Towards the Modernisation of EU Public Sector Accounting Standards:

Lessons from the Reconciliation between National and Governmental Accounting

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ABSTRACT

In the field of comparative international governmental accounting research, this chapter participates to the growing debate around the EPSAS-project that according to the EU Commission has a political priority. In this vein, it demonstrates that considering all the governmental subsectors of public administration (central government, state government, local government, social security funds) of the 28 EU Member States, proximity of national regulation to the IPSAS affects the magnitude of total adjustments. These are a proxy of fiscal fragility and are the difference between the non-harmonized data of governmental accounting and the harmonized ESA-2010 national accounting. Findings show that adjustments are significant in magnitude in countries whose regulation has low proximity to IPSAS; opposite, their magnitude is low in countries with high proximity to the IPSAS. Even if they have not provided the anticipated level of harmonisation, the process of modernising the EU public sector accounting standards cannot ignore that the future EPSAS should not diverge much from the IPSAS.

Keywords: Accounting Maturity, EPSAS, European Union, Fiscal Fragility, IPSAS, Net Borrowing/Lending, Proximity, Working Balance, Total adjustments.

INTRODUCTION

In the European Union (EU), an important public-sector accounting reform will result in a set of harmonised European Public Sector Accounting Standards (EPSAS). The European Commission has established that the EPSAS-project has a political priority for the coming years and uses the already existing International Public Sector Accounting Standards (IPSAS) as a basis for developing the future EPSAS. In a document issued in

2013 (European Commission, 2013), the Commission has launched the project to establish and implement EPSAS, because of several concerns towards IPSAS and in response to the sovereign debt crisis that has certainly highlighted the need for more rigorous, transparent, and comparable financial reporting by Member States. Always regarding the need for harmonisation, a study prepared for Eurostat by Ernst and Young (EY, 2012) provides evidence that the public accounting system and the related arrangements for auditing vary significantly among Member States and within different sub-sectors of government (EY, 2012, p. 1), thus contributing to the fiscal fragility of the EU public accounting system. Also, PricewaterhouseCoopers (PwC) has investigated the potential costs and benefits of implementing EPSAS in Member States and the suitability of IPSAS for developing EPSAS (PWC, 2014, p. 2). Analysing surplus/deficit data, all these studies show that there are significant adjustments between the working balance (WB) calculated at the micro-level by Member States following different accounting models – from cash to accrual – and the net/borrowing lending (NBL) calculated at the macro-level according to the European System of National and Regional Accounts (ESA) statistical framework, which records accounting flows on the accrual basis.

This research belongs to the comparative international governmental accounting research (e.g., Chan & Jones, 1988) in the field that investigates the relationships between governmental accounting (micro-economic perspective) and national accounting (macro-economic perspective). It participates to the debate around the factors that, more than others, may affect the divergences (e.g., total adjustments) between the surplus/deficit in governmental (WB) and national accounting (NBL) which could be considered a proxy for EU fiscal fragility. Between these factors, this study focuses on proximity of national regulation to the IPSAS.

The main motivation for this research is the interest shown in the accounting literature towards different factors that affect the divergence between the WB and the NBL. Most studies have shown how total adjustments vary in relation to the basis for assessing the WB at the micro-economic level (Dasí et al*.,* 2013, 2016; Jesus & Jorge, 2012, 2016; Jorge et al., 2014). Other scholars have studied the effect of accounting practices that vary not only cross-sectionally according to the different institutional environments (Sforza & Cimini, 2017a) but also over time (Sforza & Cimini, 2017b). None of these scholars controlled for proximity to the IPSAS as a variable that may affect the magnitude of total adjustments. Another important aspect that motivated this study is the European Commission's decision not to adopt directly the IPSAS so as to develop specific EPSAS with reference to the former. If proximity of the current accounting regulation to the IPSAS is a factor that reduces fiscal fragility (e.g., the magnitude of adjustments), the authors can predict that, overall, future EPSAS (which will be based on IPSAS) will be able to contrast such fragility.

