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Research Article


Is IPSAS Implementation Related to Fiscal Transparency and Accountability?


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ABSTRACT

IPSAS implementation is usually seen as a step toward improving the quality of public financial information, accountability, and transparency. However, it is worrying that many governments around the world are involved in the process of implementing IPSAS and transitioning to accrual base without certainty about the reality of those desired outcomes. This paper contributes to the matter by studying quantitatively whether there is any association between the use of accrual accounting and IPSAS for financial reporting purposes and both fiscal transparency and accountability. Using a cross-sectional dataset that includes observations from more than 70 countries in 2018, we find that other variables such as the degree of citizens' political participation and media freedom are more important for analyzing differences in fiscal transparency and accountability than the degree of IPSAS implementation.

Keywords: IPSAS; new public management; accountability; transparency

JEL Code: H83, M48

INTRODUCTION

There are many governments around the world in a race to implement International Public Sector Accounting Standards (IPSAS)¹ with the hope of improving state intervention, efficiency, comparability, transparency, and accountability (Association of Chartered Certified Accountants [ACCA], 2017; Deloitte, 2013; International Public Sector Accounting Standards Board [IPSASB], 2014; Lusinyan, et al., 2009; Polzer, Grossi, & Reichard, 2021), but with uncertainty about the compliance of those goals. For their part, multilateral institutions state that the adoption of IPSAS allows obtaining high quality public financial reporting and favors transparency and accountability (Ball, 2012; Brusca, Gómez-Villegas, & Montesinos, 2016; Castañeda-Rodríguez, 2019; Schmidhuber, Hilgers, & Hofmann, 2020), although implementing them is a costly process in terms of money and time (Carnegie & West, 2005), and does not guarantee better results in those matters.

Indeed, improving transparency and accountability requires an active role of the citizens since it is more likely that governments take responsibility for their actions when people request information on public issues and exercise citizen oversight (Fung, 2015). In addition, although IPSAS define some criteria for recording, disclosing, and measuring economic transactions, they leave without deep discussion many topics (e.g., pension funds and heritage assets) (Biondi & Lapsley, 2014), which hampers harmonization and comparability (Polzer et al., 2021). For instance, some balance sheet items are not traded in an active market (e.g., many intangible assets), which gives rise to estimations that may be arbitrary and unreliable (Carnegie & West, 2005). The above obstacles make the goals pursued through IPSAS implementation more difficult to achieve, which warrants further research in this area.

Consequently, it is important to have empirical evidence on whether the characteristics behind the preparation of public financial information, particularly the accounting bases and frameworks (e.g., IPSAS), are related to transparency and accountability, for example. To the authors' knowledge, there are few empirical studies that analyze the association between IPSAS implementation and institutional features such as quality of governance, transparency, or corruption (e.g., Cuadrado-Ballesteros & Bisogno, 2020; Cuadrado-Ballesteros, Citro, & Bisogno, 2020; Kartiko, Rossietta, Martani, & Wahyuni, 2018; Galera & Bolívar, 2012). However, these researches have some limitations as they focus only on developed countries (e.g., OECD), take into account particular experiences, or use dichotomous measures to refer to the public financial information reporting frameworks (e.g., it equals one when accrual-based IPSAS are adopted and zero otherwise).

Then, this paper constitutes a step toward closing that gap in the empirical literature, since we study whether the alleged outcomes of IPSAS implementation have evidence in their favor, based on a cross-sectional dataset with observations from more than 70 both developed and developing countries in 2018. Particularly, we analyze the association between the bases and the frameworks that central governments use for financial reporting purposes, for which we use the database built by the IFAC and the Chartered Institute of Public Finance and Accountancy [CIPFA] (2018), and both budgetary transparency and accountability. We focus on budgetary transparency as politicians tend to pay more attention to budget information than to financial reports (Brusca &

Montesinos, 2014; Polzer, Gärseth-Nesbakk, & Adhikari, 2019) and current public financial reforms seek that IPSAS implementation contributes to improve – make more transparent – budgetary accounting.²

Meanwhile, budgetary transparency and accountability could change in response to other political and socioeconomic variables. Therefore, we complete our dataset with other factors that have been identified as potential fiscal transparency (or accountability) determinants (see, e.g., Besley & Burgess, 2002; Cicatiello, Simone, & Gaeta, 2017; Rodríguez, Alcaide, & López, 2013). In the end, we find that other variables such as the degree of citizens' political participation and media freedom are more important for analyzing differences in fiscal transparency and accountability in the world than public financial accounting bases and frameworks (in particular IPSAS).

In addition to this introduction, this paper includes five sections. First, we briefly discuss how the so-called NPM has favored IPSAS adoption as a reference for enhancing public financial information, to the point that nowadays many countries are involved into the process of adopting them with the hope of improving also accountability and transparency, but with uncertainty to this regard. Later, we present some concepts and theoretical models that are relevant to this study and, in a third part, we describe the data and methods used. We summarize and comment on the results in the fourth section and finally list the conclusions.

THE EMERGENCE OF THE IPSAS AS A BENCHMARK FOR PUBLIC ACCOUNTING REFORMS AND THEIR IMPLEMENTATION DIFFICULTIES

The application of reforms based on the New Public Management (NPM) gives a notable role to financial and budget information for public administration purposes. Indeed, the cost-benefit analysis, in which measuring costs, revenues, and debt is central, has become a requirement to approve and implement certain policies. For instance, Kurunmäki (2009, p. 1375) stresses that “to make themselves heard and believed, health professionals had started to inform their various proposals with economic rationality, rather than in purely medical terms.”

