

Towards a Full Accrual Accounting in the Public Sector: A Critical Analysis of IPSAS 12

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Abstract: Within the new public management, a fundamental role is played by changes in accounting measurement and recognition systems (in this case, the literature speaks specifically of new public financial management). It has been substantially characterized by a gradual shift from cash to accrual accounting. In light of it, this study aims to analyse some of the most significant conceptual and practical implications associated with the use of accrual accounting in the public sector by looking closely at one full-accrual standard that seem to lend themselves better and more directly than others to show the systems innovative reach: IPSAS 12-inventories. The switch-over broadens the scope of the accounting system, thereby leading to the recognition and consequent valuation of all the resources of any public-sector entity in its financial statements. As is often the case, though, greater utility implies greater complexity and innumerable elements of uncertainty are evidently still present.

Key words: Accrual accounting, inventories, IPSAS, public sector accounting, processes, support, elements

INTRODUCTION

Institutional background and purposes of the study: The dramatic financial situation in the public sector and strong demographic modification of western population leads public administrations to be more and more efficient, resistant and sustainable. A precedent version of this study was accepted for presentation at the 2nd International Virtual Conference on Advanced Scientific Results (2014). Starting in the early 1980's, the major English-speaking countries adopted sweeping innovative processes in the public sector. In different ways and with different degrees of intensity, these processes eventually affected the great majority of the Western democracies (Pina and Torres, 2003). These changes, following the New Public Management (NPM) Model (Anselmi, 2003; Barzelay, 2001; Gruening, 2001; Hood, 1995) were inspired by managerial approaches aimed at eliminating bureaucratic obstacles (Barzelay, 1992) and raising efficiency, accountability and results-orientation in the complex world of public administration.

A fundamental role in this reform process is played by changes in accounting measurement and recognition systems (in this case, the literature speaks specifically of new public financial management (Guthrie *et al.*, 1999; Jackson and Lapsley, 2003). It has been characterized by a gradual shift from cash accounting which aims to control processes to accrual accounting which is

typically used in the for-profit sector and aims primarily to evaluate results (Pina and Torres, 2003; Hepworth, 2003).

Though the trend to adopt accrual accounting in the public sector has not been uniform in its path or its pace, over the years it has had an increasingly universal impact and can no longer be considered a prerogative of the English-speaking countries. To the contrary, the fact that a great part of the literature, both technical and academic, makes continuous reference to Australia and New Zealand as pioneers of a full-accrual accounting system may have limited the consideration and analysis of the experiences of a growing number of countries around the world that are now implementing this radical change and in some cases have already done so (Carlin, 2005; Deaconu *et al.*, 2011; Grossi and Soverchia, 2011; Osterkamp, 2007; Paulsson, 2006). Even in those parts of continental Europe and Latin America where historical, cultural and structural aspects have limited its diffusion, today it is hard to find instances of the use of a solely cash basis accounting system (Morphett, 1998). Italy, for example, whose public sector is still tightly tied to cash accounting, recently took an important step forward by enacting Legislative Decree 118 dated 23 June 2011 which contains provisions regarding the harmonization of accounting systems used in the general government sector (meaning local and territorial government entities). This decree was intended to revise

Table 1: Page summarizes the status of accrual accounting

Countries	Introduction of accrual accounting
Australia	1997 but only on the central level on the local level the change is currently under way
Austria	Accrual accounting only partly introduced: assets are recognized but no depreciation; stocks and provisions are not recognized but income and expenditure are on an accrual basis
Belgium	No or not known
Canada	2001
Chile	1973 during the economic reforms under Pinochet
Czech Republic	Accrual accounting for fixed assets and stocks but not for tax revenues
Denmark	During the 2000's
Estonia	During the 2000's
Finland	During the 1990's on central and sub-central level
France	During the 1990's on local level; 2007 on central level and sub-central level
Germany	After 2000 on local level; around 2005 in some federal states (Berlin, Bremen, Hamburg); no present consideration for the central level
Hungary	Pure cash accounting on all levels of government
Italy	After 2000 on local level
Latvia	During the 2000's
Lithuania	Accrual accounting for fixed assets and stocks but not for tax revenues
Luxemburg	No or not known
Malta	Under consideration
Netherlands	During the 1980's on local level, planned introduction on the central level postponed
New Zealand	1990; at present on of the most advanced accrual accounting countries
Portugal	No or not known
Romania	2007
Slovenia	No or not known
Spain	During the 1990's on central and sub-central level
Sweden	During the 1970's on local level, during the 1990's on central level
United Kingdom	In the early nineteenth century, accrual accounting in most major municipalities, shift to cash accounting in 1866. During the 1990's shift back to accrual accounting on central and sub-central level. The reform started in the early 1990's with the introduction of accrual accounting in the British National Health Service
EU Commission	2005
Switzerland	In some Cantons in the 1940's, all Cantons agreed to accrual accounting in 1977, after 2008 on national level
USA	1997 but only on the central level; on the local level the change is currently under way

Anonymous (2007), Tiron-Tudor and Mutiu (2005), Wynne (2003)

the structure and operation of the accounting systems used by regions, provinces and municipalities (and their agencies). As of 2015, after a three-year period of experimentation (starting January 1st, 2012), these entities will be required to use accrual accounting alongside their chief accounting system, i.e., cash accounting in order to increase the information content of their accounting reports as regards both their economic performance and changes in their net worth (Ranucci, 2012; Grandis and Mattei, 2012, 2014; Jannelli and Tesone, 2013).