According to our hypothesis, proximity to the IPSAS should reduce overall, the magnitude of adjustments. On the one hand, IPSAS are accrual-based accounting standards and so accounting regulation close to such standards could be a factor that should reduce divergences with deficit/surplus data calculated following the ESA rules. On the other hand, a high-quality set of accounting standards goes beyond the basis for accounting because, among other things, they require practices that should help the public accountant in the financial reporting process. To verify the hypothesis, the Excessive Deficit Procedure (EDP) tables have been downloaded from the Eurostat website. The tables provided by each of the 28 EU Member States covering 2010-2015 contain data that explain the transition between the national definitions of government balance and the deficit/surplus of each governmental sub-sector (e.g., central government, state government,

local government, social security funds). The variable "accounting maturity", which proxies for proximity to the IPSAS, has been collected from PwC (2014). The accounting maturity reflects the estimated current degree of compliance between the government's accounting rules and an IPSAS-based benchmark. Given that the EPSAS do not yet exist, the IPSAS are taken as a proxy for EPSAS (PwC, 2014, p. 35).

Our findings validate the hypothesis that proximity to the IPSAS is a factor that reduces the magnitude of total adjustments. Such a result allows the authors to add this study to the positive accounting theory stream of research (Watts & Zimmerman, 1978) that focuses on the relationships between different individuals that operate according to their self-interest. The choice of the European Commission to issue accounting standards close to the IPSAS is a mechanism that aligns the interests of those that work at the macro- and micro-economic level with different motivations in favor or against the introduction of accrual accounting in all the governmental subsectors of public administration.

This research contributes to the literature because, using a regression model, it demonstrates that proximity to the IPSAS affects the magnitude of total adjustments. In fact, the basis for accounting for the WB (Dasí et al., 2013, 2016; Jesus & Jorge, 2012, 2016; Jorge et al., 2014) and the quality of the legal systems (Sforza & Cimini, 2017a) are not the only aspects that affect the fiscal fragility of the EU public accounting system.

From this, regulators and standard setters can learn that despite the IPSAS have not provided the anticipated level of harmonisation, the process of modernising the EU public sector accounting standards cannot ignore that the future EPSAS should not diverge much from the IPSAS, considering also that accounting standards like the future EPSAS alone cannot reduce the fiscal fragility. A common strategy to adopt accrual accounting and a cultural change to avoid "lack of compliance" (Christiaens & Rommel, 2008) are crucial factors that – together with a common set of accounting standards – will provide a better degree of harmonisation to protect against fiscal fragility of the whole system.

BACKGROUND AND HYPOTHESIS

This paper uses the technique of classification of accounting systems to investigate the different national approaches to IFRS, and the reasons for them. The topic is relevant for companies, auditors and investors who operate internationally.

Classification, if done well, can help to organise a mass of data. According to Nobes (2008, p. 191), classification, if done well, can help to organise a mass of data. Nobes argues that techniques of classification for accounting systems have been used to investigate the different national approaches to the International Financial Reporting Standards (IFRS) and the reasons for them. Classifications can also be useful in public sector accounting to predict, for example, the different effects that the future EPSAS may have to obstruct fiscal fragility among the EU Member States. Scholars involved in comparative international governmental accounting research have used different techniques to classify EU Member States to study the magnitude of divergence between different measures of deficit/surplus. For instance, Jesus & Jorge (2012, 2016) cluster EU countries according to the basis followed at the micro-level to assess the WB. They show that cash-accrual adjustments are less significant and have lower impacts on the deficit/surplus in countries

that report an accrual-based WB and are more significant in countries that follow the cash or mixed basis. Focusing on the basis for accounting for the WB, in another study, Jorge et al. (2014) demonstrate that changing the basis of governmental accounting reporting to accruals reduces the materiality and diversity of the adjustments. Dasí et al. (2013) study the effect that the basis for accounting has on total adjustments despite other institutional factors affecting their magnitude. Among such factors, the authors deepen the accounting traditions and management style in the public sector. To do this, they classify countries according to the style of public management and accounting tradition and find four public sector accounting models: Anglo-Saxon, Nordic, Continental and Eastern. Their findings show that total adjustments differ between the EU countries and that the diversity among the EU budgetary reports exposes a serious need for harmonisation in public sector accounting. In a subsequent study, Sforza & Cimini (2017a) use the quality of legal enforcement to classify European countries to control for accounting practices that affect the magnitude of total adjustments at the micro- level. Independent from the basis for accounting for the WB, according to their empirical findings, total adjustments disclosed in the EDP tables of countries with low-quality enforcement have a higher magnitude than those disclosed by countries with high-quality enforcement.

