

MEASURING FINANCIAL RISK IN SPANISH LOCAL GOVERNMENTS

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Abstract

The need to reduce the public sector cost and the debt results in the implementation of mandatory requirements in many countries. Spain belongs to the group of countries that monitors the financial health of their local governments, using financial indicators enforced by law. The objective of this paper is to analyze whether the introduction of the 2012 Spanish legislation about fiscal stability and budgetary balance has led to improvements in the financial health of local governments. The results of our analysis show that the introduction by law of compulsory requirements is needed and that the disclosure of indicators for benchmarking purposes has been beneficial and positive, but this is not so in all cases. The practical implication of this study is that even though managers can study the financial situation of the local governments through the comparative evolution of indicators, compulsory requirements are also needed to ensure that the goals are achieved.

Key words: benchmarking, financial risk, improvement, isomorphism, local governments

Introduction

After the 2008 financial crisis, public concerns about the level of countries' borrowing in the Euro-zone have arisen. Such concerns create pressure on European Union (UE) and the Euro-zone countries to make public statements about the sustainability of their debt and how financially prudent they are in order to restore the financial markets confidence.

Regulatory failures have contributed to the onset of the global financial crisis (Moschella and Tsingou, 2013), giving rise to adopt new legislative measures by governments to control financial situations through specific tools. The need is to reduce the public sector cost and debt results in the implementation of mandatory requirements in many countries. Financial sustainability requirements are a tool chosen by the UE policymakers to track the fiscal health of countries belonging to the Euro-zone and, in turn, by the Spanish central government to control the financial conditions of Spanish local governments. These tools of control typically assess the fiscal health of local governments (LGs) based on both the transposition of the financial sustainability requirements established by the UE to the Spanish arena and the monitoring of how each LG performs across several financial indicators. Besides, the introduction of compulsory financial limits to the LGs' deficit and debt.

The Spanish Ministry of Finance website publishes a set of financial indicators for each LG, making them available in an online database with the goal of encouraging benchmarking between peers. The open access to this information allows LGs to benchmark their financial positions relative to one another each year and over time. Often the aim of these initiatives is for LGs to act on that information and make changes in their financial management.

The objective of this paper is to analyze whether the introduction of the Spanish legislation of 2012 about fiscal stability and budgetary balance has led to overall improvements in the financial health of LGs and, if so, whether the changes are improvements resulting from benchmarking between LGs' peers or they have an isomorphic component. The identification of isomorphic components would justify compulsory regulation in order to be sure that the improvements are sufficient to overcome the thresholds established by the EU requirements transposed into the Spanish regulations.

Institutional theory assumes that organizations respond to pressure from their environments, and adopt structures and practices that are considered legitimate and socially acceptable by other organizations in their field (Ribeiro and Scapens, 2006). The basic premise of this theory is that the tendency of organizations towards conformity with predominant norms, traditions and social influences in their external environments will lead to homogeneity among organizations in their structures and practices (Powell and DiMaggio, 1991). In this sense, institutions will tend to adopt, by a mimetic isomorphism, the practices generally accepted. Thus, following this theory, it is interesting to study whether the Spanish central government financial sustainability requirements may accelerate isomorphism in LGs. According to Gerrish and Spreen (2017), LGs, previously unaware of neighbors' financial performance, make managerial decisions that move their financial indicators toward the average value of their peers. So, this paper analyzes whether or not high and low performers converge towards their peers, while the mean of the group remains (largely) unchanged and the dispersion of financial indicators declines. The impact on LGs' finance of adopting mandatory financial indicators has been studied by considering a base year to analyze the effect before and after their implementation. In

this study, we analyze the financial behavior of LGs before and after 2013 in terms of budget sustainability, non-financial budget balance, public debt and their average payment period. The database consists of 11 financial indicators annually produced by 143 local governments from 2010 to 2016. We estimate the impact of Spanish government benchmarking program on measures of central tendency and dispersion; specifically, the indicator's mean, standard deviation (SD), and interquartile range (IQR) using Weighted Least Squares (WLS) Introduction regression methods.

The paper is organized as follows. Firstly, the Spanish legal financial framework and the background about the assessing LG financial risks are explained. Secondly, the theoretical approach of this study is introduced. Thirdly, the methodology is described. Fourthly, the analysis of results is shown. Fifthly, the discussion is developed and, finally, conclusions are drawn.

The Spanish legal financial framework

The Spanish public sector is made up of three layers of governments: central government, regional governments (autonomous communities) and LGs. LGs have autonomy to manage the delivery of the public services under their responsibility. In order to fund the public services provided, LGs collect their own taxes and receive transferances and grants from the central government, regional governments and/or supranational organizations. They can also fund the services provided by borrowing from banks and financial markets up to the limits established by the relevant laws. The financial control over LGs is carried out by the Central Government Internal Audit Office (Intervención General de la Administración del Estado, IGAE), the Regional Government Internal Audit Office and

the Internal Audit Office of each LG. At local level, the internal control is carried out by the LG financial controller who assesses whether the facts with economic impacts are consistent with the budget and applicable regulation. There are two internal control approaches: an ex-ante control related to the compliance with the legality and an ex-post related to the financial control. Our research is focused on the second.

