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Measurements in Accounting: Issues and Choices Determinants

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Abstract

This paper examines the common measurements in accounting, addressing the issues in general terms, including the circumstances and situations that determine each accounting measurement choice .To drive these issues, references were made to extant literature on common measurement bases and while each measurement choice is attractive. While the measurement choices made are as revealing as the reasons, research also shows that the measurement bases chosen reflect the accounting practices and principles that are most objective in capturing particular accounting items and the expectations of particular users of financial statements. In addition, it was observed from experiences that national standards and international standards as revealed in some instances play a key role in the choice of *treatment of accounting items. In essence, no particular bases are in use for all companies and even amongst companies in the same sector except to reflect treatment of items in the most objective ways.*

Key words*: Accounting measurement, measurement bases, measurement bases determinants*

Introduction

Measurement in accounting is a key aspect of financial reporting as measurements arrived at, and incorporated into the financials, affect the decisions users reach on the accounting items and how they feel about the enterprise (Barth, 2006).The International Accounting Standard Board's (IASB's) conceptual framework is specified in its framework for the preparation and presentation of financial statements (Framework, IASCB, 1989) as adapted in Nigeria until recently. This framework is not an accounting standard and hence does not define standards for any particular measure of disclosure issues.

Despite the importance of framework, accounting measurement has received very little attention in the conceptual framework of financial reporting in countries, including Nigeria. This has become so as measurement decisions and choices reflect definitions ascribed on financial statement elements and qualitative characteristics of accounting information in the context of the objective of financial reporting (Barth, 2006). Application of conceptual framework has resulted in the different measurements in accounting from which measurements that meet framework criteria are chosen.

Accounting measurement, simply defined, is the quantification of financial information in monetary or economic terms. Accountants use these measurements to in accounting report or information for internal and external users. Today, Accounting as a discipline has grown into branches which have necessitated different measurements. For instance, Financial accounting measurements rules those of Management accounting measurements, for two branches of Accounting, are clearly not the same. This can be expressed when it is a settled rule in line with the Generally Accepted Accounting Principles (GAAP) when items of assets, liabilities debts financial and equity investments are periodically measured and reported, in the financial statements. This becomes a realistic picture, giving the fact that users of financial statements make decision based on the information in such statements. But measurements of management accounting tend toward calculating the cost of materials used or the number of labour hours needed to produce or service.

Companies generally are required to use the GAAP to record balance sheet information using a country's specific GAAP for accounting measurement. While countries specific GAAP determine the accounting measurement that is applicable to accounting items, there could also be similarities in the choice of GAAP by some countries. To this end, however, measurement methods are not expected to be disclosed on the face of the balance sheet except by way of notes

Accounting has sometimes been described as a veil, a mere detail of measurement leaving the economic fundamentals, unaffected. But since the world is not in a frictionless competitive market, accounting becomes relevant in an imperfect world where transaction prices may not correspond to the hypothetical market prices that would prevail in frictionless competitive markets. Therefore, we cannot but appreciate the measurement in accounting items. But debates about measurements methods have raged on for quite some time now. Arguments are rift as to what measurements systems could lead to better insights into the companies' transactions.

In this study, we examine *measurements in accounting*. This, it is expected, will provide insights into alternative measurement bases, in a variety of contexts; help meet the criteria in the conceptual framework, such as Relevance, and Fruitful Representation (Reliability),among others, and if need be offer an alternative framework that can meet the objectives the desired characteristics.