Thus, the NPM fostered the implementation of private sector and business approaches in order to make public sector more efficient (Gomes, Fernandes, & Carvalho, 2015; Kartalis, Tsamenyi, & Jayasinghe, 2016). Financial information is taken as a key input to make decisions in the public arena (e.g., the approval and funding of an investment project), although its preparation requires that accountants follow certain criteria to recognize and measure economic transactions. To this regard, policy makers and multilateral institution (e.g., the Organization for Economic Co-operation and Development – OECD, the International Monetary Fund – IMF, and the World Bank) have promoted, especially since the 90s, the adoption of accrual accounting systems and IPSAS³ (Ball, 2012; Brusca et al., 2016; Carnegie & West, 2005; Castañeda-Rodríguez, 2019; Chan, 2008; Gómez-Villegas, Brusca, & Bergmann, 2020; Krishnan, 2021).

Indeed, pressures to adopt IPSAS in particular countries, especially in developing ones, come also from abroad (Castañeda-Rodríguez, 2019; Chan, 2008; Krishnan, 2021).⁴ Multilateral institutions such as the IMF, the World Bank, and the IFAC stress that these standards favor comparability, transparency, and accountability. For instance, many IMF reports suggest that disclosure under IPSAS favors fiscal stability, monitoring, and risk management (see, e.g., Gómez-Villegas et al., 2020; Lusinyan, et al., 2009). Likewise, the IPSASB (2014) points out that “high-quality, robust and effective accrual-based financial reporting systems, such as those based on International Public Sector Accounting Standards (IPSAS), are integral to enhancing accountability and transparency in government financial reporting.” (IPSASB, 2014, p. 2).

Therefore, public financial information reporting under a private sector-like approach is considered internationally as a required step toward the improvement of public management (Kartalis et al., 2016). IPSAS have become a benchmark for public sector modernization since they are based on International Financial Reporting Standards (IFRS) (Chan, 2008; Christiaens, Reyniers, & Rollé, 2010; Kartiko et al., 2018), which suggests an easier comparison between public and private agents’ performance, although that is debatable (see, e.g., Mattei, Jorge, & Giulio, 2020). However, this has been a reason for criticism since the IFRS disregard particular dynamics and aims of public sector (Brusca et al., 2016; Castañeda-Rodríguez, 2019).

For instance, IPSAS include few changes or additions to full IFRS (Chan, 2008), which responds to the idea that financial information should be useful for measuring profitability (or fiscal balance) or making cost-benefit analysis in the public arena. The comparison between IPSAS and IFRS shows that similarities prevail and only some modifications have been included when public transactions go beyond the IFRS scope (Brusca, Montesinos, & Chow, 2013). Thus, there are few specific accounting standards for public sector, and nowadays only five IPSAS (i.e., 22, 23, 24, 32, and 40) are not based on IFRS.

The adoption of IPSAS, based on the principle of accrual accounting, is taken as the right way to increase public transparency and accountability (Brusca et al., 2016). Accrual accounting implies that revenues and expenditures are recorded when they occur rather than when cash is disbursed, which makes easier identifying timely and faithfully the costs of state’s interventions. Likewise, the fair value, as a measurement criterion promoted by these standards, points to the recognition of changes of assets and liabilities because of market forces, which makes accounting values closer to market prices depending on the revaluation frequency.

In line with the above, many governments are adopting IPSAS and accrual accounting or planning to do so for their financial reporting purposes. For instance, and according to the IFAC and the CIPFA (2018), 65% of the governments under study would report on accrual basis within five years (today this figure is close to 25%) and 73% of them (around 72 governments) would be applying IPSAS.

But despite the supposed benefits of IPSAS adoption, such as harmonization, comparability, transparency, and accountability (Brusca et al., 2016; Brusca & Montesinos, 2014; Gómez-Villegas et al., 2020; Polzer et al., 2021; Schmidhuber et al., 2020), there is not enough empirical evidence on the respective relations, which justifies this research. Furthermore, it is difficult to

determine whether IPSAS adoption is related to real benefits when the process has been slow and ambiguous.

For example, Gomes, Fernandes and Carvalho (2015) point out that IPSAS adoption process to become successful requires complementary conditions such as appropriate human and material resources (e.g., software and financial funds), training, effective monitoring, and state power to enforce law. For its part, Brusca and Condor (2002) state that harmonization is far from being achieved since it is difficult to directly adopt particular accounting standards such as IPSAS in some contexts – for example, when cash-based budgeting prevails.

Likewise, comparability is difficult to achieve when IPSAS allow for more than one alternative for measuring or recognizing a balance sheet item and require estimating values under certain situations. In this regard, Mattei, Jorge and Giulio (2020) point out that “broad guidelines, multiplicity of options and professional judgment in accounting policy choices ... jeopardize de facto comparability of financial information.” (Mattei, et al., 2020, p. 18). Furthermore, for many assets with historical, cultural, or natural value (e.g., museums, library collections, art paintings, and forest reserves) there are not active markets, which hinders assigning monetary values to them and calls for estimates (Biondi & Lapsley, 2014), although these can be arbitrary, unreliable, expensive, challenging, and time demanding (Carnegie & West, 2005).

