring the necessity for specialized legislation to govern the taxation of income arising from these operations. The enactment of the PPTA stands as a testament to Nigeria's commitment to instituting a structured and equitable system for taxing profits in the petroleum sector (Fasoranti, 2013). This legislative framework not only ensures regulatory compliance but also facilitates the fair distribution of revenues, contributing substantively to the sustainable development of Nigeria's economy.

2.2   Theoretical Framework

The theoretical framework guiding this study on the effect of the Treasury Single Account (TSA) on tax revenue collection in Nigeria is rooted in the Institutional Theory, which focuses on the impact of institutional structures on organizational behavior and outcomes. In the context of this

research, the implementation of the TSA serves as a transformative institutional reform, influencing the practices and behaviors of entities involved in tax collection (Scott, 2014).

The study's primary objective is to assess the effect of the TSA on tax revenue collection, with specific objectives addressing company income tax, value-added tax, and petroleum profit tax. As the TSA represents a significant change in the financial architecture of government operations, its implementation is likely to have multifaceted effects on the institutional arrangements governing tax collection (North, 1991).

To ascertain the effect of TSA implementation on company income tax in Nigeria, the Institutional Theory enables an exploration of how the new institutional structure shapes the behavior of tax authorities responsible for company income tax collection. This involves analyzing changes in norms, practices, and rules governing the collection process and assessing the impact on efficiency and transparency (Scott, 2014).

Similarly, in investigating the effect of TSA implementation on value-added tax, the Institutional Theory provides a lens through which to understand the institutional changes influencing the behavior of tax collection entities. This includes examining how the TSA alters coordination mechanisms, reporting practices, and overall efficiency in value-added tax collection (North, 1991).

In the context of petroleum profit tax, the Institutional Theory allows for an appraisal of how the TSA's introduction affects the institutional environment governing tax collection for the petroleum sector. This involves studying changes in practices related to revenue reporting, transparency, and overall efficiency in petroleum profit tax collection (Scott, 2014).

2.3   Empirical Review

Nwankwo (2017) examined the transition to the Treasury Single Account (TSA) in Nigeria, focusing on the associated issues, challenges, and prospects. The study employed a descriptive survey research method and utilized a convenience sampling technique to select respondents, including ten Professors and twenty Senior lecturers from the faculties of Management and Social Sciences at Enugu State University of Science and Technology, ESUT. Questionnaires were administered to collect data, and statistical weighted means, scores, and standard deviation were used in the analysis. The findings revealed that the current economic recession and the high level of corruption in Nigeria compelled the government to introduce the long-awaited TSA program.

Onyeizugbe, Igbodo, and Enaini (2017) examined the impact of the Treasury Single Account (TSA) on university administration in South East Nigeria. The research utilized a survey research method, collecting primary data through questionnaires. The collected data were subjected to analytical regression. The study found that the newly implemented Treasury Single Account (TSA) had affected financial operations in the bursary units of universities and consequently slowed down activities. It indicated a departure from the past, where planned programs were executed as intended in universities.

Ikya, Akaa, and Ucherwuhe (2017) conducted a study to explore the nature, origin, challenges, and lessons learned from the Nigerian experience with the Treasury Single Account (TSA). The study drew upon stakeholder theory, management theory, and modern money theory as its theoretical foundations. The research revealed that the TSA serves as a unified structure of government bank accounts, allowing for the consolidation and optimal utilization of government cash resources. It facilitates regular monitoring of government cash balances and enables a more

accurate analysis of cash outturn, including the identification of causal factors behind variances and distinguishing them from random variations in cash balances.

Igbekoyi and Agbaje (2017) assessed the implications of adopting the TSA on accountability and transparency in the Nigerian public sector, aiming to determine whether the policy can enhance government accountability. The study included all ministries, departments, and agencies (MDAs) in the public service, with a sample size of ten MDAs involved in revenue generation selected through purposive sampling. The hypotheses were tested using regression analysis (ANOVA). The findings of the study demonstrated that the TSA had a significant positive impact on reducing financial leakages, enhancing transparency, and curbing financial misappropriation.

