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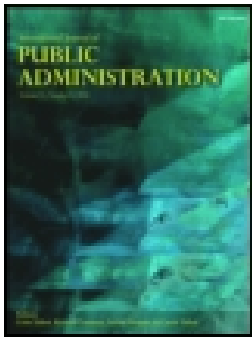
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Governmental Accounting Maturity Toward IPSASs and the Approximation to National Accounts in the European Union

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ABSTRACT

International Public Sector Accounting Standards (IPSASs) are a good reference for a harmonized microaccounting system allowing more transparency and quality in public sector accounting across EU member-States. However, questions remain concerning IPSASs contribution to the convergence between Governmental Accounting (GA) and the National Accounts (NA). This article assess how the proximity to an IPSAS-based accounting system in GA has impact on the diversity and materiality of GA-NA budgetary deficit/surplus adjustments, hence analyzing whether IPSASs might contribute to GA-NA reconciliation. Main findings show that IPSASs do not make considerable difference in terms of GA-NA adjustments, so IPSASs-based EPSASs will hardly contribute to approaching GA-NA.

KEYWORDS

Adjustments; central government; deficit/surplus; governmental accounting; national accounts

Introduction

While reporting to EUROSTAT within the scope of the Excessive Deficit Procedure (EDP), European Union (EU) member-States follow National Accounts (NA) rules (European System of National and Regional Accounts—ESA) under an accrual-oriented system. Yet, this reporting system uses data from Governmental Accounting (GA), namely from budgetary reporting, prepared according to each country's national standards, hence implying several adjustments while translating data from GA into NA. These adjustments range from the public sector scope to accounting basis adjustments, given that in some countries GA budgetary balance (deficit/surplus) is already accrual-based while in others it is still cash-based.

Materiality as well as diversity of those adjustments raises questions about the reliability and comparability of the final deficit/surplus reported by EU member-States within EDP requirements, therefore casting doubts about NA data accuracy and reliability to assess the Maastricht Treaty convergence criteria (Jesus & Jorge, 2015, 2016; Jorge, Jesus, & Laureano, 2014).

The European Commission has recently expressed its support to the implementation of public sector accounting standards across EU member-States, providing the information needed to compile ESA-based data for all subsectors of the general government. ESA-based Government Finance Statistics (GFS) need to be of high quality, since they are the base for budgetary surveillance. “The implementation of uniform and comparable accruals-based accounting practices for all the sectors of General Government, . . . , can help ensure high quality statistics” (EUROSTAT, 2012, p. 2). EU Council Directive 2011/85/EU (November 8) has started an assessment process regarding International Public Sector Accounting Standards (IPSASs) adoption across member-States.

This assessment finished with the report, in March 2013, on the suitability of IPSASs for the member-States (European Commission, 2013b), putting as an overall statement that, “. . .IPSAS cannot easily be implemented in EU member-States as it stands currently. On the other hand, the IPSAS standards represent an indisputable reference for potential EU harmonized public sector accounts” (p. 8). An additional statement is that “. . . most stakeholders agree that IPSAS would be suitable as a reference framework for the future development of a

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set of European Public Sector Accounting Standards, referred to ... as ‘EPSAS’” (p. 8).

IPSASs are accrual-based standards, applied to general-purpose financial statements of governmental entities, believed to lead to high-quality and timely accrual-based financial reporting (IPSASB, 2014a; 2014b). The adoption of IPSASs by governments worldwide has been presented as crucial to facilitate the comparability of governmental financial information, and assist in internal management decisions in resource allocation (planning and budgeting), monitoring, and accountability, hence improving the quality of financial information reported by public entities (IFAC, 2011). Nevertheless, IPSASs apply neither to budgets nor to budgetary reporting.

All in all, questions may be raised on whether IPSASs adoption can really improve the reliability of EU governments’ financial statistics, namely by reducing the diversity and materiality of GA-NA adjustments to calculate the deficit. Furthermore, one may ask whether those improvements are more significant in countries already using some form of accrual-based GA system, even if combined with cash or modified cash in the budget and budgetary reporting.

This article addresses those issues, mainly by assessing how the proximity to an IPSAS-based accounting and reporting system in GA impacts the diversity and materiality of GA-NA budgetary balances (deficit/surplus) adjustments.

The main question to be addressed is:

While moving towards IPSASs, which are the changes in terms of diversity and materiality of GA-NA budgetary balances adjustments, considered as a whole as well as taking into account different adjustments categories?

The study has embraced the 28 EU member-States, gathering data from October 2014 EDP notification to EUROSTAT, referred to 2013 and focusing on Central Government. Regarding the proximity to IPSASs, the scores presented in the PwC 2013 study have been used. These refer to the accounting maturity level that “...reflects the estimated current degree of compliance of the government’s accounting rules with an IPSAS-based benchmark (PwC, 2014, p. 32).

Although IPSASs adoption and their role in reforming governmental financial reporting have been studied by several authors (e.g. Brusca, Montesinos, & Chow, 2013; Caruana & Jones, 2013;

Christiaens, Reyniers, & Rollé, 2010; Christiaens & Vanhee, 2012; Rainero, Secinaro, & Indelicato, 2013), this exploratory article represents an original contribution toward understanding what IPSASs might add to the alignment between GA and NA systems, and therefore to improve (or not) the reliability of GFS, especially within the EU context.

As a first study to empirically analyze, using quantitative methods, the relationship between IPSASs closeness and GA-NA adjustments, it allows for corroborating or refuting the assertion that IPSASs contribute to the reconciliation between GA and NA, and hence to the improvement of GFS quality. Therefore, we expect to contribute to the debate regarding IPSASs adoption.