Likewise, there are matters that are not been taken into account by the IPSASB, so each government establishes particular regulations (Polzer et al., 2021); it is the case of pension funds and international reserves. This makes it even more difficult to improve transparency and accountability, and can skew financial information. For example, currency depreciation can affect assets and liabilities differently when an extreme prudential treatment is applied; it tilts the balance toward fiscal deficit when public debt is revaluated but international reserves do not (González, 2018). In general, all of the above facts justify deviations from IPSAS issued by the IPSASB-IFAC (Polzer et al., 2019).

However, the use of figures at fair value would also negatively influence the accountability process, especially when non-financial assets and liabilities are recorded. A certain estimation method and its parameters could be chosen to manipulate the figures reported in the financial statements, so the financial audit becomes more important, but also difficult and expensive (Navarro & Rodríguez, 2011). Additionally, when financial information is presented without public management indicators, it is likely that citizens are not able to evaluate the actions and responsibilities of public officials and politicians in a complete manner. For instance, an administration would present positive fiscal results but neglecting coverage and quality objectives in areas such as education.

SOME CONCEPTS AND THEORETICAL MODELS TO BE CONSIDERED

As it was commented in the introduction, this paper aims at establishing whether the extension in the use of IPSAS and accrual accounting as financial reporting framework and basis is related to fiscal transparency and accountability. However, this requires clarifying what transparency and

accountability mean, and taking into account some theoretical perspectives that allow us to study the possible associations between the aforementioned variables and identify relevant control variables.

Although there is not a single definition of transparency, it usually refers to the availability of understandable and reliable information (Cuadrado-Ballesteros et al., 2019). That, in a broader sense, suggests considering “... the extent to which all stakeholders have a similar understanding of and access to all required information without loss, noise, delay, or distortion” (Lyrio, Lunkes, & Taliani, 2018, p. 513). For its part, understanding accountability requires taking into account the context in which this practice takes place (Lyrio et al., 2018), since cultural and social norms help establish the issues for which society holds officials accountable and the mechanisms to do so. Despite the difficulties in defining the term, accountability includes two dimensions, that officials act transparently and openly, and that citizens can check government actions.

Now, regarding theoretical foundations, we can find at least two theories that support the study of the associations between public financial information and transparency (or accountability). They are the principal-agent theory and the legitimacy theory. An agency problem arises when the principal (e.g., citizens) can be affected negatively by the agent’s (e.g., elected officials) decisions because they do not pursue common interests.⁵ Meanwhile, one way to get politicians to act in accordance with voters’ interests is to increase transparency and accountability (Araujo & Tejedo-Romero, 2018), for example by making public financial information available under certain desired characteristics. This would allow the principal to control the agent and reward or punish him as appropriate (e.g., reelecting or replacing him).

For its part, legitimacy theory focuses on how politicians behave in order to legitimize their actions (Mourao, Bronić, & Stanić, 2020). In this regard, public officials are pressured to reveal information in order to clear up any doubts about their management, especially when they can be sanctioned, for example electorally, if they are judged as inefficient or corrupt. Consequently, politicians are more likely to provide *inter alia* budgetary and financial information along with the reasons that would explain why they acted as they did when citizens play an active role in democracy. In other words, the provision of public financial information under certain standards by the government can be seen as a step toward transparency and accountability when citizens are interested and able to participate in public affairs (e.g., monitoring the budget execution).

In short, it is necessary to control for some variables that can affect transparency and accountability. Identification of those factors, for the purposes of this paper, may be based on what principal-agent and legitimacy theories suggest.

DATA DESCRIPTION AND METHODOLOGY

A traditional problem for empirical research on issues related to the IPSAS adoption and its potential effects is the lack of complete data, especially when many variables should be included for a large sample of both developed and developing countries. This fact was considered in the construction of our dataset since we sought to increase the number of observations.

In the case of the endogenous variables, we use the open budget index and a score for public accountability because of their availability for recent years (e.g., 2018) and geographical coverage. The first one is a comparative measure of central government budget transparency and was developed by the International Budget Partnership; it covers 103 countries in 2018 and assesses how timely and comprehensible the information contained in budget documents is through a 100-point score. For its part, the so-called functioning of government index is provided by Freedom House and examines, using a 12-point score, in what extent the government and legislative decide on the public policies and whether the former is free from corruption, accountable to the electorate, and operates openly and transparently.

Additionally, we create two variables to capture the bases and the frameworks that central governments would consider for financial reporting purposes; so we take into account the database built by the IFAC and the CIPFA (2018). In the case of the variable named Base, it takes a value of one, two, or three depending on whether the financial reporting basis is cash, cash transitioning to accrual, or accrual, respectively. In turn, the variable called Framework takes a value of one, two, three, four, or five according to whether the financial reporting framework is 'Other national financial reporting standards,' 'National standards based on IFRS,' 'National standards using IPSAS as a reference point,' 'IPSAS adopted indirectly via national standards,' and 'IPSASs adopted directly.' We follow the approaches proposed by authors such as Cuadrado-Ballesteros, Citro, and Bisogno (2020) and Christiaens, Vanhee, Manes-Rossi, Van Cauwenberge and Aversano (2015) to measure the level of implementation of IPSAS and accrual accounting in the public sector.

The database provided by the IFAC and the CIPFA (2018) covers only one year (i.e., 2018) and includes 130 observations (i.e., countries). However, and as it will be seen later, the final number of available observations for the cross-section regressions falls noticeably (56 or 79) when control variables are included.⁶

Regarding our control variables, it is important to mention, as it is also suggested by the theories of the agency and legitimacy, that goals such as transparency and accountability, which are commonly pursued through recent financial reforms in public sector (Krishnan, 2021), depend on many other factors that must be taken into account to avoid misspecification bias. Table 1 presents the set of available variables on which our empirical work is supported (including indicators of fiscal transparency and accountability – endogenous variables – and those related to the bases and frameworks that central governments use for financial reporting), expected association signs (in parentheses),⁷ a brief description in each case, data sources, and some basic statistics.