Table 1 summarizes the status of accrual accounting in the public sector of different countries. In this context, a fundamental role has been played by the International Public Sector Accounting Standards Board (IPSASB), the international standard-setter for the public sector. IPSASB was created in 1986 with the stated objective of serving “the public interest by developing high-quality accounting standards (called IPSASs) and other publications for use by public sector entities around the world in the preparation of general purpose financial reports” (IFAC, 2016). The standard setter brings together a large number of organizations that refer explicitly or implicitly to the IPSASs for their financial reporting. For example, around 30 countries have adopted or are soon to adopt the IPSASB standards, some directly

(e.g., Switzerland, Slovakia and Austria) and others indirectly, by incorporating the IPSASs in their own national standards (e.g., South Africa, Brazil, Indonesia, Spain and Romania), national and supranational entities and organizations such as the UN, NATO, the OECD, Interpol and the European Commission already prepare their annual reports according to the international public-sector accounting standards; countries such as Australia, Canada, New Zealand and the United States which have a long and authoritative standard-setting tradition, use the IPSASs as important references for public-sector reporting accounting. At this writing, the accounting standards issued by the IPSASB include:

- 38 full accrual basis IPSASs
- A single cash basis IPSAS; this standard is designed, however, for entities/countries that intend to adopt accrual accounting in the future (Pozzoli, 2008; Chan, 2008)

In light of the above, this essay analyses some of the most significant conceptual and practical implications associated with the use of accrual accounting in the public sector by looking closely at one full-accrual

standard that seem to lend themselves better and more directly than others to show the system's innovative reach.

IPSAS 12-inventories: The switch-over broadens the scope of the accounting system, thereby leading to the recognition and consequent valuation of all the resources of any public-sector entity in its financial statements: no longer only its financial assets but also non-financial ones (including inventories for instance) have to be recognized in financial statements.

MATERIALS AND METHODS

The concept of inventories: IPSAS 12 sets out the accounting rules that public-sector entities the term "public-sector entities" means national, regional and local governments and the entities associated with them (e.g., ministries, government agencies, etc.) should follow in treating inventories. This standard is the result of convergence with IAS 2-inventories. It was originally issued by the IPSASB (known at the time as PSC-Public Sector Committee) in July of 2001 and was revised in December of 2006. Since, then the standard has been amended by several other IPSASs, issued in 2009-2011. Finally, the version described in this analysis includes amendments resulting from IPSASs issued up to June 2016. IPSAS 12 defines inventories as all assets (IFAC, 2016):

- In the form of materials or supplies of goods to be consumed in the production process
- In the form of materials or supplies of goods to be consumed or distributed in rendering services
- Held for sale or distribution in the ordinary course of operations or
- Used in production processes for sale or distribution

This definition was adapted to the specific nature of the public context, since, it explicitly also considers as inventories all the goods that a public entity buys, produces or uses in its own production process for the purpose-typical of that context of distributing free of charge or at a nominal price. Examples of inventories typically present in a public context (IFAC, 2016):

- Ammunition
- Consumable stores
- Maintenance materials
- Spare parts for plant and equipment
- Strategic stockpiles (i.e., energy reserves)
- Stocks of unissued currency

- Postal service supplies held for sale (for example, stamps)
- Work in progress including educational/training course materials or client services
- Land and/or property held for sale

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Inventory measurement, cost, net realizable value and current replacement cost:

The international standard setter for the public sector sees as the main issue regarding the accounting treatment of inventories the definition of the configuration of value to be used in their valuation. In this sense, IPSAS 12-adopting what was already prescribed for the for-profit sector and in accordance with the principle that an asset cannot be recognized in the statement of financial position at a value exceeding the future economic benefits or the service potential the concept of "service potential" is unique to the public sector (IFAC, 2016) expected to be realized from that asset's sale, exchange, distribution or use-requires public sector entities to value their inventories at the lesser of cost or net realizable value.

The definition of the cost of an inventory item-the definition to be used in valuing the inventories-coincides essentially with the sum of the industrial costs reasonably attributable to its realization (Zanda, 2007) because it must include.

