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Financial Sustainability in Governments. A New Concept and Measure for Meeting New Information Needs

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1 The Importance of Public Finances in the Public Management

According to the World Bank—WB—(1988), public sector plays an essential role in the development and in the economy of a country because public sector supplies the necessary technical and technological infrastructures to facilitate the development of a country (WB 1988). Indeed, the economic development could not be carried out without the public sector's effort, since governments directly invest in the different sector of the economy (such as industry, agriculture or commerce) in order to encourage the economic growth (Gupta 2013).

Also, public administrations provide a wide range of public services with a twofold objective: covering the social services that the private

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sector could not bear and making the social services affordable for every citizen. Nevertheless, the high volume of debt and deficit and the last years provoked by the economic and financial crisis has endangered the public service delivery, since public administrations have been involved in a context of a decrease of public revenues and in the introduction of policies of public expenditure cuts (Bailey et al. 2014; Lee and Wilkins 2011; Checherita-Westphal et al. 2014; IMF 2014). Also, the decentralization process followed by public administrations has caused great territorial differences (Martinez-Vazquez et al. 2015; Ruiz-Huerta et al. 2012) and even a duplication on the public services delivery (Ruiz-Huerta et al. 2012).

This situation has undermined the public administrations' capacity of continuing to provide public services to society without reducing their quality and amount, and citizens have shown some concerns regarding this issue, demanding more relevant information about financial sustainability in governments (Dumay et al. 2010; Guthrie et al. 2010).

Under this framework, international organizations (IFAC 2013; CICA 1997; EU 2012a) and prior research (Groves and Valente 2003; Cabaleiro et al. 2013) have focused on the analysis of the public finances to encourage public administrations to achieve financial health and ensure intergenerational equity. It has caused an increase of the demand on a higher quality and transparency of the financial information (Pina et al. 2010) in order to detect financial distress (Zafra-Gómez et al. 2009) and to achieve a sustainable financial balance (Burritt and Schaltegger 2010). Therefore, the achievement of the financial sustainability in public entities has been considered as a prerequisite to get the financial health.

Following World Commission on Environment and Development (Brundtland (WCED) 1987) and international organizations (IFAC 2013; GASB 2011; LGA 2012), financial sustainability can be defined as the ability to continue current policy without changes in public services and taxation and without causing a continuously rising debt. This concept has been told to collect three interrelated dimensions: service, revenue and debt (IFAC 2013). So, the analysis of these three dimensions has become relevant to meet not only financial objectives but also the rest of public ones. This book is driven to set interesting insights regarding this issue with the aim at contributing for making sustainable public administrations.

2 The Evolution in the Management of Public Finances

In the last years, accountability has become a relevant issue in public administrations. Although accountability can be defined with a multi-propose objective and different perspectives have been highlighted (Bovens et al. 2014), financial problems to keep public services running have made scholars (Rodríguez et al. 2014; Navarro-Galera et al. 2016; Dollery and Crase 2006) and international organizations (IFAC 2012; EU 2012a; NAO 2014) to focus on the link between financial sustainability and accountability. This way, there has been a call for research regarding useful financial information to monitor the accomplishment of intergenerational equity, which has become a crucial point regarding the management of public entities (GASB 2013).

This way, prior research focused on several fundamental aspects of public administrations such as financial condition and fiscal distress, among others. Firstly, the analysis of public finances was concentrated on the information about fiscal condition which was centred on solvency (Wang et al. 2007; Groves et al. 1981; Nollenberger 2003). Concretely, solvency was analysed using some financial indicators in order to represent the level of sustainability, flexibility and vulnerability. These indicators tried to examine the financial capacity of public administrations to meet their financial duties with providers (Cabaleiro et al. 2013). However, the usefulness of the information that these indicators provides is limited because they cannot capture the wide range of financial dimensions of public entities and are not able to evaluate the capacity of public administrations to keep running public services and activities (Rivenbark et al. 2010). Although sustainability is an element included in the financial condition, the concept of financial sustainability goes further. Financial sustainability is a new concept of public finances which tries to represent a measure with a clear impact on future projections of public affairs so as to improve the public management (Fig. 1).