As mentioned in the previous section, several difficulties raise concerns about the utility of IPSAS implementation and accrual accounting in the public sector to improve transparency and accountability. Consequently, we do not expect to find any association between these variables and the endogenous ones. The above can be taken as our research hypotheses (particularly that accountability and transparency do not depend on the accounting model used for public financial reporting).

Table 1

Summary statistics of the data

Variable	Description	Source	Mean	Min.	Max.	Obs.
OBI	The open budget index measures central government budget transparency on a 100-point scale.	IBP	44.680	0	89	103
Accountability	It is based on the functioning of government indicator, which captures the extent to which the government is accountable and acts in a transparent and open manner. Countries are graded in a scale from zero (worst) to twelve (best).	FH	6.538	0	12	169
Base (?)	Financial reporting basis (i.e., cash, transitioning to accrual, and accrual). Its values fall in the range [1, 3].	IFAC and CIPFA	1.931	1	3	130
Framework (?)	Financial reporting framework (i.e., 'Other national financial reporting standards,' 'National standards based on IFRS,' 'National standards using IPSAS as a reference point,' 'IPSAS adopted indirectly via national standards,' and 'IPSAS adopted directly'). Its values fall in the range [1, 5].		2.569	1	5	130
Gross_debt (+)	Gross general government debt as percentage of GDP.	WEF	56.906	2.6	236.6	159
Tax_rev (+)	Total tax revenue (excluding social contributions) as percentage of GDP.	ICTD	19.303	1.571	45.333	126
Log_GDPP (+)	Natural logarithm of GDP per capita at constant US dollars of year 2010.	WDI	8.820	5.351	11.583	156
Log_Education(+)	Natural logarithm of age-standardized education per capita.	IHME	2.096	0.278	2.703	159
Globalization (+)	The KOF globalization index. It measures the economic, social, and political dimensions of globalization on a scale from one to one hundred that is directly related to the magnitude of this phenomenon.	Gygli, Haelg, Potrafke, and Sturm. (2019)	64.759	30.164	90.794	163
Unemployment(-)	Share of labor force that is without work but available and seeking employment with basis of the International Labour Organization's estimates.	WDI	7.270	0.142	26.958	156
Pop_65 (+)	Percentage of population age 65 and over (% of total population).		9.352	1.085	27.576	159
Female_pop (+)	Percentage of the population that is female.		49.815	24.495	54.535	159
Log_Density (+)	Natural logarithm of population density (measured as the number of people per square kilometer of land area).		4.399	0.713	8.981	166
Urban_pop (+)	Percentage of urban population.		61.238	13.032	100	168
Democracy (+)	This index ranges from zero (least democratic) to ten (most democratic).	FH	6.446	0.419	10	169
Pres_elect (+)	Dummy that equals one if presidential (or prime minister) elections took place in 2018.	Own	0.254	0	1	130
Voice (+)	Voice and Accountability index. It measures the extent to which citizens of a country are able to participate in government elections and the degree of independence of the media.	WGI	0.048	-2.202	1.733	169
Turnout (?)	Voting turnout in elections as percentage of total population.	Tatu Vanhanen	40.206	0	70	157
Competition (?)	This variable portrays the percentage of votes gained by the smaller parties in parliamentary and/or presidential elections.	Tatu Vanhanen	46.450	0	70	157

Continues

Table 1 (continued)

Variable	Description	Source	Mean	Min.	Max.	Obs.
English (+)	Dummies that equal one when the legal origin of a country is respectively: the English Common Law, the French Commercial Code, the Socialist/Communist Laws, or the German Commercial Code. Thus, the reference classification is the Scandinavian Commercial Code.	La Porta, López de Silanes, Shleifer, and Vishny (1999)	0.348	0	1	138
French (?)			0.471	0	1	138
Socialist (-)			0.094	0	1	138
German (?)			0.051	0	1	138

Note. Authors' own elaboration. Notes: IBP (International Budget Partnership); FH (Freedom House); WEF (The World Economic Forum); ICTD (International Centre for Tax and Development); WDI (World Development Indicators); IHME (Institute for Health Metrics and Evaluation — University of Washington); WGI (The Worldwide Governance Indicators).

We took into account several studies to identify relevant control variables that can affect the associations between IPSAS and accrual accounting adoption in public sector and both fiscal transparency and accountability. Indeed, there are many researches (e.g., Arapis & Reitano, 2017; Besley & Burgess, 2002; Cicatiello et al., 2017; Cuadrado-Ballesteros & Bisogno, 2020; Kartiko et al., 2018; Mourao et al., 2020; Rodríguez et al., 2013) that explain why the variables presented in Table 1 are suitable for this paper.

All control variables that appear above were considered because they have been included in relevant literature. For instance, Rodríguez, Alcaide and López (2013), by applying a meta-analytic technique, identify useful contextual, institutional, and political variables that deserve attention as transparency and accountability determinants. To this respect, government's financial condition can influence financial disclosure to some extent. Donors and lenders would encourage transparency and accountability regarding public expenditures in order to monitor fiscal discipline and the use of resources, which suggests the inclusion of *Gross_debt*, in line with the agency theory.