The present control of financial risks arises in the context of the 2008 financial crisis as an important requirement for LGs. The Spanish LG legal financial framework is made up of a set of regulations which develop requirements from different perspectives to control the financial sustainability of LGs. The Spanish central government adopts a specific regulation, in the sense that is “as an intentional form of intervention by public-sector actors in economic activities” (Koop and Lodge, 2017), to build a legal framework.

The relevant legislation applicable to the financial risk control of LGs is:

- The Organic Law on Budgetary Stability and Financial Sustainability (LO 2/2012), adopted on 27th of April 2012.
- Reporting obligations of information (Order HAP/2105/2012), adopted on 1st of October 2012, which develops the commitments contained in the Organic Law on Budgetary Stability and Financial Sustainability.
- Instructions of accounting model, differentiating the model according to population and budget of the local entity:
 - Instruction of the normal local accounting model (Order HAP/1781/2013) adopted on 20th of September 2013.
 - Instruction of the simplified and basic local accounting model (Order HAP/1782/2013), adopted on 20th of September 2013.

- Royal Decree 424/2017, of April 28, which regulates the legal regime of internal control in the entities of the Local Public Sector.

The above Spanish regulation is a package of actions introduced after the 2008 financial crisis in order to curb the public expenditure and to reduce the annual deficit and the debt. As a Euro-zone member, Spain had to approve a regulatory framework consistent with the EU requirements to achieve specific commitments towards getting back on the road to growth. As a consequence of the pressures of the EU, the article 135 of Spanish Constitution was modified by socialist President Zapatero and the Organic Law on Budgetary Stability and Financial Sustainability was enacted in 2012. This act establishes the requirements to be met by LGs in order to ensure their financial sustainability. It provides important requirements based on a set of principles about budgetary stability and financial sustainability, and establishes a legal basis applicable to the different layers of the public administration. According to the Organic Law on Budgetary Stability and Financial Sustainability, all Spanish public sector entities have to meet the following principles: budgetary stability, financial sustainability, multi-annuity, transparency, efficiency in allocation and use of public resources, responsibility, institutional loyalty and the development of mechanisms for the coordination and application of the law. This act also establishes various benchmarking indicators described in Table 1: budgetary sustainability, non-financial budgetary balance, expenditure rule, public debt, average payment period, which are calculated based on the budgetary accounting¹.

The Organic Law on Budgetary Stability and Financial Sustainability establishes a legal mechanism named '*Reporting requirements*', which provides a schedule for different

analyses of the financial position of LGs for monitoring their financial health. LGs have to report about budgetary stability and financial sustainability over the year. LGs have to evaluate the budgetary stability and financial sustainability following the specifications included in this act when preparing, in the fourth quarter of the year, the budget for the next fiscal period, and to elaborate the financial report at the end of the fiscal period. LGs must upload the information shown in Table 1 on the Ministry of Finance website '*Virtual office of financial coordination of local entities*', using the XML taxonomy. At the end of the fiscal year, in the case of breaching the budgetary stability, the expenditure rule or the public debt indicator, LGs must take actions in order to get LGs back to the financial stability position. The entities which fail to meet the indicators' limits must elaborate an '*eco-financial plan*' aimed to recover the financial stability over the next two fiscal years.

Together with the indicators included in the Organic Law on Budgetary Stability and Financial Sustainability, the Spanish Public Sector Chart of Accounts (SPSCA) establishes another set of indicators (see Table 2). These indicators should be disclosed in the notes as a part of an annual financial report and are calculated under accrual basis (see [footnote_endnote1](#)). These indicators are reported at the end of the fiscal year and uploaded to the National Audit Office website.

Background on assessing LG financial risks

Financial risk is a concept taken from the private sector connected with the probability of organizations defaulting and the inability to meet their financial commitments. The Spanish legislation includes in the Royal Decree (RD) 424/2017, of April 28, -which regulates the internal control of LGs- a description of the concept of financial risk for LGs, which is defined as: '*...the possibility of occurrence of events or circumstances ...*

that could lead to non-compliance with the applicable regulations, lack of reliability of the financial information, inadequate protection of the assets or lack of effectiveness and efficiency in management.' This RD provides additional requirements about the internal control for LGs in order to homogenize the financial risk control, the risk measurement becoming a part of the financial control.

