

# Review of Inclusiveness of Selected Subhead Accounting Items with IPSASs Compliance in Sovereign Entities Consolidated Financial Statements

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## ABSTRACT

**Backgrounds:** Sovereign countries that have issued national accounting standards based on IFRS and public sector accounting standards to meet requirements of domestic public financial laws, operating environments, and systems. But implementation is mainly drawn from IPSASs conceptual framework with the degree of similarity in public accounting systems varying across jurisdictions aimed at achieving full IPSASs compliance.

**Objectives:** The research reviews inclusiveness of relevant subhead accounting items and IPSASs compliance in government consolidated financial statements.

**Methodology:** Ex-post quantitative and quantitative methods are adopted, with datasets extracted from sovereign entities financial statements used in analysis. Fisher's exact test analysis technique is applied as test statistic in deriving results.

**Findings:** Results showed Treasury Single Account/Consolidated Revenue Fund, and fixed capital assets were satisfactorily reflected in consolidated financial statements. While the remaining four pairwise accounting head-items: official portion of national foreign reserves, sovereign wealth funds; heritage assets; and decentralisation of MDAs accounting were not given improper treatments and non-inclusive in consolidated financial statements.

**Conclusions:** Without rectification of these accounting errors, omission, and non-inclusion of subhead accounting items, there are deficiencies in sovereigns audited financial statements. An interim solution, IPSASB/IFRS should also make professional pronouncements, authorising disclosure of SWF financial position as notes in government consolidated financial reporting pending issuance of formal standards.

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## 1. INTRODUCTION

The essence of development of international accounting standards; International Financial Reporting Standards (IFRS) for commercial entities and IPSASs for public sector entities is to promote financial accountability, stewardship of resources, and openness in financial transactions. These two strands of accounting standards are designed to encourage transparency, comprehensive capture of transactions and faithful representativeness of account balances in financial reporting represents movement towards harmonisation of accounting systems from the two sectors (IPSASB, 2015). However, evidence has shown that several sovereign countries' IPSASs consolidated financial statements in comparison with the private sector's corporate financial reporting is inherent with discrepancies and inconsistencies even though implementation of IPSASs has progressed swiftly in different countries globally.

Sovereign countries that have issued national accounting standards based on IFRS and public sector accounting standards to meet requirements of domestic public financial laws, operating environments, and systems. But implementation is mainly drawn from IPSASs conceptual framework with the degree of similarity in public accounting systems varying across jurisdictions aimed at achieving full IPSASs compliance. While IPSASB believes that IPSASs adoption by governments escalate improvements in quality and comparability of financial information of public sector entities, recognises rights of governments and national standard-setters to establish local accounting standards and guidelines. Thus, IPSASB encourages harmonisation of national requirements with IPSAS's in financial reporting.

This research is motivated by the need for presentation of uniform consolidated financial statements in different countries and regions globally but there is paucity of empirical studies, significant gaps in both preparers and users' understanding of contents of existing sovereigns' financial reports. Several studies previously evaluated IPSASs implementation in sovereign entities including Polzer and Nguyen (2021); Adhikari and Garseth-Nesbakk (2016); Santis, Grossi & Bisogno, (2018), but none of works reviewed IPSASs compliance in the sovereigns' financial statements. There are disparities and inherent deficiencies in the structure of general government accounting and reporting that prior empirical studies overlooked to examine correctness and reliability of GPFs. Johnson (2007), Sovereign Wealth Institute (2022); Johnson states that 71 countries operated 98 active sovereign wealth funds with investment worth US\$690 billion in 2022 but un-captured in sovereign consolidated financial statements. This study consulted financial statements of several sovereign entities from different regions, observed omission of some accounting items, lack of uniformity in structure and consolidated financial statements contents. This situation compelled our examination of sovereign entities consolidated financial statements to assess inclusiveness, IPSASs compliance and comparability of CFS.

The rationale for reviewing sovereign entities audited financial statements arises from the noticeable omission, incompleteness and disparities in assets and fund liabilities subhead-items in financial statements. Example, residual balances in Consolidated Revenue Fund (CRF) is consistently reflected as part of general fund balance in financial statements, but where CRF is resulted in budget deficit balance or overall fiscal balance in CFS. Similarly, where the apex bank grants "Ways and Means" Advance to the government, it is not accurately recorded in CFS in many cases. Alozie (2020) found evidence that Nigeria's CRF balance(s) were not correctly captured in audited financial statements during the pre-IPSASs regime.

Government's official portion of foreign reserve is not duly captured in Nigeria's financial statements (Alozie, 2008) even though such asset items existed; and accounting item omission is observed in other entities. Several sovereign entities have established SWF through interdependent agencies within the past three decades (Basu, 2020; Johnson, 2007), but such SWF entities financial performance and position are not reflected in owner-governments CFS. Ministries, Departments and Agencies (MDAs) standalone accounting records and financial reports are rarely produced and include sovereigns' financial statements. Non-inclusion of these two accounting issues pose serious challenges in financial reporting.

The main objective of this study is to review inclusiveness of selected subhead accounting items with IPSASs compliance in sovereign entities consolidated financial statements.

Specific objectives are to:

- (1) Determine sovereign entities accounting for TSA-CRF and IPSASs compliance and faithful representation in consolidated financial statements.
- (2) Determine sovereign entities' inclusion of official portions of foreign reserve with correspondence foreign exchange reserve fund with IPSAS compliance in financial reporting.
- (3) Determinate sovereign entities' inclusion of SWFs with correspondence investment assets in consolidated financial statements.
- (4) Determine inclusiveness of heritage assets and IPSASs compliance in sovereigns' CFS.
- (5) Determine sovereign entities' accounting and IPSASs compliance on fixed capital assets with public capital expenditure in CFS.

