Corporate Financial Governance, Government Fiscal Reporting and Financial Performance: The Nigerian Case

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Abstract

This paper appraises public corporate financial governance or impact of the quality of public financial management institutions on financial performance in the Nigerian federal treasury (Federal Ministry of Finance) from 1999 and 2014. Ex-post ‘facto’ empirical analysis approach using document content study and archival retrieval system as research instrument for data collection is the research design followed in this study. Secondary data extracted from Nigeria’s Federal Government (FGN) fiscal budgets, financial statements, statutory audit reports and public finance statistics were utilized in analysis. Tools of data analyses employed include; numerical analysis, descriptive statistics governance performance indicators, (or non-financial performance indicators), financial performance indexing (FPI) variant of a modified Z-score were employed. Overall result indicates that the FGN’s financial reporting practices is sub-optimal and ineffective in driving sound and reliable corporate financial reporting in the federal treasury; which contribute sub-optimal financial performance and the below-average macroeconomic performance too (citizenship distress). Of the five governance performance criteria, it was only auditors’ un-qualified certificate in proxy for audit quality assurance that recorded significant positive performance on financial accountability. The remaining four criteria yield either negative or insignificant performance indicators, implying that they induce negative impact on public financial performance. The overall result produced a fair but below average performance rating. This shows corporate financial governance imposes significant adverse influence on financial accountability and financial performance in Nigeria’s which can easily lead lo financial distress.

Keywords: Corporate Financial governance, Fiscal Institutional Quality, Financial Reporting, Transparency, Financial Performance.

1 Introduction

1.1 Introduction

Financial governance in government entities or public finance management institutions comprise policies, rules, legislation, procedures of public revenue and expenditure management processes and fund dispositions that translated to surplus budget or budget deficit that culminate to fiscal discipline or otherwise (Hameed, 2005). Government accounting, financial controls, government financial reporting as well as transparency in public sector’s financial reporting demonstrated by timely issuance of the audited accounts (Hameed, 2005; Alt & Lassen, 2006; Weber, 2012), Financial accountability and transparency in fiscal reporting open access and availability in public domain are considered as part of important commitment of the fiscal institutions to sound treasury management and good governance (Aruna, (2003) Hameed,
(2005); Alt & Lassen (2006); Weber, (2012)). Public financial governance is also inter-linked with function of the public finance management institutions and reflection of fiscal institutional quality, the political organizational structure, political systems (Weber, 2012). These also include the size of government and managerial behaviour of both the authorities of government, political office holders and management of public service. This study focuses on impact of non-financial performance of public finance management institutions (corporate financial governance) on sovereign treasury management and Nigeria’s public financial performance (financial health).

The elements of public sector’s financial governance interface with the public treasury and public financial management through fiscal budgeting, passage of annual appropriations bill, budget implementation performance and the timing lags. Statutory audit services including the routine internal auditing; audit reporting, oversight supervisory function of the public account committee of the legislature; and down to the approval, assent and publication of annual financial statement of government entity is another core component of fiscal governance. Other governance issues that act as veritable drivers of public financial performance rather remotely including certification of government annual accounts and reports by the government independent auditor and the head, national audit office; government accounting system and financial reporting practices, the availability, openness and accessibility of members of the public to government financial statements are. These demonstrate public financial accountability and transparency in handling of government’s business transactions and financial affairs.

The qualitative characteristics of public finance management institutions (institutional factors) or financial governance often include: time-lag in fiscal budgeting, passage and implementation performance (budget management); time-lag in preparation of financial statements, statutory auditing and publication of annual financial statements; quality assurance in statutory audit reporting using clean or qualified opinion as proxy; government-wide accounting financial reporting practices and transparency (represented by open access and availability of financial reports) as the last one. Thus, the paper utilizes qualitative governance variables obtained from content study and the archival information retrieval approach with application of modified Altman & Hotchkiss (2010)'s Z-score financial distress index to measure the effect of financial performance in the Nigerian treasury. Gollwitzer (2012 or 2013) noted that since the seminar paper by von Hagen (1993), a rapidly increasing empirical literature has concentrated on the functions of fiscal institutions, effectiveness of their financial control efforts in enhancing public revenues, expenditures and overall fiscal discipline and by extension, macroeconomic performance.

Following a growing concerns on the quality and reliability of public sector’s corporate financial reporting especially with the aftermath of the immediate past global financial crisis, governments, citizens, stakeholders and international agencies have shown greater interest in financial accountability and fiscal transparency. The International Monetary Fund (IMF’s study (2007) revealed that about ten countries that experienced the largest unexpected increases in general government gross debt as a share of GDP between 2007 and 2010. The IMF's report identified that lack of incomplete information about government’s underlying fiscal position; rendition of untimely and unreliable data about sovereign governments’ deficit and debt contributed a collapse in market confidence some countries (Greece, Ireland and Portugal).

In related development the World Bank (1998) report evaluated government financial performance, public treasury management and the quality of fiscal institutions—that is corporate financial governance in Lagos State, of Nigeria which encouraged the latter to extend huge credit facility to the State government. Dabbla-Norris and other (2010), Gollwitzer (2011) alongside few others authors have evaluated the impact of fiscal institutions on public financial performance in selected African countries. The research findings from these countries were
mixed but those studies revealed that those developing countries that have adhered to good accounting practices, proper accountability and transparency in financial reporting recorded better fiscal discipline and lower public debt position (Hamed (2005); Alt & Lassen, 2006).

Gleich (2003), Hallerberg and von Hagen (2005) have also made significant contribution to the quality of literature and development in practice of public financial management and government performance. Furthermore, Ncube and Vacu (2014), Casal, Gomez and Liste (2014) assessed financial distress in South African local governments and impact of political parties and political ideologies on financial performance in local governments in Spain respectively. However, the authors are not aware or accessed any empirical papers that duly evaluated the impact of public finance management institutions on sovereign treasury management and financial performance presently. Apparently, there is paucity of empirical studies on non-financial performance evaluation and measures of public financial performance in Nigeria. The aim of this paper is to assess the impact of public finance management institutions on government financial performance in the Nigerian government sector.

The study employed governance performance indicators, (non-financial performance indicators), financial performance indexing (FPI) variant of a modified Z-score in its performance measurement. The result indicates that the FGN’s financial reporting practices is sub-optimal and in-effective in driving sound and reliable corporate financial reporting in the federal treasury; which contribute sub-optimal financial performance and the below-average macroeconomic performance too (citizenship distress). Of the five governance performance criteria, it was only auditors’ un-qualified certificate in proxy for audit quality assurance that recorded significant positive performance on financial accountability. The remaining four criteria yield either negative or insignificant performance indicators, implying that they induce negative impact on public financial performance. The overall results yields a fair but below average performance rating grade ‘D’. This shows corporate financial governance imposes significant negative effect on public financial performance and on public financial accountability in Nigeria which can translate financial distress.

1.2 Background Information to the Study Introduction

An assessment of the impact of corporate financial governance of a government entity as critical component of public treasury, financial performance and measure of financial health of government is necessary due to paradigm shift in management philosophy in the public sector. Thus, the paper focused on the effect of managerial behaviour of the public service management, managerial efficiency, inefficiency; effectiveness or ineffectiveness in public financial management which in turn translate into good public governance and macro-economy performances. von Hagen (1993, 2005), Gleich (2003); Gollwizer (2013) and several others have contributed to a rapidly increasing literature on public financial management that focused on appropriate design of budget institutions, on budget management and their roles in enhancing fiscal discipline. Whilst most of the empirical literate concentrated on budget institutions, practices and fiscal performance; little has been research and reported on public sector’s corporate financial governance on government financial performance particularly Nigeria, even though the country has remained cynosure of massive revenue leakages, financial corruption and mismanagement of resources in the past years.

The adoption of qualitative (non-financial) governance variables in performance management system becomes necessary due to the influence of managerial behaviour, efficiency or inefficiency and general attitude of public functionaries and those of management of public service in handling public funds and service delivery (Kattelus, 2013, Hoffman and Clarkson, 2005). Qualitative governance indicators in performance measurement system in evaluation of public financial performance represents one the latest approach and international best practices

The incidence of the last global financial crisis inadvertently revealed shortcomings in many governments’ understanding of their underlying financial position and potential shocks to that position. The IMF’s (2007) report identified among other issues that lack of incomplete information about government’s underlying fiscal position; rendition of untimely and unreliable data about sovereign governments’ deficit and debt contributed a collapse in market confidence some countries. The report of the study finds also that hidden or implicit obligations to public corporations and public-private partnerships (PPPs) outside the general government perimeter rebounded on the government finances when the crisis struck in Greece, Germany, Iceland, Portugal, and the US (Weber, 2012). In Greece, Portugal, and Spain, governments cash-based budgeting, accounting, and reporting systems failed to capture and control expenditure commitments, resulting in an accumulation of payment arrears before and during the crisis. Second, that percent of the increase was due to an underestimation of the likelihood and scale of shocks to the government’s fiscal position. In particular, the fiscal impact of the unexpected fall in output was an important factor in all countries and the principal reason for the unexpected surge in government liabilities in five. Weber (2012) identifies poor fiscal transparency as a key predictor of statistical discrepancies in published fiscal data as measured by stock-flow adjustments between general government net lending/borrowing and the change in net debt. Gelos and Wei (2005) cited in Alt and Lassen (2006) find that fiscally more transparent countries tend to attract more foreign equity investment and are less vulnerable to withdrawals during times of stress. During the last decade and a half substantial efforts have been made to improve fiscal transparency across advanced, emerging, and developing economies (Gelos and Wei, 2005) cited in Alt and Lassen, 2006). The Asian crisis of the late 1990s highlighted shortcomings in financial reporting in both public and private sectors and regarding the linkages between the two (Lane and others, 1999; cited in Alt & Lassen, 2006) Empirical evidence has shown that gradual improvements have been achieved in fiscal transparency reporting across countries (Alt & Lassen, 2006).