Therefore, the necessity to find an indicator which allow to measure public finances and to predict when a public entity might be facing financial difficulties led prior research to make new efforts with

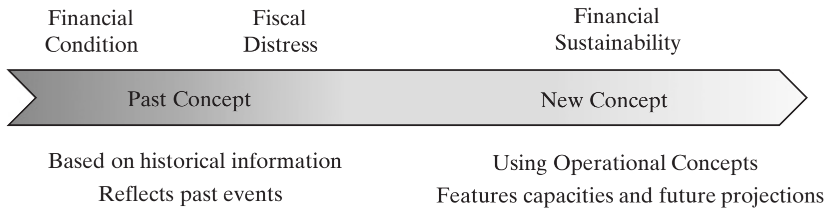

Fig. 1 Evolution of the concepts

different indicators such as fiscal distress focused mainly on budgetary information (Carmeli 2008; Kloha et al. 2005b; Kloha et al. 2005a). Nevertheless, some authors have found different difficulties regarding the use of fiscal distress measures (Kloha et al. 2005a; Woodbury et al. 2003; Dollery and Crase 2006). In this regard, these indicators seem to use a huge number of variables, to exclude some of the key variables or to have an ambiguous interpretation among others limitations (Kloha et al. 2005a, b). Indeed, following international organizations such as EU (Eurostat 2015), taking into account external information such as that provided through the demographics or economic factors, which were not included as key variables, could help public managers and other stakeholders to reach the financial sustainability and make future financial projections of financial conditions of public administrations. So, these indicators are not well-fitted to be used for evaluating the providing of public services over time.

In fact, the financial and economic crisis has revealed that the information provided by the prior indicators was not enough since they could not predict the financial problems of public administrations. This way, both financial condition and fiscal distress base their indicators in historical financial information. So, these approaches measure past events and could describe the present financial situation of an entity, but are unable to have impact on the future, which is linked to the concept of financial sustainability. Therefore, nowadays, international organizations and prior research are adulating the use of a more complex and multidimensional concept which is centred on the future instead of the past: financial sustainability.

Financial sustainability is a broader concept than financial condition or fiscal distress because it covers three dimensions: debt, revenues, and services (Rodríguez et al. 2016b; IFAC 2013). In addition, its importance derives from its link to the concept of inter-period equity or intergenerational equity. That means, financial sustainability should provide public managers with useful information not only to anticipate and solve the potential risks but also to take advantage of the opportunities with the aim at keeping providing future generations with the same quality and amount of public services. Thus, the quality of an indicator of the financial sustainability depends on the capacity to represent this intergenerational equity from the point of view of making decisions (about its three dimensions) without compromising future generations (Rodríguez et al. 2014).

Therefore, the aim of the financial sustainability puts more emphasis on having information available about the coming financial years than on explaining the reasons for the current figures of a public administration. So, to achieve financial sustainability, a public entity must to be able to meet its financial commitments and service delivery with the same quantity and quality, without causing the debt to rise continuously and without compromising future generations (IFAC 2013; EC 2011; EU 2012b).

This new measure comes to meet the new demands of citizens that require accountable and sustainable public administrations. This way, financial sustainability of public entities has become in a key concept for public administration even more important than the others dimensions of the sustainability (environmental or social) or of the public sector management (Afonso and Jalles 2015). Nonetheless, this is a new concept that requires attention from researchers because it needs to be built. A call for research about financial sustainability in public administrations is, therefore, necessary to advance in healthy and sustainable public entities.

3 Some Notes About the Measurement of the Financial Sustainability

As noted previously, the financial sustainability is determined by the ability of the government to manage expected financial risks and shocks over the long-term financial planning period, without necessity to

introduce substantial or disruptive revenue (and expenditure) adjustments (CICA 2009; CSIS 2010; USAID 2011; EC 2011; EU 2012a, b; IFAC 2012; IFAC 2014). According to IFAC (2013), long-term financial sustainability should include information about its three interrelated dimensions: revenues, services and debt (IFAC 2013). Regarding the revenues dimension, it focuses attention on the capacity of an entity to vary or introduce revenue sources (for example, taxes). In addition, the service dimension pays special attention to the capacity of an entity to maintain or vary the volume and quality of services that it provides or the entitlement programs it delivers. Finally, the debt dimension attends to the capacity of the entity to meet its financial commitments as they come due or to refinance or increase debt as necessary.