Literature review

The conceptual framework

Measurements in accounting are not guided by the current framework drafted by IASB (now IFRSB). Presently, and as contained in the current conceptual framework, the measurement bases and measurement techniques that are used in financial statement are merely listed and fail to identify key attribute for selecting among them. Under German GAAP, historical cost is the only valuation method permitted for intangible assets. Under both UK-GAAP and IFRS, however, intangible assets are to be carried at either historical cost or fair value less any amortization and impairment charges. Under fair value, the accounting treatment is similar to that of property, plant, and equipment; that said, a company may only apply fair value to an intangible asset if an active market exists for that asset

The Financial Reporting Standard Board's (formerly, IASB) framework which is similar to the Nigerian Accounting Standards Board's (NASB's) conceptual framework focuses on determining the choice of measurement basis best suited to meet the definition of the elements and the qualitative characteristics of accounting information and financial reporting,. It must however be noted that the collaborative efforts by IFRSB and other national standard setters to, redefine the conceptual framework of financial accounting items for improved financial reporting, is heartwarming.

Qualitative characteristics of accounting information

There is no doubt that the objective of financial reporting, among others, is to provide information that is useful to present and potential users in making economic decisions. According to Barth (2006) and IASB (2006), the economic decisions made by the users of financial reports include resource allocation decision. Resource allocation decision reflects how to appoint, replace or vote on shareholders' proposals. Since the objective of financial reporting focuses on resource allocation users, based on the belief that meeting their needs will invariably meet the needs of other financial statement users, it goes without saying that the objective of financial reporting affects the measurement decisions. Measurement decisions establish the context for assessing the qualitative characteristics of accounting information, including accounting measurement.

To this end, the qualitative characteristics of accounting information include, among others, *relevance, fruitful representation, comparability, and understandability*.

Relevance

Relevance as a characteristic of accounting information helps users to evaluate the potential effects of past, present and future transactions or other events on future cash flows, and confirmatory value. Timeliness is an aspect of relevance. By Timeliness it is meant 'the ability of accounting information to get to users before it loses its ability or capacity to influence their decision'. In Faithful representation, accounting information reflects real-world economic phenomena that it purports to represent. Components of

Faithful representation include *verifiability neutrality*, *completeness*. Verifiability suggests general consensus reached by different independent and knowledgeable parties; neutrality means freedom from bias intended to induce bias or predetermine result. Completeness as a component of Faithful representation indicates the presence of all information.

Comparability

Comparability as a characteristic of accounting information enables the users to identify similarities in and differences between two sets of economic phenomena. It connotes also *consistency* which refers to the use of some accounting policies, either from period to period within an entity, or in a single period, across entities.

Understandability

Understandability suggests the ability of accounting information to provide qualitative information that enables users with a reasonable knowledge of business and economic activities and financial reporting, and who study the information with reasonable diligence, to comprehend its meaning.

Measurements Concepts

When making measurements decisions, the decision maker is guided by the national, relevant GAAP for the relevant accounting items. The following present some measurements in accounting.

- **Fair value accounting**

Fair value is the amount for which an asset could be exchanged or a liability settled, between knowledgeable parties in an arm's length transaction. The Financial Accounting Standard Board's (US) definition of fair value is consistent with IASB's definition. Fair Value Accounting approach requires companies to measure and report, on an ongoing basis, certain assets and liabilities (generally financial instruments) at estimates of the prices they would receive if they were to sell the assets or would pay if they were to be relieved of the liabilities (Ryan, 2008). Under the Fair value accounting approach, companies report losses when the fair values of their assets decrease or liabilities increase. Those losses reduce companies reported equality and may also reduce companies reported net income.

Where we find application of fair value accounting in practice, instances are that fair value is likely to have a contracting explanation. First, in case of investment property, the use of fair value is concentrated among real estate companies, where fair value estimates are more likely to facilitate the measurement of the underlying economic performance required, for example, by compensation contracts. Second, companies with higher leverage are more likely to use fair value accounting; a finding consistent with these companies conveying information about the current realizable (or liquidation) value of the assets. More specifically, one can argue that debt holders, in fact, demand fair value information if the company can credibly communicate it. The application of fair value accounting increases the likelihood of overstating the book value of assets, which, in turn, increases a company's (and its auditor's) risk of litigation and losing reputation. Litigation costs and the risk of losing reputation, however, are expected to decrease as the quality of fair value estimates increases. A commitment to fair value, then, can be viewed as a costly way for companies that are confident in the quality of their estimates to distinguish themselves from companies with less reliable fair value estimates.

