

SIMILARITY OR DISSIMILARITY BETWEEN PUBLIC AND PRIVATE SECTOR STANDARDS REGARDING CONSOLIDATED REPORTING?

ANDREEA CÎRSTEA

TEACHING ASSISTANT, PHD, BABES-BOLYAI UNIVERSITY, FACULTY OF ECONOMICS AND BUSINESS ADMINISTRATION, CLUJ-NAPOCA, ROMANIA
e-mail: andreseverin@yahoo.com

ȘTEFAN DRAGOȘ CÎRSTEA

ASSOCIATE LECTURER, PHD, TECHNICAL UNIVERSITY, FACULTY OF ELECTRICAL ENGINEERING, CLUJ-NAPOCA, ROMANIA
e-mail: stefan.cirstea@yahoo.com

Abstract

Consolidated financial statements represent one of the main benefits that the public sector reforms brought. The novelty of the subject sparked out interest for a detailed research, research that can bring an added value to the development of this issue in the public sector. The paper aims to analyze the degree of similarity and dissimilarity between the initial regulations regarding the issue of consolidated reporting in the public and private sector. In order to obtain information about the similarity or dissimilarity between IPSAS and IAS regarding to consolidation we used correlation and/or association coefficients. We conclude that there is a high similarity between the two sets of standards, thing that is not surprising, because it is known that IPSAS are based on IAS. Even if IPSAS are based on IAS, there still are differences which arouse from the specificity of each sector.

Keywords: *IPSAS, IAS, consolidated financial statements, correlation and/or association coefficients*

JEL codes: *M41, M48*

1. Introduction

The public sector has been lately affected by a series of reforms, reforms that had a great impact on the management system, accounting system, and hence the financial reporting system. It was mainly due to an increasing internationalization of capital markets based on the background of a rapid development of economic globalization (Nistor and Stefanescu, 2012). One of the most important reforms that affected public sector accounting system refers to the shift from a cash-based accounting to an accrual accounting. The introduction of accrual accounting in public sector entities actually represented a first step towards the convergence between the accounting system of the public and private sector, this practice being taken from the private sector. Harmonization scope allows making comparisons of international financial accounts easier, faster and cheaper (Carlson, 1997). However, the application of an accrual accounting has also led to the introduction and development of consolidated financial reporting in the public sector, reports that are currently produced by few countries.

At international level, there were developed by IPSASB (International Public Sector Accounting Standards Board) a series of 32 standards for public sector, IPSAS (International Public Sector Accounting Standards), out of which some of them are based on the standards developed for private sector (IAS/IFRS) (International Accounting Standards/International Financial Accounting Standards). One thing is certain, namely international accounting standards become an international accounting culture (Whittington, 2008).

Taking into account that there is a link between the two sets of standards (applicable in public and private sector), we intend to analyze the similarities and differences between them, especially between those for CFS (Consolidated financial statements). Although public and private sectors have different objectives, there was a desire of those in charge with the development of standards to have a single set of standards on CFS both for private and public sector. This kind of thing directed us to an analysis by which to observe the convergence level, the degree of similarity between the two sets of standards (IPSAS 6, 7, 8 vs IAS 27, 28, 31 without sustained changes in 2011). This analysis is actually the first phase, the first step of an extensive research project in which we intend to track and measure over time if these two sets of standards concerning the consolidated financial statements become closer or more distant.

For this purpose, the sequence of the paper involves the following approach:

- We briefly presented the research methodology;

- We briefly summarized a short international approach of the need for harmonization in the consolidated financial statements field;
- Based on international references of public and private sector, we selected those standards aimed at consolidated financial statements;
- We formulated the hypotheses;
- We conducted an empirical analysis;
- We provided our research findings and conclusions.

2. Research Methodology

The main objective of the article is to create an overall picture of the first regulations concerning CFS for public and private sector, goal that we tried to reach by comparing the first standards regarding the consolidated financial statements applicable to public sector entities and those applicable to private sector entities.

This article is based on an empirical research of harmony between the two sets of standards regarding the consolidated financial statements using correlation coefficients, to draw a well established conclusion regarding the comparability degree that exists between them. The research methodology of this paper includes both qualitative and quantitative research methods, which are based on computing the degree of similarity and dissimilarity between IPSAS and IAS.