Furthermore, the process of increasing economic, political, and social interdependence also creates pressures to adopt government 'good practices' — for example, certain accounting standards and financial reforms that are seen as steps toward accountability and transparency in the public sector (Christiaens, Vanhee, Manes-Rossi, Van Cauwenberge and Aversano, 2015). Likewise, government transparency and accountability depends on factors such as the integration and concentration of population since they can favor citizens' participation in public affairs. Consequently, variables such as globalization, urban population, and population density were included in our estimations and are related to the agency theory.

Additionally, citizens' living conditions and political participation avenues matter too. Transparency and accountability would emerge because of foreign pressures, but citizens also demand changes in public administration affairs depending on the current channels to express their concerns, their interests to do that,⁸ and the information they receive (Besley & Burgess, 2002). Therefore, Table 1 also shows variables such as *Log_Education*, *Unemployment*, *Democracy*, and *Voice*.

Demographic factors such as the female population and the percentage of people aged 65 years and over are also considered in our regressions. Theoretical literature supports that elderly people are especially sensitive about their localities' future and women are more compliant than males,

so they would pay special attention to public affairs and demand greater disclosure in the public sector (Castañeda-Rodriguez, 2018; Tittle, 1980).

In addition, the electoral turnout and the degree of political competition are deemed relevant factors since they can affect citizens' demands toward fiscal transparency and government accountability (i.e., agency theory approach). For instance, a high level of electoral participation would indicate that people are interested in public affairs, resulting in greater social demands for transparency and accountability (Mourao et al., 2020). Meanwhile, other authors point out that low voter turnout may threaten public organizations' legitimacy, so officials' transparency initiatives can emerge to restore public trust (i.e., legitimacy theory approach) (Tejedo-Romero & de Araujo, 2018).

Likewise, when political competition is intense, it is likely that opposition politicians are more effective in demanding the disclosure of public information (e.g., fiscal information) and in holding officials accountable (Schnell, 2018). Nevertheless, an opposite relation is also possible because government would be interested in limiting the disclosure of information if it is potentially usable by the opposition to criticize its policies (Cicatiello et al., 2017).⁹ Furthermore, incumbents are likely to want to appear transparent and accountable for their actions and decisions to win votes when elections are held (in line with the legitimacy theory), which explain the inclusion of the presidential election dummy.

Table 1 also includes four dummies for legal origin to capture the historical and institutional roots of a country, which could explain some differences regarding the restrictions imposed on the state and the executive power. To this respect, Schnell and Jo (2019) stress that there is empirical evidence that shows that countries with common law traditions exhibit higher levels of fiscal transparency.

The time has come to comment on the regressions to be run, which makes it necessary to consider the scale of measurement of the corresponding variables. For instance, the nature of the endogenous variable called Accountability gives us clues about the econometric technique to use since it is a discrete variable instead of a continuous one. Then, we use ordered logistic (OL) regressions¹⁰ when Accountability is the right-hand variable.

On the other hand, the endogenous variable OBI can be treated as continuous, so we use ordinary least squares (OLS) regressions in that case. In order to avoid biased coefficients due to possible heteroscedasticity, we choose robust estimators (i.e., using vce-robust option). However, and before showing our results, it is worth mentioning that although we have a large set of variables, not necessarily all of them will appear in the final econometric models since some of them are highly correlated. Therefore, we first identify the best models in terms of the adjusted-R², the Akaike information criterion (AIC), and the Bayesian information criterion (BIC) taking Base and Framework as fixed variables.

It is used an exhaustive search technique that allows us to identify the best model under specific conditions (e.g., the inclusion of certain variables in all regressions) and taking into account an index of normalized accuracy.¹¹ We employ the *gsreg* Stata command that runs as many regressions

as there are possible combinations between the variables and selects one of the former according to the aforementioned index (see Gluzmann & Panigo, 2015).

ECONOMETRIC RESULTS AND DISCUSSION

Table 2 displays first the OLS and OL estimates selected when OBI and Accountability are taken as endogenous variables respectively and both Base and Framework are fixed when using *gsreg* Stata command. These models (i.e., 1 and 2) do not include all the control factors since they correspond to the best specifications under the criterion of getting the higher normalized accuracy index.

Models 1 and 2 (Table 2) are the result of taking restricted specifications since they include both Base and Framework as fixed variables (i.e., the latter are included in all intermediate regressions). For their part, Models 3 and 4 (Table 2) arise from maximizing the normalized accuracy index without conditions on which covariates are considered in all regressions. In other words, Models 3 and 4 (Table 2) seek to identify the data-generating process behind OBI and Accountability, so this allows us to determine whether their dynamics depend on certain characteristics of the public financial reporting.

Table 2

Econometric estimates (selected OLS and OL models)

Model	1	2	3	4
Method	OLS	OL	OLS	OL
Dependent variable	OBI	Accountability	OBI	Accountability
Base	-2.043	0.692*		0.702*
Framework	-0.067	0.018		
Gross_debt	-0.134*	-0.019**	-0.130*	-0.020**
Tax_rev	-1.032*	0.050	-0.979*	0.050
Log_GDPP		-0.630		-0.635
Log_Education	0.020		-0.100	
Globalization	1.277***		1.197***	
Pop_65		0.249**		0.249**
Log_Density		0.381*		0.384*
Democracy		2.031***		2.037***
Pres_elect	9.308*		9.190*	
Voice	11.798***	2.470*	11.622***	2.450*
Competition	-0.093	-0.083***	-0.096	-0.083***
French		-1.172**		-1.179**
Socialist	-17.877***	-2.558**	-17.051**	-2.573**
Observations	56	79	56	79
R^2	0.933		0.933	

Continues

Table 2 (continued)

Model	1	2	3	4
Pseudo- R^2		0.546		0.546
Combinations		524,288		2,097,151

Note. Authors' elaboration. Significance levels: * $0.05 \leq p\text{-value} < 0.10$, ** $0.01 \leq p\text{-value} < 0.05$, *** $p\text{-value} < 0.01$. We use Stata 13 for estimating the respective models. Note: There were included the logarithms of GDPP, education and population density in order to reduce their scales and standard deviations.