From Nigerian perspective, the narrow base of the taxation and non-oil fiscal revenue generating capacity couple with recent decrease in crude-oil price and dwindling revenue accretion to the Federation Account caused treasury liquidity and solvency problems in public finances of different layers of government entities in Nigeria. Under the prevailing financial situation, the Nigerian governments at different levels are facing difficulties in meeting financial commitments. This fiscal situation has manifested in service-level distress and lack of fiscal solvency which arises partly as due to tremendous increase in demand for public goods / services in line with population growth (Ritonga, 2014). Consequently, the constituents require greater financial accountability and transparency particularly in general government sector and Nigerian public service (Ncube & Vacu, 2014).

Governments as an economic, political and sovereign entity are required by its own laws, regulations and ethics of good governance to prepare, present and gazette their annual audited accounts and reports commonly referred as financial report for each year on regular basis (World Bank, 2010, International Organization of Supreme Audit Institutions (INTOSAL), 2006, FGN, 1999). This reporting responsibility is equated to and or related legal and corporate governance requirements to registered companies and enterprises in the private sector which compels the management to prepare and publish their audited reports and annual financial statements to its members, relevant government agencies, and other stakeholders in the affairs of a company including the public in some cases. The main objective of financial reporting in public sector and private enterprises is to provide accurate and reliable financial information concerning economic entities, primarily financial in nature, and useful for economic decision
making (International Federation of Accountants (IFAC) 2013) Kattelus, (2013) stated that the existence of an efficient financial reporting systems and practices enhance credibility, integrity, public confidence, and the information value of government finances, and contribute to more effective management of resources.

Preparation, issuance of comprehensive and provision of reliable government-wide financial statements as core components of government finance statistics vis-à-vis other annual corporate reports constitute essential pieces of public information from government sector (Aruwa, 2004, Padovanni, 2016). It depicts the level financial stewardship and accountability by the state actors to the constituents (Ncube & Vacu et al), other stakeholders and the society at large. These user groups supports government through taxes, grant of short and long term credit facilities, variety of financial aids and technical assistance from the development partners (Kattelus, 2013).

However, it has been observed that the annual statutory auditing, government financial statements and the overall government fiscal reporting leaves much to be desired. For instance, the Nigerian public finance laws stipulated that the annual appropriation bill takes effect from the first day of each new fiscal year but in practice, the federal budget laws are passed by the end of first quarter and or in the second quarter of current periods. Second, the Nigerian (1999) Constitution requires that the FGN’s annual audit report and accounts should be issued and published within nine months after the end of each financial year but this rule is not fully complied with. Therefore, effective financial reporting practices, commencing from budgeting, financial accounting, management accounting, auditing services and publication of government financial reporting are critical to government performance (public service) in order to be in better position to formulate fiscal policies, and economic decision and deliver the required services to the population.

Aruwa (2004) argue that public accountability is an obligation on the part of the government to render proper record of public resources for responsibility entrusted to the public office holders. It is also a relationship based on the obligation to demonstrate and to be responsible for performance in light of agreed expectations. Fiscal accountability in its broad context is a duty of stewardship or every public central treasury as well as the public functionaries particularly those entrusted with the management of public finance owe the population especially the tax payers, stakeholders and the general public without boundaries (Kattelus, et al). Kinua (2013) stresses that accountability is the regime’s duty to provide the citizenry with the facts, figure and good reasons for public revenue generated and feedback communication on the utilization. It is a common phenomenon that the published annual financial statements of the Nigerian governments are rarely found, accessed and read in the public places and libraries and unavailable in the internet financial reporting, presently. Whilst the published financial reports of the Nigerian governments and their public sector organization are not readily available in the public domain, the governments have been engrossed with several reported cases of missing public funds, leakages in public revenues and mismanagement of financial resources in the treasury. These incidents constitute sufficient background for discerning researchers, stakeholders in fiscal affairs of the Nigerian state and authorities of the governments in Nigeria to carry out in-depth research inquiry into the public corporate financial governance and public financial performance which is non-existent and the over-riding gap this paper is bridging here.

1.3 Problem Statement

Financial governance in government entities which includes transparency in fiscal reporting plays an important part in the evaluation and management of fiscal risks. Fiscal risks are factors that give rise to differences between a government’s forecast and actual fiscal position (Aruwa,
(2003), Weber (2012); Alt & Lassen (2006); International Monetary Fund (IMF), 2007). These differences according to Babatunde (2013), Weber (2012); Alt & Lassen (2006) can be the result of (i) an incomplete understanding of the government’s underlying fiscal position; (ii) exogenous shocks to the public finances; or (iii) endogenous changes in fiscal policy settings. While improvements in fiscal transparency cannot eliminate these risks, they can help policymakers and the public to understand and respond to them. For example, first, there remain significant gaps and inconsistencies in financial transparency standards in areas such as the coverage of public institutions, treatment of assets and liabilities, reporting of transactions and other economic flows, and the comparability between forecast and actual data. These problems are inherent in annual financial reports and fiscal reporting (government finance statistics) in different countries, especially in developing economies.

Public budgeting system and processes in the Nigerian government constituted only of the toughest challenges of public treasury and public financial management over the years. For instance, Nigeria’s federal annual budget appropriation bills has been consistently passed and implemented around the second quarter of each current fiscal year for the past decade (Omolehinwa, 2014) which in effect affect effective budget implementation. Several previous studies that have investigated the impact of fiscal institutions (which includes fiscal governance), public budgeting on government financial management in different countries by Hameed (2005), Dabla-Norris and others (2010) established that developing countries with greater transparency in budgeting and fiscal reporting recorded better fiscal discipline and credit rating. This is supported by Alt and Lassen (2006) which found that a greater transparency in government financial reporting is associated with lower annual budget deficits and public debts. Moreover, monitoring of fiscal transparency by other institutions has not been sufficient to prevent the substantial underreported deficits and debt in some advanced economies (by citizens, residents, stakeholders, trading partners and various user groups (IMF, 2010b). This has reflected a combination of falling demand and a reduction in public financial resources devoted to this area.

In related development, theoretical and empirical literature have provided evidence that excessive delays in execution of statutory auditing and belated rendition / publication of the audited annual financial statements erode public confidence in financial reporting (Aruwa, 2003 or 2005); Kittnonen, (2013); Weber (2012); Alt & Lassen (2006); International Monetary Fund (IMF), 2007). The extant legislations guiding government accounting and financial reporting for Nigeria stipulate that government annual accounts must be audited, approved and published within nine months after the end of financial year. However, in practice, Nigeria’s government audited accounts and reports have been approved and published in about thirty months after the completion of several fiscal years. This trend in corporate financial or fiscal reporting renders the information utility of such financial statements obsolete for decision-making and at the same token enhance information asymmetry and also encourage mismanagement of public funds and assets. We are not aware of any published empirical study that adopted the elements of financial governance to assess public financial performance presently. Given the role of public functionaries and political office holders in fiscal policy decisions and the avalanche of reports of mismanagement of public funds in the federal treasury, non-inclusion of fiscal institution in the analysis and measurement of fiscal condition in government entities it is expedient to examined the effect of financial governance on government performance in Nigeria.

From the Nigerian perspective, Federal Government of Nigeria (FGN) approved the adoption of the IPSASs accounting and financial reporting system 2010 and proposed that the new accounting regime takes effect in 2014 but this is yet to be fully implemented (as at the 2016 year-end). This is an indication that the accounting systems and financial reporting used in
preparation of the FGN’s financial reporting could have were sub-optimal and lacking transparency over time. Babatunde (20013) confirmed that Nigeria have not implemented accrual method in its fiscal budgeting and government accounting and argued that the implementation of accrual accounting will enhance transparency. Apparently, governments’ implementation of international accounting and statistical reporting standards has lagged behind the development of the standards themselves. Hameed (2005), Alt and Lassen (2006), Weber (2012) observed that implementation of international accounting and statistical standards help in detection of the deficiencies in the public sector entities’ accounting and can highlight otherwise hidden costs or obligations and encourage governments to budget and reflect such events in the accounts.

Effectiveness in the publication of audit reports and financial reporting of government entities in accordance with internationally accepted standards can highlight weaknesses in government financial control or accounting practices and prompt governments to remedy the issues identified. In buttressing this view-point, the World Bank (2010) study reports that more frequent and timely public reporting of fiscal developments can help ensure that fiscal forecasts are based on the most up-to-date understanding of the current fiscal position and facilitate rapid policy responses to shocks. Surprisingly, in the Nigerian model of government accounting and financial reporting, printed (hard) copies of the annual audit reports and financial statements of government entities of the three tiers are rarely in circulation and thus, they remain inaccessible to the citizenry and other members of the public. Federal Government of Nigeria hardly publish its annual financial statements in her official web-set – that is, internet financial reporting and likewise the state governments. In the light of lack of internet financial reporting, transparency in fiscal reporting is presumed to constitute major factor that facilitate corrupt practices, mismanagement and lack of proper functioning of the economy. The degree of fiscal transparency has been shown to be an important predictor of a country’s fiscal credibility and performance. A growing body of empirical research has highlighted the positive relationship between the degree of fiscal transparency and measures of fiscal sustainability (such as government deficits and debts), with a stronger correlation among low and middle income countries than among high income countries. Empirical evidence also points to a positive relationship between the degree of fiscal transparency and market perceptions of fiscal solvency.

The main objective of the paper is to assess the impact of financial governance on government financial performance in Nigeria’s federal treasury. The specific objectives are:

1. Examine the impact of budget passage vis-à-vis implementation timing-lag on public financial performance in the Nigerian treasury.
2. Appraises impact of statutory auditing alongside financial reporting timing-lag in gazette of government’s (FGN) annual financial statements and financial performance;
3. Determine the direction to which un-qualified audit reporting of the Nigerian government’s financial reporting (unqualified reports) in attestation of audit assurance influence on financial performance;
4. Ascertain the direction to which the quality of government accounting practices alongside financial reporting influence financial performance in Nigeria’s federal treasury;
5. Determine the extent transparency in government financial reporting (distribution, availability and open access in public domain including internet reporting) affect public financial performance in federal treasury.
The pertinent research questions that guided the investigation on the impact of financial governance and government financial performance in Nigeria are the following:

1. In what direction does the timing-lag in federal budget passage-implementation as a criterion of fiscal governance affect government financial performance in Nigeria’s sovereign treasury?

2. In which direction does statutory audit, financial reporting vis-à-vis gazette of government (FGN) financial statements timing-lag affect the utility of accounting in decision making in the Nigerian federal treasury?