- (6) Assessment of sovereign entities' MDAs maintenance of stand-alone departmental accounting alongside departmental financial statements and their inclusion in consolidated financial statements

Plausible arguments for comparison of sovereign governments accounting systems and assessment of IPSASs compliance are to verify whether sovereign entities effectively implement these standards in consolidated financial statements. The intention is to ensure that sovereign financial statements are reasonably prepared and presented in compliance to the IPSASs and gauge the degree of uniformity in sovereigns' financial reporting, fiscal governance and to encourage harmony in public financial management.

This research's scope is to investigate the extent assets and fund liabilities subhead-items identified in statement of problem as erroneously classified or omitted in sovereigns' government-wide accounting in our statement of problem(s) are treated in IPSASs compliance in consolidated financial statements. In accomplishment of these goals, we reviewed information content of several sovereign entities but effectively adopted 24 sovereign entities consolidated financial statements from 2015 to 2021 in determining the treatments given to affected items and their inclusion in financial statements or otherwise.

The study is arranged in five sections including the introduction. Section 2 provides the review of literature and related studies including identification of the omitted assets and liabilities accounting items in government-wide accounting and consolidated financial statements for rectification. These were spiced with evidence from published audited financial statements reports and empirical studies together with research questions. Section 3 describes the design of the research, sources of data employed, model development and techniques of analysis. Results of analysis are presented in section 4. Conclusions and recommendations are given in Section 5.

## 2. LITERATURE REVIEW

Government-wide accounting in sovereign government entities is structured, operated, and managed in a fund accounting pattern. Countries operate a variety of fiscal finance management models notably; either federal or centralised public finance, or communal (pure) centralised fiscal management systems and devolutionalised public finance models. Ministries, Departments, and agencies (MDAs) of government entities together with their extra-budgetary agencies conventionally adopt a fund accounting system. Canada (2017), Australia (2021), Pattanayak and Faibboim (2010) confirmed that governments of Canada, USA, and Australia operated TSA/CRF; and TSA maintains a treasury linked to the fund accounting system. Pattanayak et al stated that the USA's government accounting system runs on a treasury ledger system. Government accounting system of many of the sovereign entities reviewed herein and we confirmed these entities operate on a fund accounting system (FGN, 2015, 2019; Canada, 2016-2021; H.M. Treasury, 2021). This accounting arrangement commences with annual budgeting and approval, routine accounting functions and financial reporting practices are structured in fund accounting units because by implementing fund accounting system. Fund accounting system emphasises accountability rather than profitability, as used in non-profit organisations, governments not concerned with profit-making, but service delivery solvency (Chan, 2012; Alozie, 2020).

Consolidated financial statements are prepared and presented by the Office of the Accountant-General of sovereign government entities. It involves proper data capturing of aggregate financial transactions and events for every fund account operated by a reporting entity. Rendition of reliable GPFR requires maintenance of accurate record of all fund accounts, extraction of correct fund balances and faithful representation of fund liabilities in the balance sheet. This accounting arrangement is based on the conventional general government sector's balance sheet equation which states that total assets are equal to total liabilities (Chan, 2012). An effective fund accounting system is needed to guarantee accurate capturing of relevant transactions and accounting events in each fund account is a critical element in financial accounting processes preceding preparation and presentation of financial statements. Identification and characterisation of defects and divergence in the structure of government-wide accounting and effecting necessary amendments is necessary in strengthening financial reporting. Thus, this research concentrates on

exploration of identifiable accounting issues through reviewing of information contents of IPSAS-implemented financial statements of selected countries during the past five years.

## **2.1. Assets and Liabilities Accounting Subhead Items Requiring Amendments**

### **2.1.1. Treasury Single Account (TSA) / Consolidated Revenue Fund (CRF) accounts**

Treasury Single Account (TSA) is a unified structure of a government entity's bank account(s) that provides a consolidated view of government cash resources, linking fund accounts and government transacts all its receipts and payments, enabling efficient management of government treasury finances (credit supplies and accrued expense). TSA presumably is considered to serve as the Treasury main bank account (but not necessarily so in practice) in many countries. TSA and CRF serve different purposes; whereas TSA is the treasury's main bank account, normally maintained with the sovereign's Central Bank and it provides the main bank balance (position) periodically. Consolidated Revenue Fund is the fund general ledger accounting, configured with approved budget estimates, where government revenues, appropriations and expenditures of government entities pass and consolidate. CRF is a statutory fund where government revenues must recorded be recorded after being deposited into a single treasury single account and from where all expenditures must also be recorded in accordance with appropriations and fund disbursements (actual payments), alongside accrual transactions (un-collected revenues, credit supplies and accrued expense). CRF is primarily used for budget execution, deriving budget fiscal surplus or deficit reported for fiscal management. It is expected that the apex bank creates an overdraft bank account, loan, or bond account for government entities whenever such a situation arises and is reflected as part of current liabilities in the government's balance sheet.

TSA arrangement does not prevent sovereign governments and sub-national government entities from maintaining multiple bank accounting as previously used in normal financial activities. Pattanayak and Fainboim (2010) confirmed that the USA operated the TSA and maintained the CRF treasury linked fund accounting system. Some sovereign government entities are not making use of TSA, while others use TSA to harmonise collection of domestic generated revenues as a central revenue pool fund. It is through CRF that fund allocations are distributed to subnational units and MDAs for disposition, but we observed that TSA is not used as a designated common revenue collection channel for natural / mineral commodities in exporting countries.