The academic literature proposes multiple approaches to define the term of financial risk in LGs, which are used interchangeably. Financial condition (Mead, 2001), fiscal health (Hendrick, 2004), fiscal distress (Kloha, 2005) or financial health (Zafra, 2009), are examples of terms used by authors, acts, governments or institutions with a similar meaning. These terms are related to indicators that measure the financial position of LGs. Cabaleiro et al. (2012) show an overview of different terms by authors. The idea of the concept of financial risk is the same, but each author includes specific details [\(table 3\)](#). The common idea in all definitions is that LGs have liabilities against third-parties and debts and the likelihood of failure is the financial risk. To assess this likelihood, some indicators are based on the financial information used to measure the European System of Accounts (ESA) concept of net lending/net borrowing, the solvency or the liquidity of LGs. Table 4 includes a summary of recent research, by author, year of publication, main objectives of the article, indicators used, and conclusions.

From the analysis of previous literature seems that authors apply benchmarking indicators universally accepted. The most used is the Financial Trends Monitor System (FTMS) of the International City/County Management Association (ICMA), which defines the financial condition as the ability to maintain existing service levels, resistance to local and regional disruptions, and meeting the demands of natural growth, decline and change.

ICMA's tool consists of a total of 42 indicators categorized in different factors: revenues, expenditures, operating position, debt, unfunded liability, capital plant, community needs and resources and disaster risk indicators. Other accepted benchmarking tools are the Canadian Institute of Chartered Accountants alert system, and the ratios included in the Comprehensive Annual Financial Report of GASBS 34 (Governmental Accounting Standards Board).

It is interesting to highlight that the majority of indicators used are those connected with debt. In our study, common ratios identified in the literature such as long-term debt, debt per capita or solvency ratios are analyzed. Clark (2015) studies the financial condition of local governments through the Financial Condition Index (FCI), using 11 variables which measure financial stress. Gorina et al. (2017) relate the financial condition with a regression model in which fiscal distress is the dependent variable, and the financial indicators are the independent variables. The variable which is similar in our study is the budgetary solvency because according to the definition included in that paper, the net lending or net borrowing is measured.

Trussel and Patrick (2017) use indicators related to debt similar to our study: debt service (our indebtedness) and debt per capita. Once again, the dependent variable is financial risk, and the indicators are the independent variables. In conclusion, the recent international literature aims at explaining the financial condition as a dependent variable of a set of financial indicators. The independent variables are internationally accepted indicators related to debt.

Other researchers, like Navarro Galera et al. (2015, 2016, 2017), build a model based on the probability of default (PD) according to Basel II requirements and study the impact

of socio-economic variables in the LG debt. Their conclusions are that PD is influenced by: population, socio-economic and financial factors, Mayors having studied an economics-related university degree and the presence of a low proportion of women councilors in the municipal corporation in that period. Likewise, the left-wing ideology of the local governing party and its ideological alignment with the party in power in the regional government are political factors that may increase the default risk of LGs.

Bastida et al. (2011) and Pérez López et al. (2013) use debt per capita as a dependent variable, the first authors conclude that population, immigration, economic level, transfers and taxes, have a positive impact on debt per capita, the second authors conclude that the variable which better explains the level of debt is the transfer index. In summary, debt per capita is considered as the dependent variable and socioeconomic/political variables as the independent variables.

There is a consensus in the Spanish literature around the shortages in the financial information disclosed in order to study LGs: ‘the limitations arising from the information available in Spain’ (Cabaleiro et al., 2012); ‘...to the lack of information for certain years’ (Sole-Olle and Sorribas Navarro, 2012); ‘such information was not available for the local governments in our sample’ (Navarro Galera et al., 2017). So, the deficit of available information is a limitation for researchers. The Law on Budgetary Stability and Financial Sustainability and Law on Transparency, Access to Public Information and Good Governance (Law 9/2013 of 9th December) which develops the transparency of public activity, makes it easier to access LG financial information since 2012.

Theoretical approach: improvement and isomorphism.

The impact on the financial position of Spanish LGs before and after the introduction by law of new financial condition requirements and the disclosure of new financial indicators in the official website of the Spanish Ministry of Finance is analyzed from the perspectives of the improvement and the isomorphism approaches. Central government expected that, with the introduction of compulsory new financial requirements, the financial condition of LGs converge towards Euro-zone requirements and that with the disclosure of the new financial indicators, benchmarking information would be used to correct fiscal problems on a peer comparison basis.

The improvement approach notes the benefits of the disclosure of financial information by the benchmarking because the display of financial indicators can contribute to improving the mean of financial indicators, by providing information to managers of LGs in order to facilitate better decision-making (Rivenbark and Roenigk 2011). Ammons and Rivenbark (2008), Rivenbark and Roenigk (2011) and Ammons and Roenigk (2014) find a positive effect in the disclosure of financial indicators arguing that benchmarking is a way of transferring knowledge from another organization judged to be superior for the results it achieves. This approach considers that the use of benchmarking can redirect the financial situation of LGs, because managers can compare financial stages over time, and receive an extra-information which helps to adopt better financial decisions.