These three dimensions are linked to intergenerational equity (WCED 1987), or 'inter-period equity' (Pezzy and Toman 2002; IFAC 2014), concept which focused its efforts on the need to provide public services balancing the financial resources obtained with the consumption of resources (the cost of services).

However, although nowadays it is admitted that the concept of sustainability should consider the intergenerational equity, its measurement taking into account the intergenerational equity has had different attempts. First of all, Hicks (1945) suggested that economic sustainability should include the concept of 'income'. That means, the maximum amount that a person can consume during a period maintain the economic well-being. Following this idea, Stavins et al. (2003) suggested a broad approach of the sustainability based on a growth that combines dynamic efficiency—measured on the basis of the difference between revenues and expenses—with future maintenance. Padilla (2002) and Pezzey and Toman (2002) have warned that in the analysis of sustainability not only it should be focused on the assessment of efficiency but also on the intergenerational analysis because an understanding of the rights of future generations is vital.

Following this new idea about the sustainability linked to the intergenerational equity, numerous international organizations and prior research have taken part in the analysis of financial sustainability, but not all of them have provided a concrete measurement. This body of literature can be divided into two groups. The first one has been focused

on analysing financial sustainability as compendium of financial indicators to be achieved by public administrations. In this regard, the FSRB (2005) has proposed four indicators to assess the financial sustainability: net financial liabilities, operating surplus or deficit. In addition, Gold (2008) on account of the PwC's report about sustainability (PwC 2006) has pointed out five KPI to assess financial sustainability: operating surplus/deficit, rates coverage, sustainability ratio, current ratio and interest coverage. Finally, with the aim at analysing the financial sustainability and following the statements of the CICA (1997), Cabaleiro et al. (2013) use three indicators: long-term debt/total budgetary revenues, long-term debt/net budgetary revenues from nonfinancial operations and long-term debt/net budgetary revenues from current operations. However, all these indicators are based on historical information, so the potential future projections that they can provide are limited.

Indeed, international organizations have currently highlighted the importance of financial statements for assessing financial sustainability, considering them vital to achieving an understanding of the present situation of public finances (EC 2011; IFAC 2013), specifically, the income statement (IFAC 2013). This way, the second group of definitions of financial sustainability has focused on the income statement as a good approach to measure financial sustainability in public administrations.

The importance of this financial statement is that the income statement uses an accrual basis of accounting which makes the income statement the most closely concept linked to the intergenerational equity (GASB 1990; IFAC 2012: Navarro-Galera et al. 2016). On the other hand, the budget statement is primarily cash-based or follows a mixed cash-accrual basis in determining the budget results, which could be distanced from the intergenerational equity (GASB 1990; IFAC 2012; Navarro-Galera et al. 2016). Indeed, the income statement includes several items that are not incorporated in the budget statement such as the consumption of capital investments, estimates of future costs and expenses incurred but pending allocation to the budget, among others (Navarro-Galera et al. 2016). These concepts effectively represent the organization's capacity to maintain its financial well-being in the future. Therefore, considering the income statement, financial sustainability

Concept	Amount
Income statement for the financial year obtained by applying the current IPSAS	(1)
+ Negative entries for extraordinary activities	(2)
– Positive entries for extraordinary activities	(3)
Corrected income statement for the financial year (intergenerational equity for financial sustain ability)	(1) + (2) –(3)

Fig. 2 Financial sustainability: Adjusted Income Statement *Source* Rodriguez et al. (2014, 2016) and Navarro-Galera et al (2016)

can be measured from a much more comprehensive standpoint than that of budget information (Navarro-Galera et al. 2016).

Moreover, according to the IFAC (2013), this statement would reflect a direct approach to two of the three dimensions included into the fiscal sustainability. So, income statement directly includes the value of the public revenues (revenues dimension) and expenditures (which are considered as the economic measurement of the services dimensions) on accrual basis. So, both public revenues and expenditures are linked to the intergenerational equity. In addition, the income statement is indirectly associated with the debt dimensions since the debt is related to the volume of services provided and this statement includes the interests of the debt (IFAC 2013).