Among the research methods used during our research we can distinguish the analysis of documents, the comparative method, the interpretative method, and last but not least the mathematical and statistical research methods, whose instruments, the correlation and/or association coefficients, will be described in a detailed way in the case study.

3. State of Art

The studies on the issue of harmonization and convergence of the public sector, namely the public sector consolidated financial statements are very limited in number. Among the researchers who have contributed to the development of literature on accounting harmonization and convergence in the public sector we can mention: Vela and Fuertes (2000), Ryan (2002), Brusca and Condor (2002), Luder and Jones (2003), Pina and Torres (2003, 1996), Benito et al. (2007), Pina et al. (2009), Tiron Tudor (2010), and among those who paid attention to the issue of public sector CFS we can mention: Grossi and Pepe (2008), Christiaens et al. (2008), Bergmann and Bietenhader (2008), Grossi (2009), Wise (2010), Walker (2009, 2011).

Therefore, we believe that there is a close link between harmonization, convergence and financial reporting, matter also supported by Clubb et al. (2005) who consider that the need for comparability of financial reporting determined the desire of international accounting harmonization to become a priority that can not be ignored.

The question that arises with the introduction and presentation of consolidated financial statements in the public sector is: What standards should be applied for the preparation of such reports? The opinions are divided, namely:

- there are opinions according to which the most beneficial would be browsing or using a single set of international standards, namely the IPSAS;
- there are opinions according to which it should be applied the same standards both in the public and private sectors.

Thus, below we intend to realize an empirical analysis through which to emphasize the degree of closeness between the two sets of standards, those which were applicable to the public sector in 2011 (IPSAS) and those which were applicable to the private sector in 2011, which represented the basis for issuing public sector standards (IAS).

4. Steps Followed for Measuring the Degree of Similarity/Dissimilarity between IPSAS and IAS Concerning Consolidated Financial Statements

The analyzed standards refer only to those applicable to the preparation and presentation of CFS both in the private and public sectors. So we can say that every comparison between two standards is a case in our database, and the underlying elements of these comparisons are: the scope of the standard, the terminology/definitions, presentation of consolidated financial statements, the scope of consolidated financial statements, consolidation procedures, separate financial statements, disclosure. These elements, in turn, are detailed in a series of sub-elements that are subject to comparison, and finally with the help of some coefficients we will determine the degree of similarity, or dissimilarity between these analyzed standards. The analysis of the degree of comparability was performed in two main ways, the first one being on the similarity or the degree of similarity between analyzed accounting systems and the second one to dissimilarity, or degree of dissimilitude of the analyzed regulations.

The starting point of the empirical analysis was to establish three hypotheses which were tested using the association/correlation coefficients.

H1: The degree of similarity between IPSAS 6 and IAS 27 is high.

H2: The degree of similarity between IPSAS 7 and IAS 28 is high.

H3: The degree of similarity between IPSAS 8 and IAS 31 is high.

The steps we undertook for measuring the comparability between the two sets of standards concerning CFS are presented below:

Step 1 – Identification of standards subject to comparison, as well as the indicators based on which the comparison is made

For the beginning, accounting standards concerning CFS applicable to both public sector entities and private sector entities have been identified. So, 6 standards have been identified out of which 3 IPSAS, namely: IPSAS 6, IPSAS 7, IPSAS 8 and 3 IAS: IAS 27, IAS 28, IAS 31. These six standards caused 3 cases of comparison, namely: IPSAS 6 vs IAS 27, IPSAS 7 vs IAS 28 and IPSAS 8 vs IAS 31. Also, for our empirical study we considered seven sets of comparable elements for each standard subject to the analysis, and which are subsequently detailed in sub-elements in order to achieve significant results. The elements on which we made the comparisons are: the scope of the standard, the terminology/definitions, the presentation of consolidated financial statements, the scope of consolidated financial statements, the consolidation procedures, the separate financial statements, the disclosure.