The cost of purchase, i.e., the price paid to buy the item plus the relevant ancillary charges (such as import duties, shipping and handling costs), less any commercial discounts or rebates, however, if the item was acquired in a non-exchange transaction, its cost is taken to be its fair value at the acquisition date.

The cost of conversion, i.e., the sum of all the costs that go into the conversion of raw materials or semi-processed goods into finished products, whether by a direct relationship with the resulting production units (e.g., direct labour costs) or by an indirect relationship, for example, overhead whether fixed (depreciation and maintenance of plants and machinery) or variable (materials and indirect labour costs) fixed overhead expenditure contributes to the definition of the cost of converting an inventory item in accordance with the entity's normal production capacity, even if the entity has suffered a loss of output or its equipment is idle.

All other costs considered necessary to manage the inventory at its current location and in its current conditions. In the case of goods (later defined as inventories) bought with deferred payments, if the sale

agreement contains a financing element-expressed as a difference between the purchase price in normal credit conditions and the actual amount paid that element must be recorded as interest expense over the deferral period.

For the purposes of determining this cost configuration, the principle in question, though allowing in limited cases the use of reference parameters such as the standard cost or the retail price, prescribes two different calculation methods, depending on whether reference is made to:

- Fungible goods, i.e., items that can be replaced with identical ones without affecting their value in the least
- Goods that are not normally fungible or are being kept separate for specific projects

Regarding the types of goods described at point 1 above which have the same nature and are intended for similar use IPSAS 12-likewise consistently with IAS 2-allows the following inventory movement methods to be used alternatively (IFAC, 2016).

FIFO (First in First Out), whereby it is assumed that the goods bought earliest will be sold first, hence, the year-end inventory will contain the goods bought or produced more recently.

Weighted average cost, meaning that the cost of each item is determined by the weighted average of the cost of similar goods at the beginning of the year and the cost of similar goods bought or produced during the year. Hence the standard disallows the LIFO (Last in First Out) method which assumes that inventory items purchased most recently will be sold first and that the year-end inventory will consist of the goods bought or produced less recently. The reasons for this prohibition can be found in the basis for conclusions included in IAS 2 which (as noted above) was the main influence for IPSAS 12. That document explains that the LIFO method does not give a true picture of the real movements in the inventories of business entities and that it is often used purely for tax purposes.

Regarding the types of goods described at point 2 above, IPSAS 12 (IFAC, 2016) says that the cost must be estimated "using specific identification of their individual costs", i.e., applying an analytic criterion to each item.

The net realizable value of an inventory item means the price that a public entity believes it can obtain by selling the item in the ordinary course of operations, minus completion costs and the costs the entity estimates it would have to incur in order to sell, exchange or distribute the item.

Net realizable value, unlike fair value, for example is entity-specific in other words, it reflects the appraiser's specific expectations. IPSASB's preference for this configuration of value in the definition of the inventory valuation criterion testifies to the different weight that the standard setter gives to the aspects of reliability compared with those of relevance which are typical elements in any accounting-information process. This trend is confirmed by the indications that IPSAS 12 gives for calculating net realizable value when, for example, it holds that in estimating the value of an inventory value one must always take account of the item's actual purpose.

Consistently with what we have noted regarding the definition of the concept of inventory, IPSAS 12's consideration of the valuation process likewise takes due account of the specific nature of the public sector. In fact, if an inventory item belonging to a public sector entity is intended to be distributed (or used in producing goods to be distributed) free of charge or for a nominal price, it must be valued at the lesser of:

- Cost, calculated
- Current replacement cost, meaning the cost that the public sector entity would incur to repurchase the item at the valuation date

In fact, IPSASB believes that the future economic benefits or service potential that can be associated with these kinds of resources in light of their social purpose are more appropriately related to the amount that the entity would have to pay to buy them again (hence, IPSASB's choice of the current replacement cost criterion) than to their capacity to generate positive net cash flows for the entity (hence, its preference for the net realizable value criterion in all other cases).

To highlight the difficulties associated with the definition of a unitary accrual basis accounting information system for the public sector, it is worth noting that the accounting treatment prescribed for these particular types of inventories is not uniform at the international level. In Australia, for instance, inventories of goods held for distribution are valued at cost which may be reduced if the public sector entity believes that intervening circumstances have caused a loss of the service potential associated with the inventories in question.

The Australian Accounting Standards Board (AASB) the AASB is the Australian standard setter for both the private sector and the public sector made this change in August, 2007. Before that, the prescribed accounting treatment was the one established by IPSASB and

described above. The AASB explained that the valuation of these kinds of inventories at the lesser of cost and current replacement cost generates both conceptual and practical problems.