However, other authors (Behn, 2003 and Moynihan and Pandey, 2010) state that the implementation of benchmarking is not, by itself, enough to achieve beneficial results on financial situations (isomorphic approach), since benchmarking tools simply summarize and report about financial condition, leaving LGs to use that information as they please (Gerrish and Spreen, 2017). The isomorphic approach states a null effect of these tools over LGs, because low-performing LGs will converge towards their peers, but so too will

LGs with healthy financial ratios. Therefore, these programs will have no effect on financial indicators because positive and negative changes roughly offset one another, resulting in a null effect on average. Therefore, compulsory requirements may be required in order to achieve improvements in the mean of financial indicators and to reach the financial thresholds required by the Euro zone.

Gerrish and Spreen (2017) apply these theories to the North Carolinas' benchmarking tool. They clarify both possibilities: the introduction of benchmarking tool will have an impact on the mean values of the monitored indicator values (improvement approach) and the prediction of low-performing LGs will converge toward their peers, but so too will LGs with healthy financial ratios (isomorphic approach). The results of the study lend support to the fact that isomorphic forces are stronger than improvement forces.

In addition, Moynihan and Pandey (2010) raise the question about how managers use performance information. This article substantiates that governments have devoted extraordinary effort in creating performance data, wagering that it will be used to improve governance, but there is much we do not know about the factors associated with the use of that information.

Methodology

The impact of the adoption of the new financial requirements and indicators above stated on the LGs' financial condition is studied by considering a base year to compare the effect of these indicators before and after their implementation. As there are two groups of financial indicators, two different fiscal years are established for benchmarking in order to compare the pre and post-performance.

Although the Spanish Organic Law on Budgetary Stability and Financial Sustainability was adopted in 2012, the implementation started to be reported in January of 2013. Therefore, we analyze the behavior of LGs before and after 2013 in terms of *budgetary sustainability, non-financial budgetary balance, public debt and payment period average*².

The SPSCA adapted to the Local Administration was approved in 2013, but the effective date was January 1st, 2015. Therefore, we also study the pre- and post-implementation in 2015 of the indicators: *current solvency, short-term solvency, solvency ratio, debt per capita, indebtedness, debt ratio, and cashflow*. These indicators aim to represent the financial position of LGs, because, besides providing public services, a challenge of LGs is controlling financial sustainability of the service delivered. This information will allow managers to take decisions to reach or maintain the financial balance required by the Euro zone.

This analysis aims to assess the effect of the adoption of the new reporting requirements (composed by different indicators which test the financial condition) on LGs. The results of the pre- and post-analysis will confirm: the isomorphism or the improvement approaches. The isomorphic approach upholds that the implementation of benchmarking is not enough to achieve beneficial results in financial situations, while the improvement approach upholds the positive effect of benchmarking on financial decisions.

A dataset of LGs with a population greater than 50,000 has been built from 2010 to 2016, having a sample of 143 entities. When there is not enough information about the indicators' selected in the fiscal years 2010-2012, proxy variables are calculated applying the legal procedures provided by the Manual for Calculating the Deficit and the Debt according to the European System of Accounts for LGs, published by the Central

Government Internal Audit Office (Intervención General de la Administración del Estado, IGAE), and the procedures included in the SPSCA adapted to the Local Administration.

The main sources of information have been the *Virtual office of financial coordination of local entities* website and the Spanish National Audit Office website. Budgetary execution statements disaggregated in chapters of economic classification, the Statement of Financial Position and the Statement of Financial Performance have been used to build proxies of indicators following the legal definition of the indicators. Tables 1 and 2 include a column with the formula for proxy indicators ([calculation column](#)).

Following Gerrish and Spreen (2017), the methodology applied is the fixed effects model. The change in the mean is checked to test the improvement hypothesis and the change in the standard deviation to test the isomorphic hypothesis. The changes in the mean of each financial indicator, after the starting the benchmarking tool established by law, is analyzed to confirm the isomorphism hypothesis. An advantageous change in the mean will indicate a benefit for LGs, i.e., they improve LGs' financial position after the effective date of the financial sustainability legislation. We also verify if the change in the mean is statistically different from zero using standard errors of the regressions.

The model includes the following control variables: the percentage of residents over age 65, the percentage with a college degree, the median income, the poverty rate, the logarithm of population, and the unemployment rate. All this information is gathered from National Statistics Institute (INE) at regional or local level according to availability. The analysis is made with a linear regression for each indicator. The dependent variables are these indicators: *budgetary sustainability*, *non-financial budgetary balance*, *public debt*,

average payment period, current solvency, short-term solvency, solvency ratio, debt per capita, debt ratio, and cashflow.