Fair value accounting has played a significant role in a country's generally accepted accounting principle. There is no doubt that accounting standard that requires Fair value accounting has increased considerably in number and significance. In 2006, the IFRSB in the US issued a Statement of Financial Accounting Standards, No 157 on Fair Value Measurement (FAS 157) which provides a comprehensive guidance to assist companies in estimating fair values. To meet the objective of using Fair value accounting, companies must fully incorporate currently, information about future cash flows and current risk adjusted discount rates into their fair value measurements. FAS 157 provides that in the event of an availability of current information and conditions on market prices for the same or similar positions, companies are required to use the prices in estimating fair values. It is believed that market prices should reflect all publicly available information about future cash flows including investors, private information that is revealed through trading as well as current risk-adjusted discount rates.

The main issue in Fair value accounting is whether companies can and do estimate fair values accurately and without discretion. When identical positions trade in liquid markets that provide unadjusted mark-to-market values, fair value is the most accurate and least discretionary possible

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measurement attribute though liquid markets get values wrong sometimes. But Fair value accounting could be less accurate and more discretionary when it is adjusted mark-to-market value or mark-to-model values. In adjusting mark-to-market values, companies may have to make adjustments for market illiquidity or for the dissimilarity of the position being 'fair valued' from the position for which the market price is observed.

In estimating mark-to-model values, companies have choices about which valuation models to use and about the inputs to use in applying the chosen models .It must be noted that all valuation models are limited and different models capture the value relevant aspects of position differently.

But this standard has been criticized, during credit crunch, on the following grounds (issues).

- Reported losses reverse as market return to normal.
- Fair values are difficult to estimate and they are unreliable because of market illiquidity.
- Reported losses have adversely affected market prices, yielding further losses and increased risk in the financial system.

The above criticisms, notwithstanding, Fair value accounting, has brought about the following benefits:

- It permits companies to report amounts that are more accurate, timely and comparable.
- It permits companies to report amount that are up dated on a regular and ongoing basis.
- It reduces company's ability to manipulate its net income because gains and losses on assets and liabilities are reported in the period they occur, not when they are realized as a result of a transaction.
- It gives companies with fewer growth opportunities more likelihood of curbing over investment in fixed assets.
- Gains and losses resulting from changes in fair value estimates indicate economic events that companies and investors may find worthy of additional disclosures.

In general terms, given Fair value accounting standards,

- Fair value accounting is relevant because it reflects present economic resources and obligations under which accounting information users can make decision.
- Fair values have predictive value
- Fair values can be faithful representation of assets and liabilities as defined by the framework because they reflect risk and probability – weighted assessment of expected future inflows and outflows.

- **Historical cost accounting (HCA)**

In historical cost accounting (HCA), assets are recorded at the amount of cash or cash equivalents paid or the fair value of the consideration given to acquire them at the time of their acquisition. Liabilities are recorded at the amount of proceeds received in exchange for the obligation or in some circumstances at the amounts of cash equivalents expected to the paid to satisfy the liability in the normal course of business.

HCA is most commonly used by companies in the preparation of their financial statements. But the use of HCA may be in conjunction with other measurement basis as may be determined by the relevant standards. An instance of this is when HCA is combined with net realization value in the case of stock valuation and market value for securities and pensions liabilities which are carried at their present value. But the use of HCA is characterized by:

- The attribute of the elements of financial statements.
- The assumption of a stable monetary unit.
- The marching principle, and
- The realization

It has been reasoned that the choice of historical cost can be viewed as a commitment against upwards asset revaluation. According to Christensen and NikoLaev (2010), the HCA exhibits better reliability; and it is a more effective mechanism for reducing agency cost than the FVA which subjects a company and its auditors to litigation risks. Canadian Accounting Standard Board (2005) asserts that HCA is a possible measurement basis only when it cannot be fortified to equal the fair value of the item received and therefore must be judged by its historical cost properties.