3. To what extent does the un-qualified audit opinion certification as evidence of audit quality assurance of government financial statements sustain public confidence in government’s financial reporting add value to the management of treasury in Nigeria?

4. Which direction does government accounting systems including financial reporting practices affect government financial performance (financial health) in federal treasury?

5. Which direction does the prevailing trend pattern in the distribution or circularization of the Nigerian government’s financial statements affect financial performance in the federal treasury?

The hypotheses of the research are:

1. Budget passage along with implementation timing-lag does not impose adverse impact on Nigeria’s federal treasury’s financial performance.

2. Timing-lag in statutory audit execution, presentation of government annual financial reports and the issuance (gazette) of audited financial statements does not induce poor financial performance (impairment in information utility fiscal policy-making in Nigeria’s federal treasury.

3. Unqualified audit opinion as certificate of quality assurance of assurance to government annual auditing services and rendition of financial statements does not sustain public confidence in accounting information utility including soundness financial performance in Nigeria’s federal treasury.

4. Government-wide accounting systems combined with financial reporting practices in Nigeria’s federal treasury do not yield positive impact on financial performance in the federal treasury.

5. Transparency in government’s published financial statements does not confer positive influence on information utility of the corporate financial reporting as well as financial performance of the Nigerian federal treasury.

The paper is significant in public treasury management and financial performance management because useful insights of the impact, contribution and consequences of institutional quality and or fiscal governance factors on sound, efficient and effective public financial management in a government treasury and macro-economy. Human side of the public financial administration within the realm of new public management as a critical factor which can enhance or undermine good public governance and proper functioning of the economy, especially under resource constraints.

Through adoption of qualitative governance variables which capture managerial behaviours of the public service, managerial efficiency or inefficiency, incompatible incentives of public functionaries to utilize public resources for personal interest, budgeting systems, fiscal management, financial practices, statutory auditing and transparency in financial reporting; all configured into performance measurement metrics of financial performance, this research
established that fiscal governance exert enormous influence on management of public resources. Furthermore, performance management system developed and adopted in this study exposes the nature, relevance and implication of public finance management institutions quality, and by extension, managerial efficiency and or inefficiency of the public functionaries on public financial performance and political economy (Casal, Gomez & Liste, 2014). Empirical evidence in Casal et al identified managerial behaviour of the executing agencies in the public sector to exert influence on public resources management, financial accountability and sound or weak public financial management including losses or wastage of funds.

The scope of study is assessment of impact of the public financial management institutions’ quality (fiscal governance quality) on financial management performance in federal treasury. The paper covers a total period of 16 fiscal years, from year 1999 to 2014 financial years, both years inclusive. Budget passage / implementation timing-lag, statutory auditing / financial reporting timing lag, audit certification attesting audit quality assurance, accounting systems, financial reporting architecture vis-à-vis quality of financial reporting, and transparency in publication of financial statements as proxy for and public accountability are the fiscal governance variables of interest in the paper.

2 Review of Related Literature

2.1 Conceptual Literature

Public finance governance or simply fiscal institutions quality in the context of public treasury and public finance management in a government entity refers to the collection or amalgamation procedures, rules, legislations, controls systems, organization structures adopted in the public service that guide management of resources and good governance. Kopits and Craig (1998) defined fiscal (financial) transparency in a government entity as “openness toward the public at large about government structure and functions, fiscal policy intentions, public sector accounts, and projections. The ministries, departments and agencies of government, public functionaries and all employees in the government sectors follow these procedures in all their functions in handling of public financial resources. Public financial management institutions include also all committees of the legislative arm of government (under a democracy) vested with responsibilities and oversight functions on budgeting, revenue, public finance and public accounts. Casal, Gomez and Liste (2014), Dabbla-Norris, and others (2010); Gollwizter (2012) stated that the quality of public finance management institutions or fiscal institution exerts strong influence (positive and or adverse) on financial management system, financial performance in government treasury and macroeconomic performance of a country.

Government accounting refers to the concepts, standards, rules, and systems used to generate the financial information used in fiscal reporting (IMF, 2007). Weber (2012), Alt and Lassen (2006) defined fiscal transparency as the clarity, reliability, frequency, timeliness, and relevance of public fiscal reporting and the openness to the public of the government’s fiscal policy-making process—is a critical element of effective fiscal management. Fiscal transparency helps ensure that governments’economic decisions are informed by a shared and accurate assessment of the current fiscal position, the costs and benefits of any policy changes, and the potential risks to the fiscal outlook. Fiscal transparency also provides legislatures, markets, and citizens with the information they need to make efficient financial decisions and to hold governments to account for their fiscal performance and their utilization of public resources. Finally, fiscal transparency facilitates international surveillance of fiscal developments and helps mitigate the transmission of fiscal spillovers between countries. Padovanni, 2016 argued that fiscal institutional quality represent a qualitative governance indicators approach to the evaluation of public financial performance and performance management of public treasury in an entity. Padovanni, 2016 explains further that measures of financial performance and financial health of
an entity assesses its ability to meet its existing financial obligations both in respect to service commitments, creditors, employees and other stakeholders. Carmeli (2008), Padovanni (2016) stressed that financial condition (health) is a broad, complex concept with both short and long-term implication that describes the financial health in a government entity in the context of its overall economic and financial environment.

2.2 Relationship Between Corporate Finance Governance and Public Financial Performance

The association between public finance governance factors has been considered in measuring public financial performance by many scholars including Casal, Gomez and Liste (2014). Public financial management institution or fiscal institutions and political economy links public resources with government financial management performance and how the political and fiscal institutions affect the macro-economy is an essential component of performance evaluation framework. Weber (2012) argued that the degree of fiscal transparency has been shown to be an important predictor of a country’s fiscal credibility and performance. A growing body of empirical research has highlighted the positive relationship between the degree of fiscal transparency and measures of fiscal sustainability (such as government deficits and debts), with a stronger correlation among low and middle income countries than among high income countries. Empirical evidence also points to a positive relationship between the degree of fiscal transparency and market perceptions of fiscal solvency (such as credit default swap spreads on sovereign debt, credit ratings, and foreign equity investment), this time with a stronger correlation among high-income than middle-income countries. The impact of these institutions on public resources are multi-faceted and may arise through incompatible incentive of public functionary to hold on to power, budgetary allocation and compensation for patronage or support, deliberate mismanagement of resources, quality of accounting and audit institutions and provision of asymmetric financial information.

Furthermore, Alt and Lassen (2006), Hameed (2005) and Weber (2012) considered transparency in government financial reporting refers to the clarity, reliability, frequency, timeliness, and relevance of public fiscal reporting and the openness to the public of the government’s fiscal policy-making process. Within this, clarity refers to the ease with which these reports can be understood by users (Weber, 2012). Alt and Lassen (2006) opined that reliability refers to the extent to which these reports reflect the government’s true financial position, frequency (or periodicity) refers to the regularity with which reports are published, timeliness refers to the time lag involved in the dissemination of these reports, relevance refers to the extent to which these reports provide users with the information they need to make effective decisions, and openness refers to the ease with which the public can understand, influence, and hold governments to account for their fiscal policy decisions.

Kattelus (2013) argued that the financial factors include revenue generating capacity, aggregate public expenditure, size of government fiscal operating balances; debt portfolio, unfunded liabilities and state of public infrastructure affect public financial performance. However, organizational factors encompass fiscal institutions; legislative policies, management practices, behaviour of public functionaries and of government employees. Also included under organizational factor are mismanagement, quality of public financial management institution, other political factors, transparency, and union power in public administration. Due to the above factor, the present study specifically considers impact of public financial management institutions, predicated purely on governance performance ratios to measure the soundness or weakness in public financial management and financial health of the Nigerian federal treasury. It is established that strong links exist between public financial management agencies, notably: fiscal institutions, that is, the public accounts committee of the legislature (FGN, 1999).

Compliance to rules and external audit performance are some of the specific public finance

Furthermore, the relationship between transparency in government corporate financial reporting, treasury management and good public governance has been well defined in 1998 by Kopits and Craig which argue financial transparency in a government entity presuppose “openness toward the public at large about government structure and functions, fiscal policy intentions, public sector accounts, and projections. This viewpoint is corroborated by Alt and Lassen (2006) which found that a greater transparency in government financial reporting is associated with lower annual budget deficits and public debts. Moreover, monitoring of fiscal transparency by other institutions has not been sufficient to prevent the substantial underreported deficits and debt in some advanced economies (by citizens, residents, stakeholders, trading partners and various user groups (IMF, 2010).

In essence, efficient and effective public fiscal management institutions influence sound public financial performance (INTOSAI, 2006). Effective financial accountability and transparency in fiscal reporting also provides legislatures, markets, and citizens with the information they need to make efficient financial decisions and to hold governments to account for their fiscal performance and their utilization of public resources. Finally, fiscal transparency facilitates international surveillance of fiscal developments and helps mitigate the transmission of fiscal spillovers between countries. On the contrary, inefficiency in public finance institutions encourage mismanagement of resources, poor financial performance and often cause public financial distress. Thus, the quality, characteristics and managerial behaviour of the public functionaries and management of government services as well as quality of the performance of the Supreme Audit Institution (SAI) in a sovereign entity impact either positively or adversely on the utilization of resources in public treasury (INTOSAI), public financial performance and ultimately, financial health. Thus, managerial inefficiency, ineffectiveness and or gross mismanagement of public financial resources can lead deterioration in fiscal capacity, formulation of unsuitable fiscal policies and financial decision whereby influence financial distress.

Public financial management institution is the dependent variable while dimensions of government financial performance are independent variables. Thus, to capture the effect of managerial efficiency and effectiveness of public financial management institutions in government performance and financial distress model in the five criteria, the following qualitative variables are attributes of management and governance related issues variables frequently used include: budget planning, approval and implementation timing lag; statutory audit-cum- government financial reporting timing lag; audit certification -external audit performance quality on reliability of financial reporting; quality of accounting services and the financial systems architecture; transparency in government financial reporting (openness, availability in the public domain, and accessibility).