As can be seen, the number of effective observations drops significantly to 56 or 79 depending on the endogenous variable selected. That is, the cost of including various control factors together with indicators of fiscal transparency, accountability, and accounting bases and frameworks is the loss of degrees of freedom for estimation purposes, despite the fact that we use an exhaustive search technique that allows *inter alia* excluding unnecessary variables. Therefore, our estimations refer to the following countries (those with an asterisk are deemed only in the Models 2 and 4 – Table 2): Argentina, Australia, Bangladesh, Belgium*, Bolivia*, Botswana, Brazil, Burkina Faso, Cambodia, Canada, Chile, Cote d'Ivoire, Cyprus*, Denmark*, Dominican Republic, Ecuador, El Salvador, Finland*, France, Gambia*, Ghana, Greece*, Guatemala, Guyana*, Haiti*, Honduras, Hungary, Iceland*, Indonesia, Israel*, Italy, Jamaica*, Japan, Jordan, Kenya, Lebanon, Lesotho, Liberia, Luxembourg*, Malawi, Maldives*, Mali, Malta*, Mauritius*, Mexico, Mozambique*, Nepal, Netherlands*, New Zealand, Nicaragua, Panama*, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Portugal, Romania, Rwanda, Sao Tome and Principe, Senegal, Seychelles*, Sierra Leone, Singapore*, South Africa, South Korea, Spain, Sri Lanka, Sweden, Switzerland*, Thailand, Turkey, Uganda, United Arab Emirates*, United Kingdom, United States, Vietnam, Zambia, and Zimbabwe.

If we take into account all intermediate regressions behind the Models 1 and 2 (Table 2), we can analyze the stability of the parameters through a kernel density plot, for example, in which the coefficient distributions for Base and Framework are shown. Figure 1 depicts that the coefficient distribution of Base concentrates around 0.5, a positive value that is close to that obtained in the Model 1 (Table 2) and that indicates the relevance of this public financial reporting feature to study the variation of Accountability. Conversely, the coefficient distribution of Framework is concentrated in zero, which aligns with the statistical non-significance of that variable in our selected estimations (Table 2).

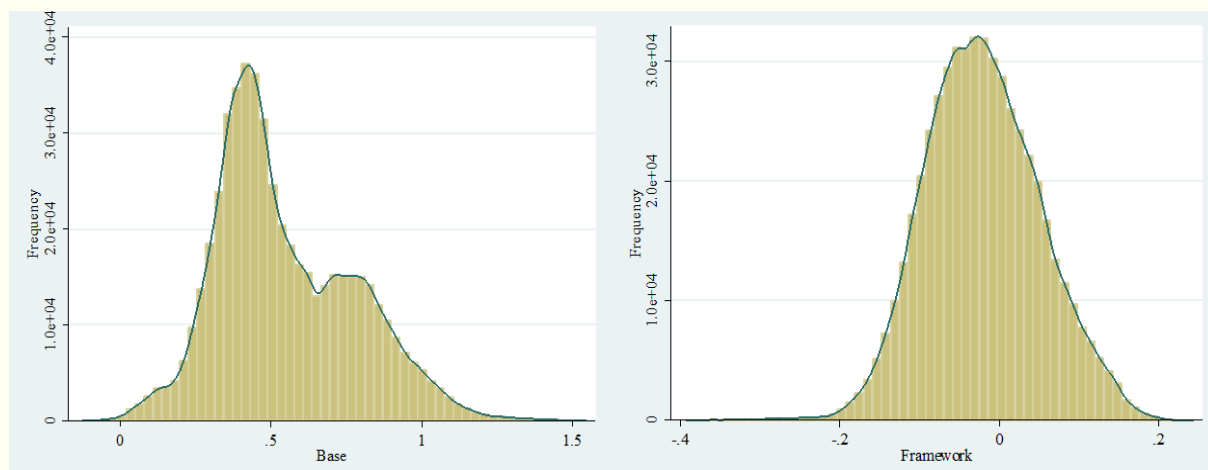


Figure 1. Coefficient distributions of Base and Framework when Accountability is the endogenous variable.

Source: Authors' own elaboration.

For its part, Figure 2 presents the respective kernel density plots when OBI is taken as endogenous variable. However, the coefficients of both Base and Framework are distributed around zero, so other control variables seem to be more important to study the outcomes in fiscal and budget transparency.