So, this income statement approach which includes the three dimensions and is based on accrual basis is linked to the new concept of the financial sustainability which is focused on featuring a financial statement which reflects future aspects and projections of public administrations and not only the past events.

Under this framework, Navarro-Galera et al. (2016) and Rodríguez Bolívar et al. (2016a, b) have proposed a financial sustainability indicator based on accrual information call "adjusted income statement" (see Fig. 2). This indicator uses the income statement but the revenues or expenditures derived from the extraordinary activities which are not expected to be repeated in the future are deleted. This adjustment could make a more reasonable measure of the intergenerational equity, and more suitable for the concept of financial sustainability given that the extraordinary activities lack any future scope.

The use of this measure in local governments have allowed to identify drivers and limiting factors to achieve sustainable public entities (Rodríguez et al. 2016b; Navarro-Galera et al. 2016). The knowledge of

these factors is relevant for public managers to take decisions. So, in the next section, we refer to the most relevant identified drivers and risk factors for financial sustainability.

4 Internal and External Factors for Financial Sustainability

Similarly to international organizations (NAO 2014; PwC 2006; Local Government Association 2011; IFAC 2013), prior research has put the emphases on the analysis of financial sustainability in local governments (Rodríguez et al. 2016b; Rodríguez et al. 2014; Navarro-Galera et al. 2016; Andrews 2015; Dollery and Crase 2006; Dollery and Grant 2011; Mahdavi and Westerlund 2011; Gold 2008), because they are the public level closest to citizen, so they are well placed to be aware of citizens' information needs (Watt 2004). This characteristic of the local government linked to the economic and financial crisis caused high volume of accumulated deficit and debt at local level (Muñoz-Cañavate and Hípola 2011) which has increased the necessity to analyse the financial sustainability at local level.

This context has grown the concern about the management of public finances focused on financial sustainability. In this regard, financial sustainability management of a public entity depends on two types of variables: internal and external factors (see Fig. 3).

The internal variables could be represented by a "local management approach" (Kimhi 2008) and they are focused on the political and financial management of a municipality (Zeedan et al. 2014). So, the analysis of these internal factors tries to identify how the variables which represent the past management of a political group can influence on the financial sustainability and thus, on the intergenerational equity in the future. In this regard, an interesting research question that should be analysed is whether these historical and internal variables (such as the budget, the solvency, the financial independence or debt) could have relation with a future impact on the financial sustainability.

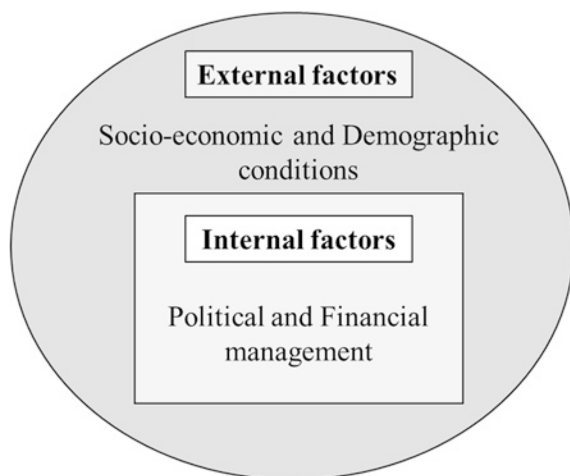

Fig. 3 Internal and External factors

Thus, having analysed 116 Spanish municipalities, Rodríguez et al. (2014) identified the budget result as an internal variable that could influence positively on the financial sustainability. On the other hand, they were unable to identity the current liabilities as a negative internal factor due to its slight influence. Finally, they discovered that the short-term solvency and the financial independence have no influence on it.

Moreover, Navarro-Galera et al. (2016) considering a wider sample (130 municipalities from 2006 to 2011) have carried out a deeper analysis which shows that the origin (external or internal) and the destination (operating or capital) of the revenues could be specific financial sustainability drivers. By contrast, they demonstrated that the long-term debt, the financial expenditures, the wages and the operating expenditures could be risk factors for financial sustainability.