Despite scholars having used different classifications to study the theme of fiscal fragility of the EU public accounting system, further new classifications may be useful to provide both a contribution to the accounting literature and new insights for practitioners. One of such contribution consists of classifying countries according to their proximity to the standards applied in the different levels of public administration with respect to the IPSAS. Benito et al. (2007, p. 313) use a questionnaire to calculate the conformity of certain practices followed in the central and in the local government to the IPSAS. Their results lead them to classify countries in three clusters: those with greater conformity with the IPSAS (e.g. Australia, Sweden, New Zealand, Mexico, Portugal and the United Kingdom), those with lower conformity to the IPSAS (e.g. Argentina, Italy, Chile, Norway and France) and those with a medium level of conformity (e.g. Finland, Austria, Switzerland and Spain). Focusing on the European countries, they observe big differences between some countries and others, ranging from a maximum of 89.13 percent conformance in Sweden to 19.57 percent in France for local government. Also, practitioners have demonstrated interest in the proximity of the different levels of public administration to the IPSAS. In this regard, in EY (2012), the authors find an indicator of proximity with respect to the IPSAS that shows how the accounting standards vary across EU Member States between 0% and more than 90% (the larger the score, the more closely the standard analysed complies with the IPSAS), with a different distribution depending on the level of government in which the analysis is conducted (central government, state government, local government and social funds). This is consistent with the results of another study conducted by PwC (2014, p. 36). That study calculates an indicator of proximity for each country and governmental level that provides detailed information on current accounting, taking IPSAS requirements as a basis for comparison. Using a questionnaire that investigates ten key accounting areas (e.g., reporting, consolidation, fixed assets, intangible assets, inventories, revenue, accruals and expenses, employee benefits, provisions, and financial instruments), PwC (2014) builds a metric called “accounting maturity” that measures the proximity of the public administration governmental levels of the EU Member States to the IPSAS. In the field of comparative international governmental accounting research, to the best of our knowledge, Jorge et al. (2016) offer the first attempt to explain, using a quantitative approach mainly based on univariate analysis, how proximity to IPSAS in Governmental Accounting (GA, micro) systems (considering an Accounting Maturity Index) might affect the alignment between these and National Accounting (NA, macro) systems. Their main findings show that high proximity

to the IPSAS in governmental accounting tends to slightly decrease adjustment diversity. Nevertheless, overall, the results suggest that the IPSAS per se do not make a considerable difference in terms of GA-NA adjustment diversity and materiality; hence, IPSAS-based EPSAS will hardly contribute to approaching GA into NA by reducing the adjustments to the minimum (Jorge et al., 2016, p. 986).

This research will go beyond these results, which reflect the interest in the accounting literature around the implementation and adoption of the IPSAS. To do this, the present research investigates all the levels of public administration (because a given country may have a regulation close to the IPSAS at the local government level, while the central government may have the opposite situation) and, also using a multivariate analysis, formulates a research hypothesis regarding the capability of proximity to act as a moderating factor of the fiscal fragility within EU public sector accounting.

To formulate such a hypothesis regarding the effect that proximity of accounting regulation to the IPSAS may have, overall, on the magnitude of total adjustments, the authors start with Brusca & Martínez (2016), which identify eight "stimuli" and four "barriers" to adopting IPSAS. These scholars explicitly include, between the "stimuli", the harmonisation of micro- and macro-information based on the IPSAS adoption. This is justified by the IPSASB (2014) publication, titled "Process for Considering Government Finance Statistics Reporting Guidelines during Development of IPSASs", whose objective is to set out the IPSAS Board's process for considering statistics reporting guidelines during the development of the IPSAS. Using a questionnaire, according to Brusca & Martínez (2016), both adopters and non-adopters of the IPSAS consider the standards useful for achieving international comparability and for improving the quality of financial reporting systems, leading the researchers to argue that "EPSAS will be based on IPSASs, which is another proof of the efficacy and legitimacy of IPSASs for modernizing and harmonizing governmental accounting" (Brusca & Martínez, 2016, p. 741). There is consensus in the literature that the IPSAS can provide the anticipated harmonisation in the public sector by increasing transparency, accountability, and comparability of financial reporting in the public sector (Brusca & Martínez, 2016; Brusca et al., 2013; Christiaens et al., 2010; Christiaens et al., 2014). However, the reality demonstrates that, in the case of adoption, such standards have not provided the anticipated level of harmonisation and modernisation of the EU public sector accounting system. This is likely due to both the content of the IPSAS and, for instance, the IPSASB having no formal power so the adoption of the IPSAS in local and central governments is completely voluntary (Christiaens et al., 2010). Similarly, Adhikari & Gårseth-Nesbakk (2016) argue that no institutional pressure being exerted on the Member States to adopt the IPSAS has raised concern over their applicability in Organisation for Economic Co-operation and Development (OECD) and EU Member States.