The article henceforth is organized in three main sections. Section 1 addresses GA, NA, and the relationship between the two systems. Section 2 focuses on IPSASs and its role in reforming GA and reporting in the EU. In Section 3, while developing the empirical study, the role of IPSASs in approaching GA and NA is assessed: first describing the methodology and then presenting and discussing the main findings. The article concludes summarizing some final remarks.

Governmental accounting and national accounts

Governmental accounting

The adoption of the accrual basis stands out as the most important common feature in GA reform processes under the New Public Management (NPM) context (Benito, Brusca, & Montesinos, 2007; Brusca & Condor, 2002; Lüder & Jones, 2003; Vela Bargues, 1996).

Groot and Budding (2008) also highlight that one of the most relevant characteristic of the NPM was replacing traditional cash-based by accrual-based accounting, for purposes of financial reporting, in order to achieve better transparency and accountability. However, they underline, as Paulsson (2006) does, that, within GA systems, accrual accounting is mostly used for assessing performance and control of governmental entities and less adopted for budgetary decisions and policymaking.

Accrual accounting has been introduced to generally improve the financial information system of public sector entities (Christiaens et al., 2010).

One important discussion that emerges from the recent GA reforms is the need to introduce the

accrual basis in the budgetary accounting systems, since many international studies have shown that most countries that have adopted accrual-based GA have not introduced it in the budgetary systems, namely in the budget preparation as well as in the budget execution reporting (Barton, 2007; Lüder & Jones, 2003; Martí, 2006; Montesinos & Brusca, 2009; Sterck, 2007).

Regardless of the GA reforms common trends, the lack of harmonization is yet a problem, inasmuch as large diversity still exists across countries. Particularly across EU member-States, accrual basis is applied differently: some countries have already budgetary accrual-based accounting (e.g. Austria, France, United Kingdom), while others continue with cash basis; moreover, within each country, accruals in financial accounting are not applied at all levels of government (e.g. Germany) (European Commission, 2013a).

This problem of lack of harmonization while adopting accruals in GA has been acknowledged by the EU Parliament as well as by the International Federation of Accountants (IFAC) who, in the context of the current financial crisis, have issued some documents¹ with strong recommendations for EU member-States to adopt accrual accounting, namely IPSASs, in a comprehensive and consistent way, covering all subsectors of the General Government Sector (GGS). This point of view is a direct consequence of the lack of transparency and accountability in the public sector accounts, which has increased the risk for both capital markets and global financial instability.

The recent EU Commission Report concerning the suitability of IPSASs for the member-States evidences a great diversity of GA practices between countries and also across different levels of government within each country (European Commission, 2013a, 2013b). The study carried out embracing all EU member-States shows that most countries apply public sector accounting practices near accruals or modified accruals, but, in many cases, in parallel with cash accounting systems in different levels of the government. However, budgeting is cash-based in the majority of member-States.

More recently, through interviews carried out in a sample of selected EU member-States, a study developed by PwC concluded that the countries analyzed present a large diversity concerning accounting maturity, considered as an effort-based score regarding a future IPSASs implementation (PwC, 2014).

National accounts

NA constitute a harmonized system, aiming to calculate key aggregate indicators (e.g. Gross Domestic Product (GDP), volume growth, national income, disposal income, savings, and consumption) so that the whole national economy might be evaluated, including comparisons with other countries' aggregates (Bos, 2008; Vanoli, 2005). It calculates and reports governments' financial statistics.

Concerning EU countries, European Council Regulation n.2223/96 (and subsequent amendments²) obliges all member-States to adopt the ESA in preparing their NA. Additionally, according to ESA95, one of the specific purposes of this system is to control the European monetary policy, namely national aggregates as GDP, deficit, and debt.

In September 2014, ESA95 was replaced by ESA2010.³ "ESA2010 is the newest internationally compatible EU accounting framework for a systematic and detailed description of an economy. ... [It] differs in scope as well as in concepts from its predecessor ESA95 reflecting developments in measuring modern economies, advances in methodological research and the needs of users. The structure of the ESA2010 is consistent with the worldwide guidelines on national accounting set out in the System of National Accounts 2008"⁴

ESA is therefore the harmonized conceptual framework for EU member-States' NA in order to derive accurate values for the ratios established in the EU Treaty and required by the Protocol on the EDP for assessing and monitoring the budgetary discipline of EU member-States under the European Monetary Union (Benito & Bastida, 2009; Lüder, 2000).

Martí (2006) highlights that the Systems of National Accounts (SNA), as the Government Finance Statistics Manual (GFSM) and the ESA, compile aggregated data in order to evaluate national income and net worth for the whole economy, divided into institutional sectors, the GGS being one of these. Consequently, NA records the transactions between national institutional sectors (nonfinancial corporations, financial corporations, General Government, households, and nonprofit institutions serving households) for the purposes of fiscal policy at a macro level (Cordes, 1996; Jones, 2003; Jones & Lüder, 1996; Lüder, 2000).

NA systems work over an economics and statistical-based conceptual framework and apply to economic activities taking place within an economy and also between it and the rest of the world (IPSASB, 2012). They forecast and describe macro aggregates for a nation as a whole and the interaction between the

different economic agents (IPSASB, 2012; Vanoli, 2005).

As the recent report from the European Commission underlines (European Commission, 2013b), EU governments report two kinds of information: GFS (NA) for fiscal policy purposes (including statistics for the EDP) and financial and budgetary reports for accountability and decision-making purposes relating to individual entities or groups of entities (GA). The relationship between the systems providing these two types of reporting is important, concerning both transparency (explaining to users the differences between the data in the respective reporting) and efficiency (GA budgetary systems are generally the main source of data for compiling GFS—NA).