From a conceptual standpoint, the AASB believes that the reduction of the current replacement cost of an inventory intended to be distributed free of charge does not necessarily imply a reduction of the service potential associated with the inventory in question. By the same token, a reduction of the service potential associated with this kind of inventory is not always reflected by a reduction of its current replacement cost, because the service potential associated with it must often be considered in physical terms, not only in financial terms.

From a practical standpoint, the AASB believes that the current replacement cost of inventories intended for distribution and held for long periods is not always readily available, especially for public sector entities which by definition do not operate regularly in the market.

The effects of inventory values on the statement of financial performance and the further information to be submitted: The international standard setter for the public sector sees as the main issue regarding the accounting treatment of inventories the definition. The value of inventories which as a rule are recognized in the statement of financial position, must be recorded in the statement of financial performance as a negative income component (expense or loss) in the period in which they are sold, exchanged or distributed (depending on their specific destination).

Likewise, a negative income component must be charged to the statement of financial performance every period in which the current replacement cost (of inventories intended to be distributed free or at a nominal price) or the net realizable value (of all other types of inventories) falls below their historical cost. On the contrary, a positive income component (in terms of smaller inventory costs) must be recorded upon the cessation of the circumstances that had previously required writing down the historical cost.

Lastly, to supplement the purely quantitative data presented both in the statement of financial position and in the statement of financial performance, IPSAS 12 requires that the general purpose financial statements prepared by any public-sector entity disclose information on (IFAC, 2016).

The accounting policies adopted in measuring inventories including the cost formula used. The total carrying amount of inventories and the carrying amount

in classifications appropriate to the entity IPSAS 12 identifies the following habitual inventory classifications: merchandise, production supplies, materials, work in progress and finished goods.

The carrying amount of inventories carried at fair value less costs to sell for business entities that adopt a statement of profit or loss format in which items are classified by their nature (as in Italy for instance), the cost of inventories is posted as a net change in inventories over the period.

The amount of inventories recognized as an expense during the period. The amount of any write-down of inventories recognized as an expense in the period. The amount of any reversal of any write-down that is recognized in the statement of financial performance in the period. The circumstances or events that led to the reversal of a write-down of inventories and the carrying amount of inventories pledged as security for liabilities.

RESULTS AND DISCUSSION

In recent decades the international public sector has experienced a gradual transition from cash to accrual accounting. It is a widely accepted (albeit not unanimous) opinion in the literature (Barton, 2005; Brown, 2005; Carnegie and West, 2003; Christiaens and Rommel, 2008; Guthrie, 1993, 1998; Jones and Puglisi, 1997; Lapsley *et al.*, 2009; Ma and Mathews, 1993; McGrae and Aiken, 1994; Mellett, 1997; Bogt and Helden, 2000; Walker, 1998) that the recognition and reporting of monetary/financial aspects alone cannot satisfy the growing demand for accountability voiced by the public sector's increasingly numerous and exigent stakeholders (Mussari, 2003; Mulgan, 2000; Pezzani, 2005). The recognition of business operations by accrual accounting requires broadening the subject matter of the accounting system: going beyond the simple dynamic of financial inflows and outflows, the accrual accounting system makes it possible to represent an entity's total worth and its year-to-year changes in quantitative terms (Capalbo, 2012; Clark-Lewis, 1996; Palumbo, 2005). As a result, it seems fair to see advantages in terms of: external (or political) accountability, if the body politic can benefit from the appropriate extension of reporting obligations to include all the resources that have been entrusted to the relevant government body.

Internal (or managerial) accountability, if all government bodies, being able to base themselves on information systems that make it possible to develop a full-cost configuration of the functions they perform and the services they deliver (Pina and Torres, 2003) can monitor more adequately and prospectively the results

achieved by the managers they employ and evaluate a public sector entity's real capacity to be self-sufficient during the current year and in the future (Caperchione, 2000; Pavan and Reginato, 2005).

In this context, since, 2001 the Public Sector Committee (now IPSASB) has issued a series of International Public Sector Accounting Standards, inspired explicitly by the already tried and tested international accounting standards for the for-profit sector (IAS/IFRS).

Because of the increasing relevance that the positions taken in these standards are acquiring the international level, this study analysed one of the 38 accrual standards currently in force (IPSAS 12), highlighting the main conceptual and practical innovations it proposes and identifying its problematic aspects.

In this regard, this accrual-basis standard indubitably offers many advantages in terms of accountability (on all, the possibility of recognizing non-financial assets that a public sector entity holds at year-end), at the same time, greater utility always implies greater complexity that you can find when different accounting systems.

Interpret the same management event in different ways (for example, the Australian standard setter treats inventories held for distribution and assets subject to restrictions and/or conditions differently from the IPSASB).

CONCLUSION

Use different configurations of value to quantify the resources included in a public sector entity's net worth (e.g., historical cost, net realizable value or current replacement cost). In this sense, innumerable elements of uncertainty are evidently still present.

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