This supports the idea that the absence of answers regarding the need for harmonisation provided by IPSAS's adoption in certain countries (e.g., Israel) or by National Public Sector Accounting Standards like IPSAS (e.g., Canada) was not only due to the content of IPSAS but also to the context that such standards found at the time of their introduction. Thus, the authors believe that the IPSAS remain a good paradigm both to project the future EPSAS and to study whether the proximity of accounting regulation to the IPSAS can obstruct fiscal fragility in the EU public accounting system. Supported by Brusca & Martínez (2016), the idea is that, overall, the proximity of accounting regulation to the IPSAS should have a positive effect on the magnitude of adjustments (e.g., total adjustments should decrease when proximity increases). The consensus

in the literature towards the IPSAS and such standards being accrual-based like the ESA rules leads us to formulate the following research hypothesis:

H_1: In countries whose accounting regulation has high proximity to the IPSAS, total adjustments are lower than in countries whose regulation has low proximity to such standards.

METHODOLOGY

To test the research hypothesis, the authors download the EDP tables issued as required by Council Regulation 479/2009, as amended by Council Regulation (EU) No 679/2010 and by Commission Regulation (EU) No 220/2014. These tables are available from the EUROSTAT website. From the tables and for the four levels of the public administration, the authors collect data for 2010-2015 regarding the WB, the NBL and the single adjustments that compose the difference between the two measures of deficit/ surplus. In EDP Table 2A, the authors find data concerning the central government (CG), in EDP Table 2B data regarding state government (SG), in EDP Table 2C the local government (LG) and in EDP Table 2D the social security funds (SF). Comparison between such data is allowed despite the new ESA 2010 became effective in September 2014. In fact, the deficit/surplus data of prior years have been restated following the rules of this new framework. Data refer to the 28 European countries belonging to the EU.

It is important to note that while the focus on deficit/surplus data is because, according to the European Commission (2013, p. 3), "two of the most important indicators of fiscal sustainability are debt and deficit", the interest in adjustments is due to the possibility of considering them a measure of EU fiscal fragility.

Testing our research hypothesis requires collecting a variable to proxy for proximity of internal regulation to the IPSAS. Similarly, to Jorge et al. (2016), data regarding proximity to the IPSAS have been collected from PwC (2014). In this document, a score (expressed on a maximum total of 100 points) is calculated for each governmental level that reflects its degree of maturity with the future EPSAS standards, with the IPSAS being taken as a proxy for EPSAS as EPSAS does not yet exist. The authors call this variable PR_{ct} and split it at the median to identify countries and governmental levels with accounting regulation that is more ($dPR_{ct} = 1$) or less ($dPR_{ct} = 0$) like the IPSAS.

According to the research hypothesis, proximity to the IPSAS, overall, reduces the magnitude of total adjustments. To validate the hypothesis, the authors start from the model of Sforza & Cimini (2017a), whose specification is as follows:

$$NBL_{ct} = \alpha_0 + \alpha_1 WB_{ct} + \varepsilon \quad (1)$$

with *c* and *t* referring to the countries analysed and to the years investigated, respectively; ε is the error term.

Equation (1) assumes as measure of total adjustments the magnitude of the regression coefficient α_1. This coefficient suggests how much the NBL_{ct} changes when the WB_{ct} increases of 1€. If such coefficient is statistically equivalent to +1, total adjustments are not statistically significant in magnitude, because any

change of the WB_{ct} is reflected by a similar change of the NBL_{ct}. In contrast, the more the regression coefficient differs statistically from the theoretical value of +1, the more significant total adjustments are in magnitude, rendering the NBL_{ct} incapable of mapping changes in the WB_{ct}. For the intercept, it catches the other (missing) information that explain the relation between the two measures of deficit/surplus.

This model has been adapted to test our hypothesis by adding the variable dPR_{ct} and its interaction with the regressor WB_{ct}, as follows:

$$NBL_{ct} = \alpha_0 + \alpha_1 WB_{ct} + \alpha_2 dPR_{ct} + \alpha_3 dPR_{ct} x WB_{ct} + \varepsilon \quad (2)$$

All the regression parameters have been estimated using Ordinary Least Squares (OLS). Standard errors are calculated according to the Petersen (2009) procedure, which cluster standard errors by firms and years and it is quite common in accounting studies (Goncharov and Hodgson, 2011; Mechelli and Cimini, 2014; Song et al., 2010; Tsalavoutas et al., 2012). To avoid biases in our research results, the authors add countries' governmental levels and years' fixed effects to control for omitted variables that change cross-section or over time.