Ndubuaku, Ohaegbu, and Nina (2017) examined how the introduction of the Treasury Single Account affected banks' credit to the private sector, deposit mobilization, and loans and advances. Their study utilized descriptive and ex post facto research designs, focusing on the 24 commercial banks in Nigeria. Time series data from the Central Bank of Nigeria Statistical Bulletin for the period 2010-2015 were analyzed using OLS regression and correlation analysis. The study concluded that the introduction of the Treasury Single Account significantly reduced credit to the private sector, deposit mobilization, and loans and advances.

Fatile and Adejuwon (2017) investigated the implications of implementing the Treasury Single Account (TSA) on the cost of governance during the Buhari civilian administration in Nigeria. This qualitative study relied on secondary sources to examine the subject. The findings of the research suggested that the increase in the cost of governance was primarily attributed to corruption rather than an over-bloated bureaucracy. The Treasury Single Account (TSA) was implemented primarily to ensure the accountability of government revenue, enhance transparency, and prevent misappropriation of public funds.

Ogbonna and Amuji (2018) conducted a study on the impact of the treasury single account (TSA) on the performance of banks in Nigeria from 2007 to 2017. By analyzing data from two banks, Diamond Bank Plc and First Bank Plc, and using statistical tests such as Hotelling's T2 statistic and F statistic, the study found that there were no significant differences in liquidity ratio, capital adequacy, and credit to customers between the two periods, indicating that the TSA did not have a noticeable effect on banks' performance.

Abiola (2018) conducted a study to investigate the opinions and perceptions of individuals regarding the adoption of the Treasury Single Account (TSA) in Nigeria. The researcher collected data through structured questionnaires administered to a sample size of 200 participants selected from Federal, State, Local Government, and Private Sector Employees. The outcome variable, perception, was categorized into positive and negative perceptions. The analysis of the data using frequency, percentages, and analytic weighted mean revealed variations in the acceptance attitude towards the implementation of the TSA in Nigeria. Approximately 23.4% of respondents reported a negative perception, indicating non-acceptability, while 76.6% reported a positive perception, indicating acceptability.

Oloruntoba, et al. (2019) investigated the implication of treasury single account on the performance of Nigerian Deposit Money Banks. Quantitative analysis was used in this research, with data collected by the researchers. Five banks (Zenith Bank, First Bank Plc, UBA, Access Bank and Guaranty Trust Bank) were selected through purposive method. Judgmental sampling technique was also used to select Head of Operation, Accountant and Branch Manager from 10 branches each of the selected bank in Oyo State, Nigeria, totaling 150 respondents as a sample

size for the study. Data collection instrument used was a structured questionnaire and data analysis was performed with the aid of Ordinary Least Square method of estimation. Result shows that implementation of Treasury Single Account has significant relationship with closure of branches, withdrawal syndrome from the banking system, liquidity crisis and unemployment crisis in Deposit Money Banks.

Adebayo, Akinleye, and Adeduro (2020) examined the relationship between the Treasury Single Account (TSA) and government expenditure in Nigeria. The researchers employed a secondary method of data collection, encompassing pre- and post-implementation years from 2011 to 2018. The dependent variable in the study was government expenditure, which included both recurrent and capital expenditure. The independent variable was represented by Federal Government Time Deposits (TSA). The data underwent correlation and regression analysis using the E-View econometrics package. The results indicated that Federal Government Time Deposits had a positive but insignificant effect on both the pre- and post-implementation eras of the TSA.

Omosidi, et al. (2020) investigated the impact of TSA on revenue generation and utilization in the University of Ilorin. This study empirically examined the extent to which TSA has an effect on total revenue (Grant + IGR) and its utilization. Both the interview and secondary data were utilized for this study. The data were divided into two periods: Pre TSA period (2012 to 2014) and Post TSA period (2015 to 2017). A pre-post analysis (difference in means test) was carried out using SPSS version 20. Findings show that the implementation of the Treasury Single Account has improved revenue generation in the University. However, further findings revealed that University's revenue utilization improved after the implementation of TSA from N6, 691,451,094.41 billion to N8, 928,707,239.14 billion.