It is important to know that the historical cost does not measure the value received. It must be supplemented by some additional recoverable value; that the price paid is recoverable in the market without independent substantiation. HCA may be useful in predicting future reported net income. However, this does not in itself have any implication for future cash flow. It is however reasoned that historical cost accounting is less relevant than fair value accounting on initial recognition of assets and liabilities. Save for, it must be stated that HCA ,applied in accordance with GAAP, is a relevant and reliable substitute for FVA on initial recognition when fair value is not reliably estimable; if it is reasonable to assume that the historical cost amount is recoverable (if an asset) or reasonably represents that amount owning (if a liability).

- **Deprival value**

Deprival Value (DV) is the loss that the entity would suffer if it were deprived of the asset. It is measured as the lower of replacement cost and recoverable amount where recoverable amount is the higher of value in use and the net realizable value (NRV). Put differently, recoverable value is the higher of the value in exchange and the value in use. According to the Canadian Accounting Standards Board (2005), the deprival value framework holds that the value of an asset to a business entity is the economic loss that the entity would suffer if deprived of it. The loss could not exceed the most economic current cost to replace its productive capacity or service potential. In an article extracted from http://www2.glos.ac.uk, entitled: “Asset Valuation”, DV was defined as the value by which a company will be worse off if it were deprived of the asset. This is a logical guide for the company to following a rational value-maximizing decision. It is expected that when the recoverable value exceeds the replacement cost, then if the company were deprived of its assets, it could go out and buy another to replace it, if this is possible. The replacement cost will therefore set a maximum on the loss that the company can suffer. However, if the economic benefits that arise from ownership of the asset (termed the recoverable value) are less than the cost of replacing it, then the company would logically choose not to replace it.

The calculation of recoverable values depend on how the company intends to maximize inflows-cash or other benefits. However the company has two basic choices: *value in exchange*, defined as the asset's net realization value (the sales proceeds less the future costs of sale). On the other hand, the *choice of value in use*, which is the present value of the future cash flows obtainable as a result of the continued use of an asset, including those resulting from its eventual final disposal.

The Deprived Value approach has particularly been popularized in the U.K. (Mattessich, 1998) and in Australia (Baxter, 2003). The Deprival Value is often seen as the value to the owner or value to the business; it provides a coherent principle for selecting the most defensible type of current value for each kind of assets and liabilities, and for finding the value's size. Its general use would make accounts more consistent and comprehensible.

On the Deprival Value model provides a means of selecting a measurement basis that is relevant in specific circumstances. It identifies the amount that would just compensate the entity for the loss of an asset. This is:

- Replacement cost, except where recoverable amount is lower.
- Recoverable amount is the higher of value in use and net selling price.

The relief value model applies the same reasoning to liabilities with some changes in terminology.

Deprival value, according to IPSASB (2010), is criticized on the following grounds that all of the bases considered by the deprival value model are current, entity-specific bases. However, (apart from the consideration of transaction costs), the selected bases would not be expected to be significantly different from market values in the case of assets and liabilities that are widely traded on a market. Use of the deprival value model suggests a basis that is highly relevant. However, it is necessary to consider whether the basis that it implies adequately reflects the other qualitative characteristics of financial reporting. Such an analysis ensures that appropriate consideration is given to all the qualitative characteristics and the need to obtain an appropriate balance between them

- **Current cost accounting**

Current Cost Accounting (CCA) encompasses reproduction or replacement cost. It is defined as the process of determining the most economic cost of replacing an asset with an identical one (reproduction cost) or with an asset of equivalent productive capacity or service potential (replacement cost).