Prior evidence showed that some sovereign entities erroneously reflected annual fiscal expenditure deficit balance as CRF balance. Overdrawn outstanding balance in government entities' CRF should be recorded as "Ways and Means Advances (WMWA)" as part of government debt whereas budget deficit or overall fiscal deficit derived from revenue income and expenditure statement should appear as part of liabilities fund preferably with explanatory notes periodically. Unfortunately, CRF in many countries, particularly in developing countries this is not always the case. This phenomenon requires urgent clarification from the IPSASB, accounting standards setting agencies and eminent public sector accounting practitioners.

Furthermore, MDAs cash and bank balances (holdings) are closely related to TSA/CRF accounting and financial reporting since carrying balances in these two segments of liquid fund accounts also constitutes financial assets. Sub-national units and MDAs always operate subtreasury-bank accounts—at least in dispensing fiscal allocated funds for the purposes such public monies were released. Maintenance of TSA/ CRF with the balance(s) held there-in does not exempt either in central treasury and or MDAs from maintaining other bank accounts at least for the primary purpose of running their expenditure and in retaining residual balances there-in periodically except where extant fiscal regulations debar them from doing so. The existence of such supplementary bank accounts in government entities necessitates that such bank accounts balance must be listed, sum-up and reflected as other bank account balances (including special project and donor accounts) in sovereigns consolidated financial statements but without proper balances and reconciliations (USA, 2015-2021; Australia, 2015-2021; South Africa, 2020-2021; FGN, 2016-2019; Government Accountability Office (GAO), 1998; Nasr et al., 2020; Morretti, 2018). The combination of these treasury accounting services within sub-treasuries (MDAs) and main treasury (TSA) constitute new challenges in managing public funds that prompted our first research question.

**RQ 1:** How does sovereign entities capture TSA or CRF balances or corresponding budget deficit (overdrawn) in IPSASs compliance in government's consolidated financial statements?

### 2.1.2. Government's Official Portion of Foreign Exchange Reserves Treasury

A sovereign nation's official portion of foreign exchange reserves are assets held by the Central Bank(s), typically in foreign currencies, gold, and other international reserve assets (IMF, 2004; IPSAS-2); but commonly reported in the Central Bank's balance sheet rather than in sovereign GCFS. This is a wrong practice. Instead, the government might report on it as an investment or a receivable from the Central Bank which does not exist presently and deserves urgent amendments. However, so far, there is no direct corresponding liability accounting entry for government foreign exchange reserves as they represent a store of value and a means of settling international transactions. If the government borrows in foreign currencies or has foreign currency-denominated liabilities, such transactions are reported as foreign currency liabilities with liquid fund-official portion cash account debited and foreign currency loan credited.

This category of liquid or near fund assets comprises official reserve assets and other foreign currency assets (stated in approximate market values in US dollars), foreign currency deposits, investments in foreign currency government securities, foreign currency cash and bank balances (Lane, 2019). Other types of foreign exchange reserve assets are gold stock, IMF Reserve position, SDRs and other related foreign currency assets (USA, 2021; Australia, 2021), but many sovereign entities are capturing these asset items and correspondence liabilities funds in government financial reporting, presently. This research preview of sovereign entities financial statements from different regions showed that USA and Canada in North America; Australia in Oceania, United Kingdom from Europe captured the official portion of foreign currency liquid funds in their CFS, but Nigeria and some other countries did not capture asset items in their financial reporting. Inclusion of the official portion of foreign exchange reserves in government's financial statements is necessary in ensuring completeness, and faithful representativeness of such publicly owned assets and liabilities in financial position. Many sovereign entities are now holding virtual assets as an integral part of treasury liquid funds and this phenomenon justifies the need for inclusion and segmentation of official portions of foreign reserves alongside virtual assets in sovereigns' financial statements.

**RQ 2:** To what extent are the sovereign government's official portion of national foreign reserves assets alongside corresponding foreign reserves segmented and reflected in consolidated financial statements?

### 2.1.3. Sovereign Wealth Fund Entities Financial Position (Inclusion)

International Monetary Fund (IMF) (2022); Sovereign Wealth Fund Institute (n.d.) defined SWF as sovereign nation's owned investment vehicle that manages her financial assets such as mineral resources export revenue proceeds or excess foreign exchange reserves to achieve long-term financial returns and stabilise the economy. SWF investments are managed by a country's SWF entity, aimed at diversifying SWF (fund's) portfolio of investments, to generate sufficient returns. Seward and Ulukun (2014); World Bank (2007); IMF (2007); Johnson (2007) explained that SWFs are funds transfers from natural resource commodities export revenues, currency interventions and fiscal savings as special investment funds to hold foreign assets for long-term purposes. There four types of SWF are stabilisation, future generation, reserve investment and pension reserve funds.

This research's literature survey of public accounting standards on capture of SWF entities and inclusion of SWF financial position in CFS revealed that there is no specific IPSASs on SWF accounting. However, IPSAS 35 provides broad guidance for sovereign entities to follow in integrating SWF agencies financial reports in consolidated financial statements the owner-government holds 50% to 100% equities. NSIA (2020-2024) and Sovereign Wealth Fund Institute (n.d.) showed SWF entities financial positions but none was reflected in owner sovereign CFS in the past decade. Non-inclusion of financial position of sovereign entities SWF as IPSASs non-compliance to IPSAS 35 in financial reporting is an omission in government-wide accounting and violation of accounting principles (GAAP).