Relationship between governmental accounting and national accounts

One question that raises important concerns is knowing whether the current GA systems in the EU countries, especially budgetary accounting and reporting systems, are able to meet ESA requirements, namely in what relates to the data provided by the GGS.⁵

Therefore, in the relationship between GA and NA, the main problem concerns GGS data to NA, since they are obtained from GA budgetary information, which diversity and divergences to macro accounting systems may question the relevance, reliability and comparability of the aggregates that sustain financial decisions of the EU member-States (Benito & Bastida, 2009; Lüder, 2000).

Consequently, the study of the relationship between the two systems is very relevant for several reasons, namely (Cordes, 1996; Jones & Lüder, 1996; Keuning & Tongeren, 2004; Lüder, 2000; Montesinos & Vela, 2000): search for a possible reconciliation, given that the aggregates of NA relating to the governmental sector are based on GA budgetary reports; the adoption of full accrual basis for the majority of transactions is compulsory for all EU member-States for preparing NA, while for GA it is still an option; and budgetary reporting is cash-based for most countries.

Keuning and Tongeren (2004) explain that accounting basis differences imply making adjustments and corrections based on estimations of GA data to determine the macroeconomic ratios, like the weight of deficit and debt on GDP, which have consequences on their reliability and comparability. The authors underline that this situation requires the adoption of accrual basis under GA and also a standardization of

procedures and practices between the two systems (GA and NA).

From the conceptual differences arises the need to make adjustments from GA data into NA. Within the EU each member-State discloses in the Inventory of Sources and Methods⁶ the main categories of adjustments they make when translating accounting information into NA. Those categories are related to: (i) cash/accrual adjustments for taxes, social contributions, primary expenditures, and interest; and (ii) reclassification of some transactions, namely capital injections in State-owned corporations, dividends paid to GGS entities, military equipment expenditures, and EU grants (Jesus & Jorge, 2015, 2016).

The adjustments' quantitative impact may be measured through the EDP Reporting Notifications⁷ each country is obliged to report to EUROSTAT twice a year. These notifications provide data related to Central Government deficit/surplus from budgetary execution, designated as “working balance”, which represents the balance between all revenues and expenditures. They also specifically evidence the data adjustments to reach the final deficit/surplus—net deficit/surplus reported by EU member-States, explaining the transition from Central Government accounts deficit/surplus (GA) into Central Government final deficit/surplus (NA).

According to those notifications, and considering the basis used in GA budgetary systems, the working balance is cash-based in some countries while in other countries it is already reported as accrual-based. Reading the Inventories, one can additionally notice that some countries display mixed accounting basis, meaning they use cash to some transactions and accruals to others.

Table 1 demonstrates the relationship between the adjustments categories displayed in EDP Notifications and the conceptual differences categories above discussed.

IPSASs and the modernization of governmental accounting and reporting systems in the EU context

Despite the GA reforms common trends, namely moving from cash into accrual basis, as mentioned before, there is still a problem of poor harmonization, especially among the EU countries. Budgetary accrual accounting is already implemented by countries as the United Kingdom, France or Austria, but several other countries go on using cash basis. Moreover, as stated previously, within each country, accrual accounting is not adopted at all levels of government, as in the German case (European Commission, 2013a).

Table 1. Adjustments Categories and Conceptual Differences between GA and NA.

Adjustments categories	Conceptual differences
(A) Financial transactions included in the "working balance"	Recognition criteria differences
(B) Nonfinancial transactions not included in the "working balance"	Not related
(C) Accounting basis adjustments C.1 Differences between interest paid and interest accrued C.2 Other accounts receivable C.3 Other accounts payable	Recognition criteria differences
(D) Balance (net borrowing or net lending) of other CG entities ⁸ D.1 "Working balance" (\pm) of entities not part of Central Government D.2 Net borrowing (+) or lending (-) of other Central Government bodies	Definition and scope of reporting entity under GA and NA Preparation and disclosure of consolidated financial statements
(E) Other adjustments	Relationship between government and government business enterprises and other reclassifications of specific transactions

Source: Jorge et al. (2014) and Jesus and Jorge (2015a).

Table 2. GA Systems and IPSASs.

IPSASs relation	Countries	Percentage
National standards based on or orientated by IPSASs	9	33%
Some IPSASs references	5	19%
IPSASs for some Local Government entities	1	4%
None	12	44%
Grand Total	27	100%

Source: European Commission (2013a, 2013b).

Acknowledging the problem of lack of harmonization, both the EU Parliament and the IFAC issued some documents, already referred to in previous sections, strongly recommending the adoption of the accrual basis in GA, namely the IPSASs, across the EU member-States. Those recommendations consider that applying accrual accounting is a significant step to improve transparency and accountability in the public sector reporting, reducing risks for capital markets and contributing to the global financial stability.

The recent financial crisis context seems to have additionally raised the discussion about the need for alignment between NA and GA, which is particularly relevant when a government does not accomplish with the deficit and debt levels under the EU fiscal surveillance requirements, questioning the quality of those ratios reported based on NA data. The crisis has enhanced the relevance of controlling deficit and debt, particularly in the EU countries, whose budgetary stability is now critical (Ball, 2012; Bergman, 2010).