2.3 Public Finance Management Institutions, Fiscal Governance and Performance Theory

Some eclectic of theories corporate management underpinning impact of corporate financial governance, financial control system in public sector and managerial controls or organizational theory in performance measurement and management in government entities exist in literature. These include: the Code of good public governance, system theory and public auditing theory. These were drawn from the International Monetary Fund (IMF)’s ‘Code of Good Practices and Fiscal Transparency’ (2007); the World Bank’s (2010) Principles of good public governance; Institute of Internal Auditors (IIA)’s Public sector governance (2011), International Federation of Accountants (IFAC)’s Good Public Governance (2013, 2015); System Approach Theory
Kinua (2015) posits that the broad scope of accounting services alongside corporate financial reporting can be more sufficiently and appropriately utilized to formulate fiscal and macroeconomic policies in government entities.

Kittonen (2013) invoked pertinent theories of statutory auditing, notably: monitoring hypothesis, lending credibility hypothesis, inspired confidence hypothesis, agency hypothesis and information hypothesis) in situating the roles and importance of auditing service in corporate finance. Kittonen (2013) explains that public financial accountability is enhanced through statutory auditing and audit implementation in a government entity. Also, in the organizational theory of the new public management (NPM) recognizes that inefficient management of resources by managers is facilitated through rendition of asymmetric financial information (Jensen & Meckling, 1976). Drawing from rules-and-principles based accounting practices and corporate financial reporting in public sector, compliance to rules hypothesis has been added to theoretical framework of auditing in government entities. This brings number of core variants of eclectic theories of auditing applicable to government sector in existing literature to five.

Public corporate financial governance or public finance management institutional quality (PFMIQ) utilize the statutory external audit functions and the execution of routine internal audit and external auditing services in providing strong moderating influence or interface between audit assurance, financial accountability and stewardship financial reporting, transparency in government financial performance and financial distress (Kittonen, 2013). This is, in the sense that effective accountability supports fiscal governance principles, good public governance, prudence, financial information symmetry, and optimal resource utilization. According to Aruwa (2005) this performance measures links audit assurance, financial accountability and stewardship financial reporting, transparency in government financial performance. It also lends credence to the effectiveness of financial accountability and assesses the level of compliance of the federal MDAs extant public laws, fiscal governance rules, good public governance principles, and optimal resource utilization.

Statutory auditing services provided by independent external auditor to the sovereign governments. For example, the Comptroller / Head, the National Audit Office in the United Kingdom have provided effective interface that linked government-wide accounting services, financial reporting, sound public financial management performance with good governance (Bourns, 2012). In Nigeria, the office of the Auditor-General of the Federation (OAUgF) in collaboration with the National Assembly and Public Accounts Committee (PAC) administer the statutory audit functions and services for the federal treasury (Federal Government of Nigeria, (FGN), 2014. Similarly, in the jurisdictions that already adopted actionable governance metric, optimal resource utilization and remarkable reduction in poor financial accountability, in lack of audit independence, low external audit system in government sector, lack of credibility in financial reporting, and published annual financial statements (World Bank, 2010). However, there exist several factors that have encouraged financial information asymmetry and poor financial performance of government entities, efficiency in treasury management and macroeconomic performance (example growth with development) is the lack of transparency in financial reporting and non-compliance to fiscal responsibility reporting (IIA, 2011).

Managerial activities of the PFMI encompass fiscal policy formulation, preparation of fiscal budgets, negotiation, adoption and implementation on one hand. Both the operating and strategic management of government finances are handled by public functionaries including bureaucracy, type and quality of accounting practices, financial reporting architecture, auditing and corporate financial reporting. Statutory auditing and external audit reporting is the final step in public finance management cycle and reporting chain. To conclude, the adverse information asymmetry theory propounded in Jensen and Meckling (1976), the incompatible
incentive of public office-holders hypothesis (using public resources for private gains) and erected in Altman and Hotchkiss (2010)’s modified Z-score represent the suitable framework for empirical model to measure impact of qualitative financial governance and financial performance in Nigeria’s public treasury in this paper.

2.4 Review of Empirical Studies

Aikins (2012) research considered the impact of government’s auditing processes on audit client management’s adoption of audit report findings. Result showed that client management’s adoption of audit recommendations is a function of auditors’ professional designation, due diligence, client relations, and the agreed post-audit implementation plan. Results further indicated that clients management’s adoption of audit reports is strongly influenced by professional due diligence as the auditors assessment of risks inherent in clients operation to determine the appropriate tests. Aikins (2012) confirmed that government auditors generally maintained independent reporting structure and exercise quality control over their work.

Wong (2012)’s thesis assessed the role and performance of audit committee in providing assurance and governance (public accountability) in the Victorian state’s public sector in Australia. Results of the research indicated that the oversight functions and performance in the public sector of the Victorian State ensured compliance with the extant legislations on public financial management and audit; and the set of rules for the treasury. Kinua (2013)’s dissertation assessed the effect of “financial reporting practices” on quality of annual accounts in Kenya’s government sector. Results established that fiscal budgeting as singular independent variable whose performance had significant consequence on quality of Kenya’s government annual accounts. The results further revealed that expenditure appropriations alongside budget implementation performance, financial statements preparation and external auditing variables were not significant in influence quality of annual accounts. This empirical study demonstrated that there are direct linkages between institutional quality, budgeting, treasury management, financial reporting practices, preparation of annual accounts, annual external auditing, and compliance to public finance rules, governance and effective public financial management system.

Dabbla-Norris et al, (2010)’s paper establish the linkages between budget implementation performance, financial management and economic growth. Research result of findings, based on the constructed multi-dimensional indices provides preliminary empirical support that strong political and institutions with due compliance to rules accelerated economic growth. Bartlett (2016) dissertation evaluated the impact of “Government financial disclosures on the timeliness of the comprehensive annual financial reports (CAFR) in the USA states from 2005 to 2014. Results of model variables tested found that debt capacity, total revenues, population, credit worthiness rating, and statutory deadline for the states’ financial reporting all had significant effect on when financial statements (CAFR) is issued.

Alt and Lassen (2006) which found that a greater transparency in government financial reporting is associated with lower annual budget deficits and public debts. This empirical finding is in tandem with the outcome of the IMF’s report of monitoring of fiscal transparency and by other institutions has not been sufficient to prevent the substantial underreported deficits and debt in some advanced economies (by citizens, residents, stakeholders, trading partners and various user groups (IMF, 2010b).

Oghuma (2009) examined Nigeria’s federal budgets, and the economic implication of misuse of unspent budgetary funds and its impact on effective implementation of government’s annual budgets on fiscal planning. The paper finds that in some cases un-utilized budget funds – mostly for capital development programmes were misappropriated and shared by some government officers. This human behaviour hindered proper execution of capital project and plans and also
imposed serious constraints to the leadership of the executive arm of government from attainment of fiscal goals. These are some of the notable case of financial practices perpetrated in fiscal operations but uncovered by both routine audits and external audit services. Oghuma (2009) counselled that public officers to consider overall interest of the nation above individual interest; therefore enjoined public servants to ensure that budget disbursed for capital projects are effectively utilized. The author recommended that Nigeria’s federal budget appropriation bills should be passed, adopted and implemented before the end of January every year; and that budget process adhered to by all state actors without inducements to towards personal benefits. The papers also recommended that project implementation monitoring units should henceforth be established to supervise execution of capital projects in the federal agencies.

Wynne (2016) examined the impact of government-wide financial reporting practices in the national treasury of eight countries in Sub-Saharan Africa (SSA). Result of the showed that out of the five indicative criteria of good financial accounting / reporting practices in the analysis, only timeliness was rated satisfactory while understandability, openness and consistency were unsatisfactory. Wynne’s results further showed that out of the five indicative criteria of good financial accounting / reporting practices, only timeliness was rated satisfactory.

2.5 Limitations of the Reviewed Empirical Studies
Most of the reviewed empirical studies did not include fiscal institutions or public financial management institutions and statutory external performance as governance performance criteria in their measures of financial performance and financial distress in sub-section 2.4. However, Alt and Lassen (2006) provided confirmation that fiscal institutions or institutional capacity, external audit quality assurance, compliance to legal regulation and transparency in government financial reporting exert strong influence on sound public financial management practice and good public governance. The omission governance variables in measures of financial performance might have contributed to some of the limitations observable in the results of prior public financial performances and financial distress studies in many climes.

2.6 Value Addition of the Study to Knowledge
The paper adopts financial governance which most of the previous empirical studies consulted on public financial performance omitted fiscal governance variables in the model. Second, there is paucity of existing empirical study on Nigeria’s public financial performance that adopted PFMIs quality as key governance indicators in the models. This is a major milestone and significant contribution to knowledge and public finance literature to be emulated by other researchers.

Furthermore, through inclusion of non-financial qualitative variables in evaluation of government financial performance omitted in prior studies create awareness of the leadership of authority of governments, public managers and external user groups’ on deficiency in government-wide accounting, corporate financial reporting and financial management practices and in performance evaluation. An evaluation of government external auditing, assessment audit quality assurance as a measurement of stakeholders’ confidence on public financial accountability, verification of the level of transparency in government financial reporting as non-financial qualitative variables to be built into public financial performance indexing is a veritable factor in gauging good public governance and prudence in treasury resource management in developing countries including Nigeria.

3 Research Methodology
The research design and method used in development data adopted in the models, data collection, population, survey sample; in fiscal performance analysis, measurement and test of
hypotheses and other important information relating to the methodology of the research are presented in this section.

3.1 Research Design

The paper adopted ex-post ‘facto’ empirical financial analysis and quantitative methods to utilize fiscal governance variables extracted from the Federal Government’s financial statements as metric in evaluation of the impact of corporate financial governance (mechanisms) on government financial performance of the federal treasury. Similar research design and methods were adopted in Kinua (2014) for Kenya; Casal, Gomez and Liste, 2014 in Spain; Carmeli, 2008) for Israel. The research instrument adopted in the process of data generating and collection is facilitated through content study of the FGN financial statements, domestic audit reports, budget documents and other pertinent information on compliance with legal regulations aspect of public financial management; external audit performance and audit reporting; audit reporting lags, effectiveness of public institutions to the management of Nigeria’s federal treasury. Usman and Anao (2015) posited that the longitudinal data survey method deals with data relating to different periods. Asika (1991) cited in Usman and Anao (2015) posits that despite the fact that time exists as variable, it should not be measured, but should rather be accepted as a factor responsible for variations in independent variables. Document content study with that archival data retrieval collection system are data collection procedure followed in extraction of relevant data sets utilized to derive fiscal aggregates of model.