The independent variables are the control variables: *the percentage of residents over age 65, the percentage with a college degree, the median income, the poverty rate, the logarithm of population, and the unemployment rate.*

The Equation 1 shows the data panel regression:

$$\text{Dependent variable} = f(\text{independent variable, control variables}) \quad \text{Equation 1}$$

The change in the standard deviation pre and post-new regulation of the 11 financial indicators is calculated to study the isomorphism hypothesis. Bartlett's test is applied as an ANOVA-variant, which is appropriate for samples with equal variances (homoscedasticity). In this case, we use the equation 1 above and calculate the residuals in both periods: pre and post. We use the residuals model because it controls other components that may have created the dispersion in the post-implementation period, *ceteris paribus*.

We have also applied a procedure to remove outliers in the LGs' sample. We use a panel form of Thompson's Tau Technique (Wheeler and Ganji, 1996). This procedure, calculates the panel average for each financial indicator removing LGs whose panel average is greater than four standard deviations over the sample mean. The main conclusion excluding outliers is that, the percentage of observations removed is 0.61%, on average in 11 indicators, meaning a reduction of 61 observations. Average payment period, debt and debt ratio are the indicators which lose more observations with 0.88, 1.02

and 2.63 per cent respectively. Although the reduction of observations is not particularly significant in this study, it is necessary to observe the impact in the behavior of indicators to see if there are differences.

Descriptive statistics

Table 5 shows the summary of the descriptive statistics of LGs' indicators. This table shows a comparison with the sample, excluding and including outliers. The mean of indicators is similar in both cases and there is a substantial difference between considering outliers or not. In non-financial budgetary balance, the average with no outlier correction is 26 million Euros, while excluding outliers is around 16 million Euros, which is a difference of 10 million Euros. Table 5 also shows a public debt of 145 million Euros to 104 million Euros, with outlier correction which is a variation of 41 million Euros. This difference in standard deviation is even higher. This represents that the exclusion of these values have a powerful effect on the descriptive statistics' indicators. Outlier's correction has a low impact in the rest of indicators, because the reduction of the mean is not significant, for example: the payment period average is from 56.64 to 51.95 days.

Table 6 reports the summary statistics of the control variables included in the regression model. The average of residents over age 65 is 17.34% and the percentage of population with a college degree is 27.85%. Median income is around 27 million Euros per year. AROPE (At Risk of Poverty or Exclusion) index has been used to measure poverty rate which is 0.27%. Ln of population is 11.63%. Referring to unemployment, it is remarkable that there is a high rate of an average of 24%. This information is gathered from National Statistics Institute (INE) with an autonomic or local level according to availability.

Analysis of Results

We have adopted the year of approval as a benchmark to establish the pre and post period, to analyze the performance of the indicators. In the Organic Law on Budgetary Stability and Financial Sustainability indicators the pre implementation period is FY2010-2012 and the post implementation period is FY2013-2016, because 2012 is the year in which this law came into force. In the SPSCA indicators, the pre-implementation period is FY2010-2014 to the post-implementation period FY2015-2016, because the SPSCA entered into force in 2015.

Table 7 shows the main results, using the output from the fixed effects regression model. This table includes the pre and post percent change in the mean and the standard deviation (SD) of each indicator of the Organic Law on Budgetary Stability and Financial Sustainability (2012), and SPSCA (2015).

According to the methodology, the percentage change in the mean is calculated using the parameter on the post-implementation variable, divided by the mean of the pre-implementation period. In order to test the percentage change in SD, the residuals of the model were used. If an indicator shows a favorable change in the mean (for example: an increase of non-financial budgetary balance or a reduction of public debt), an improvement is considered. If the mean indicator shows improvement, but in the analysis of SD there is a statistically significant reject ($p < 0.05$), isomorphism is supported. So, we analyze two tests: one, focusing on the mean, and the other, on the SD. The improvement hypothesis is accepted if the change in the mean is statistically significant ($p < 0.05$). The isomorphism hypothesis is accepted when a change in the mean is not statistically

different from zero ($p \geq 0.05$) and decline in the SD being statistically significant ($p < 0.05$). Bartlett's test and Levene's test reveal similar results.

As can be seen in Table 7, in most cases, for both types of indicators, it can be concluded that there is isomorphism. This means that after the implementation of the new indicators (2012 and 2015), seven out of eleven indicators do not produce beneficial changes in the mean or statically significant reductions in the SD. However, the behavior of the public debt, the current solvency, the solvency ratio and the cash-flow indicators, suggests the existence of improvement in the post-implementation. In other words, around 60% of indicators present an isomorphic behavior.

Particularly, in the Organic Law on Budgetary Stability and Financial Sustainability indicators, three out of four, and in the SPSCA indicators, four out of seven indicators show isomorphism.