**RQ 3 :** To what extent were sovereign wealth investment assets with correspondence funds net-worth reflected in CFS?

#### 2.1.4. Heritage Asset(s) with Relative Capital Reserve Fund Accounting

Heritage asset(s) (HA) are resources controlled by an entity based on past events, which future economic benefits are expected to flow to a sovereign entity”, held indefinitely and preserved for the present and future generations and (IPSAS, 2017). This is due to their rarity or significance in relation, but not limited to, archeological, architectural, agricultural, artistic, cultural, environmental, historical, natural, scientific, or technological features. Many sovereign nations possessing heritage assets have not reflected HA values with correspondence special capital reserve funds in financial statements prior and after the introduction of IPSAS 17. Despite IPSAS 17 adoption, we still observed that these two pairwise accounting head-items are being omitted in many sovereigns’ government-wide accounting and financial reporting. HA Valuation method in government financial reporting is not uniformly applied, while it is uncertain whether inclusion of heritage assets enhances financial position of owner-entities, presently (Aversano, et al., 2019) since HA(s) are non-marketable items without market prices, although considered as treasured assets. Take note that many HA assets and liabilities are recorded in financial position except for those relating to natural resources (example, federal oil and gas resources), included in ‘required supplementary information’ including museums, monuments, and artifacts as heritage items (IPSAS, 2017). Lack of uniformity in HA accounting prompted our conduct of in-depth review of selected entities CFS to verify HA’s inclusion and IPSASs compliance.

**RQ 4:** To what extent sovereign entities capture HA accounting in compliance with IPSASs with correspondence HA capital reserve fund in CFS?

#### 2.1.5. Fixed Capital Asset (PPE) and Government Capital Expenditure Accounting

Accounting for Property, Plants and Equipment (PPE) (Fixed capital asset) and public capital expenditure disbursement is the practice of recording capital expenditures, with the cost of additions to PPE is accurately reflected in financial statements. PPE expenditure(s) leads to increase in asset values, its corresponding entries decrease liquid fund asset balance or increase creditors position under current liabilities. Government entities normally provide for capital development expenditure in annual approved budgets, disburses capital expenditures plus credit supplies on acquisition of additional fixed and infrastructure assets. These assets generate benefits to the government. Empirical evidence drawn from statements of cash flows in comparison with movement in fixed assets and closing balance(s) in some countries showed that government capital expenditures in several cases were not accurately captured, wrongly classified, or understated (Alozie, 2020). Non-inclusion or understatement of PPE constitutes fundamental accounting errors and omission influence multiple deficiencies in government-wide accounting and financial reporting. This phenomenon prompted us to investigate sovereign entities capture and inclusion of capital expenditures with IPSASs compliance in CFS.

**RQ 5:** To what extent are sovereign governments recording annual public capital expenditure disbursements as additions to PPE carrying balances correctly reflected in CFS?

#### 2.1.6. Decentralisation of MDAs Accounting and Financial Reporting

Decentralisation of MDAs accounting services in sovereign and sub-national government entities transfers of financial planning, maintenance of accounting records, utilisation and stewardship reporting is necessary proper accountability for resources entrusted such units to government central treasury, fully independent of central treasury. Decentralisation of MDAs accounting system and policy links decentralised fiscal budgeting to planning and emphasises observance of certain mandatory expenditure requirements to attain national standards in a timely and efficient manner. Pattanayak et al opined that MDAS maintained routine accounting records including cash books, bank reconciliation, etcetera apparently to track and control annual appropriations and periodic allocation disbursements. MDAs in some countries utilise internally generated revenues in augmenting budgetary allocation from central revenue pool to meet expenditure requirements and render accounting returns that are incorporated in consolidated financial statements (USA, 2015; HM, UK’s 2018; Australia’s Commonwealth Treasury, 2015-2021). These accounting behaviours lend credence to quality of public sector accounting, openness, and transparency in the three counties, but lacking in many developing countries including Nigeria.

Alozie (2020) suggested decentralisation of MDAs accounting and rendition of departmental financial reporting to Nigeria's Supreme Audit Institution (SAI) but was not implemented. Devolution of MDAs financial reporting as the core accounting issue that deepens government accounting for effectiveness.

**RQ 6:** Does sovereign entity MDAs prepare standalone accounting records for budgetary allocations, IGRs, and other receipts through decentralised financial statements for inclusion in consolidated financial statements?

## 2.2. Theoretical Frameworks

### 2.2.1. Public Interest Accounting Theory

Public interest theory of accounting guides assessment of sovereign entities in comprehensive capture of all species of assets and liability funds in consolidated financial statements in accordance with IPSAS standards. Mintz (2018) defines public interest in accounting as a variant of public sector agency theory as the "collective well-being of community and institutions" that the profession serves. Haider (2015) argues that the demand for "public interest-orientated accounting" depends on the extent of government's functions and interventions in the economy. Public interest accounting integrates rules-of-law theory of accounting with public finance management theory blends the diverse national public laws to guide the utilisation of public resources and proper financial accountability in ensuring that carrying balances of every item of assets and liabilities, revenues, and expenditures of government entities. Rules-of-law and regulations are used in enforcing compliance (approved budgets and its implementation; timely rendition of audited financial statements) and combined with agency theory as cornerstone of prudent or sound financial accountability and good governance.

### 2.2.2. Intergenerational Equity Theory

Intergenerational equity theory with public trust interlinks resource revenue management with conservation of sovereign wealth funds (Basu, 2020; Seward & Ulukun, 2014). This theory supports the need and relevance for adoption of suitable accounting standards for resource revenues, sovereign wealth fund and SWF investment accounting and their inclusion in sovereign consolidated financial statements which is lacking now. Intergenerational equity or future generation fund theory suitably supports the establishment and operation of SWFs in managing revenue booms and bumps in resources-rich resource commodities exporting countries having huge accumulation of international reserves and macroeconomic management. Intergenerational equity theory supports rationing of resource revenue for future generations. The inclusion of sovereign wealth investments and cumulative SWF net funds in financial reporting and the provision of suitable public sector accounting standards would enhance faith representatives of government financial reporting. Institutional theory in accounting supports adoption of IPSASs and their compliance in assessment of sovereigns' financial reporting and accounting behaviours (Zhuk, 2017).