3.2 Data Sources, Population, Sample Size and Method of Collection

3.2.1 Data Sources and Method of Collection

The necessary annual time series were obtained from secondary data sources, exclusively from the FGN published official documents particularly Nigeria’s government annual financial statements, the approved annual appropriation bills, annual budget speeches delivered by the President, budgetary accounting and performance reports, and the Auditor-General of the Federation (OAuGF)’s domestic audit report and audited financial statements. In effect, the pertinent non-financial and governance variables were extracted from the Federal Government of Nigeria’s corporate financial reports for the relevant years covered in the study from the year 1999 to 2014 (both years inclusive) were used.

3.2.2 Focal Institution, Population and Sample

Nigeria is the focal institution in this study, which makes it a country specific analytical and evaluation study on corporate financial governance as drivers of government financial performance in a developing country. The research concentrated on Nigeria’s Federal Ministry of Finance and its financial management agencies since this federal ministry is statutory responsible for management of the sovereign treasury and government’s corporate financial reporting. Flowing from this perspective, with Nigeria as the sole unit of research, the population and sample of the study covered 16 consecutive financial years, representing 100 percent sample size in terms of the time frame with the Federal Government of Nigeria (FGN) the unit of research. Population of the research is guided by data availability on all the variables (fiscal aggregates) of the study.

3.2.3 Data gathering and Method of Collection

These include the pair-wise non-financial and corporate finance governance variables such as actual time spent on annual budget execution compared the number of normal standard days in fiscal year (365 days); actual time spent on statutory audit performance including preparation, approval and gazette of governments annual financial statements against the minimum statutorily permitted period (expressed in days or months). Another set of pair-wise variables is drawn from the actual number of clean audit opinion certificates or qualified audit opinion certificates in this period.
issued for the total number of the evaluated financial years in comparison with the total years involved. Then, qualitative indices for the actual government-wide accounting practices alongside those of the financial reporting architecture and presentation pattern in comparison with the expected normal standard systems. The implementation of the international public sector accounting standards (IPSASs); accounting for fixed capital assets, current assets, current liabilities and public debt funds as well as faithful representation of such balance sheet items in the audited financial statements are used (IFAC, 2014). The pair-wise variable relating to transparency in government-wide financial reporting was premised on actual number of annual financial statements published in Nigeria’s official web-site; and availability of the printed copies of such annual accounts in the print media, new-stands, and public libraries.

Data gathering for the study was facilitated through the document content study and archival data retrieval collection system which involved extraction of the necessary secondary data from official documents required in deriving the governance variables we adopted the analyses. The procedure was facilitated through the use of simple numerical ratios and derivation of the raw key non-financial performance indicators (KPI) which we used in the construction of financial performance index (FPI) in the models of the study. It is pertinent to state (here) that document content study / archival data retrieval method is the equivalence or the alternative approach to questionnaires as research instrument in primary data collection. This method is often adopted by researchers / analysts when data sets are obtained from published reports.

3.3 Model Specification and Development on Public Corporate Financial Governance

Corporate financial governance or public finance management institutions’ (PFMIs) quality is dependent variable while government financial performance variables drawn from five sub-systems of managerial activities of the public financial management institutions constitute the independent variables. To analyze and realize the goals of the research objective, the qualitative governance variables incorporated in the models include; timing-lag in federal budget passage / implementation; timing-lag in statutory audit execution with issuance of government annual financial statements; statutory audit reporting quality assurance; government-wide accounting system with the financial reporting practices (Frap) and transparency in the rendition, distribution and availability of government financial reports in the public domain. These are the representatives of the independent variables (Xs) or the intervening control variables. Raw non-financial governance performance indicator derivable from these pair-wise government variables are utilized as predictors of financial performance index of this model (FPI). Predictor values of the financial prediction index FPI \( (Y) \) (Z) ranges from 0.01 to 0.99 or from one (1) percent to 99 percent is the financial parameter for measuring financial distress in this model of the study. Descriptions of model variables are provided in table 3.1.

The financial governance-oriented performance measurement empirical model in this paper is supported by the frameworks established by the International Internal Auditors (IIA)’s Guideline on Good Governance, (2012); International Monetary Fund’s (IMF) (2007)’s Code of Good Governance and Kittenon (2013)’s ‘Statutory Auditing Theory”. Following a modified Altman’s (1968); Altman and Hotchkiss (2010)’s modified Z-Score for developing countries and emerging markets; the CRAs (Fitch, 2014; Moody, 2014) financial performance index (FPI) rating score system now blended into a hybrid FPI model score-rating can be expressed as: is:

\[
FPI = Z-Score (Z) = 0.5X1 + 0.50X2 + 0.50X3 + 0.05X4 + 0.50 X5 \tag{3.1}
\]

Values of the predictor variables and financial performance indicators were converted to natural numerals using data transformation procedures such that the values ranges from 0 (zero) and 1.00 then, plugged in the developed financial distress index where the sum total is restricted and becomes one (FPI) or Z-Score = 1.
Composition and description of the qualitative governance variables used in model development are given as follows:

### Models: Prefix of Variables, Symbols and Descriptions

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Code</th>
<th>Description of the performance indicators (ratios)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPIT</td>
<td>X1</td>
<td>Budget Planning, Passage-cum-Implementation Timing-Lag</td>
</tr>
<tr>
<td>SART</td>
<td>X2</td>
<td>Statutory Auditing-with-Government Financial Reporting Timing-lag</td>
</tr>
<tr>
<td>SUAS</td>
<td>X3</td>
<td>External Audit Quality Assurance (Clean Audit/Total Reports)</td>
</tr>
<tr>
<td>FRAP</td>
<td>X4</td>
<td>Financial Reporting Accounting Practices (IPSAS as proxy)</td>
</tr>
<tr>
<td>TGFR</td>
<td>X5</td>
<td>Transparency in Government Financial Statements Reporting</td>
</tr>
</tbody>
</table>

Thus, the arrangement of the model equation function commences with econometric method, and subsequently, the multiple discriminant analysis (MDA) approach for the construction of the financial distress index (FDI) of the five model in the study is given as:

Econometric model development of qualitative governance of financial performance indices is

\[
FPI. = (Z) = a + Bo + Bpit X1 + Sart X2 + Auas X3 + Frap X4 + Tgis X5 + d + E \quad (3.2)
\]

Financial Performance Index

\[
FPI. = (Z) = W1*X1+W2* X5.2 +…+Wn* Xn \quad / \quad n \quad (3.3)
\]

Where: FPI or (Z) is a composite financial index and parameter to measure of model test \( W1*X1+ W2* X2 +…+ W \ n* X \ n \) are the representative values of each non-financial governance performance indicators.

Decision criterion and interpretation: If FPI calculated is negative and < 0.50 or 50 percent accept Ho and reject Ha; but the FDPi is equal 0.50 (50 percent) and above positive, then, accept Ha and reject Ho. Hypotheses results are further categorized in line with the ordered performance.

### 4 Analysis and Results

#### 4.1 Data Evaluation

In practice, time series data are often found to have the tendency to drift (trend) with passage of time, we tested for the presence of unit root in the model variables using the Augmented Dickey Fuller (ADF) and or Phillip-Peron (PP) techniques (Gujaranti & Sangetha, 2008), Johansen’s or Geoffrey-Bresuch cointegration test were also implemented as part of data diagnosis as the check of stationarity. Furthermore, Wald and Dublin-Watson test were also performed to ascertain whether the selected governance variables used in our models were suitable for analysis and adoption in non-financial performance measurement metrics.

Unit root test for models 1, 3, 5 explanatory variables yield showed negative results at levels; whilst those in models 4 and 5 tested positive, were further differenced and normalized in order 1 (1). The control variables for timing lags in the partial regression analysis did not well fit into Breusch-Godfrey co-integration rank test testing due to zero variances. Since the paper developed static models that utilized the traditional non-monetary values in a ratio analysis for the qualitative governance performance indicators, it adopted these variables for the necessary analysis and tests. It is also pertinent to stress that in line with the principles of ex-post ‘facto’ analysis and measures used in the study did not require econometric estimation of future timing-lags, because our analyses were premised purely on past events only. Pair-wise fiscal governance variables of the models were statistically significant at 5 percent (0.05) significance level; Dublin-Watson tests fall below 2.4 level. Generally, results of these diagnosis checks and evaluation procedures undertaken established that the relevant pair-wise model variables were...
suitable for use in analysis of financial performance and hybrid MDA / LR analysis and also fitted the model very well.

Summary of the relevant statistical analysis for the respective models are provided in the relevant tables for each model in the appendix pages (appendices).

4.2 Results of Analysis

The set of system equation to derive the impact of public financial management institutions on treasury management, financial management and financial distress in the federal treasury in MDA pattern in the first stage is expressed as:

\[ FPI = (Z-Score) = W1*X1 + W2*X2 + \ldots + Wn*Xn / n \] (4.1)

\[ FPI = (Y=1) = 1/1+e^{- (Bo+B1Xi1 + B2Xi2 + \ldots + Bn* Xin )} = 1/1+e^{-Zi} \] (4.2)

\[ FPI (Z) = (10.52X1*w1) + (12.43X2*w2) + (16X3*w3) + (9.72X4*w4) + (9.6X5*w5)/16 \].

The re-arrangement of the above system equation into its LRM structure is given as:

\[ FPI \text{ in LRM} = (Z-Score5) = 1/-1 \{f (0.65X1) + (-0.78X2) + (1.00X3) + (0.61X4) + (0.6X5) / 5 \}

Composite FPI result is 0.41 (41%); grade (‘D’) and fair but below average non-financial (governance) performance rating. Based on the result of analysis from performance measurement in this model’s test, Ha is adopted for model one. This indicates is a fair and below average overall performance rating score.