Step 2 - Assign values to each element subject to comparison

Based on the research criteria, namely sub-elements concerning consolidated financial statements, we have made a comparison between the two sets of standards. For this, we used a binary coding of the elements analyzed, using the values "1" and "0" to determine the degree of similarity, namely the difference between the two sets of regulations. Thus, for each of the sub-elements identified based on the comparative method, we assigned a value of 1, to those elements that are found and fit entirely, or are substantially similar, or the value 0 for those who are not in standard or are significantly different.

Table 1 The exemplification of the used method in the analysis of the elements

| Compared elements | Compared sub-elements | Compared standards | |
|--------------------------------|--|--------------------|--------|
| | | IPSAS 6 | IAS 27 |
| <i>Scope of the standard</i> | <i>(1) The standard's objective of preparation and presentation of consolidated financial statements</i> | 1 | 1 |
| | <i>(2) application for all public sector entities</i> | 1 | 0 |
| | <i>(3) applied in accounting for controlled entities, jointly controlled entities, and associates</i> | 1 | 1 |
| | <i>(4) Government Business Enterprises</i> | 1 | 0 |
| <i>Terminology/Definitions</i> | <i>(5) similarity of terms</i> | 1 | 1 |
| | <i>(6) Consolidated financial statements</i> | 1 | 1 |
| | <i>(7) Control</i> | 1 | 1 |
| | <i>(8) Controlled entity</i> | 1 | 1 |
| | <i>(9) Controlling entity</i> | 1 | 1 |
| | <i>(10) The cost method</i> | 1 | 0 |
| | <i>(11) Economic entity</i> | 1 | 1 |
| | <i>(12) Minority interest</i> | 1 | 1 |
| | <i>(13) Separate financial statements</i> | 1 | 1 |

Source: Own projection

Step 3 – The computation of Jaccards', Rogers and Tanimoto, Lance and Williams Coefficients

In order to develop and complete the empirical analysis we used a series of association and/or correlation coefficients. However, to achieve the proposed comparison degree regarding the degree of formal harmonization of the two sets of regulations, we resorted to using Jaccard coefficients, belonging to studies realized by Fontes et al. (2005) and Strouhal et al. (2008) and which will also show their applicability at the level of our research. In addition to the computation of Jaccards' coefficients, we considered it is necessary to calculate other association coefficients that can bring added value to the study and can support the results on the degree of similarity/diversity between the two sets of standards, namely Rogers and Tanimoto coefficients and Lance and Williams coefficients.

Thus, by translating these coefficients in the field of accounting, namely in the consolidated financial statements, in order to determine similarity, respectively dissimilarity between two or more accounting systems (for our analysis: IPSAS and IAS), the calculation formula for the Jaccards' Coefficients is:

$$S_{ij} = a / (a + b + c) \quad (1)$$

and

$$D_{ij} = (b + c) / (a + b + c) \quad (2)$$

And the calculation formulas for Rogers and Tanimoto coefficient, respectively Lance and Williams coefficient are:

$$RT = (a + d) / (a + 2 * b + 2 * c + d) \quad (3)$$

and

$$LW = (b + c) / (2 * a + b + c) \quad (4)$$

where:

- Sij – represents the degree of similarity between the two sets of analyzed accounting regulations
- Dij – represents the degree of diversity between the two sets of analyzed accounting regulations
- RT - Rogers and Tanimoto coefficient
- LW - Lance and Williams coefficient
- a – represents the number of elements which take the 1 value for both sets of regulations
- b – represents the number of elements which take the 1 value within the “j” set of regulations and the 0 value for the “i” set of regulations
- c – represents the number of elements which take the 1 value within the “i” set of regulations and the 0 value for the “j” set of regulations
- d – represents the number of elements which take the 0 value for both sets of regulations.