Effiong and Obun (2020) examined the asymptomatic link between Treasury Single Account (TSA) and economic growth. Expo-facto research design was used and data for the study were obtained from the Federal Inland Revenue tax statistics report and UN data site. Data collected were analyzed using the ordinary least square regression method, and descriptive statistical method. The research results indicate that the implementation of the treasury single account has a significant scientific influence on the growth of the economy in real GDP terms, while revenue generated by government and per capita income were negatively influenced by the operation of TSA.

Echekoba, Obi-Nwosu, Ubesie, & Mbanefo (2020), in their study ascertained whether there was improvement with government to private sector credit deposit after adoption of TSA in Nigeria using ex-post facto on CBN data from 2011 to 2018. The statistical regression analyses revealed there is significant improvement in federal government deposit to private sectors after TSA implementation.

2.1   Gap in Empirical Review

The preceding review of empirical literature highlights a predominant focus on the impact of the treasury single account on revenue collection in Nigeria. However, a noticeable gap emerges as none of these studies have undertaken an examination of its influence on government spending, particularly in the realm of capital expenditure. Addressing this knowledge void, the present study contributes by delving into the nuanced dynamics of how the treasury single account affects tax revenue collection in Nigeria. This research seeks to broaden the understanding of the

implications of the treasury single account beyond revenue generation, extending its investigation into the realm of government expenditure, notably in the crucial domain of capital investment.

3. METHODOLOGY

3.1 Research Design

The chosen research design for this study adopts an ex-post-facto approach, relying on historical data to investigate the impact of the Treasury Single Account (TSA) implementation on tax revenue collection in Nigeria. Conducted within the Nigerian context, the study utilizes tax revenue data collected both before and after the implementation of TSA, establishing a benchmark to gauge its influence. Secondary sources, specifically time series data extracted from the Central Bank of Nigeria Statistical Bulletin spanning the years 2011 to 2019, form the basis of the study's dataset.

The study's population encompasses all government revenue heads, with a specific focus on tax revenue as the sample for analysis. Within tax revenue, the researcher narrows the scope to company income tax, value-added tax, and petroleum profit tax for a more detailed examination. This targeted approach allows for a nuanced exploration of the impact of TSA on different components of tax revenue.

For the determination of the sample size, tax revenue is strategically selected, offering a comprehensive view of the study's objectives. The analysis methodology employed is the paired sample t-test, a statistical procedure that assesses whether the mean difference between two sets of observations is statistically significant. In this case, each subject or entity is measured twice, creating pairs of observations representing the periods before and after TSA implementation. The statistical analysis is facilitated through the Microsoft Excel program (version 2016).

To fulfill the study's objectives, the research engages in descriptive statistics to assess the normality of the distribution of the time series data. Subsequently, the paired sample t-test is employed to scrutinize any discernible differences in public financial management before and after the implementation of TSA. This meticulous approach allows the study to draw meaningful insights into the impact of TSA on tax revenue collection, contributing to the understanding of the broader implications for public financial management in Nigeria.

3.2 Model Specification

The model was specified as follows:

$$t = \frac{\overline{x}_{\text{diff}} - 0}{s_{\overline{x}}}$$

Where;
$$s_{\overline{x}} = \frac{s_{\text{diff}}}{\sqrt{n}}$$

Where;

$\overline{x}_{\text{diff}}$ = Sample means of the differences

n = Sample size (i.e., number of observations)

s_{diff} = Sample standard deviation of the differences

$s_{\overline{x}}$ = Estimated standard error of the mean (s/sqrt(n))

To analyse the respective differences, the mathematical representation of the null and alternative hypotheses is defined as follows;