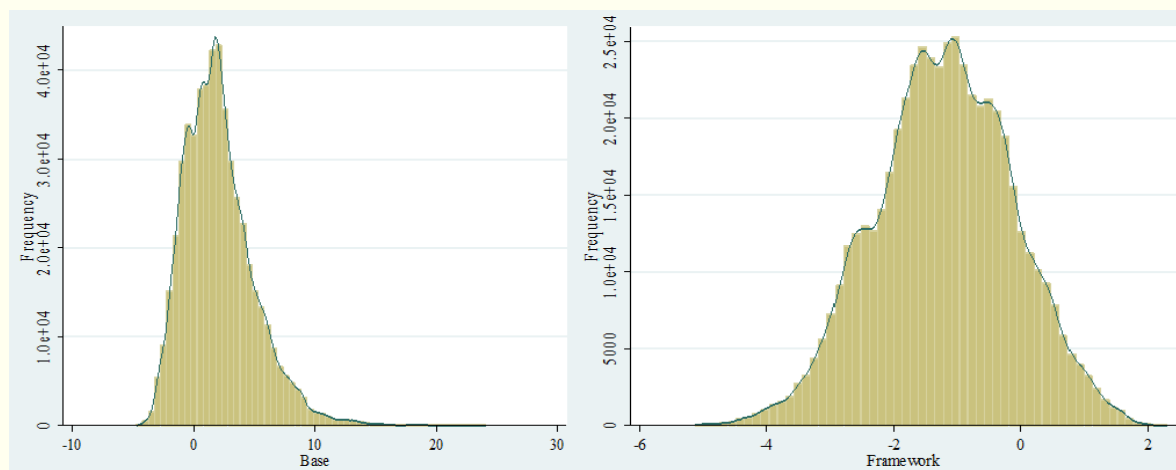


Figure 2. Coefficient distributions of Base and Framework when OBI is the endogenous variable.

Source: Authors' own elaboration.

Now, it is noteworthy to remember that the coefficients estimated through probabilistic models (e.g., OL regressions) do not allow us to make statements about how strong are the associations between the variables since the former do not follow a linear path. In consequence, Table 3 presents the marginal effects of Models 2 and 4 (Table 2). This shows that political and/or institutional factors such as the degree of democratization and the extent to which the media is free (captured by Voice) are a key factor for analyzing how accountability changes in the public sector.

Table 3

Marginal effects for OL estimates in Table 2

Model	2*	4*
Dependent variable	Accountability	
Base	0.0296*	0.0301**
Framework	0.0008	
Gross_debt	-0.0008**	-0.0008**
Tax_rev	0.0021	0.0021
Log_GDPP	-0.0270	-0.0272
Pop_65	0.0107**	0.0107**
Log_Density	0.0163*	0.0165*
Democracy	0.0869***	0.0874***
Voice	0.1057*	0.1051*
Competition	-0.0035***	-0.0035***
French	-0.0501**	-0.0506**
Socialist	-0.1094**	-0.1103**

Note. Authors' elaboration. Significance levels: * $0.05 \leq p\text{-value} < 0.10$, ** $0.01 \leq p\text{-value} < 0.05$, *** $p\text{-value} < 0.01$.

Many of the expected results (Table 1) were supported by the econometric results.¹² Only two coefficients are significant and have contra-intuitive signs, in particular those related to fiscal conditions (i.e., gross debt and tax revenue). Although the quoted literature indicates that those variables are positively associated with fiscal transparency and accountability, since they favor greater monitoring on officials' actions and encourage citizens' participation, Table 2 shows the opposite.

Nevertheless, a large amount of public debt may suggest that the incumbent administration is financially inefficient, so restricting access to fiscal information could serve to hide that fact. Furthermore, officials would do the same if citizens can find taxes to be burdensome and eventually unjustified according to the visible public expenditure (Castañeda-Rodríguez, 2021). Meanwhile, these hypotheses deserve attention in future research.

Another interesting result is that socioeconomic variables such as GDP per capita and education appear to be unrelated to fiscal transparency and accountability. This suggests that citizens pay special attention to the political and institutional context in which they can demand some characteristics and actions from their government. Therefore, it is not surprising that the spread of democracy is associated significantly with accountability and that governments appear to be more fiscally transparent in electoral periods, as explained by the theory of legitimacy.

Table 2 also shows that demographic variables, in addition to democracy and political competence,¹³ are strongly associated with accountability. This suggests that the former is a stable institutional characteristic that does not usually respond to conjunctural changes (e.g., elections). The population density or the percentage of the population aged 65 years and over are included

as control variables in empirical literature since they can foster certain behaviors or interests in citizens, so that the motivations of the principals can influence the institutional arrangement that imposes *inter alia* controls and channels to hold agents accountable for their actions and decisions.

For its part, fiscal transparency is especially related to variables that capture international monitoring and pressures (Globalization), the political juncture (Elections), and the extent to which citizens can participate in politics and media are independent to monitor those in authority (Voice). In other words, this implies that while politicians would be more motivated to disclose fiscal information during elections, to show their commitment to certain programs, or to hold future winning politicians accountable for their actions, it is also important that citizens get involved in public affairs to get better outcomes in fiscal transparency.

Finally, it is time to discuss our findings regarding the associations between public accounting bases and frameworks, on the one hand, and transparency and accountability, on the other one. Our evidence indicates that these institutional features are independent of which accounting framework is adopted for public financial reporting, despite the benefits that are usually attributed to the IPSAS. Conversely, accrual accounting seems to favor accountability since identifying the financial implications of officials' decisions in a timely manner could be easier under this accounting recognition criterion.

In other words, it is an illusion to think that a government can achieve better results in structural matters such as accountability, transparency, and corruption control by applying only some public financial reforms, even more so when they are promoted from abroad. In general, the latter requires the empowerment of citizens and their engagement in public affairs, as well as incentives that contribute to officials favoring and enforcing the disclosure of public information. This implies, *inter alia*, the extension of the participatory democracy.