- **Reproduction cost:**

  This is commonly equal to the historical cost on initial recognition. It could be different however from it: self-constructed assets require the allocation of costs incurred. In past periods, significant pre-recognition costs could be expensed as incurred, or the most economic current cost of reproducing an asset could differ from the fair value of the consideration given to acquire it. Reproduction cost purports only to measure the amount that would be expected on a measurement date. It does not measure value received and thus, must be supplemented by a recoverability condition.

- **Replacement cost:**

  This is the most economic cost required for the entity to replace the service potential of an asset (including the amount that the entity will receive from its disposal at the end of its useful life) at the reporting date. It is the measurement basis that measures the most economic cost of replacing the productive capacity or service potential of asset. Proponents of replacement cost are of the opinion that replacement cost is an appropriate performance measurement because it shows whether the entity is able to recover its replacement cost or not from revenues especially in the period of changing or unstable prices. Besides, the proponents of this measurement believe that it provides the basis of predicting future profitability of the firm by excluding holding gains or losses that may not be sustained. Replacement cost differs from FVA when it (replacement cost) is based on entity specific expectation as to an asset's service potential or productive capacity, and its most economic replacement cost that differs from market expectations. However, entity-specific determinations of replacement cost have significant limitations. This manifests itself when identifying and measuring the productive capacities or service potentials of many assets. It is subject to serious problems with respect to its capability for reliable estimation. This is itself stems from the lack of objective bases for defining the most economic service potential or productive capacity of assets in entity-specific contexts. Beside, in some cases the calculation of replacement cost is complex and confusing. This will reduce the timeliness, comparability and verifiability of information prepared on a replacement cost basis. Such a calculation may also be relatively costly. These limitations render replacement cost less relevant than fair value on initial recognition.

However, replacement cost is conceptually more relevant than reproduction cost or historical cost on initial recognition,

- **Amortized cost accounting**

Amortized Cost Accounting (ACA) is usually a form of fair value accounting; it is also called an accrual accounting. ACA uses historical cost accounting about future cash flows and risk adjusted discount rates from the inception of positions to account for them throughout the lives in the financial statements. In ACA, gains and losses unrealized are ignored in the financial statements and not reported until they are realized through disposal, or impairment in value, of positions or the passage of time. In ACA, generalized gains and losses are accumulated when firms have cause to disposal off positions. These accumulated gains and losses are carried in the firm’s income statements. In similar vein, prior impairments of positions (if any) are also reflected in the income statement.

Issues raised by ACA are in three (3) perspectives, and they arise from the accrual accounting basis. The issues include:

- Incomes are persistently in the books as long as firms hold position, but such incomes become transitory when positions are disposed of on maturity and replaced with new position. As incomes are persistently reported in the income statement, it gives the impression that incomes are more persistent than they really appear. Positions could, and in practice, be acquired at different times. This gives rise to using different historical information and discount rates. This results in inconsistent and untimely accounting from the constituent components of the firm’s portfolios. This, though not visible on the face of the financials, tend to obscure the net value and risks of firm’s portfolios.

The issues discussed above are pertinent and associated, though not exclusively, with financial institutions which tend to hold many positions or portfolios in order to diversify the attendant risk. Financial institutions tend to hold a large portfolio chosen to have largely but not completely able to offset risks, so that the aggregate risks of the institutions' portfolios are within their risk management guidelines (Ryan, 2008).

In ACA, there is the presumption that there are no unexpected changes in value of positions held by financial institutions until the gains and losses are realized. It is important to note that financial institutions can engage in gains trading. This is because their positions are often liquid, and one side of each of their many offsetting positions typically will have a cumulative unrealized gain; because the other side will have a cumulative unrealized loss, financial institutions can selectively dispose of the side of their offsetting positions with cumulative unrealized gains (losses), thereby raising (lowering) the net income.