On the other hand, the external factors are those which are uncontrollable by a public entity. The UE considers that analysing the current demographics changes is essential in order to establish adequate social and financial policies. So, demographic factors could be considered uncontrollable potential and influential factors for financial sustainability which likely become even more important in the future (Eurostat 2015). Moreover, prior research has identified as external factors de

socio-economic ones (Zeedan et al. 2014; Rodriguez et al. 2016b). Indeed, the UE classifies the municipalities taking into account their economic and demographic characteristics, so the most studied external factors could be considered the socio-economic and demographic ones.

In this regard, the analysis of financial sustainability and its factors at local level can help public managers and politicians to monitor and to keep sustainability of public services over time. Specially, it should be considered the external factors since useful information about them could help public managers to take decisions to strengthen the factors that favour the financial sustainability (drivers) and to reduce the negative effects of risk factors (EU 2012a, b; IFAC 2013; NAO 2014).

Based on previous comments, researchers have carried out different studies in order to figure out a good indicator to measure the financial sustainability at local level (Navarro-Galera et al. 2016) and the drivers and risk factor (external ones) that could influence on it (Rodríguez et al. 2016a, b; Andrews 2015). Some prior studies have only analysed factors that separately affect the previously mentioned three dimensions of financial sustainability regarding local governments' public finances: expenditures (Choi et al. 2010), revenues (Benito et al. 2010; Gupta 2007) or public debt (Feld and Kirchgässner 1999). Nonetheless, it is much interesting to focus on those that have analysed drivers and risk factors in financial sustainability as defined by the IFAC (2013) and GASB (2011) in order to identify which external factors could have an effect concretely on the financial sustainability.

In this regard, as mentioned before, prior studies have been focused on the influence of the demographic and socio-economic variables in financial sustainability because they have been told to be of huge current importance to achieve the financial sustainability (EC 2011; EU 2012a, b; GASB 2011; IFAC 2013).

Thus, previous studies have pointed out that the population size, the dependent population under 16, the foreign population and the unemployment rate are external variables that are expected to be risk factor for the financial sustainability of local government (Rodríguez et al. 2016a, b). In addition, in a further analysis, Rodriguez et al. (2016a) have found that the specific unemployment rates that have a stronger influence on financial sustainability are the agricultural, building and

services sector unemployment rates. By contrast, it has been considered that the population density (Andrews 2015) and the educational level of the population (Rodríguez et al. 2016a, b) could be drivers of the financial sustainability.

As noted previously, all studies undertaken by prior research have chosen the local administration context as the focus of the study. In fact, there is a lack of studies which analyse the financial sustainability and its factors in other levels of the administration such as regional or state level even on other types of public entities such as Universities. So, future research should focus on the financial sustainability and its influential factors at other levels of the public administrations in order to provide public managers with useful information which allow them to take appropriated public policies to reach financial sustainability in all types of public entities.

5 Conclusions

The sharp drop of public revenues together with the maintenance or increase of public expenditure had led to budgetary gaps and to increase in debt. Therefore, central governments have been forced to adopt strong measures against the crisis such as budget cuts, public funding reductions or lowering transfers among other levels of government. These measures have had an impact on all levels of government, even on other types of public entities such as Universities.

At international level, organizations and prior research are working on the concept of the financial sustainability since it has been considered as a key aspect in public management (IFAC 2013; EU 2012a; EC 2016; FSRB 2005; Local Government Association 2011; Andrews 2015; Navarro-Galera et al. 2016). Financial sustainability should have a predictive capacity (Dollery and Crase 2006) which help public managers and other stakeholders to make appropriated decisions regarding public finances. So, financial sustainability should provide useful information to assess the government's ability to maintain or to adjust the volume and/or quality of services provided, and to predict vulnerability problems caused by uncontrollable factors such as demographic

trends or standards issued by other levels of governments (IFAC 2014; Navarro-Galera et al. 2016). However, the lack of agreement on the measurement of the financial sustainability jointly with its huge and current importance for public administrations make the study of this concept particularly timely and relevant in all levels of the public sector. Moreover, the study of the financial sustainability is increasingly important because its obtainment and maintenance are as a prerequisite to aim the public entities' objectives.

Therefore, it is necessary to undertake research in the field of public sector management with the aim at keeping financial sustainability safe, assuring the provision of public services for future generations. It means to focus efforts in defining and measuring financial sustainability and in the identification of drivers and risks factors to make available financial systems capable of providing relevant information to take good financial decisions.

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