A model with interaction terms like the one in equation (2) allows for testing the different ability of the NBL to map changes of the WB in countries with different proximity to the IPSAS. In fact, the regression coefficient α_3 measures the different ability of the NBL to map changes in the WB in countries whose accounting regulation adopted at the micro-level has different proximity to the IPSAS. Therefore, if the regression coefficient α_1 is a proxy of the magnitude of total adjustments in countries whose standards are not similar to the IPSAS, the sum of α_1 and α_3 provides insights into the magnitude of total adjustments in countries whose regulation is close to the IPSAS. To validate our research hypothesis, our expectation is to find the regression coefficient α_1 statistically significant but not statistically equivalent to the theoretical value of +1. On the contrary, the sum $\alpha_1 + \alpha_3$ should be closer and statistically equivalent to the theoretical value of +1.

EMPIRICAL FINDINGS

Before showing the research findings achieved in the main analysis, in Table 1, the authors present descriptive statistics of data collected from the EDP tables presented by the 28 EU countries analysed regarding the magnitude of total adjustments and distinguishing, at a country level, the different subsectors of public administration. In Table 1, the authors also show the values of the variable PR_{ct}, which is the proximity of each governmental level to the IPSAS.

At first glance, the table shows that where proximity to the IPSAS is high (e.g., UK), the magnitude of total adjustments is low. In contrast, where proximity to the IPSAS is low (e.g., Greece), the magnitude of total adjustments is high. The table provides also a first insight that it is not only the basis for accounting the WB to reduce the magnitude of total adjustments. In fact, despite in Spain and UK accrual accounting is adopted in all the levels of public administration, total adjustments of the former are by far higher than the ones of the latter. Indeed, differences in total adjustments between Member States are due to the problem of the different

scale of the countries analysed. For this reason, in the sensitivity analysis, the authors test the robustness of our findings by re-running the regression model after scaling the variables by the per-capita gross domestic product (GDP).

Table 1. Descriptive statistics for total adjustments and proximity

M/euro	2010	2011	2012	2013	2014	2015	PR (/100)
AUSTRIA							
Central government	-2,068	-2,850	60	-353	-6,137	-2,427	73
State government	-1,137	-535	-21	131	814	18	12
Local government	-427	-183	-207	-56	-33	-78	12
Social security funds	167	307	329	177	231	275	61
BELGIUM							
Central government	-262	2,755	-5,491	-2,173	1,496	3,279	67
State government	-691	15	329	-2195	-545	-7,284	67
Local government	-1,568	-1,262	-1,249	-530	-1,201	-336	73
Social security funds	-793	-178	-1,159	-907	-807	-450	60
BULGARIA							
Central government	65	145	425	508	-2,151	1,174	56
Local government	188	39	159	260	-97	-652	56
Social security funds	23	17	-48	-52	222	-86	63
CROATIA							
Central government	-5,593	-11,228	-6,655	-2,793	-6,405	-1,847	34
Local government	14	-75	115	-684	717	57	34
Social security funds	-81	-412	-1,105	1,496	836	-448	55
CYPRUS							
Central government	569	-806	-1,016	-1,676	-1,747	-28	14
Local government	-3	8	5	6	6	5	75
Social security funds	14	3	-4	-10	1	-1	17
CZECH REPUBLIC							
Central government	305	58,585	-48,608	14,329	-12,484	22,114	75
Local government	-14,642	-8,579	-3,612	-5,780	-3,640	3,797	75
Social security funds	-1,460	2,669	-30	1,951	-2,619	1,858	77
DENMARK							
Central government	41,268	-7,559	8,379	-30,407	17,681	-71,955	72
Local government	1,760	811	2,867	2,380	1,492	-210	65
Social security funds	-662	-828	-571	-378	-441	-315	58
ESTONIA							
Central government	-95.5	304.1	-81.5	-37.7	51.6	369.2	92
Local government	12.7	7.7	-32.6	-24.1	-3.2	16.6	92
Social security funds	7	4.2	-4.9	5.6	-1.9	0	86
FINLAND							
Central government	644	815	376	841	-1,329	-1,672	72
Local government	-3,433	-3,605	-3,925	-4,161	-4,447	-3,948	90
Social security funds	5,422	5,428	4,873	3,715	3,389	2,780	92
FRANCE							
Central government	37,951	-699	2,968	6,674	13,169	-1,900	89
Local government	-31,501	-33,029	-34,574	-37,708	-31,828	-27,008	84
Social security funds	4,838	7,981	4,731	6,527	5,253	5,002	92
GERMANY							
Central government	-29,247	-17,039	3,667	5,173	4,962	-11,530	22
State government	179	-1,887	-1,750	-3,005	-822	2,266	29
Local government	878	454	1,755	601	-2,174	4,114	58
Social security funds	167	-346	2,430	595	323	4,821	42
GREECE							
Central government	-4,644	3,625	-238	-22,164	-4,115	-9,184	12
Local government	-1,284	-311	-312	-360	-682	-1,006	12
Social security funds	-693	-1,503	-1,859	2,318	1,174	-890	12
HUNGARY							
Central government	-205,912	0	-317,107	-766,423	-389,033	515,764	66
Local government	1,402	28,363	49,335	636,512	352,337	-18,461	66
Social security funds	142509	108354	113795	137,189	38,105	28,974	55