## 2.3. Review of Previous Research

Pattanayak and Fainboim (2010) confirmed that the USA operated TSA and maintained a treasury-linked fund accounting system. USA's audited financial statements for five years (2016 - 2021) further attested that TSA was used, and TSA main balances reflected in CFS. Nigeria's FGN CFS from 2016-2021 attested to adoption of TSA and the balances reflected. Alozie (2020) discovered that Nigeria's overdrawn CRF balances were inadvertently classified as public fund liabilities in FGN 2010; 2014, but rectified subsequently (FGN, 2015; 2016).

Government Accountability Office (GAO) (1998) found reconciliation problems in about 10 out of 22 agencies covered by the Chief Finance Officers Act of 1990 and the agencies with reconciliation problems about 47% of total federal dollars disbursed in 1997 financial year with billions of dollars in unreconciled differences outstanding. The agencies were not tidy in reconciling fund balances with treasury accounts but merely adjusted their accounts to match amounts reported to USA's central Treasury.

Nasr et al. (2020) stated that e-payment companies and their customers suffer billions of dollars in fraud losses annually; and urged the users be mindful of dangers of e-transactions, e-government, or electronic remittances particularly in newly computerised operation facilities in developing countries. Shuaibu and Aliyu (2016) and Nasr et al. (2020) also confirmed that Nigeria switched to e-payment system, explained that challenges of e-payment system include system failures, hacking into payment and collection platforms, restriction of daily number of transactions processing, constitute challenges in managing public treasury funds.

Nigeria's NSIA's (SWF) possessed N982 billion as on 31<sup>st</sup> December 2020 and net worth of N773 billion from direct savings fund transfers of USD (\$) 3.56 billion (comprising an initial seed capital of \$1. Billion in 2013. Additionally, \$1.1 billion, and \$1.46 billion accrued from retained earnings and the financial position increased to N4.5 trillion in 2024 (NSIA et al). Alozie (2020) discovered that public capital expenditures were treated as a capital development fund (CDF) in Nigeria but incorrectly captured, wrongly classified and under-stated in pre-IPSASs financial statements. Botswana (2019) provides evidence that the country applied the out-dated CDF possibly without fixed capital asset (PPE) but rather recorded capital expenditures under CDF as fund liability items in its financial statements appeared spurious accounting treatment or overstates public funds. (This research's duly captured research gaps distilled from our review of empirical studies under the rationale and motivation in section one).

### 3. METHOD

This research adopts quantitative method, based on document content review of financial statements of sovereign entities using data extracted from contents of financial statements of 16 sovereign entities drawn from different regions, forming quasi-secondary data as equivalence of primary data without administration of field survey instruments.

#### 3.1. Focal Institutions, Data Sources and Method of collection

24 sovereign entities are selected as sample population and focal entities, reflecting global perspective with emphasis on ascertaining the extent of inclusion of the six identified pairwise subhead accounting assets and liabilities in government-wide accounting and IPSASs compliance in financial reporting. These are: Nigeria, United Kingdom, USA, Canada, South Africa, Ghana, Zambia, Tanzania, Limor Lestee, Indonesia, Chile, France, Sweden, Portugal and Spain, Australia, New Zealand, Norway, Brazil, Botswana, Kuwait, Saudi-Arabia, Indonesia, and Malaysia. There are a minimum of two sovereigns drawn from South America, North America, Europe, Africa and Asia region and Oceania regions. 16 sovereigns are employed in each objective model developed. Datasets were obtained from national and international accounting standards, public finance laws, and audited financial statements of selected sovereign entities and utilised in model development.

The rationale, criteria and justification for selection of these sovereigns are: implementation of IPSASs, or equivalence IFRS and or national public sector accounting standards, 2) data availability and quality, comparability of financial statements, establishment SWF fund and existence of SWF investment entities and prevalence of some identified accounting deficiencies or non-inclusion in financial reporting.

#### 3.2. Model Variables, Specification and Development

This research developed six separate pairwise accounting models followed in investigative assessment and analyses of extent of inclusiveness of the observed omitted or erroneously classified sub-head accounting assets and liabilities alongside IPSASs compliance treatment in sovereigns' financial reporting.

Model specification and description of variables are outlined as follows:

1) Treasury Single Account and Consolidated Revenue Fund (TSA-CRF (X1))

The model's equation is designed to check correctness of accounting treatment in IPSASs compliance and inclusion of TSA-CRF balance(s) in CFS are expressed as:

$$TSA-CRF=Y1=f[X1.1TSA-CRF-ij=1(X1.1TSA-CRF-nig; X1.2 TSA-CRFUSA;X1.3TSA-CRFUK;X1.4TSA-CRFAUSX1.1e)]/16(X1) \quad (1)$$

## 2) Government Foreign Reserve Assets and Foreign Reserve Special Fund GFX-SRF(X2)

The model equation function for Governments' Portion of Foreign Reserve / Special Fund Accounting GFX-SRF (X2) in CFS is expressed as:

$$\text{GFX-SRF} = Y_2 = f[X_{2.0}\text{GFX-SRF}_{ij=1}] f [(X_{2.1}\text{GFX-SRF}_{nig}; + X_{2.2}\text{GFX-SRF}_{USA} + X_{2.3}\text{GFX-SRF}_{UK} + \dots + X_{2.n})] / 16(X_2) \quad (2)$$

## 3) Sovereign Wealth Fund (SWF) entities financial position (X3)

Model specification for inclusion of SWF entities financial position(s) (X3) in CFS is expressed as.