The presentation of analysis results derived from the mapping of financial performance indicators of the pair-wise partial non-financial – governance ratios for the respective models are provided as follows:

(1) Result of analysis on budget planning, passage-cum-Implementation timing-Lag (BPIT-Model one) test result yield a non-financial performance indicator of 0.65 > 0.50 minimum cut-off mark for sound financial performance and solvency in the treasury. Thus, Ha is adopted. This result appears rather contradictory because Nigeria’s federal budgets have been approved / assented around the second quarter of the fiscal budget year hence it is expected that delay in budget execution leads to poor performance. Empirical evidence in Hourerou and Taliero, (2002) and Gollwitzer, (2013) established that belated implementation of public budgets in some African countries resulted fiscal ineffectiveness and poor public financial performance.

(2) Result on statutory Auditing-with-government corporate financial reporting timing-lag (SART - Model two) record a non-financial performance indicator of - 0.75 and a significant negative ratio far below 0.50 minimum cut-off points in the association between actual time spent and the constitutionally prescribed normal time frame for rendition of the Nigeria’s annual financial statements. Ho2 was adopted in model two for the second objective. This result signifies that the belated issue of annual audit report and financial statements induced lack of financial accountability and suboptimal financial management system in the federal treasury and lead to financial distress.

(3) The analysis of the unqualified audit opinion as certificate of audit quality assurance by the government’s independent external auditors by the Auditor-General of the Federation (OAuGF) in proxy of statutory audit quality assurance (model three); the result produced a performance indicator of a 100 percent and significant positive ratio that is above 0.50 minimum cut-off mark in the association between total actual clean audit opinion certifications (16 times for 16 annual financial statements). Ho3 was adopted for the third research objective.

(4) Performance appraisal on government accounting practices, financial reporting architecture and financial reporting system the test results produce 60 percent or 0.60 non-financial performance indicator. Therefore, Ho4 is adopted. This is an indication of a significant positive
in the association between the quality of government-wide accounting systems, financial reporting framework and financial reporting practices as a measure of public financial performance in Nigeria’s federal treasury.

(5) The result of the performance evaluation on transparency in government financial reporting criterion of corporate financial governance yields 61 percent or 0.61 non-financial performance indicator. Based on this test result, Ho5 is adopted. This is an indication of a significant positive in the association between the quality of public finance management institutions and public financial performance in Nigeria’s federal treasury. It implies that efficient and effective fiscal governance institutions is a major driver of transparency in government financial reporting which in turn leads sound public financial management system or practices in some countries.

4.3 Summary of Results of Analyses

Summary of results derived from the respective specified objectives and models are as follows:

(1) Result of analysis on budget planning, passage-cum-Implementation timing-Lag (BPIT-Model one) performance indicator of 0.65 > 0.50 and strong positive non-financial performance which supports solvency in the treasury.

(2) Result on statutory Auditing-with-government corporate financial reporting timing-lag (SART - Model two) record a non-financial performance indicator of - 0.75 < 0.50 and a significant negative ratio far below 0.50; a significant adverse non-financial performance which signifies that timing lags in the execution of statutory audit services and rendition of out-of-time corporate contribute to weak financial accountability with very high risk of the probability of inducing financial distress in Nigeria’s federal treasury.

(3) On statutory audit quality assurance (SAUS in the third); the result produced a performance indicator of 100 percent > 0.50; and the strongest significant positive ratio which is indication es that the issuance of unqualified audit opinion certificate, granting credence that the government financial reporting during the periods (16 times for 16 annual financial statements) are highly reliable. But this result is in conflict with the information in public domain and reported cases of missing funds in that treasury even though audit exercise does not detect fraud in at always.

(4) Performance appraisal on government accounting practices, financial reporting architecture and financial reporting system in model four (FRAP) the test results produce 60 percent or 0.60 > 0.50non-financial performance indicator. Therefore, Ho4 is adopted. This implies that the quality of government-wide accounting systems, financial reporting framework and financial reporting practices support sound public financial performance in Nigeria’s federal treasury. This is also debatable.

(5) The result of the performance evaluation on transparency in government financial reporting criterion of corporate financial governance (TGIS – the fifth model) yields 61 percent or 0.61 non-financial performance indicator and a strong positive performance. It implies that efficient and effective fiscal governance institutions is a major driver of transparency in government financial reporting which in turn leads sound public financial management system or practices in some countries.

Out of these five non-financial, governance performance indicators evaluated, statutory auditing-cum-financial reporting timing-lag produced the worst performance measurement indicators within the Nigerian government-wide accounting, financial reporting chain and treasury management practices. This arises from prolonged delays in completion, scrutiny, adoption and issuance (gazette) of FGN annual audit report and financial statements between the public accounts committee of the National Assembly and Supreme Audit Institution in Nigeria.
The overall composite financial performance index (FPI) of the performance measurement on corporate financial governance or the impact of the public finance management institutions’ quality on public financial management performance in the Nigerian federal treasury yield 41 percent which is lower than the 50 percent threshold we adopted as cut-off mark for solvency and stability. In effect, public finance management institutions’ dimension of government financial performance is a major causative factor for sub-optimal of financial performance in Nigeria’s federal treasury.

The results of the papers is validated on the bases of the variety of data screening, estimation and evaluation procedures performed before the relevant data sets were utilized in the analyses and tests. In addition, the quality and plausibility of the analytical results hinge on exclusive use of secondary data from official documents obtained directly from government sources and also on predicated tenets of ex-post ‘facto’ research design where-in the outcome analysis are not manipulated, rather reproduced factually as there were. Finally, for the fact that the composite (non)-financial performance index (FPI) used as our corporate financial governance performance measurement metric produced below average and marginal weak governance grade, the result tell the bitter truth about the suboptimal nature and structure of the fiscal institutions and the prevailing operating in the federal treasury. The research findings are in agreement with available public information and reported cases of losses of public money. It is not useful in claiming that the public financial system is working properly whereas a reasonable large proportion of government funds have been found missing during the fiscal period of study.

5 Summary, Conclusions and Recommendations

In this section, we present the summary of results, conclusions, policy implications, recommendations and suggestions for further studies.

5.1 Summary of Results

The composite financial performance index (FPI) result yield of 41 percent; a grade ‘D’ in our governance (non-financial) performance rating is a clear demonstration that government financial management system is either inefficient and or that there still remains lingering deficiencies in Nigeria’s fiscal governance hampering public performance and aggravating macroeconomic disturbances. This suggests that Nigeria’s federal treasury is at risk of financial distress if adequate remedies to the situation are not urgently implemented. The detailed result of the five distinct models and representative of the objectives are synthesized as follows:

Summary of results derived from the respective specified objectives and models are as follows:

1. Result of analysis on budget planning, passage-cum-Implementation timing-Lag (BPIT-Model one) show a strong positive non-financial performance and supports solvency in the treasury.

2. Result on statutory auditing-with-government corporate financial reporting timing-lag (SART - Model two) show a significant negative ratio with significant adverse implication to induce weak financial performance as well as the prospect financial distress in Nigeria’s federal treasury.

3. On statutory audit quality assurance (SAUS) in the third); the result produced a performance the strongest significant positive ratio, indicative that the issuance of unqualified audit opinion certificate, granting credence that the government financial reporting during the periods (16 times for 16 annual financial statements) are highly reliable. However, this is misleading because it is in conflict with the information in public domain and reported cases of missing funds in that treasury even though audit exercise does not detect fraud in at always.
(4) Performance appraisal on government accounting practices; financial reporting architecture and financial reporting system in model four (FRAP) the result show a strong positive non-financial performance and supports solvency in the treasury.

(5) Similarly, the result of the performance evaluation on transparency in government financial reporting criterion of corporate financial governance (TGIS – the fifth model) also show a strong positive non-financial performance and supports solvency in the treasury.

The overall result of the composite financial performance for the study show a below average, fair and marginally weak (distress) in our (non)-financial government performance. This weak performance arises as a consequence of the worst performance measurement indicator recorded from our second research objective (SUART - model two) on statutory auditing and financial reporting timing-lag and weakest link within the government-wide accounting, financial reporting chain and treasury management practices for the Nigerian federal treasury.

5.2 Discussion of Results and Major Findings

(1) The result of obtained analysis in budget planning, passage-cum-Implementation timing-lag (BPIT) in Model one) show a strong positive non-financial performance and supports solvency in the treasury. This result is rather contradictory because Nigeria’s federal budgets have been approved / assented around the second quarter of the fiscal budget year hence it is expected that delay in budget execution leads to poor performance. Empirical evidence in Hourerou and Taliero, (2002) and Gollwitzer, (2013) established that belated implementation of public budgets in some African countries resulted fiscal ineffectiveness and poor public financial performance. Oghuma (2009) examined Nigeria’s federal budgets, and economic implication of misuse of unspent budgetary funds and its impact on effective implementation of government’s annual budgets on fiscal planning. The paper finds that in some cases un-utilized budget funds – mostly for capital development programmes were misappropriated and shared by some government officers. This is un-disputable evidence that budgetary resource allocations for capital projects and socio-economic welfare services were not properly and fully utilized for the purposes for which they were disbursed.

(2) Result on statutory auditing-with-government corporate financial reporting timing-lag (SART) in the second model show a significant negative ratio with significant adverse implication to induce weak financial performance as well as the prospect financial distress in Nigeria’s federal treasury. This signifies that the belated issue of annual audit report and financial statements induced lack of financial accountability and suboptimal financial management system in the federal treasury and lead to financial distress. This finding is in agreement with the Open Budget Initiatives (2012) report as cited in Petrie (2013) on ‘budget management, accounting and engagement by the audit institutions and the legislature which indicated that is typically weak.

(3) We found that the result from model three to have produced the strongest significant positive ratio, indicative that the issuance of unqualified audit opinion certificate, granting credence that the government financial reporting during the periods (16 times for 16 annual financial statements) are highly reliable. This is an indication that the aggregate fiscal transactions capture in the operating financial statements, statement of cash-flows; the aggregate assets and liabilities, reflecting the financial position are reasonable and faithful representation of the financial affairs of the Federal Government of Nigeria in the national treasury. However, this is misleading because it is in conflict with the information in public domain and reported cases of missing funds in that treasury even though audit exercise does not detect fraud in at always. This is contradictory for several reasons. First, the capital expenditures used in acquisition of fixed capital assets were not duly captured in accounts. Second, there are several reported cases of leakages in government’s duly collected revenues but not fully accounted for. This apparent
lack of financial information utility has trickling down effect to household or family units, business units and also government institutions as the trend erode public confidence in government financial reports except the annual budget in rational economic decisions.