$H_0: \mu_d = 0$

$H_1: \mu_d \neq 0$ *(two-tailed)*
$H_1: \mu_d > 0$ *(upper-tailed)*
$H_1: \mu_d < 0$ *(lower-tailed)*
The assumptions are as follows:
1. The null hypotheses (H_0) assumes that the true mean difference (μ_d) is equal to zero.
2. The two-tailed alternative hypotheses (H_1) assume that (μ_d) is not equal to zero.
3. The upper-tailed alternative hypotheses (H_1) assume that (μ_d) is greater than zero.
4. The lower-tailed alternative hypotheses (H_1) assume that (μ_d) is less than zero.

4 DATA ANALYSIS

Table 4.1: Descriptive Statistics for the Focal Variables

	CIT	VAT	PPT
Mean	1088197.	883565.6	2331545.
Median	1068471.	815581.9	2460764.
Maximum	1604698.	1184580.	3201320.
Minimum	654448.2	659153.6	1157808.
Std. Dev.	305417.4	187189.0	710229.6
Skewness	0.268375	0.502537	-0.450700
Kurtosis	2.192761	1.906586	2.063978
Jarque-Bera	0.313245	0.735243	0.562887
Probability	0.855027	0.692379	0.754694
Sum	8705577.	7068524.	18652364
Sum Sq. Dev.	6.53E+11	2.45E+11	3.53E+12
Observations	8	8	8

Source: Eviews 10.0 Statistical Software

Table 4.2.1 reveals the examination of the normality of the distribution for each tax type, namely Company Income Tax (CIT), Value-Added Tax (VAT), and Petroleum Profit Tax (PPT).

Company Income Tax (CIT): The skewness value of 0.268375 for CIT suggests a slight positive skew, indicating a distribution that is slightly skewed to the right. This implies that there may be a few higher values influencing the distribution. The positive kurtosis (2.192761) further emphasizes a relatively peaked distribution with heavier tails. However, the Jarque-Bera test, with a probability of 0.855027, indicates no significant departure from normality. While there is a subtle deviation from a perfect normal distribution, the data for CIT appears to be reasonably close to normal.

Value-Added Tax (VAT): VAT exhibits a skewness of 0.502537, indicating a positive skew and a distribution slightly skewed to the right. The positive kurtosis (1.906586) suggests a relatively peaked distribution with heavier tails. Similar to CIT, the Jarque-Bera test, with a probability of 0.692379, does not provide evidence of a significant departure from normality. Thus, the distribution of VAT values appears to be relatively close to normal, with a subtle rightward skewness.

Petroleum Profit Tax (PPT): PPT demonstrates a skewness of -0.450700, signifying a slight negative skew and a distribution slightly skewed to the left. The positive kurtosis (2.063978) indicates a relatively peaked distribution with heavier tails. The Jarque-Bera test, with a probability of 0.754694, suggests no significant deviation from normality. While there is a subtle leftward skewness, the data for PPT seems to adhere reasonably well to a normal distribution.

Table 4.2.2: t-Test: Paired Two Sample for Means (CIT)

	CIT AFTER	CIT BEFORE
Mean	1273405.375	902988.7898
Variance	77716164370	48464327320
Observations	4	4
Pearson Correlation	0.993631361	
Hypothesized Mean Difference	0	
df	3	
t Stat	11.4052814	
P(T<=t) one-tail	0.000723157	
t Critical one-tail	2.353363435	
P(T<=t) two-tail	0.001446313	
t Critical two-tail	3.182446305	

Source: Computed by Researcher Using Microsoft Excel 2016 Software

Table 4.2.2 presents the results of the paired two-sample t-test for means specifically focused on Company Income Tax (CIT). This statistical analysis is a powerful tool for assessing whether there is a significant difference in the means of CIT after and CIT before the implementation of the Treasury Single Account (TSA) in Nigeria.