$$\text{SWA-SRF} = Y_3 = f [X_{3.0}\text{SWA-SRF}_{v-ij=1}] (X_{3.1}\text{SWA-SRF}_{nig} + X_{3.2}\text{SWA-SRF}_{USA} + X_{3.3}\text{SWA-SRF}_{UK} + \dots + X_{3.n}) / 16(X_3) \quad (3)$$

## 4) Heritage Assets and correspondence Special Capital Reserve Fund HAS-RCLF(X4)

This fourth model for heritage assets and associated capital reserve fund in IPSASs compliance in CFS is specified as:

$$\text{HAS-CRF} = Y_4 = f[X_{4.0}\text{HAS-CRF}_{ij=1}] (X_{4.1}\text{HAS-CRF}_{nig} + X_{4.2}\text{HAS-CRF}_{USA} + X_{4.3}\text{HAS-CRF}_{UK} + \dots + X_{4.n}\text{HAS-CRF}) / 16(X_4) \quad (4)$$

## 5) Fixed Capital Asset and Government Capital Expenditure FCA-GCE(X5)

The model's equation function specification is expressed as:

$$\text{GCE-FCA}(X_5) = Y_5 = f[X_{2.1}\text{CDF}_{ij=1}] (X_{2.1}\text{FCA-GCE}_{nig}; X_{2.2}\text{FCA-GCE}_{USA}; X_{2.3}\text{FCA-GCE}_{UK}; + \dots + X_{2.n}) / 16(X_2) \quad (5)$$

## 6) MDAs Decentralised Accounting and Financial Reporting MDD-AFR(X6),

The model's equation function specification is expressed as:

$$\text{MDD-AFR}(X_6): Y_6 = f[X_{6.0}\text{MDD-AFR}_{ij=1}] (X_{6.1}\text{MDD-AFR}_{ng} + X_{6.2}\text{MDD-AFR}_{US} + X_{6.3}\text{MDD-AFR}_{UK} + \dots + X_{6.n}) / 16(X_6) \quad (6)$$

The designated  $X_{1 ij}$ ,  $X_{2 ij}$ , ...  $X_{n ij}$  is the total sum of the number of countries covered and total score-point(s) for each of the models. Formula to derive 50% score ratio or more and otherwise is:

$$Y_{ij=t} = t_{ij}(\text{cal}) 1=j = . = 0, 1, 2 \text{ is } 50\% \text{ score or } -1, -2 \text{ otherwise} \quad (7)$$

Formulated hypotheses are:

**HO1:** There are no significant differences between TSA bank account balance or CRF fiscal surplus or (overdrawn) deficit balances in CFS.

**HO2:** There are no significant differences in balance(s) of the official portion of sovereign foreign reserves and corresponding foreign reserve funds in CFS.

**HO3:** There is no significant difference(s) between SWF sub-entities' financial position reflected in consolidated financial statements.

**HO4:** There are no significant differences between aggregate HA balance and HA capital reserve fund shown in CFS.

**HO5:** There are no significant differences in fixed assets balance in sovereign entities' CFS.

**HO6:** There are no significant differences observed between rendition and non-rendition of sovereign entities MDAs decentralised financial reporting in CFS.

### 3.3. Measurement Rating Scale(s), Tools of Analyses and Statistical Testing

Model variables extracted for these accounting head-items are assigned score-points, depending on observed accounting events and applied in measurement scale(s). 15 points are allocated where necessary accounting entries are recorded; five points are assigned for partially recorded accounting head-items, incomplete account is one point and zero (0) for omission.

Techniques of analyses is Fisher's exact test based on the higher of required score or unachieved score to total expected score-points is applied to obtain results (Fischer, 1934 cited in Sheridan et al., 2025). A comparison of actual score points and expected total score for each accounting subhead item by sovereigns is employed in each model's analysis to derive the result (Fischer, 1934 cited in Sheridan et al., 2025).

Decision rule: If sovereign entities recorded up to 50% or more on a given subhead accounting item for the 5-financial years period, null hypothesis (H<sub>0</sub>) accepted or if otherwise. Ha subject to 5% level significance.

### 3.4. Data Presentation

Data analyses are presented in descriptive statistics with outcomes are in table 1.

**Table 1. Descriptive statistics with analysis test results**

Model Variable	Prefix	Total Score	Actual	Mean	Min	Maximum	P-Value	HA/HO
Consolidated Rev Fund	TSA-CRF	1600	1240/360	00x	20	75	0.0167	HA (Y)
Govt Portion of Forex	GFX-SRF	1600	400/1200	64	0	75	1.0**	HO (Y)
Sovereign W- Fund NAV	SWA-SWF	1600	0	0	0	0	N / A	HO (Y)*
Heritage Asset / Cap. Res	HAS-RCLF	1600	440/1160	38	20	75	0.025	HO (Y)
Capital Spends/FCA	GEC-FCA	1600	300/300	81	20	75	0.000	HA (Y)
MDAs / Decentralised-AR	MDD-AFR	1600	80/1420	11	25	75	0.52**	HO (Y)

Sources: Sovereign Annual Balance Sheets 2015 - 2021; Central / Reserve Banks Data 2015 -2021 and Author's Compilation 2022; 2025

Notes: (1) \* Significance Level at 5%; \*\* at above 5%

## 4. RESULTS AND DISCUSSION

### 4.1. Research Results

#### 4.1.1. Presentation of Results with Hypotheses Evaluations

The analysis results are as follows.