Third, there are several cases of mismanagement of public fund and looting of public funds from the treasury which were not uncovered in through either the routine internal audit and or statutory audit functions. For example, Oghuma (2009) examined Nigeria’s federal budgets, and the economic implication of misuse of unspent budgetary funds and its impact on effective implementation of government’s annual budgets on fiscal planning. The paper finds that in some cases un-utilized budget funds – mostly for capital development programmes were misappropriated and shared by some government officers. This human behaviour hindered proper execution of capital project and plans and also imposed serious constraints to the leadership of the executive arm of government from attainment of fiscal goals. These are some of the notable case of financial practices perpetrated in fiscal operations but uncovered by both routine audits and external audit services. Oghuma (2009) advised that public officers to consider overall interest of the nation above individual interest; therefore enjoined public servants to ensure that budget disbursed for capital projects are effectively utilized. Whilst the Nigerian government and the same authorities also held these sets of financial statements in the right side of their hands; they are holding massive reports on massive leakages of federally generated revenues, misappropriation and management of public funds in the left ones or vice-versa. These developments can tell even the non-professional educated or trained people and concerned citizens is that these clean audit report might have been issued due to lack of audit independence or other unknown factors.

(4) The result in model four shows a strong positive non-financial performance and supports solvency in the treasury. This is an indication of a significant positive in the association between the quality of government-wide accounting systems, financial reporting framework and financial reporting practices as a measure of public financial performance in Nigeria’s federal treasury. This implies that the level of the quality of government accounting and financial reporting is fairly good but suboptimal, thus there urgent need for improvement; the notable example is completion of implementation of the IPSASs new cash basis and accrual methods which is still a work-in-progress. Weber (2012), Hameed (2005) found that implementation of the IPSASs accounting systems in many countries have contributed very significantly in the improved financial reporting in some countries.

This result from this aspect of ex-post ‘facto’ is fair representative of the quality of financial, resource costing and management accounting practices followed in data capture of the Federal Government’s financial transactions, fiscal operations, investments, fixed capital assets and public debts or repayable liability funds held in the federal treasury. It also reflects the financial reporting architecture as well as the quality of information content of the Nigerian federal general purpose consolidated financial statement rendered during the affected fiscal years. For instance, the old cash basis method followed in Nigeria’s government accounting, thus, virtually all capital expenditures included within these 16 financial years from 1999 and 2014 were not captured in the financial accounting records, therefore the values of such fixed assets were not represented in the relevant financial statements. In the related arrangement, although the new International Public Sector Accounting Standards (IPSASs) has been adopted by Nigeria, both the new IPSASs cash basis method; the IPSASs prescribed accrual accounting method and treasury single accounting were all contemplated but there were not yet implemented and neither used in the preparation of the financial reporting we used in the analysis of this research.

The existing government accounting, budgetary reporting and corporate financial reporting in the federal treasury is not in harmony with the current international regime and therefore at variance with best practice in government accounting. This research finding is in agreement

(5) The result of corporate financial governance (TGIS – the fifth model) also shows a strong positive non-financial performance and supports solvency in the treasury. This is an indication of a significant positive in the association between the quality of public finance management institutions and public financial performance in Nigeria’s federal treasury. It implies that efficient and effective fiscal governance institutions is a major driver of transparency in government financial reporting which in turn leads sound public financial management system or practices in some countries. Hameed (2005), Dabla-Norris and others (2010) earlier found that the developing countries that implemented / achieved greater transparency in their fiscal reporting recorded better credit ratings and better fiscal discipline in their sovereign treasury. This is further supported by Alt and Lassen (2006) which established that a greater transparency in fiscal reporting has been associated with lower public debts and budget deficits in 19 advanced countries. Given this governance performance rating on transparency in fiscal reporting, Nigerian government is expected to step up the quality of her external auditing, corporate financial reporting, accountability, open access and distribution of the published annual financial statements.

However, there are some remarkable corporate financial governance practices of our contemporary times which we have found to be conspicuously missing in Nigeria’s government financial reporting practices. The most important one is the non-adoption of internet financial reporting in the federal treasury’s financial reporting. It is only the authority of the federal treasury that can provide genuine reasons for this omission. Second, copies of Nigeria’s FGN annual financial statements are rarely found in the University libraries, in New-stands, and other public libraries for the citizens, stakeholders and other interested parties to obtain the copies for their use. The scarcity or non-availability of government financial statements is a contradiction of international convention of the modern public financial management system; then, Nigeria’s Freedom of Information Act, 2011, Fiscal Responsibility Reporting Act, 2007 and the World Banks / IMF’s Code of Good Public Governance among other things.

The deficiencies identified in the public corporate financial governance or public finance management institutions’ quality constituted significant sub-optimal moderating factors on Nigeria federal treasury management, and impact negatively on financial performance. In actual fact, corporate financial governance is one of the major influencing factors responsible for mismanagement of public funds, corrupt practices with great prospect of driving the entire government sector of Nigeria’s economy into a state of financial distress.

The overall result of the composite financial performance for the study show a below average, fair and marginally weak (distress) in our (non)-financial government performance. This weak performance arises as a consequence of the worst performance measurement indicator recorded from our second research objective (SUART - model two) on statutory auditing and financial reporting timing-lag for the Nigerian federal treasury. This signify that Nigeria’s sovereign treasury can be considered in a marginally financial distress position or risk of fiscal distress based strictly on this criterion of financial governance alone. It is correctly in correspondence with the prevailing development in the Nigerian financial management space as highlighted in the discussion of research results and deliverables. This is due to prolonged delays in completion, scrutiny, adoption and issuance (gazette) of FGN annual audit report and financial statements between the public accounts committee of the National Assembly and Supreme Audit Institution in Nigeria.
Research findings of the study has demonstrated that managerial behaviour and governance issues including government financial reporting practices in Nigeria’s federal public service did not support positive public performance and sound public financial accountability, rather it enhance the prospect of financial distress. This is an indication of a high probability of financial distress in Nigeria’s federal public sector, if appropriate measures are adopted to reverse the existing trend. Thus, the result of this paper can be justified on grounds of the publication of audited account and reports in most cases two years after year end which encourages both deliberate financial information asymmetry, mismanagement of public funds and corruption.

5.3 Conclusions and Implications for Policy

The prevailing trend of belated passage and implementation of the annual budget appropriation bills also induce ineffectiveness fiscal operations and financial performance which can contribute to fiscal distress in the economy. The only sub-performance indicator on audit certification of financial statements (clean audit report) used proxy for audit quality assurance that yielded a strong significant performance. The efficacy of this sub-index result in this model is highly deceptive and debatable because it is at variance with performance indicators from other governance variables within model due impaired public trust and confidence in FGN’s government financial statement, judging from the avalanche of reported cases of misappropriation of public funds, fraud and the purportedly recovery of looted funds in recent times.

Policy implications of the empirical results of this study which in effect identified the institutional (PFMIs) quality as the weakest link in Nigeria’s federal treasury and public financial management chain is a scientific demonstration that mismanagement of public resources, citizenship or service level distress, impaired economic growth and development are deeply rooted in the managerial behaviour and human side of public management. This is a clear demonstration that government financial management system is either inefficient and or that there are inherent deficiencies in Nigeria’s fiscal governance that still lingering on and hampering public performance and aggravating macroeconomic disturbances.

5.4 Recommendations

Following recommendations are proposed for policy intervention:

1) The relevant financial arms of government and financial authorities including the PFMIs should ensure that federal annual budget bills is approved and assented and implemented as from the first week of every fiscal year. This means that the budget process should always be completed before the Christmas week and before the commencement of the new fiscal years and incoming fiscal budget period. In addition, Federal Government is advised to establish an independent, non-political and non-partisan ‘Fiscal Council to supervise the nation’s federal budget system that will be rancor free.

2) Statutory auditing time schedule, external audit execution, oversight activities, final approval and publication (gazette) should be completed, reviewed, approved, gazette and circularized within the stipulated nine months’ time-frame after year-end under the existing law and within six months under the proposed new audit regime in this paper.

Under the proposed structure, the service of Office of the Auditor-General of Federation is retained as the coordinating comptroller of government and head of the federal audit services commission. Second, a statutory board of the Court Audit Scrutinizers or Governors should be constituted by eminent persons to be made of accomplished professional accountants; professionals from other fields, distinguished academics with strong background in public treasury and finance management should be assembled. The body will carry-out the oversight
scruity and final approving authority of government external audit function thus a replacement of the PAC.

(3) Certification of the statutory annual audit report and financial statements of the FGN should be not appearing as a rubber stamping action; therefore, the responsibility for final scrutiny and approval should be separated from the legislative body that approves the annual appropriation currently residing with the PAC in the spirit of segregation of authority.

(4) Fourth, the FGN’s government-wide accounting system, financial reporting architecture together with both internal control, internal auditing, and statutory audit performance, preparation and presentation of financial statements should be comprehensively restructured, strengthened and modernized in line with the IPSAS and accrual accounting and rules-based accounting regime.

(5) Lastly, the Federal Government is advised to adopt internet financial reporting henceforth as a medium of enhancing transparency in the preparation and presentation its financial statements; and making it readily available and accessible in the public domain as it is the practice in many countries.

5.5 Limitations to Implementation and Realization of Results and Deliverables of the Paper

Inadequate fiscal revenue generation, financial constraints, lack of prudence in public expenditure management and financial information asymmetry phenomenon of the public sector agency theory are some of the common factors that may likely constitute major impediments or severe limitations on the implementation of the recommended policy measures of this study. Furthermore, institutional quality the political audacity in getting the right things done in Nigeria and other developing countries also constitute major limiting factors.

5.6 Suggestions for Further Research Studies

More empirical studies need to be conduct to further investigate the impact of institutional factors on public financial management and macro-economic disturbance in Nigeria. Such research activities will help the financial authorities and fiscal policy makers of the Federal Government of Nigeria to obtain useful and reliable research information formulate suitable public policies for more efficient and effective government financial management systems and practices in the federal treasury. Furthermore, intensive and extensive empirical investigations and analyses of the impact of financial management institutions in Nigeria will enthroned the regimes or rules-plus-principles based government accounting, public treasury management and good public governance in the Nigerian fiscal space.
References


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International Public Sector Accounting Pronouncements, (2010 edition), New York. IFAC.