It is worth commenting that although public accounting bases and frameworks can be captured through dummy variables, one for each particular basis or financial reporting model, the results do not change significantly. In general, this means that the number of exogenous variables could increase by four, but without justification (e.g., better performance of the estimated models). The respective tables are not presented for space considerations.

CONCLUSIONS

IPSAS and accrual accounting have gained recognition in the last decade as necessary to improve financial efficiency, comparability, transparency, and accountability in relation to government activities (ACCA, 2017; Deloitte, 2013; IPSASB, 2014), despite scant empirical evidence on these associations and concerns about IPSAS adoption (Biondi & Lapsley, 2014; Carnegie & West, 2005; Mattei et al., 2020; Navarro & Rodríguez, 2011). Meanwhile, many countries have embarked on implementing the corresponding public finance reforms, but without being sure of their usefulness, at least to improve fiscal transparency and accountability.

In this regard, our results indicate that the degree to which IPSAS are taken as financial reporting model, which is measured using the database built by the IFAC and the CIPFA (2018), is not related to fiscal transparency or accountability. For its part, the accounting base, in particular the transition to accrual-based accounting, is positively associated with accountability, which suggests that this accounting recognition criterion helps identify the financial implications of officials' decisions in a timely manner, a prerequisite to hold them accountable for their actions.

Our study also shows that there are other variables that help explain the dynamics of accountability and fiscal transparency. Factors such as the degree of political participation of citizens and freedom of the media (captured by Voice) seem to be more important in the analysis of these institutional issues in the world than the adoption of a certain public accounting framework (e.g., IPSAS).¹⁴ Likewise, it is found that the expansion of democracy and demographic variables, such as the population density and the percentage of the population aged 65 years and over, are positively associated with accountability and that governments appear to be more transparent fiscally in electoral periods. In other words, the political context matters when analyzing institutional characteristics such as those mentioned above.

Although the implementation of a particular accounting framework in the public sector (e.g., IPSAS) could be a favorable initiative to achieve a greater degree of harmonization in the financial reporting of governments (Brusca et al., 2016), this does not mean that improvements in fiscal transparency and accountability are also achieved. For the latter, it is required that the context in which public officials and citizens interact creates incentives (or demands) for the administration to provide more information about its actions and to allow its open access, as well as awakes the interest of citizens to participate in public affairs.

This explains why factors such as the spread of democracy, the media freedom, and the globalization are positively and significantly related to fiscal transparency and accountability. Therefore, achieving improvements in terms of these institutional characteristics implies, for example, thinking about strategies that limit the control of the public sector over the media and create scenarios through which citizens participate in the discussion and monitoring of policies that affect their communities (e.g., public oversight committees).

We recommend, for future research, considering other alternative measures about the level of IPSAS implementation in a country, either at the central or sub-national level. For this, the characteristics of the public financial reports issued could be taken into account, for example. Likewise, it is important to review whether it is possible to periodically measure progress in the process of adoption (or adaptation) of IPSAS in a country or region, to study its possible long-term relationship with other institutional characteristics (e.g., corruption or transparency).

NOTES

¹ These standards are issued, updated, and monitored by the International Public Sector Accounting Standards Board under the auspice of the International Federation of Accountants (IFAC).

- ² This explains why the Open Budget Index (which is one of the variables included in this study) also considers the degree to which the budget discloses revenue composition, distribution of spending, and financing operations. It requires revealing, for example, information on assets and liabilities since their changes could imply future budgetary pressures.
- ³ Multilateral organizations, in addition of promoting IPSAS implementation, favor their legitimation by applying them to their own situations.
- ⁴ Those pressures can be exerted through ways such as financial assistance, capacity development programs and stand-by agreements. For example, approvals and disbursements of credits may be conditioned to commitments on public financial reforms.
- ⁵ For instance, elected officials could prefer to increase their private rents or favor their relatives or acquaintances through public contracting rather than pursuing the general welfare.
- ⁶ Since the number of observations differs between countries and variables, this falls depending on the models considered for regression purposes
- ⁷ The appearance of a question mark indicates that the theory or empirical literature does not allow predicting a certain relationship. It can also mean that we do not expect any association, which is the case for Base and Framework.
- ⁸ It explains the inclusion of GDP per capita as a proxy of citizens' living condition since it is more likely that people call for transparency when they have satisfied primary needs.
- ⁹ In addition, political competition would hinder or delay necessary reforms if the government was the one interested in improving transparency and accountability to legitimize its administration
- ¹⁰ Those estimates were run using the Stata's comand ologit
- ¹¹ It was specified as $0.333(\text{adjusted-R}^2 / \text{or pseudo-R}^2 \text{ for ologit regressions}) - 0.333(\text{AIC}) - 0.333(\text{BIC})$.
- ¹² For instance, the coefficients related to the dummy variables for legal origins suggest that countries with historical socialist roots tend to have lower levels of fiscal transparency and accountability, which was expected since this legal system concentrated power in the sovereign (or government) to facilitate its intervention in the economy, politics, and social relations.
- ¹³ Our results for this variable are in line with the findings of Cicatiello, Simone and Gaeta (2017).
- ¹⁴ According to the calculated marginal effects (Table 3), Voice is one of the more important factors to explain the changes in accountability.

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1st author: conceptualization (lead), data curation (lead), formal analysis (lead), investigation (lead), methodology (lead), software (lead), validation (lead), writing – original draft (lead), writing – review & editing (lead).


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