In practice, financial report disclosures tend to mitigate issues of seeming persistent and transitory incomes when positions are held on one hand and the inconsistent and untimely accounting for the constituent parts of the firm's portfolios. With ACA, banks are required to disclose breakdown of their amortized cost interest revenue and expenses by type of interest-earning asset and interest-paying liabilities. It is expected that investors, through these disclosures and careful analysis, can attempt to untangle the persistent and transitory components of amortized cost interest and to undo the inconsistent calculation of interest for different positions. This poses some challenges and difficulties as the analysis requires the investors to estimate from other information sources the average lives in banks' different types of assets and liabilities and thus, when positions are incepted and mature.

However, advocates have argued that unrealized gains and losses on fixed rate or imperfectly floating-rate positions that arise due to changes in risk-adjusted discount rate are irrelevant when firm intend to hold positions to maturity because firms will eventually receive or the promised cash flows on the positions.

Amortized cost accounting is not applied in pure fashion. Assets accounted for at ACA are subject to impairment write-downs. These write downs can adjust the asset balance to fair value. Depending on how impairment write-downs are measured, some or all of the fair value measurement issues apply to these write-downs. Moreover additional issues arise for impairment write-downs that are recorded only if judgmental criteria are met. Financial Accounting Standards Board (1993) and the International Accounting

Standard No 36 provide that impairments write downs be effected only if the impairments are not transitory. In similar vein, certain economic liabilities accounted for using ACA are subject to judgments accruals of probable and reasonable losses under FASB (1975- in FAS Accounting for Contingencies) and other similar standards.

Policy choice of accounting measurements

Specific accounting issues may dictate the choice of accounting measurements. IFRS and local GAAP may disagree on the choice for an accounting measurement. In an article, titled *ifrs fair value measurement and accounting policy choice in the U.K and Australia*, extracted from www.afaanz.org, it was argued that the choice of fair value measurement for *derivative*, held for trading and available-for-sale financial assets, as well as, *share-based payments* and *biological assets,* is in variance with the U.K. GAAP and Australian GAAP on the same accounting items. Specifically, HCA is required for such accounting items. The above submissions reflect only two scenarios.

Arguments advanced for the choice of accounting measurement range from the contracting theory and political costs (Brown, Izan and Loh, 1992; Whittred & Chan, 1992; Cotter and Zimmer, 1995) to communication of performance expectations, avoidance of takeovers when assets are undervalued (Aboody, Barth & Kaszink 1992), the depletion of equity, by writing off of goodwill against equity on acquisition, among others. This ranges from historical cost being a less informative measure of economic performance in real estate companies to leverage , as an important determinant of fair value use, for both investment property and property, plant, and equipment as well as to the choice of fair value for up-to-date liquidation value of a company's assets by supply lenders. The same goes for other measurement bases for accounting treatment of items

Conclusion and comments

This paper examines the common measurements in accounting, addressing the issues in general terms. The circumstances and situations to each accounting measurement choice are briefly examined.

From the foregoing, it is not unlikely that accounting measurement choices are dictated by factors captured by the relevant standards and principles which allow the preparers sufficient latitude to exercise their professional judgment on the accounting choice .The accounting standard in addition, specifies the treatment of accounting items. Such accounting standard may be local when the accounting items do not have any specific treatment in the international standard. Where the treatment is provided by international standard, the accounting treatment will be so treated.

It is however interesting to note that with the convergence or internationalization of accounting standards, the question of how assets should be treated or recognized on the balance sheet or some expenses will be treated in the income statement with be one of the key issues to be resolved. Differences in measurements, it must be noted, do not occur in the differences in frameworks drafted by countries. Rather, they result from convention and differences in practice evolved over time.

Therefore, when viewed in terms of framework, these differences generate financial statements that are internally inconsistent. Not only is use of multiple measurement bases conceptually unappealing, it creates difficulty for financial statement users. The challenge worth noting is the choice of the preferred bases for measurement of assets or liability as countries harmonize standard. How this will play out, only time will tell.

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