Consequently, currently an important debate is rising in the EU about the adoption or adaption of IPSASs by EU member-States in order to obtain high-quality

governmental financial reporting by governments given that macroeconomic accounting information (NA), whose reporting outputs are used to control and assess the Maastricht criteria, is derived from microeconomic accounting information (GA). Thus, good-quality reporting systems for accounting at the micro level, apart from being fundamental to a sound governmental financial management, are demanded to assure debt and deficit data at the accruals-based macro-accounting level (Brusca et al., 2013).

This debate also requests a harmonized accounting system to obtain more transparency and quality in GA across the EU member-States so that macroeconomic aggregates reported by these countries may be comparable and accurate. The question is whether the IPSASs approach, covering (micro) accounting and financial reporting systems, is the most suitable to avoid problems of deficit and debt reporting, given that information to NA is gathered from the micro budgetary accounting systems, mainly cash-based, requiring for adjustments as explained before. Therefore, problems regarding the comparability and accuracy of outputs within NA reporting are likely to remain.

Recently, a Consultation Paper was prepared (IPSASB, 2012), in order to achieve convergence between the statistics reporting systems and IPSASs. This document classifies topics causing differences between the two reporting systems as: some are resolved if countries adopt updated IPSASs (e.g. GGS reporting is solved by IPSAS 22); others are considered opportunities to reduce the differences (e.g. reporting entity definition, inventories measurement, financial statements presentation, including classification and aggregates, measurement of assets, liabilities, and net assets/equity); and a few are treated as differences that will remain anyhow and therefore need to be managed between the two systems (e.g. recognition criteria, measurement of assets/liabilities, particularly market value *versus* historical cost).

Regarding the latter, developments have been carried out by IPSASB (2012) in order to reduce those type of differences, considering three key approaches: (1) restricting IPSASs accounting policies options (IPSASB notes that where IPSASs offer options to preparers, one option may be aligned or close to the GFS approach); (2) designing a chart of accounts (IPSASB proposes guidance on the development of an integrated chart of accounts, where the several types of differences should be highlighted so that accountants may choose the most suitable option to an alignment purpose); and (3) providing additional data (IPSASB acknowledges that some additional information may need to be prepared for NA compilers).

The IPSASB support for convergence between IPSASs and GFS was underlined in a policy paper of February 2014 (IPSASB, 2014a), where this concern is clearly stated as central to its work plan.

The European Commission started in 2012 a program concerning the suitability of IPSASs for the GA of member-States,⁹ carrying out a study to assess the harmonization degree in what GA is concerned, embracing all levels of government (European Commission, 2013a, 2013b). This study shows that most countries apply public sector accounting practices near accruals or modified accruals, but, in many cases, in parallel with cash accounting systems in different levels of government. However, budgeting and budgetary reporting are cash-based in the majority of member-States.

The study evidences, regarding a possible harmonization of national GA systems toward a IPSASs approach, that diversity is still very large, as displayed in Table 2.

The EU Commission's study also concluded that there is great heterogeneity regarding accounting practices applied transversely over all member-States; it also demonstrated that in EU countries Local Government generally presents accounting practices nearer IPSASs than Central Government.

According to Brusca et al. (2013), EPSASs would be the suitable accounting standards to a European harmonized accrual-based governmental accounting, avoiding some problems that IPSASs present to an acceptable implementation in practice in the EU countries, despite being based on the key IPSASs principles.

The European Commission (2013a) proposes that the EPSASs standard-setting body could classify the current 32 accrual-based IPSASs into three categories:

- Standards that might be implemented with minor or no adaptation;
- Standards that need adaptation, or for which a selective approach would be needed; and
- Standards that are seen as needing to be amended for implementation.

As Brusca et al. (2013) underline, the EU Commission proposal assumes that ESA preserves independency from the national GA standards of the member-States and even from the forthcoming EPSASs. Indeed, in the proposal nothing is mentioned regarding the harmonization between micro and macro accounting (European Commission, 2013a), data for the latter being obtained from the GA budgetary reporting systems and not from the financial reporting system that EPSASs represent and address.

The most recent study regarding IPSASs' proximity in the EU was carried out by PwC (2014), while

assessing the suitability of the IPSASs for developing EPSASs. The study concludes that the majority of governments already use IPSASs as a source of inspiration for developing their own accounting rules. Considering that EU member-States already take IPSASs as a natural benchmark for their public sector accounting, the study presents, for each government level (central, state where applicable, local, and social security fund), a score—designated as “*Accounting Maturity*” and expressed on a maximum total of 100 points—intending to reflect, for each country analyzed, its degree of maturity with the future EPSASs standards, considering IPSASs as a base for comparison (PwC, 2014).¹⁰

This study was carried out between October 2013 and June 2014, using primarily questionnaires and interviews to officials of a sample of eight EU member-States (Austria, Estonia, France, Germany, Lithuania, The Netherlands, Sweden, and the United Kingdom), and one non-EU country: Switzerland. The member-States included in the study sample covered over 60% of the total expenditure of the EU-28 GGS (PwC, 2014). The interviews were engaged to the sample countries that received the visit of the PwC core team and EUROSTAT officials between December 2013 and March 2014, to obtain information on the current state of accounting practices in the EU. The study research design also developed questionnaires to all member-States in order to obtain a depth perception of the present accounting practices among all levels of governments. A basic assumption was that countries already practicing accrual accounting should get a high accounting maturity score, based on the following key issues: reporting, consolidation, fixed tangible assets, intangible assets, inventories, revenue, accruals and expenses, employee benefits, provisions, and financial instruments. The study links these issues to the requirements of IPSASs as issued up to date. Regarding central government, amongst the countries in the sample, the Accounting Maturity index ranged from 12% in Greece to 96% in The United Kingdom, and thus great heterogeneity continues to exist.