Table 8 shows the percentage change³ in the interquartile range of each indicator from the pre to the post implementation periods. These results confirm the conclusion stated above supporting the isomorphism hypothesis. The use of IQR is a measure of statistical dispersion that studies the variation among the mid 50% of the distribution of LGs. In this table, nine out of eleven indicators show that there is no advantageous behavior after the introduction of the new indicators. Specifically, in the Organic Law on Budgetary Stability and Financial Sustainability indicators, three out of four indicators confirm the isomorphism hypothesis. In SPSCA indicators, six out of seven support isomorphism.

Table 9 shows the top percentiles and includes the pre and post-implementation percentile of each indicator. In the third column there is the percentage change of pre and post period in each indicator by percentile. There are seven financial indicators with negative impact.

This confirms again a beneficial behavior for the public debt and solvency indicators. Budgetary sustainability shows no change because it is a dichotomous variable, taking value 1 if there is budgetary sustainability and 0 otherwise.

Outliers

We repeat the analysis with and without the exclusion of outliers to examine the sensitivity of results). Table 10 shows the percentage change in the mean and the SD for the pre and post periods, nine out of eleven indicators confirm isomorphism. Public debt and cash-flow ratio have a different behavior, from improvement to isomorphism when outliers are included.

If we look at the group of the Organic Law on Budgetary Stability and Financial Sustainability indicators, all of them show isomorphism. In SPSCA Indicators, isomorphism impacts on five of seven indicators.

Discussion

The main objective of this paper was to test the effectiveness of Spanish legislation published for the compulsory fulfillment of Euro-zone financial condition requirements. Since the reform of the Spanish Constitution in 2011, whose objective was the reduction of the public debt and a curb on the public expenditure, the financial control of the activity of the public administration (especially LGs) has been intensified through new reporting requirements enforced by the central government, with a fixed timetable established by law. The requirements include indicators for the regularly assessment of the financial situation of LGs, in order to strengthen the budgetary and financial discipline and the disclosure of all of this information in the official website of the Spanish Ministry of Finance. The Spanish legislation requires LGs both to reach the financial thresholds established by the Euro-zone and to disclose this information for benchmarking. For these

purposes, we have analyzed whether, after the implementation of those legal requirements, the Spanish legislation (Budgetary Stability Law and SPSCA) has led to improvement or isomorphism behaviors. That is to say, if in Spain (and, by analogy, in other bureaucratic/Weberian public administration styles), the improvement of the financial condition of LGs can be achieved by enhancing transparency and promoting benchmarking through the disclosure and dissemination of financial information or, if this is not enough, those improvements need to be required by law.

The empirical results suggest that, in nine out of eleven indicators of the study, the isomorphism approach is stronger than the improvement approach. That means that, both low-performing and high-performing LGS converge to the mean which does not guarantee the fulfilment of Euro-zone requirements. These results show the beneficial effects of the compulsory requirements implemented by law on the alignment of the financial condition of Spanish LGs with the requirements of the Euro-zone. These results are consistent with those obtained by the seminal article of DiMaggio and Powell (1983), and also with Gerrish and Spreen (2017).

The result from the introduction by law of the new requirements and the disclosure of indicators has been beneficial and positive, yet not in all cases. The results of our analysis show that a high proportion of indicators converge towards the average, in other words, the trend supports isomorphism. There are two exceptions: public debt indicator and solvency ratio (outliers not included). The public debt has had a satisfactory and positive evolution, because after the implementation of the requirements and the disclosure of indicators, the results show that public debt has decreased in all cases. Public debt and the solvency ratio are limited by the Euro-zone requirements and their variations are under the close scrutiny of the Ministry of Finance. In the case of the budgetary sustainability

and the public debt indicators, when a breach occurs, the law imposes corrective actions (Eco-financial Plan) to remove the financial instability. Therefore, even though the effect converges towards the mean, it is confirmed that the corrective actions have been required to redirect the financial situation to the Euro-zone thresholds.

Conclusions

This paper analyses the effect of introducing by law new reporting requirements approved by the Spanish central government to reduce the public debt and curb on the public expenditure of LGs up to the thresholds required by the Euro-zone. In this way, Spain belongs to the group of states that monitor the financial health of their local governments using compulsory indicators which are regularly reported according to the applicable laws in order to enhance the transparency and openness of LGs financial information.

For these purposes, two hypotheses are tested, based on the isomorphic or improvement approaches, about the effect of both the entry into force of two groups of financial indicators for LGs and the disclosure of them. The evidence supports the isomorphic approach, except for the public debt and the solvency ratio which are critical indicators under specific scrutiny by the Spanish Ministry of Finance and the Euro-zone. These results confirm the current topic of the effectiveness of the disclosure of indicators for benchmarking purposes, because although corrective actions are taken to redirect the financial situation, the effect converges towards the mean. In the Spanish case, the results can be considered beneficial since the compulsory introduction by law of financial indicators has moved the threshold of the indicators' mean over the limits required by the Euro-zone. The results also support the effectiveness of the new reporting requirements enforced by the above mentioned legislation to redressing the public debt and the public expenditure to the limits established by the Euro-zone for Spain, since the analysis finds

improvements in the means of both indicators which coexists with a general isomorphic effect. Those LGs with poor financial indicators improve over time whereas LGs with healthy ratios decline towards the mean, offsetting poor performers at the mean of the distribution. Both results, as much the improvements brought about the introduction by law of new reporting requirements, which have increased the mean of critical indicators identified in that laws, as the isomorphic effect between LGs, have important implications for the evaluations of the performance of laws and benchmarking programs.