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Appendices

Unit Root Test and Co-Integration Analyses with Results

**Model 5.1: Public Budget Passage + Implementation Timing-Lag**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Levels</th>
<th>1st Diff</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOST TIME</td>
<td>-5.343820* (0.0003)</td>
<td>-3.999581</td>
<td>I(0)</td>
</tr>
<tr>
<td>STANDARD TIME</td>
<td>-5.359661</td>
<td>-8.691461* (0.0000)</td>
<td>I(1)</td>
</tr>
</tbody>
</table>

**Model 5.2: Statutory Auditing & Financial Reporting Timing-Lag (SAFR)**

<table>
<thead>
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<th>Variables</th>
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<th>1st Diff</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delay in Financial Reporting (Months lost)</td>
<td>-3.236089</td>
<td>-5.091856* (0.0007)</td>
<td>I(1)</td>
</tr>
<tr>
<td>Minimum Required Standard Reporting Period (In Months)</td>
<td>-4.708805* (0.0005)</td>
<td>-4.693477</td>
<td>I(0)</td>
</tr>
</tbody>
</table>

**Model 5.3: Audit Quality Assurance in Annual Audit Reporting (SUAS)**

<table>
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<tr>
<th>Variables</th>
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<th>1st Diff</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual Clean Report</td>
<td>-2.608945</td>
<td>-4.185690* (0.0004)</td>
<td>I(1)</td>
</tr>
<tr>
<td>Standard Reports</td>
<td>-5.880522* (0.0006)</td>
<td>-3.934776</td>
<td>I(0)</td>
</tr>
</tbody>
</table>

**Model 5.4: Government-Wide Accounting System-Financial Reporting Practices (FRAP)**

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<th>Variables</th>
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<th>1st Diff</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>G-w FRAP Annual Rating</td>
<td>-3.582062* (0.0116)</td>
<td>-3.099960</td>
<td>I(0)</td>
</tr>
<tr>
<td>Total Audit Reports</td>
<td>-2.189654</td>
<td>-6.846637 (0.0000)</td>
<td>I(1)</td>
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</table>

**Model 5.5: Transparency in Government Financial Statements (TGIS)**

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<tr>
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<th>Levels</th>
<th>1st Diff</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ranking of TGIS Actual Annual Access</td>
<td>-4.304492* (0.0010)</td>
<td>-3.785433</td>
<td>I(0)</td>
</tr>
<tr>
<td>Total (16) Annual Financial Statements</td>
<td>-0.982578</td>
<td>-4.529432* (0.0062)</td>
<td>I(1)</td>
</tr>
</tbody>
</table>
### Model 1: Unrestricted Cointegration Rank Test (Trace)

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Eigenvalue</th>
<th>Trace Statistic</th>
<th>Critical Value</th>
<th>Prob.**</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>0.459865</td>
<td>8.623111</td>
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</tr>
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</table>

Trace test indicates no cointegration at the 0.05 level  
* denotes rejection of the hypothesis at the 0.05 level  
**MacKinnon-Haug-Michelis (1999) p-values

### Model 2: Unrestricted Cointegration Rank Test (Trace)

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<tr>
<th>Hypothesized No. of CE(s)</th>
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<th>Trace Statistic</th>
<th>Critical Value</th>
<th>Prob.**</th>
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<tr>
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Trace test indicates no cointegration at the 0.05 level  
* denotes rejection of the hypothesis at the 0.05 level  
**MacKinnon-Haug-Michelis (1999) p-values

### Model 3: Unrestricted Cointegration Rank Test (Trace)

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<th>Hypothesized No. of CE(s)</th>
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<th>Critical Value</th>
<th>Prob.**</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>0.142638</td>
<td>2.154530</td>
<td>3.841466</td>
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Trace test indicates no cointegration at the 0.05 level  
* denotes rejection of the hypothesis at the 0.05 level  
**MacKinnon-Haug-Michelis (1999) p-values

### Model 4: Unrestricted Cointegration Rank Test (Trace)

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<th>Hypothesized No. of CE(s)</th>
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<th>Trace Statistic</th>
<th>Critical Value</th>
<th>Prob.**</th>
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</thead>
<tbody>
<tr>
<td>None *</td>
<td>0.652897</td>
<td>14.81389</td>
<td>12.51798</td>
<td>0.0203</td>
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Trace test indicates 1 cointegrating eqn(s) at the 0.05 level  
* denotes rejection of the hypothesis at the 0.05 level  
**MacKinnon-Haug-Michelis (1999) p-values
Model 5: Unrestricted Cointegration Rank Test (Trace)

<table>
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<th>Hypothesized</th>
<th>Trace</th>
<th>0.05 Critical Value</th>
<th>Prob.**</th>
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</thead>
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<tr>
<td>None</td>
<td>0.524281</td>
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</table>

Trace test indicates no cointegration at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Data Sources: FGN – Audited Annual Financial Statements (1999-2014) and Domestic Reports
E-Views 8 is the analysis software system package used in processing of analytical results.

MODEL 1: PUBLIC DEBT AND REVENUE STATISTICAL ANALYSIS

Dependent Variable: REVENUE
Method: Least Squares
Date: 07/16/17  Time: 11:54
Sample: 1 16
Included observations: 16

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL_DEBT</td>
<td>0.404255</td>
<td>0.166992</td>
<td>2.420799</td>
<td>0.0297</td>
</tr>
<tr>
<td>C</td>
<td>92.71778</td>
<td>901.3470</td>
<td>0.102866</td>
<td>0.9195</td>
</tr>
</tbody>
</table>

R-squared    0.295075  Mean dependent var 2173.355
Adjusted R-squared 0.244723  S.D. dependent var 1249.632
S.E. of regression 1086.014  Akaike info criterion 16.93488
Sum squared resid 16511964  Schwarz criterion 17.03146
Log likelihood -133.4791  Hannan-Quinn criter. 16.93983
F-statistic 5.860270  Durbin-Watson stat 0.345322
R 0.54321
Prob (F-statistic) 0.029662

Breusch-Godfrey Serial Correlation LM Test:

<table>
<thead>
<tr>
<th>F-statistic</th>
<th>Obs*R-squared</th>
<th>Prob. F(2,12)</th>
<th>Prob. Chi-Square(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.68621</td>
<td>10.57204</td>
<td>0.0015</td>
<td>0.0051</td>
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</tbody>
</table>
MODEL 2: EXTERNAL DEBT-TO-EXPORT REVENUE SUSTAINABILITY STATISTICS

Dependent Variable: REVENUE(2)
Method: Least Squares
Date: 07/16/17    Time: 12:25
Sample: 1 16
Included observations: 16

<table>
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<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXT_DEBT</td>
<td>-2.353100</td>
<td>0.646093</td>
<td>-3.642043</td>
<td>0.0027</td>
</tr>
<tr>
<td>C</td>
<td>12705.13</td>
<td>1622.502</td>
<td>7.830579</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

R-squared: 0.486511
Mean dependent var: 7932.750
Adjusted R-squared: 0.449834
S.D. dependent var: 5159.839
S.E. of regression: 3827.218
Akaike info criterion: 19.45413
Sum squared resid: 2.05E+08
Schwarz criterion: 19.55071
Log likelihood: -153.6331
Hannan-Quinn criter.: 19.45908

Model Diagnostic Checking

Breusch-Godfrey Serial Correlation LM Test:

<table>
<thead>
<tr>
<th>Test Statistic</th>
<th>Value</th>
<th>Df</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>t-statistic</td>
<td>-3.642043</td>
<td>14</td>
<td>0.0027</td>
</tr>
<tr>
<td>F-statistic</td>
<td>13.26448</td>
<td>(1, 14)</td>
<td>0.0027</td>
</tr>
<tr>
<td>Chi-square</td>
<td>13.26448</td>
<td>1</td>
<td>0.0003</td>
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</table>

REVENUE2 = 12705.13 -2.353100 (EXT-DEBT)

Wald Test:
Equation: Untitled

<table>
<thead>
<tr>
<th>Test Statistic</th>
<th>Value</th>
<th>Df</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prob(F-statistic)</td>
<td>0.002667</td>
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</table>

Model Diagnostic Checking

Breusch-Godfrey Serial Correlation LM Test:
MODEL 3.3: TOTAL PUBLIC DEBT AND GDP SUSTAINABILITY STATISTICS

Dependent Variable: GDP
Method: Least Squares
Date: 07/16/17   Time: 12:14
Sample: 1 16
Included observations: 16

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEBT</td>
<td>13.52781</td>
<td>3.134096</td>
<td>4.316336</td>
<td>0.0007</td>
</tr>
<tr>
<td>C</td>
<td>-37894.20</td>
<td>16916.40</td>
<td>-2.240087</td>
<td>0.0418</td>
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</table>

R-squared                  0.570957  Mean dependent var 31731.38
Adjusted R-squared         0.540311  S.D. dependent var 30062.09
S.E. of regression         20382.21  Akaike info criterion 22.79918
Sum squared resid          5.82E+09  Schwarz criterion 22.89575
Log likelihood             -180.3934  Hannan-Quinn criter. 22.80413
F-statistic                18.63076   Durbin-Watson stat 0.622382

R                      0.75562
Prob(F-statistic)      0.000711

GDP = -37894.20 + 13.52781 (DEBT )

Wald Test:
Equation: Untitled

<table>
<thead>
<tr>
<th>Test Statistic</th>
<th>Value</th>
<th>df</th>
<th>Probability</th>
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</thead>
<tbody>
<tr>
<td>t-statistic</td>
<td>4.316336</td>
<td>14</td>
<td>0.0007</td>
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<tr>
<td>F-statistic</td>
<td>18.63076</td>
<td>(1, 14)</td>
<td>0.0007</td>
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<tr>
<td>Chi-square</td>
<td>18.63076</td>
<td>1</td>
<td>0.0000</td>
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Model Diagnostic Checking

Breusch-Godfrey Serial Correlation LM Test:

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Prob. (2)</th>
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<tr>
<td>F-statistic</td>
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<tr>
<td>Obs*R-squared</td>
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<td>0.0221</td>
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