The role of IPSASs in approaching GA and NA

This section presents the empirical study, assessing the role of IPSASs in approaching GA and NA. In particular, the analysis evaluates the relationship between the public sector accounting maturity level (having IPSASs as benchmark) and GA-NA adjustments materiality and diversity in the EU member-States.

Methodology

Research design and sample

This research assumes a clearly exploratory character, as it is the first attempt to quantitatively explain how the proximity to IPSASs in GA (micro) systems (considering an Accounting Maturity Index) might affect the alignment between these and NA (macro) systems. An inductive approach is followed to explain the relationship between the accounting maturity and the magnitude and diversity of GA-NA adjustments. Additionally, it is a positivist research since it seeks to describe certain phenomena, while keeping the independency of the researchers; it applies quantitative tools, adapting to social sciences methods used in exact sciences (Davila & Oyon, 2008; Moreira, 2009).

The sample consists of all 28 EU member-States as of December 31, 2013, focusing on Central Government. Data were gathered from EDP reporting notifications¹¹, covering the year 2013.

Table 3 displays descriptive information regarding budgetary balances for the year 2013 (reported for the first time according to ESA2010). Both in GA and in NA, budgetary balances tend to be clearly negative. Only five countries (Cyprus, Denmark, Estonia, Latvia, and Luxemburg) report a positive balance in GA and none of the EU countries report a positive balance in NA (i.e. all finally report deficits to EUROSTAT). GA balance is, on average, of -14,799.6 million euro, although revealing a high dispersion around this value (standard deviation (SD) = 27,625.8 million euro). The median value of this balance is much higher (less negative) than the mean value (Med = -4,272 million euro). Regarding the NA balance, mean and median values are very close to the ones of GA balance, also evidencing a very high dispersion (SD = 25,487.1 million Euro).

As to difference magnitude (GA-NA), i.e. the total amount of adjustments, a mean value of 584 million euro might be observed, while positively impacting in the final NA balance. Nevertheless, 53.6% of the countries report a negative amount of adjustments, meaning that the adjustments have a negative impact in those countries' GA budgetary balances, leading them to report a lower NA final balance (i.e. higher deficit). Moreover, the United Kingdom is the only country

Table 4. Pearson Correlations among Budgetary Balances for 2013.

	GA – Working balance	NA – EDP B9 of Central Government	Difference magnitude
GA Working balance	1	0.948***	-0.393*
NA - EDP B9 of Central Government		1	-0.080
Difference magnitude			1

***significant at the 0.001 level; **significant at the 0.01 level; *significant at the 0.05 level.

that does not report adjustments, meaning that GA and NA balances are reported as equal.

The analysis of the correlation between the two budgetary balances—GA working balance and NA final deficit—(Table 4) revealed, as expected, a strong and direct relation (Pearson = 0.948). As to the correlation between the difference magnitude and the two balances, only the correlation with GA balance is significant (Pearson = -0.393), meaning that when the GA balance increases the difference magnitude tends to slightly decrease. This implies that, as countries tend to have higher balances in GA (micro), the amount of adjustments they make from GA into NA final balance tends to reduce.

Variables

In this study, to measure the proximity of the GA and NA balances, two variables are used, namely adjustments materiality and adjustments diversity:

$$\text{Materiality}_i =$$

$$\bullet \left| \frac{\text{GA budgetary balance}_i - \text{NA balance}_i}{\text{GA budgetary balance}_i} \right| \times 100$$

Materiality is always a positive number that represents the weight of the difference, i.e. the algebraic sum of the adjustments on GA budgetary balance, expressed in %.

- *Diversity_i is the total number of adjustments from Central Government “working balance” in GA into Central Government deficit/surplus in NA*

Diversity in theory ranges from 0 (no adjustments made) to 7 (all types of adjustments made). The seven adjustments categories are (as identified in Table 1):

Table 3. Budgetary Balances for 2013.

Budgetary balances	Mean	SD	Minimum	P25	Median	P75	Maximum
GA – Working balance	-14,799.6	27,625.8	-111,750.2	-12,066.0	-4,272.0	-403.5	843.0
NA – EDP B9 of Central Government	-14,215.7	25,487.1	-111,750.2	-9,790.5	-4,687.0	-1,367.5	-17.0
Difference magnitude	584.0	8,807.8	-20,924.0	-1,803.5	-35.2	1,441.5	32,122.0
Total obs: 28 EU countries							

×10⁶ Euro

- A. Financial transactions included in the working balance
- B. Nonfinancial transactions not included in the working balance
- C. Accounting basis adjustments
- C1 Differences between interest paid and interests accrued
- C2 Other accounts receivable
- C3 Other accounts payable
- D. Net borrowing (+) or lending (-) of other Central Government bodies¹²
- E. Other adjustments

Moreover, “partial” materiality and diversity were also defined, considering only the categories of adjustments conceptually related to accounting issues, hence eventually more affected by the IPSASs adoption. Those categories are A, C1, C2, and C3.

To measure the accounting maturity (approximation to IPSASs), we have selected the *Accounting Maturity Score*, defined and calculated in the PwC study. We considered only central government scores, interpreted in percentage terms.

We use this study instead of the European Commission one, mentioned in the previous sections, because it is more updated, focusing on the EU member-States reforms in the public sector and their closeness to IPSASs. Moreover, it was carried out under a more robust research design, than reaching to assess the potential impact of implementing accrual accounting in the public sector and about the suitability of individual IPSASs (PwC, 2014).

According to the report of the study (Chapter 3—methodology), the score is based on issues comprised within 10 key accounting areas covered by IPSASs, as in Table 5.