CIT After and CIT Before Means: The mean values provide a clear indication of the average Company Income Tax (CIT) after and before the implementation of TSA. CIT After has a mean of 1,273,405.375, while CIT Before has a lower mean of 902,988.7898. This suggests an apparent increase in the average CIT after the implementation of TSA compared to the pre-implementation period.

Variance: The variance measures the dispersion of data points around the mean. In this case, the variance for CIT After is 77,716,164,370, and for CIT Before, it is 48,464,327,320. The higher variance in CIT After indicates greater variability in the data points.

Observations and Pearson Correlation: The paired t-test involves comparing observations from the same entities before and after the implementation of TSA. In this case, there are 4 paired observations for both CIT After and CIT Before. The Pearson correlation of 0.993631361 suggests a strong positive correlation between the two sets of observations, indicating a consistent pattern in the changes.

t-Test Results: The t-statistic, with a value of 11.4052814, is compared against critical values to determine statistical significance. The degrees of freedom (df) are 3, and the hypothesized mean difference is 0. The p-values for one-tail and two-tail tests are 0.000723157 and 0.001446313, respectively. Both p-values are significantly lower than the common significance level of 0.05, suggesting strong evidence to reject the null hypothesis.

Interpretation: The t-test results indicate a statistically significant difference between the means of CIT After and CIT Before. The positive t-statistic suggests that the average CIT after the implementation of TSA is significantly higher than before. The strong correlation and consistent pattern in observations further support the reliability of these findings. Overall, these results suggest a notable impact of the Treasury Single Account on the average Company Income Tax in Nigeria, signifying a potential influence on revenue collection.

Table 4.2.3: t-Test: Paired Two Sample for Means (VAT)

	VAT AFTER	VAT BEFORE
Mean	1023291.871	743839.2295
Variance	24617509803	5079318501
Observations	4	4
Pearson Correlation	0.975971436	
Hypothesized Mean Difference	0	
df	3	
t Stat	6.300174615	
P(T<=t) one-tail	0.004039539	
t Critical one-tail	2.353363435	
P(T<=t) two-tail	0.008079078	
t Critical two-tail	3.182446305	

Source: Computed by Researcher Using Microsoft Excel 2016 Software

Table 4.2.3 outlines the results of the paired two-sample t-test for means, specifically focusing on Value-Added Tax (VAT) before and after the implementation of the Treasury Single Account (TSA) in Nigeria.

VAT After and VAT Before Means: The means reveal the average Value-Added Tax (VAT) after and before the implementation of TSA. VAT After has a mean of 1,023,291.871, while VAT Before has a lower mean of 743,839.2295. This suggests an apparent increase in the average VAT after the implementation of TSA compared to the pre-implementation period.

Variance: The variance measures the dispersion of data points around the mean. In this case, the variance for VAT After is 24,617,509,803, and for VAT Before, it is 5,079,318,501. The higher variance in VAT After indicates greater variability in the data points.

Observations and Pearson Correlation: There are 4 paired observations for both VAT After and VAT Before. The Pearson correlation of 0.975971436 suggests a strong positive correlation between the two sets of observations, indicating a consistent pattern in the changes.

t-Test Results: The t-statistic, with a value of 6.300174615, is compared against critical values to determine statistical significance. The degrees of freedom (df) are 3, and the hypothesized mean difference is 0. The p-values for one-tail and two-tail tests are 0.004039539 and 0.008079078, respectively. Both p-values are significantly lower than the common significance level of 0.05, suggesting strong evidence to reject the null hypothesis.

Interpretation: The t-test results indicate a statistically significant difference between the means of VAT After and VAT Before. The positive t-statistic suggests that the average VAT after the implementation of TSA is significantly higher than before. The strong correlation and consistent pattern in observations further support the reliability of these findings. Overall, these results suggest a notable impact of the Treasury Single Account on the average Value-Added Tax in Nigeria, signifying a potential influence on revenue collection.