- 1) 16 evaluated sovereign entities implemented TSA-CRF and IPSASs compliant in financial reporting issues with  $p = .0167 < 0.05$  indicates a satisfactory score.
- 2) Four of entities captured GFX-SRF accounting in financial reporting in compliance with IPSASs requirements with  $p = 1.00 > 0.05$ , representing poor case outcome.
- 3) None of assessed 16 sovereign entities reflected SWF entities financial positions in consolidated financial statements, signifies zero case outcome.
- 4) Four sovereign entities captured HAS-RCLF accounting and IPSASs compliant in CFS, yielding  $p = 0.025 < 0.05$ : and suboptimal outcome.
- 5) Sovereigns implemented GCE-FCA in financial reporting with IPSASs compliance with  $p = 0.00 < 0.05$  indicating satisfactory performance ranking.
- 6) Four sovereign entities implemented decentralised MDAs accounting and financial reporting with  $p = 0.52 > 0.05$ , and unsatisfactory.

#### 4.1.2. Evaluation of hypotheses tests with interpretations

- 1) There is statistically significant association between TSA-CRF accounting and IPSASs compliance in government's financial reporting.
- 2) There is no statistically significant association between sovereign entities GFX-SRF accounting and inclusion of correspondence fund liabilities with IPSASs compliance in consolidation financial statements.

- 3) This analytical exercise yielded zero result, considered unsatisfactory and no statistically significant association between sovereign entities' non-inclusion of SWF entities' financial position asset in consolidation financial statements.
- 4) There is no statistically significant association between sovereign entities HAS-RCLF accounting and inclusion of correspondence fund liabilities with IPSASs compliance in related national accounting standards in consolidation financial statements.
- 5) There is a statistically significant association between sovereign entities' fixed asset accounting capture, inclusions with IPSASs compliance in consolidated financial statements. However, few countries like Botswana (which was not part of our research sample), still using old-fashioned CDF accounting treatment of capital expenditures.
- 6) There is no statistically significant association between sovereigns' MDAs decentralised accounting and IPSASs compliance.

## **4.2. Discussion**

### **4.2.1. Treasury Single Account (TSA) and Consolidated Revenue Fund (CRF) Reporting**

Treasury Single Account (TSA) / CRF are jointly used as medium of centralised collection of domestic revenues phenomenon by government institutions but un-used in collection of export proceeds in commodities producing countries, fund accounting and budgetary controls. Developed and developing economies like USA, Canada, etcetera use TSA jointly with CRF whereas smaller developing countries grapple with challenges of infrastructure required in processing transactions through TSA accounting channels, constantly reconciles TSA balance or overdrawn CRF in statement of cash-flows.

Similarly, some countries provide separate statements of income and expenditure with operating income surplus(deficit), but fiscal revenue surplus or deficit is rarely correctly reflected in many nations' financial statements including Nigeria (Alozie, 2020). Comparison between sovereign entities captured TSA balances, and CRF's revenue surplus or budget deficit balance and overall budget deficit balance in government's CFS is a government-wide accounting issue that IPSASB needs strengthening and makes comparable to meet stakeholders' requirements. The reported balance in CRF and overall budget deficit constitute the bedrock of discrepancies we discovered in government-wide accounting and CRF in financial reporting. The study noticed that the overdrawn CRF (budget deficit overdraft) with the apex bank, either in form of Ways and Means or temporary loan liability is not accurately reflected in CFS in agreement with the position in public finance statistics. Thus, we are suggesting that accounting profession and standard setting agencies needs to workout suitable pattern for presentation of TSA or CRF balances in government's financial reporting.

### **4.2.2. Foreign Exchange Reserves (GFX-SRF) Reporting**

Australia, USA, UK, and Canada reflected gold, SDRs plus other of official portion of foreign exchange reserves in CFS (USA, 2021; Canada, 2021; Australia, 2021; UK Treasury, 2021). The prevailing trend in recording government's portion of foreign reserves in majority sovereign entities financial reports is unsatisfactory because affected governments either encouraged their Central Banks to classify official portion of foreign exchange reserve as an integral part of central bank's foreign exchange reserve or outright omission or negligence. There are excess crude-oil export proceeds in the Nigerian case, shows that natural commodities exporting as well as part of foreign exchange reserve fund belongs to FGN but not segregated in accordance with true ownership. Sovereign entities that reflected the official portion of foreign exchange currency assets with compliance or partially to IPSASs in consolidated financial statements are more comparable, reliable, and have better financial accountability

### **4.2.3. Sovereign Wealth Fund (SWF) Financial Position Reporting**

Finding on SWF entities' financial position is consistently excluded from consolidated financial statements. The accounting practice of non-inclusion SWF entities' financial position in CFS constitutes material defect in sovereign government financial reporting and IPSASs non-compliance and signifies absence of prudence principle and IPSASs non-compliance on investment

assets and future generation fund in financial reporting. There is urgency for sovereign entities, IPSASB and other standard-setters to educate CFS external users on justification for non-inclusion of SWF financial positions.

#### **4.2.4. Heritage Assets (HA) Accounting**

Majority of assessed countries have not embraced Ha accounting standard, or not interested in including it in financial statements and this finding demonstrates low penetration of heritage accounting or that some countries are reluctant to implement it. Sovereigns possessing HAs should capture notional values or provide disclosure notes in financial statements or in statement of accounting policies as suggested in Carnegie and Woliner (1999) cited in Aversano et al. (2019) The consensus among accounting scholars on inclusion / non-inclusion of HAs is that where HAs are not captured as financial data; they should be disclosed as notes of non-financial information in financial statements when excluded (IPSAS, 17).

#### **4.2.5. Property, Plant and Equipment (PPE) and Capital Expenditure Accounting**

PPE accounting treatments is in IPSASs compliance and a significant contribution of IPSASB in development of accounting, proper public accountability, and good public governance. Botswana is still applying the outdated CDF due to non-migrated to full IPSASs, some countries retain CDF without improper accounting for PPE-fixed asset but entities that reflected this asset in their financial position render more reliable information to stakeholders.