The *Accounting Maturity Score* represents the effort a country needs to move from a cash-based accounting into an IPSAS-based accounting. It indicates the country’s “starting point in respect of a future EPSAS

reform” (PwC, 2014, p. 33). It considers that 77% of the estimated efforts that countries shall do to achieve full compliance with the IPSASs requirements are centered in the accounting areas related to fixed assets, accruals and expenses, revenue, and reporting.

After obtaining the *Accounting Maturity Score* for each country’s central government (PwC, 2014, Table 4, p. 36), the 28 countries were clustered using an agglomerative hierarchical technique, into three homogeneous groups.¹³ Table 6 presents the countries belonging to each group and the descriptive statistics of the *Accounting Maturity Score* for each group. The differences among the three groups are clear, corresponding to three levels of maturity: low maturity ($M = 23.1\%$, eight countries); average maturity ($M = 67.5\%$, 16 countries); and high maturity ($M = 91.3\%$, four countries).

Additionally, Table 7 shows a weak and nonsignificant association between accounting maturity (the groups—low, average, and high) and the accounting basis (cash, accrual, or mixed) adopted by the countries in their reporting (Cramer’s $V = 0.265$; $p = 0.413$). Indeed, among the countries that have low maturity any of them adopts the accrual basis in central government (62.5% adopt cash basis and the remaining a mixed basis). When the accounting maturity is average or high those countries tend to adopt cash (68.8% in the first situation and 75% in the second one). Moreover, among the four countries with high accounting maturity score, only the United Kingdom reports GA balance on accrual basis.

Statistical analysis

The data analysis starts by a brief description of the GA-NA adjustments materiality and diversity (total and partial), followed by the Pearson correlation analysis between both and the accounting maturity (measured, as mentioned, by the *Accounting Maturity Score*).

Table 5. Accounting Maturity Score.

Accounting area	IPSASs requirements	Central Government Scoring points
<i>Reporting</i>	IPSAS 1, IPSAS 2, IPSAS 3, IPSAS 18, IPSAS 20, IPSAS 22, IPSAS 24	12
<i>Consolidation</i>	IPSAS 6, IPSAS 7, IPSAS 8	7
<i>Fixed assets</i>	IPSAS 5, IPSAS 13, IPSAS 17, IPSAS 21, IPSAS 23, IPSAS 26, IPSAS 32	33
<i>Intangible assets</i>	IPSAS 31	2
<i>Inventories</i>	IPSAS 12	3
<i>Revenue</i>	IPSAS 9, IPSAS 23	14
<i>Accruals and expenses</i>	IPSAS 1	18
<i>Employee benefits</i>	IPSAS 25	5
<i>Provisions</i>	IPSAS 19	2
<i>Financial instruments</i>	IPSAS 28, IPSAS 29, IPSAS 30	4
Total		100

Source: Adapted from PwC (2014: 33).

Table 6. Accounting Maturity Score—Characterization of the Groups of Countries.

Country	Accounting Maturity Score (%)							
	Count	Mean	SD	Minimum	P25	Median	P75	Maximum
Croatia, Cyprus, Germany, Greece, Italy, Luxembourg, Malta, The Netherlands	8	23.1	8.2	12.0	16.5	22.0	31.0	34.0
Austria, Belgium, Bulgaria, Czech Republic, Denmark, Finland, Hungary, Ireland, Latvia, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden	16	67.5	7.9	54.0	62.5	68.5	73.0	81.0
France, Lithuania, the United Kingdom	4	91.3	3.6	88.0	88.5	90.5	94.0	96.0

Table 7. Accounting Basis by Accounting Maturity Level (Central Government).

		Accounting Maturity					
		Low		Average		High	
		Count	%	Count	%	Count	%
Accounting basis	Accrual	0	0.0	1	6.3	1	25.0
	Cash	5	62.5	11	68.8	3	75.0
	Mixed	3	37.5	4	25.0	0	0.0
	Total	8	100.0	16	100.0	4	100.0

To find out whether the accounting maturity contributes to reduce the differences between GA and NA balances and the diversity of the adjustments needed to reconcile both balances, descriptive statistics were used, namely comparing the mean values of materiality and diversity in the above-referred three levels of accounting maturity. Owing to the small sample (28 observations), one cannot rely much on the hypotheses tests, because the *p*-value is sensitive to the sample size, tending to make the mean or distribution differences and the correlation coefficients statistically nonsignificant. Nevertheless, the nonparametric *Kruskal-Wallis H* test was run to compare distributions of both diversity and materiality in three independent samples. Given the statistical nonsignificance, test results are not worthy to be reported.

Findings

Table 8 presents descriptive statistics concerning materiality and diversity of GA-NA budgetary balances differences (i.e. adjustments when moving from GA into NA deficit/surplus). As explained, while materiality is represented by the weight of GA-NA budgetary balances difference on GA balance, diversity is represented by the number of adjustments categories. Partial

materiality and diversity embrace only adjustments categories/subcategories somehow related to accounting matters.

Regarding materiality, the adjustments total is, on average, a little less than 100% of the GA balance, although highly dispersed (SD around 118%). Considering the median value, 50% of the countries show materiality values equal to or lower than 44.2%, while 25% of the countries demonstrate materiality values equal to or greater than 171.8%. Regarding diversity, the average number of adjustments tends to be very high with a low dispersion—the average and the median are, respectively, 6.7 and 7 categories/subcategories of adjustments (SD = 1.3), meaning that countries report, on average, adjustments in almost all categories/subcategories.