We should note that although the term improvement is used in contrast to isomorphism, they do not exclude each other. In fact, isomorphism would likely result in LGs both above and below the mean converging toward the mean, implying improvement for some governments. For example, local governments with high liquidity ratios may be withholding valuable resources from the local economy; spending accumulated reserves would likely benefit the local economy (Gerrish and Spreen, 2017). Notwithstanding, the isomorphism evidence justifies the need for introducing compulsory requirements by law in order to make sure that all indicators achieve the minimum values required by law.

A new paradigm for LGs is emerging in a society in which citizens are demanding the discipline of public funds after years of corruption and instability which partially gave rise to the Spanish financial crisis. All economic players mandate a stringent financial control: citizens want to know how much and in which way money is spent that is collected through taxes. Likewise, the Euro-zone needs to know if Spain meets its financial obligations because such control is linked to the general interest of the economy of a country and of the EU. The control of financial risk is required as a preventive measure, so that LGs are able to restore the financial situation through corrective actions, such as eco-financial plans, to avoid a relapse in financial instability.

Much remains to be done in financial risk control, but all signs point to working with discipline, responsibility and commitment which added to efficient and useful reporting tools should improve the financial situation. Benchmarking helps to make comparisons, but compulsory requirements are also needed. A future interesting research would be to analyze what is in common about the financial situation of those LGs that have approved eco-financial plans following legal requirements and those that did not need to do it. The approval of the Budgetary Stability Law, and the Law on Transparency has facilitated access to public figures allowing building a data set of indicators of LGs, which means the beginning of new opportunities to investigate this topic.

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1. The Organic Law on Budgetary Stability and Financial Sustainability (LO 2/2012), adopted on 27th of April 2012.
2. Reporting obligations of information (Order HAP/2105/2012), adopted on 1st of October 2012, which develops the commitments contained in the Organic Law on Budgetary Stability and Financial Sustainability.
3. Instructions of accounting model, differentiating the model according to population and budget of the local entity:
4. Instruction of the normal local accounting model (Order HAP/1781/2013) adopted on 20th of September 2013.
5. Instruction of the simplified and basic local accounting model (Order HAP/1782/2013), adopted on 20th of September 2013.
6. Royal Decree 424/2017, of April 28, which regulates the legal regime of internal control in the entities of the Local Public Sector.

Endnotes

¹ For a better understanding of Spanish local administration framework, it should be noted that two kinds of accounting figures are distinguished: the budget accounting figures and the financial accounting figures. The budget accounting figures register the degree of

implementation of the budget of revenues and expenditures. The financial accounting figures enables reporting on the financial position and financial performance.

² The ratio *expenditure rule*, which would be also interesting to analyze, is not available in reporting websites and is not able to be tested it.

³ The percent change is calculated as $(\text{Post-Pre})/\text{Pre} \times 100$

Tables:

Table 1. The Organic law on Budget Stability and Financial Sustainability indicators (2012)

Indicator	Description	Calculation	Interpretation
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Budgetary stability	Net lending or net borrowing adjusted.	Non-financial budget balance plus National Accounts adjustments.	If the indicator is zero, there is not budgetary sustainability, if it is one, there is budgetary sustainability.
Non-financial budgetary balance	Net lending or net borrowing.	Non-financial revenues minus non-financial expenditure.	If the indicator is positive, it means that the LG have net lending, and if it is negative, LG have net borrowing.
Expenditure rule	The growth of the expenditure of public administrations cannot exceed the reference rate of growth of medium term GDP of the Spanish economy.	Current expenditure ceiling is the result of multiplying the expenditure of the previous year by the annual reference rate stated by the Central government.	If current expenditure is greater than the expenditure ceiling, the budget is not approved by the central government
Public debt	Nominal value of outstanding liabilities of public administrations at the end of the fiscal year. Public debt is made up of: deposits, debt bonds and loans, according to ESA 2010 definitions.	Outstanding debt over current income for the year).	Capacity to finance current and future spending commitments within deficit limits.
Average payment period	It measures the payment delay of commercial debt.	Ratio of the days in which LG makes the payments of transactions to suppliers.	There is sustainability of the commercial liabilities, when the average period of payment to suppliers does not exceed the maximum term established by the regulations on defaulting.