IRELAND							
Central government	-34,807	3,222	964	1,312	1,019	-5,564	54
Local government	71	-113	-60	23	-41	689	71
Social security funds	0	0	0	0	0	0	57
ITALY							
Central government	1,837	5,569	-3,852	30,496	22,449	13,444	31
Local government	-6,468	-2,457	3,810	-6,611	-2,906	-6,111	30
Social security funds	4,730	3,186	2,559	2,141	1,651	2,272	14
LATVIA							
Central government	314	209.29	-212.49	-37.95	-97.23	-138.7	73
Local government	-139	-32.36	24.64	19.11	34.06	118.04	73
Social security funds	25	-4.43	26.47	-19.75	-12.51	-55.53	55
LITHUANIA							
Central government	341	-1.304	-351	-275	289	1.320	88
Local government	-283	-38	-30	-48	7	25	88
Social security funds	36	17	5	9	-142	144	72
LUXEMBOURG							
Central government	-1.848	-358	-697	-858	61	6	19
Local government	27	121	214	61	63	309	31
Social security funds	-132	280	-486	-301	-1.036	58	15
MALTA							
Central government	62	42	87	26	-44	102	22
Local government	-3	-2	-4	-3	1	0	94
NETHERLANDS (THE)							
Central government	2.374	5.051	9.704	6.687	4.214	-17.907	31
Local government	-6.962	-4.392	-4.081	-4.589	-3.204	-4.334	58
Social security funds	5.847	-516	357	-965	846	1.991	78
POLAND							
Central government	-33.602	-25.564	-25.021	-23.195	-7.532	7.376	66
Local government	-3.070	-1.485	-1.491	-2.548	-778	-2.555	66
Social security funds	-1.445	-1.627	-1.907	-2.350	-2.241	-2.423	68
PORTUGAL							
Central government	-2.966	676	9.581	3.726	935	2.138	55
Local government	-1.492	-408	331	1.201	459	359	80
Social security funds	834	799	1.501	-148	357	-85	70
ROMANIA							
Central government	4.840	174	-326	2.137	10.674	9.447	63
Local government	-3.174	-4.258	-1.867	5	1.829	2.704	63
Social security funds	-1.266	-1.288	-294	2.692	772	1.060	38
SLOVAK REPUBLIC							
Central government	15	206	402	62	1039	-344	75
Local government	-172	-112	19	33	-75	49	75
Social security funds	-185	3	-26	-330	-74	-574	34
SLOVENIA							
Central government	-107	-924	-285	-3.875	-690	3	62
Local government	43	67	23	-29	38	68	62
Social security funds	-88	-8	-86	66	59	41	19
SPAIN							
Central government	-12.572	4.714	-60.780	-16.021	-18.149	-21.371	70
State government	-17.043	-30.408	6.975	-1.175	-1.695	-18	61
Local government	-4.534	-7.929	-848	-2.373	-1.701	-1.874	68
Social security funds	-4.234	-2.102	-3.603	-3.200	-963	-1.786	58
SWEDEN							
Central government	-13.746	-79.752	-15.236	86.584	22.767	28.473	81
Local government	-11.800	-17.988	-23.482	-15.638	-29.956	-17.005	81
Social security funds	-60.917	42.044	-75.699	-104.861	-122.949	-37.826	71
UNITED KINGDOM							
Central government	0	0	0	0	0	0	96
Local government	0	0	0	0	0	0	95

The table provides the mean total adjustments tabulated by the Member States for each governmental subsectors and the value of the PwC (2014) index of proximity of national legislation to IPSAS.