Restricting the analysis to only four categories of GA-NA budgetary balances adjustments (partial differences), materiality on average decreases (M = 74.4%; SD = 156.1%) but in median terms it is much lower (Med = 19.3%), while diversity maintains its very high value (M = 3.8; Med = 4) with very low dispersion (SD = 0.8). This means that 50% of the countries show adjustments partial materiality values equal to or lower than 19.3% of the GA balance. Otherwise 25% of the countries reveal partial materiality values equal to or greater than 45.3%.

Table 8. Materiality, Diversity, and Accounting Maturity Score.

	Mean	SD	Minimum	P25	Median	P75	Maximum
GA-NA total adjustments							
Materiality (weight of difference on GA - %)	96.2	117.8	0.0	11.4	44.2	171.8	384.6
Diversity (0 to 7)	6.7	1.3	0.0	7.0	7.0	7.0	7.0
GA-NA partial adjustments							
Materiality (partial weight of difference on GA - %)	74.4	156.1	0.0	8.7	19.3	45.3	776.9
Partial Diversity (0 to 4)	3.8	0.8	0.0	4.0	4.0	4.0	4.0
Proximity level to IPSAS							
Accounting Maturity Score (0 to 100%)	58.2	25.1	12.0	32.5	66.0	74.0	96.0

Total obs: 28 EU countries.

Table 9. Pearson Correlations between *Accounting Maturity Score* and Both *Materiality* and *Diversity*.

	Materiality	Diversity	Partial materiality	Partial diversity
Accounting Maturity Score	-0.169	-0.311	-0.248	-0.305

Total obs: 28 EU countries.

Also presented in Table 8 are the statistics for the *Accounting Maturity Score*. This score ranges from 12% (Greece) to 96% (the United Kingdom). The average is 58.2% (SD = 25.1%), meaning that if the objective is the full IPSASs (IPSASs-based EPSASs) adoption, then EU countries still have a long way to run in order to achieve this purpose. Consequently, it might be said that GA systems at the central government level in EU countries have a maturity level that, on average, is around 60%; hence, several issues included in the 10 accounting areas of the *Accounting Maturity Score* probably have not yet been considered in many countries. Indeed, in 2013, 24 of the EU countries had a maturity score not higher than 81% and eight member-States have a maximum score of 34% (see Table 6). Despite the weak negative (and not significant) correlations between both materiality and diversity and the *Accounting Maturity Score* (Table 9), the results show a feeble tendency to decrease diversity (Pearson = -0.311) and partial diversity (Pearson = -0.305) as the *Accounting Maturity Score* increases. This means that as GA systems maturity increases in EU countries approaching to IPSASs, there might be a slight tendency to reduce the number of GA-

NA adjustments categories/subcategories they perform. Regarding adjustments materiality, statically it is not possible to support any relationship with *Accounting Maturity*. As displayed in Table 10, the accounting maturity level (low, average, and high level) overall has no significant impact on the adjustments diversity, either total or partial. This means that regardless of the more or less proximity to IPSASs of their GA systems, EU countries in general continue performing several categories of adjustments in GA balances in order to get the final deficits in NA. However, considering the mean values, countries with a high level of accounting maturity reveal a slightly lower total (M = 5.3) and partial (M = 3.0) diversity of GA-NA adjustments than countries that have low or average levels. Yet, these findings derive from the fact that the United Kingdom, in the cluster of countries with high maturity in GA systems (see Table 6), does not report any adjustments.

Regarding adjustments materiality, the results in Table 11 show higher mean values for a country with either low level (M = 127.0%) or high level (M = 116.4%) of accounting maturity than for a country with average level (M = 75.7%). When the median values are compared, the findings are similar. In relation to partial materiality (focusing on accounting issues, hence eventually more affected by IPSASs proximity), countries with a low level of accounting maturity tend to have, on average, higher adjustments materiality (M = 144.0%; and also the highest value on median terms) than those countries with an average level (M = 38.0%; Med = 15.3%), but such also happen for countries with a high level of accounting maturity (M = 80.8%; Med = 17.3%). Therefore, one cannot say that countries with more mature GA systems (i.e. closer to IPSASs) have less material adjustments

Table 10. GA-NA Adjustments Diversity by Accounting Maturity Level.

	Diversity (0 to 7)			Partial diversity (0 to 4)		
	Accounting maturity			Accounting maturity		
	Low	Average	High	Low	Average	High
Mean	7.0	6.9	5.3	4.0	3.9	3.0
SD	0.0	0.3	3.5	0.0	0.3	2.0
Minimum	7.0	6.0	0.0	4.0	3.0	0.0
P25	7.0	7.0	3.5	4.0	4.0	2.0
Median	7.0	7.0	7.0	4.0	4.0	4.0
P75	7.0	7.0	7.0	4.0	4.0	4.0
Maximum	7.0	7.0	7.0	4.0	4.0	4.0

Total obs: 28 EU countries.

Table 11. GA-NA Adjustments Materiality by Accounting Maturity Level.

	Materiality			Partial materiality		
	Accounting maturity			Accounting maturity		
	Low	Average	High	Low	Average	High
Mean	126,96	75,73	116,36	144,01	37,95	80,83
SD	134,22	106,20	145,81	262,84	61,44	138,88
Minimum	9,87	5,09	0,00	10,09	0,37	0,00
P25	27,92	10,04	4,69	22,44	6,57	6,99
Median	63,30	26,50	77,10	35,26	15,31	17,28
P75	219,41	69,91	228,04	124,82	29,24	154,66
Maximum	384,56	354,67	311,26	776,94	225,00	288,74

Total obs: 28 EU countries.

when translating data from the GA balance into the NA final deficit.