Table 4.2.4: t-Test: Paired Two Sample for Means (PPT)

	PPT AFTER	PPT BEFORE
Mean	1815034.619	2848056.275

Variance	3.44688E+11	1.20883E+11
Observations	4	4
Pearson Correlation	-0.794940628	
Hypothesized Mean Difference	0	
df	3	
t Stat	-2.324324222	
P(T<=t) one-tail	0.051339002	
t Critical one-tail	2.353363435	
P(T<=t) two-tail	0.102678004	
t Critical two-tail	3.182446305	

Source: Computed by Researcher Using Microsoft Excel 2016 Software

Table 4.2.4 provides the results of the paired two-sample t-test for means, focusing on Petroleum Profit Tax (PPT) before and after the implementation of the Treasury Single Account (TSA) in Nigeria.

PPT After and PPT Before Means: The means illustrate the average Petroleum Profit Tax (PPT) after and before the implementation of TSA. PPT After has a mean of 1,815,034.619, while PPT Before has a higher mean of 2,848,056.275. This suggests a decrease in the average PPT after the implementation of TSA compared to the pre-implementation period.

Variance: The variance measures the dispersion of data points around the mean. In this case, the variance for PPT After is 344,688,000,000, and for PPT Before, it is 120,883,000,000. The higher variance in PPT After indicates greater variability in the data points.

Observations and Pearson Correlation: With 4 paired observations for both PPT After and PPT Before, the Pearson correlation of -0.794940628 suggests a strong negative correlation between the two sets of observations, indicating an inverse pattern in the changes.

t-Test Results: The t-statistic, with a value of -2.324324222, is compared against critical values to determine statistical significance. The degrees of freedom (df) are 3, and the hypothesized mean difference is 0. The p-values for one-tail and two-tail tests are 0.051339002 and 0.102678004, respectively. While the one-tail p-value is slightly above the common significance level of 0.05, the two-tail p-value exceeds 0.05. This suggests weak evidence to reject the null hypothesis.

Interpretation: The t-test results indicate a potential difference between the means of PPT After and PPT Before, but the evidence is not strong enough to establish statistical significance. The negative t-statistic suggests a potential decrease in the average Petroleum Profit Tax after the implementation of TSA, although caution is warranted in drawing firm conclusions given the p-values. Further exploration and consideration of additional factors may be needed to discern the impact of the Treasury Single Account on Petroleum Profit Tax in Nigeria.

4.3 Test of Hypotheses

Decision Rule: The decision rule stipulates that if the p-value surpasses the alpha level of 0.05, the null hypothesis positing no significant effect will be accepted. Conversely, if otherwise, the null hypothesis is rejected, and the alternative hypothesis is embraced. Additionally, if the t-tabulated value is less than the t-calculated value, the null hypothesis is accepted.

Hypothesis One:
Null Hypothesis: Treasury Single Account (TSA) implementation does not significantly affect company income tax in Nigeria.

The paired two-sample t-test in Table 4.2.2 reveals a two-tail probability of 0.0014, which is below the alpha value of 0.05. Consequently, the null hypothesis is rejected, and the alternative hypothesis is accepted. The t-tabulated value (11.4053), exceeding the t-calculated value (3.1824), further supports the rejection of the null hypothesis. This suggests that TSA has a substantial impact on the company income tax revenue collected in Nigeria.

Hypothesis Two:
Null Hypothesis: Treasury Single Account (TSA) implementation does not significantly affect value-added tax in Nigeria.

The paired two-sample t-test in Table 4.2.3 indicates a two-tail probability of 0.0081, falling below the alpha value of 0.05. As a result, the null hypothesis is rejected in favor of the alternative hypothesis. The t-tabulated value (6.3002), surpassing the t-calculated value (3.1824), reinforces the rejection of the null hypothesis. This implies that TSA significantly affects value-added tax revenue in Nigeria.

Hypothesis Three:
Null Hypothesis: Treasury Single Account (TSA) implementation does not significantly affect petroleum profit tax in Nigeria.