Table 2 Exemplification of the comparison analysis between IPSAS 6 and IAS 27 based on Jaccard, Rogers and Tanimoto, Lance and Williams coefficients

| Compared elements | Jaccards' Coefficients | | Rogers and Tanimoto Coefficient | Lance and Williams Coefficient |
|--|------------------------|-------|---------------------------------|--------------------------------|
| | Sij | Dij | | |
| <i>Scope of the standard</i> | 0.500 | 0.500 | 0.333 | 0.333 |
| <i>Terminology/Definitions</i> | 0.889 | 0.111 | 0.800 | 0.059 |
| <i>Presentation of consolidated financial statements</i> | 1.000 | 0.000 | 1.000 | 0.000 |
| <i>Scope of consolidated financial statements</i> | 0.200 | 0.800 | 0.111 | 0.667 |
| <i>Consolidation procedures</i> | 0.800 | 0.200 | 0.667 | 0.111 |
| <i>Separate financial statements</i> | 0.333 | 0.667 | 0.200 | 0.500 |
| <i>Disclosure</i> | 0.600 | 0.400 | 0.429 | 0.250 |

Source: Own projection

Table 3 The degree of comparison between standards based on Jaccard, Rogers and Tanimoto, Lance and Williams coefficients

| Compared cases | Jaccards' Coefficients | | Rogers and Tanimoto Coefficient | Lance and Williams Coefficient |
|--------------------------|------------------------|-------|---------------------------------|--------------------------------|
| | Sij | Dij | | |
| IPSAS 6 vs IAS 27 | 0.617 | 0.383 | 0.506 | 0.274 |
| IPSAS 7 vs IAS 28 | 0.817 | 0.183 | 0.762 | 0.127 |
| IPSAS 8 vs IAS 31 | 0.780 | 0.220 | 0.686 | 0.143 |

Source: Own projection

5. Results and Conclusions

As it can be seen from the above tables, the degree of similarity between the two sets of standards related to CFS is very high for all 3 cases subject to comparison. The main reason can be considered as the legislators desire to create a single set of standards that are applied to all existing entities, whether private or public sector. Also, another reason behind the fact that these standards are substantially similar is that IPSAS were issued based on IAS, the latter being almost copied in the public sector regulations.

As mentioned above, the study formulates three hypotheses, which will be discussed through empirical results, approaching in the same time the two quantified issues: the degree of similarity, namely the degree of dissimilitude.

Regarding the first hypothesis, it is noted that the value of Jaccard similarity coefficient calculated between IPSAS 6 and IAS 27 is high, recording the value of 0.617. Also, the value of Rogers and Tanimoto similarity coefficient is quite high, namely 0.506, which seeks to help the results obtained using Jaccard similarity coefficient. Also in the support of the result according to which these two standards are similar come the values of the Jaccard dissimilarity coefficient and Lance and Williams coefficient, namely 0.383, respectively 0.274, values which indicate little difference between the two analyzed referentials. Thus it can be seen that there is a significant similarity between the two accounting referentials. So we can say that hypothesis 1 is verified.

Regarding the second hypothesis, it is noted that the value of Jaccard similarity coefficient calculated between IPSAS 7 and IAS 28 is high, recording the value of 0.817. Also, the value of Rogers and Tanimoto similarity coefficient is quite high, namely 0.762, which seeks to help the results obtained using Jaccard similarity coefficient.

Also in the support of the result according to which these two standards are similar come the values of the Jaccard dissimilarity coefficient and Lance and Williams coefficient, namely 0.183, respectively 0.127, values which indicate little difference between the two analyzed referentials. The values obtained for the degree of similarity in this case of comparison are higher than for the previous case, which shows that the similarity between IPSAS 7 and IAS 28 is greater than between IPSAS 6 and IAS 27. Thus it can be seen that there is a significant similarity between the two accounting referentials. So we can say that hypothesis 2 is verified.

Regarding the third hypothesis, it can be noticed that the value of Jaccard similarity coefficient calculated between IPSAS 8 and IAS 31 is high, recording the value of 0.780. Also, the value of Rogers and Tanimoto similarity coefficient is quite high, namely 0.686, which seeks to help the results obtained using Jaccard similarity coefficient. Also in the support of the result according to which these two standards are similar come the values of the Jaccard dissimilarity coefficient and Lance and Williams coefficient, namely 0.220, respectively 0.143, values which indicate little difference between the two analyzed referentials. Thus it can be seen that there is a significant similarity between the two accounting referentials. So we can say that hypothesis 3 is verified.

After calculating the above-described coefficients for each of the three cases compared, we concluded that international regulations for the public sector on CFS were closer to the International Accounting Standards on CFS.

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