Table 2 shows the 28 EU countries analysed and the basis for accounting for the WB in the different public administration subsectors.

Table 2. Descriptive statistics for the basis for assessing the WB

Countries	Bases	Countries	Bases
AUSTRIA	C,M,M,A	ITALY	C,X,C,C
BELGIUM	M,M,A,A	LATVIA	C,X,C,C
BULGARIA	C,X,C,C	LITHUANIA	C,X,C,A
CROATIA	C,X,M,C	LUXEMBOURG	M,X,M,A
CYPRUS	M,X,A,A	MALTA	C,X,A,X
CZECH REP.	C,X,C,A	NETHERLANDS (THE)	C,X,A,A
DENMARK	M,X,M,M	POLAND	C,X,C,A
ESTONIA	C,X,M,A	PORTUGAL	C,X,C,C
FINLAND	M,X,M,A	ROMANIA	C,X,C,C
FRANCE	C,X,A,A	SLOVAK REPUBLIC	C,X,C,C
GERMANY	M,M,M,M	SLOVENIA	C,X,C,C
GREECE	C,X,C,M	SPAIN	A,A,A,A
HUNGARY	M,X,M,M	SWEDEN	C,X,A,M
IRELAND	C,X,A,X	UNITED KINGDOM	A,X,A,X

For each country analysed, the four letters refer to the basis for accounting the WB in the four governmental subsectors. So, the first one refers to the central government, the second letter to the state government, the third to the local government and the fourth to the social security funds. Variables' definition: C (cash-basis); M (mixed-basis); A (accrual-basis); X (not available).

Table 3 shows research results and tabulates the regression coefficients estimated by having as a reference the full sample (e.g., the governmental subsectors of 28 countries whose deficit/surplus data have been collected for a period of six years).

Table 3. Research findings

	Coefficient	Std. Err.	t	P-value	95% Conf. Interval
WB	+1.50	+0.21	+7.15	+0.00	+1.08; +1.91
dPRxWB	-0.35	+0.17	-2.07	+0.04	-0.68; -0.02
dPR	-16,080.91	+12.283.69	-1.31	+0.19	-40,332; +8,170.42
Intercept	+30,502.74	+19,924.67	+1.53	+0.13	-8,833.95; +69,839.44
Test:	F(1; 167)	P-value		Obs:	+510
WB=1	+5.65	+0.02		R-squared	+0.84
WB+dPRxWB=1	+3.22	+0.08			

The table reports the regression parameters and the test statistics useful to validate our hypothesis. It tabulates the regression coefficients of equation (2) estimated by having as a reference the full sample.

Results show that the coefficient of WB in countries with low proximity to the IPSAS is +1.50. Testing the hypothesis that this coefficient is statistically equivalent to the theoretical value +1, it is possible to reject such hypothesis at the 5% level of significance (p-value = +0.02). This provides interesting evidence that total adjustments are significant in magnitude in countries whose regulation has low proximity to IPSAS and render the NBL incapable of mapping changes in the WB disclosed in the EDP tables. The same panel shows that the magnitude of total adjustments is statistically different in countries with high proximity to the IPSAS compared to countries with low proximity. In fact, the regression coefficient of the interaction term $dPR_{ct}xWB_{ct}$ is statistically significant at the traditional level (e.g., p-value<5%). Its negative sign (-0.35)

makes the coefficient of WB in countries with high proximity to the IPSAS equal to +1.15 (e.g., +1.50-0.35) and thus close to the theoretical value of +1. However, at 5%, the authors cannot reject the null hypothesis that such coefficient is statistically equivalent to +1 (e.g., p-value = 8%). This validates the hypothesis that in countries whose regulation has high proximity to IPSAS, because total adjustments are not so significant in magnitude, the NBL maps any change in the WB better than in countries whose regulation has low proximity to IPSAS.