#### **4.2.6. Decentralized Ministries, Departments and Agencies (MDAs) Accounting**

Sovereign countries' MDAs are not rendering financial statements and stewardship of resources. MDAs in USA, UK, Canada, and Australia provided decentralised accounting functions and rendered stand-alone periodic financial statements to the central treasury (GAO, 1998; 2021; Canada, 2017). Pre-occupation of MDAs accounting services in developing countries including Nigeria, Ghana, etcetera is merely recording of vote books, passing payment vouchers and other petty accounting services, neglected core financial accounting and management reporting while comprehensive accounting services are performed in federal treasury. Lack of implementation of decentralised MDAs accounting and financial reporting contributed to inefficient use of public financial resources, lack of transparency, fiscal illusion, and mismanagement of funds in several jurisdictions. Conclusively, decentralisation of MDAs routine accounting work and rendition of departmental financial reporting would engender enhanced transparency and proper financial accountability as in USA, UK, Australia, and Canada particularly in corruption prone countries.

## **5. CONCLUSION**

In conclusion, TSA has been exclusively adopted for collection of domestically generated revenues but not used in collection of export proceeds in commodities producing countries including Nigeria, hence need to harmonise this strategy. There is prevalence mix-up in the use of TSA main bank account balance and government entity's CRF revenue surplus or deficit from the statement of revenue and expenditure. thus, there is urgency for IPSAS to provide guidelines for proper treatment of these fiscal accounting balance in CFS and government fiscal reporting. This study discovered that sovereign government entities are still using outdated CDF instead of PPE due to non-migration to IPSASs and non-compliance to international standards. This research's finding provides evidence sovereigns are not consolidating their SWF position in CFS and some sovereigns' MDAs are rendering stand-alone financial statements to central treasury.

Policy implication of these findings are that lack of uniformity and discrepancies in presentation of certain assets and liabilities in government-wide accounting, examples, inconsistency in TSA/CRF bank balance or disparity in reflecting revenue-income surplus or expenditure deficit (as deficit in fiscal spending) as identified in this study, is not in accord with the generally accepted accounting practice. This phenomenon constitutes a sharp contradiction of long-established accounting conventions, rules and principles-based—generally accepted accounting practice (GAAP). Non-inclusion of SWFs financial position in CFS constitute deficiency in government entities financial reporting, evidencing information asymmetry in fiscal reporting. Disparities in HA accounting, financial reporting and variations in HA valuation methods is likely

to result in non-comparability of sovereign's CFS. Non-decentralisation of MDAs accounting functions adversely impairs MDAs effectiveness, public sector accounting, treasury management and good governance; contributes to poor accountability, and mismanagement of funds. Rectification of these discrepancies in government-wide accounting strengthens financial reporting and convergence in consolidation CFS.

The paper makes the following suggestions or recommendations, namely:

- 1) Since TSA has been adopted for centralised collection of domestic revenues, governments should also use TSA in collection of commodities export proceeds with monthly online reporting to enhance transparency and accountability. Sovereigns render revenue income and expenditure statements showing revenue surplus or expenditure deficit and budget deficit overdraft account with the apex Bank via "Ways and Means" etcetera and overall budget deficit with schedule should be reflected in CFS periodically. IPSASB / IFAC should intervene to streamline CRF accounting, and inclusion of budget surplus/deficit and overall budget balance in the financial statements.
- 2) Governments should strengthen accounting for official portion of foreign exchange reserves, ensuring that gold stock, SDR, etcetera is accurately reflected in CFS.
- 3) Sovereign entities should reflect their SWF entities financial performance and position in CFS or provide statements of SWF disclosures as accompanying notes. IPSASB and national accounting standard-setters intervene on inclusion of SWF financial position in CFS.
- 4) Sovereign entities should ensure that realistic HA values or financial value estimates are shown in financial statements. Where government chooses excluding HA(s) heritage in its financial position, or 'inclusion without of their value(s), must provide a statement of disclosure to CFS.
- 5) Sovereign entities should provide supplementary reconciliation statement of movement and changes in fixed assets (PPE) with capital expenditure scheduled to CFS.
- 6) Governments should encourage MDAs to handle full accounting services from data capturing and processing of revenue receipts and expenditures including accruals and prepare and render stand-alone financial statements and make such accounting returns to central public treasury.

Finally, national financial reporting regulators, IPSASB /public sector accounting standard-setting agencies should review, scrutinise and confirm suitability CFS to sovereign governments prior to gazetting it and advocate timely rendition of financial statements internet hosting of CFS in public domain.

This research contributes to improvement of public sector accounting practices and good governance by identifying erroneously captured and omitted assets and liabilities sub-head items in sovereign entities consolidated financial statements and prescribed plausible solution.

Without rectification of identified accounting errors, omission, and non-inclusion of public resources, funds, revenues, assets, and liabilities in governments' financial reporting leads to sustaining material defects in sovereigns audited financial statements. Thus, there are needs to urgently develop and implement exposure draft on inclusion of SWF and its investment assets in sovereigns' entities consolidated financial statements. Remediation of these deficiencies facilitates smooth convergence of consolidated financial statements in line with IPSASs.

### **Conflict of Interest Statement**

The authors declare that there is no conflict of interest regarding the publication of this paper.

### **Author Contributions**

A.C.E (Sole Author): Conceptualization, Investigation, Writing – Original Draft. Methodology, Supervision, Validation, Writing – Review & Editing and Software,

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## Informed Consent

Informed consent was not required.

## Ethical Approval

This article does not contain any studies with human participants or animals performed by the authors.

## Data Availability

The data that support the findings of this study are available from source information websites and from the corresponding author [A.C.E.] upon reasonable request.

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