The paired two-sample t-test in Table 4.2.4 exhibits a two-tail probability of 0.1027, exceeding the alpha value of 0.05. Consequently, the null hypothesis is accepted, and the alternative hypothesis is rejected. Furthermore, the t-tabulated value (2.3243), lower than the t-calculated value (3.1824), supports the acceptance of the null hypothesis. This suggests that TSA does not significantly affect petroleum profit tax in Nigeria.

4.4 Discussion of Result
The assertion regarding the significant impact of the Treasury Single Account (TSA) on the company income tax revenue collected in Nigeria is underpinned by a multifaceted set of factors designed to enhance financial management, transparency, and accountability within the government. The pivotal role of TSA lies in the centralization of government funds, providing a consolidated and unified perspective of the government's financial landscape. This consolidation facilitates improved financial management practices, fostering the efficient allocation and utilization of resources, particularly those stemming from company income tax. The TSA's core objectives, which include closing gaps and leaks in the financial system, mitigating fraudulent activities, and optimizing cash resources, collectively establish an environment conducive to fortifying government revenue streams.

The resultant streamlined collection processes, an outcome of centralization, coupled with heightened transparency, further contribute to the development of a more efficient tax collection framework. Additionally, the positive repercussions on economic activities, stemming from the adept management of government funds, have the potential to elevate income levels for companies. This, in turn, influences the overall revenue generated from company income tax. While these factors collectively imply a substantial impact of TSA on company income tax

revenue, it remains imperative to recognize the intricate nature of the financial ecosystem. Continued research is crucial to comprehensively understand the nuanced dynamics at play and to refine strategies for sustained financial enhancement in Nigeria.

The observation that the Treasury Single Account (TSA) significantly influences value-added tax (VAT) revenue in Nigeria stems from a combination of systematic changes introduced by the TSA implementation. The centralization of government funds through TSA serves as a linchpin for improved financial management and transparency, which directly impacts the efficiency of VAT revenue collection. By providing a consolidated and unified view of the government's financial position, the TSA facilitates more effective allocation and utilization of resources, including those derived from VAT.

The TSA's primary objectives, such as eliminating gaps and leaks in the financial system, reducing fraudulent activities, and optimizing cash resources, collectively contribute to creating an environment conducive to strengthening government revenue streams, including VAT. The streamlining of collection processes, a direct outcome of centralization, coupled with heightened transparency, fosters a more efficient VAT collection framework.

Moreover, the positive economic impact resulting from the adept management of government funds under the TSA can contribute to increased economic activities. This, in turn, positively influences VAT revenue, as economic growth and transactions typically correlate with higher VAT collections. The observed significant effect of TSA on VAT revenue underscores the transformative role of financial reforms in shaping and optimizing revenue collection mechanisms in Nigeria.

The observation that the implementation of the Treasury Single Account (TSA) does not significantly affect petroleum profit tax (PPT) in Nigeria suggests a nuanced relationship between the financial reform introduced by the TSA and the revenue generated from petroleum-related activities. Unlike other taxes, such as company income tax and value-added tax, which showed a significant impact from TSA implementation, the specific characteristics of PPT and the nature of petroleum operations might contribute to this distinctive outcome.

Petroleum profit tax is intricately linked to the profits derived from petroleum operations, which encompass a range of activities such as extraction, transportation, and acquisition of petroleum. The unique nature of these operations, coupled with the exclusion of refinery processes from the scope of PPT, could limit the direct influence of TSA on this particular tax. The complexities involved in petroleum-related activities, including the global and economic factors influencing oil prices and market dynamics, contribute to the intricate landscape within which petroleum profit tax operates.

Moreover, the petroleum sector often faces challenges and opportunities distinct from other industries, making it less responsive to certain financial management reforms. The global nature of the petroleum market and the dependency on external factors highlight the need to consider a broader context when assessing the impact of financial reforms like TSA on PPT revenue.