To test the robustness of our findings, the regression parameters are re-estimated deflating all the variables of equation (2) by the per-capita GDP. Untabulated, the findings validate our hypotheses. Overall, the proximity of accounting regulation to the IPSAS reduces the magnitude of adjustments. The regression coefficient of WB for countries with low proximity to the IPSAS is +1.58; the same coefficient for countries whose regulation is closer to the IPSAS is 1.19, with the interaction term equal to -0.39.

CONCLUSION

According to the European Commission (2013), the IPSAS standards do not describe sufficiently precisely the accounting practices to be followed, taking into account that some of them offer the possibility of choosing between alternative accounting treatments, which would limit harmonisation in practice. In addition, the suite of standards is not complete in terms of coverage or its practical applicability to some important types of government flows, and can also be regarded as insufficiently stable, since it is expected that some standards will need to be updated. Finally, the governance of IPSAS suffers from insufficient participation from EU public-sector accounting authorities. For all these reasons, an important public-sector accounting reform in the EU will result in a set of harmonised EPSAS.

Despite the skepticism of the European Commission towards IPSAS, the results of this research show that the future EPSAS should not diverge much from the IPSAS. In the chapter, the authors have assumed the magnitude of total adjustments, that is, the difference between two measures of deficit/ surplus calculated at the micro-level (WB) and at the macro-level (NBL), to be a good proxy of the EU public sector fiscal fragility. The findings show that the proximity of accounting regulation of the EU member states to the IPSAS is a factor that, overall, contributes to impair fiscal fragility. As a matter of fact, total adjustments are significant in magnitude in countries whose regulation has low proximity to IPSAS where the NBL is incapable of mapping changes in the WB disclosed in the EDP tables. Their magnitude is lower (and statistically different) in countries with high proximity to the IPSAS, by rendering the NBL more capable to map any change in the WB. Therefore, proximity of national regulation to IPSAS can be useful to contrast fiscal data fragility, despite one needing to be aware that harmonisation will not definitively solve this issue because a source of fragility is created by different objectives and methodologies of national and governmental accounting that cannot be removed (Giovanelli, 2006).

The results found in this chapter are justified by the nature of IPSAS that are public sector accrual-basis accounting standards and add to studies that investigated the factors that enhance fiscal fragility (e.g. Dasí et al*.,* 2013, 2016; Jesus & Jorge, 2012, 2016; Jorge et al., 2014).

A possible limitation of this research is the absence of additional tests that control whether the effect of proximity on fiscal fragility is homogeneous in all the European countries analysed or it changes according to features that make European countries many different from each other. A possibility is to investigate whether the level of investor protection impairs the effect that proximity has on the magnitude of adjustments. Assuming investor protection a proxy of differences in cultural values (Stulz & Williamson, 2003), according to our expectation, proximity should have a significant effect to contrast fiscal fragility in countries with low investor protection, where accounting practices and cultural constraints make more difficult the implementation of reforms. Opposite, in countries with high quality investor protection, good practices and cultural values should reduce the magnitude of total adjustments. In these countries, the proximity of accounting regulation to the IPSAS should be likely to have second-order effects relative to the effects of accounting practice that are the consequence of cultural values and constraints. In more clear words, where accounting practices do not obstruct reforms and contribute to enhance harmonisation, the proximity of accounting regulation to the IPSAS should not make a difference in the magnitude of total adjustments. Conversely, where practices act against the process of harmonisation, the proximity of accounting regulation to the IPSAS can facilitate such process by impairing the negative effects of adverse practices that are the consequence of cultural constraints.

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KEY TERMS AND DEFINITIONS

EPSAS: European Public Sector Accounting Standards. Future public-sector accounting standards that will be based on IPSAS.

European System of National and Regional Accounts (ESA): Internationally compatible EU accounting framework for a systematic and detailed description of an economy.

Excessive Deficit Procedure (EDP): Action launched by the European Commission against any EU Member State that exceeds the budgetary deficit ceiling imposed by the EU's Stability and growth pact legislation.

IPSAS: International Public Sector Accounting Standards. Set of international accounting standards issued by the IPSAS Board (IPSASB) for use by public sector entities in the preparation of financial statements.

National Accounts (NA): Statistics focusing on the structure and evolution of economies. They describe and analyse, in an accessible and reliable way, the economic interactions (transactions) within an economy. Often, it is called macroeconomic accounts.

Net Borrowing/Lending (NBL): Measure of deficit/surplus calculated at the macro-economic level according to the ESA rules.

Working Balance (WB): Measure of deficit/surplus calculated at the micro-economic level following the cash basis, the mixed basis or the accrual basis for accounting.