Discussion and conclusions

This article addressed a research question about the changes in terms of diversity and materiality of GA-NA budgetary balances adjustments (considered either as a whole or focusing on adjustments categories relating to recognition criteria), when countries approach IPSASs in their GA systems. In other words, one have sought to discuss and empirically analyses whether EU countries with supposedly more mature GA systems have lower materiality and diversity of the adjustments required to be made when moving from GA into NA, having as basic assumption that proximity to IPSASs allows for better convergence between the micro and macro accounting and reporting systems.

This is especially relevant in a context where, particularly within the EU, IPSASs have been acknowledged as a good reference for the development of EPSASs, and hence claimed to contribute to more transparent and reliable GFS, thereby improving the convergence between GA and NA.

The empirical study used data from EDP reporting to EUROSTAT, referring to 2013 and Central Government, as well as an *Accounting Maturity Score* representing the degree of compliance with an IPSAS-based GA system, developed by PwC (2014) and applied to EU countries as well as to Switzerland, between October 2013 and June 2014.

The main findings show that high proximity to IPSASs in GA (i.e. high accounting maturity) tends to slightly decrease GA-NA adjustments diversity; however, there seems to be an outlier effect of the United Kingdom. Thus, one cannot say that GA systems' maturity affects the number of categories of adjustments EU countries in general continue performing in their GA balances in order to get the final deficits in NA.

As to GA-NA adjustments materiality, it seems to be higher in countries with low but also with high GA systems maturity levels. Subsequently, one cannot conclude that countries with GA systems closer to IPSASs have less material adjustments when translating data from GA into NA.

When restricting the analysis to only four (out of seven) GA-NA adjustments categories more related to accounting basis issues (financial transactions included in the working balance, differences between interest paid and interest accrued, other accounts receivable, and other accounts payable), the results are similar.

Considering that GA-NA adjustments diversity (total and partial) does not change significantly while GA systems become more mature (i.e. approaching IPSASs), and that GA-NA adjustments materiality (total and partial) is lower in countries where the GA system maturity is average, an overall conclusion is that one cannot say that the proximity to IPSASs contributes to the convergence between GA and NA.

Consequently, the basic assumption this article tried to question—proximity to IPSASs (high accounting maturity) allows for better convergence between the micro and macro accounting and reporting systems—cannot be corroborated.

Therefore, the idea that IPSASs-based EPSASs will allow for better convergence between GA systems and the GFS within the EU might be illusive, since such convergence seems to be only apparent.

Overall, the results in this article seem to point to the fact that IPSASs *per se* do not make considerable difference in terms of GA-NA adjustments diversity and materiality; hence, IPSASs-based EPSASs will probably hardly contribute to approaching GA into NA by reducing the adjustments to the minimum and improving GFS reliability.

In our understanding, this is due to the fact that the great majority of EU countries, even those with a high proximity level to IPSASs (according to the score that has been used), still have cash-based budgetary accounting, hence reporting a cash-based budgetary balance in GA (exceptions are the United Kingdom and Spain, although the latter uses cash-based budgeting but reports accrual working balance).

EU policymakers must be aware that IPSASs (hence IPSASs-based EPSASs) might eventually become relevant in reconciling GA and NA only and when they start addressing budgetary accounting and reporting, or when countries move to accrual-based budgets.

Notes

1. E.g. EU Council Directive 2011/85/EU, November 8, 2011, on requirements for budgetary frameworks of the member-States; and IFAC October 11, 2011, Recommendations for the G-20 Nations—Meeting of November 3–4, 2011.
2. Council Regulation n.448/98; Commission Regulation n.1500/2000; Parliament and Council Regulation n.2516/2000; Commission Regulation n.95/2001; Parliament and Council Regulation n.2258/2002; and Commission Regulation n.113/2002.
3. Regulation (EU) 549/2013 of the European Parliament and of the Council, of 21 May 2013—European System of National and Regional Accounts in the European Union. Published in the Official Journal of the European Union, L174, Vol.56, 26.06.2013.

4. http://epp.eurostat.ec.europa.eu/portal/page/portal/esa_2010/introduction.
5. This is Sector S.13—GGs, following the definition of institutional sectors in ESA.
6. EDP Consolidated Inventory of Sources and Methods—available to all EU member-States at <http://ec.europa.eu/Eurostat>.
7. Reporting of Government Deficit and Debt Levels each EU member-State discloses twice a year (April—1st Notification, and October—2nd Notification), available in <http://ec.europa.eu/Eurostat>.
8. Budgetary balance of other entities not included in the subsector State is reported for the whole of those entities and is added to the State deficit/surplus (“working balance”).
9. Following the EU Council Directive 2011/85/EU, November 8, 2011, a consultation process was carried out between February and May 2012, in order to assess the suitability of IPSASs for EU member-States. Additionally a staff commission was created to assess the current status of GA systems across EU, who prepared a “staff working document” accompanying the Report from the Commission to the European Council, on March 6, 2013 (European Commission, 2013a).
10. Further details on this score will be provided in section 3.1.2, as it will be used in the empirical study.
11. *Reporting of Government Deficit and Debt Levels*, 2st Notification, October 2014, from all 28 EU member-States, available at www.ec.europa.eu/Eurostat.
12. It might be noticed that Category D1 (Working balance’ (+/-) of entities not part of Central Government) as Table 1, is not reported by any country in the EDP Notification analyzed. We suppose these entities are already included in Table 2 “working balance”, according to the new ESA2010 rules.
13. Several cluster analyses were performed with different clustering methods and measures of distance and all results supported this number of groups.

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