While the current findings suggest no significant effect, it is imperative to approach this conclusion with a degree of caution. The petroleum sector's dynamics are multifaceted, and further in-depth research is necessary to uncover potential nuances and contributing factors that might elucidate the observed relationship between TSA and petroleum profit tax in Nigeria. As

the nation continues to navigate the complexities of revenue generation in the petroleum industry, a comprehensive understanding of these dynamics will be crucial for informed policy decisions and financial management strategies.

5. CONCLUSION AND RECOMMENDATIONS

5.1   Conclusion

The Treasury Single Account (TSA) policy is poised to play a pivotal role in mitigating identified financial leakages in revenue generation and fostering transparency and accountability within the public financial system upon full implementation. This comprehensive financial strategy is anticipated to streamline the timely payment and accurate capture of all revenues flowing into the government treasury, effectively eliminating the need for multiple banking arrangements. Additionally, the TSA policy promises to provide the central government with real-time insights into its cash position, offering a seamless mechanism to monitor and manage financial resources. Furthermore, the system is expected to curtail the occurrence of round-tripping of government deposits, enhancing overall financial integrity.

Building on the insights derived from a pre-post analysis of the impact of TSA on tax revenue collection in Nigeria, the study concludes that the implementation of the Treasury Single Account has notably bolstered the collection of company income tax revenue and value-added tax revenue. The findings underscore the positive and statistically significant impact of TSA on these specific revenue streams. However, it is noteworthy that, while the TSA has exhibited a negative effect on the collection of petroleum profit tax revenue in Nigeria, this effect is deemed statistically insignificant. This nuanced observation highlights the need for targeted strategies and further exploration into the dynamics of petroleum-related revenue under the TSA framework.

5.2   Recommendation

Consequent to the findings of this study, the study therefore recommends that:

To enhance revenue from company income tax (CIT) under the Treasury Single Account (TSA) framework, a comprehensive review and simplification of the tax code are recommended. A simplified and transparent tax code promotes compliance, reduces the likelihood of tax evasion, and contributes to increased revenue. By ensuring clarity and ease of compliance for businesses, tax authorities can create an environment that aligns with the goals of the TSA, fostering a conducive atmosphere for effective revenue collection.

For value-added tax (VAT), the recommendation is to enhance collaboration between tax authorities and businesses through technology-driven solutions. Leveraging technology can streamline VAT collection processes, reduce administrative bottlenecks, and ensure real-time reporting. This not only aligns with the principles of the TSA but also contributes to increased efficiency in revenue collection. Improved collaboration and technological solutions can enhance the overall effectiveness of VAT collection mechanisms.

In the context of petroleum profit tax (PPT), a tailored approach is necessary. The recommendation involves conducting a comprehensive study of the petroleum sector to identify specific challenges and opportunities for revenue optimization. Understanding the unique dynamics of petroleum operations, refining tax regulations, and aligning them with global best practices can enhance revenue collection without compromising the growth of the industry. This

targeted approach acknowledges the complexities of the petroleum sector and aims for a balanced strategy that benefits both the government and industry stakeholders.

To sustain and optimize the impact of TSA, strengthening the monitoring and evaluation mechanisms for implementation is crucial. This recommendation involves regular assessments and adjustments as needed. Continuous monitoring allows for the timely identification of challenges and opportunities, enabling policymakers to refine strategies, address emerging issues, and sustain the positive impact of TSA on revenue collection. A dynamic and responsive approach to TSA implementation ensures its continued effectiveness.

Investing in capacity building and training for tax officials is essential for navigating the complexities of tax collection under the TSA. Well-trained tax officials are better equipped to enforce tax regulations fairly, reducing tax evasion, and optimizing revenue collection. This recommendation emphasizes the importance of a skilled workforce in ensuring the success of revenue-generating initiatives under the TSA framework.

To foster a culture of compliance and support revenue-generating initiatives, public awareness campaigns are recommended. Educating businesses and the public on the importance of tax compliance and the role of TSA in enhancing financial transparency is crucial. Increasing public understanding reduces resistance to tax policies, promotes voluntary compliance, and contributes to the overall success of revenue optimization efforts.

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