Calculation: In most of calculations Spanish Economical classification of budget is used:

Spanish Economical classification of budget

Revenues

Expenditure

1. Direct taxes	1. Staff costs
2. Indirect taxes	2. Current expenditure
3. Fees and other incomes	3. Financial charges
4. Current transfers	4. Current transfers
5. Equity revenues	5. Contingency fund
<u>Total current operations</u>	<u>Total current operations</u>
6. Actual investments' sales	6. Actual investments
7. Capital transfers	7. Capital transfers
<u>Total capital operations</u>	<u>Total capital operations</u>
Total non financial operations	Total non financial operations
8. Financial assets	8. Financial assets
9. Financial liabilities	9. Financial liabilities
Total financial operations	Total financial operations
TOTAL REVENUES	TOTAL EXPENDITURES

Table 2. SPSCA adapted to Local Administration Financial Indicators (2015)

Indicator	Description	Calculation	Interpretation
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Current solvency	It reflects the percentage of budgetary and non-budgetary debts that can be met with the liquidity immediately available.	Liquid funds divided by current liabilities.	If the ratio is greater than one, it means that liquid funds are sufficient to satisfying current obligations.
Short-term Solvency	It reflects the ability of the LG to meet its outstanding obligations in the short term.	Liquid funds plus receivables outstanding, divided by current liabilities.	If the ratio is greater than one, it means that the liquid funds and the rights pending collection are sufficient to cover the current obligations.
Solvency ratio	It reflects if current assets cover current liabilities.	Current assets divided by current liabilities.	If the ratio is greater than one, it means that the current assets are sufficient to cover the current obligations.
Debt per capita	In LGs this index distributes the total debt of the entity among the number of population.	Current liabilities plus non-current liabilities, divided by population.	It shows the amount of short and long term debt for each inhabitant of the city.
Indebtedness	Represents the relationship between the total liabilities required (current and non-current) with respect to equity plus the total liabilities of the entity.	Current liabilities plus non-current liabilities, divided by the sum of current liabilities, non-current liabilities and equity.	It shows the total liability of the LG in the short and long term.
Debt ratio	It represents the relationship between current and non-current liabilities.	Current liabilities, divided by non-current liabilities.	It shows the relationship between short term debt by long term debt.
Cash flow	It reflects if net flows of cash management cover the liability of the entity.	Current liabilities plus non-current liabilities, divided by management net flows.	It shows the relationship between short and long term and cash.

Table 3. Concepts and definitions.

Concept	Definition
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Fiscal health	ability of government to meet its financial and service obligations
Fiscal distress	a failure to meet standards in the areas of operating position, debt, and community needs and resources over successive years
Financial health	ability of a government to provide services and to meet its future obligations
Financial condition	ability to adequately provide services to meet current as well as future obligations.

Table 4. Recent research on financial risk assessment

Authors	Year	Goal	Indicators	Conclusions
Bastida, F., Benito, B., Guillamón, M.D.	2011	Finding variables which better explain debt behavior in local administration.	Debt per capita.	Have a positive impact on debt, population, immigration, economic level, transfers and taxes. Have a negative impact on population density, self-financing capacity and consolidated financial statements.
Cabaleiro, R., Buch, E., Vaamonde, A.	2012	Proposal of a method for evaluating the financial health of municipalities based on the Canadian Institute of Chartered Accountants.	Sustainability (long-term debt), Flexibility (net current budgetary revenues- net budget obligations), Vulnerability (net current budgetary revenues-taxes-transfers).	Sustainability, Current Flexibility and Current Vulnerability are components of the function that best allows to identify municipalities' financial health.
Solé-Ollé, A., Sorribas-Navarro, P.,	2012	Response of Spanish LGs adjusts to budget shocks and which elements of the budget are more likely to adjust.	Own revenues, grants, expenditures, debt service, and deficit.	Spanish municipalities make adjustments in response to fiscal shocks.
Pérez López, G., Plata Díaz, A. M., Zafra Gómez, J.L., López Hernández, A.M..	2013	Study of inter municipal cooperation, public-private collaboration and decentralization, with the political and financial aspects of the entity, are factors that condition the municipality to present a certain level of debt during the economic crisis.	Debt per capita.	The variable which better explains the level of debt is the transfer's index.
Kuhlmann, S., Jäkel, T..	2013	Analysis of a framework applied to compare interlocal benchmarking projects in Sweden, England, Switzerland, and Germany.	Mapping local level benchmarking in Western Europe: empirical evidence from Sweden, England, Switzerland, and Germany.	Benchmarking could help as an instrument of budget consolidation.
Clark, B.Y.	2015	Evaluation in Ohio of the reliability and validity of one method of assessing financial condition, the Financial Condition Index (or FCI) (developed by Groves, Godsey, and Shulman, 1981).	Cash ratio, quick ratio, current ratio, operating ratio, surplus (deficit) per capita, net asset ratio, long-term liability ratio, long-term liabilities per capita, taxes per capita, revenues per capita, expenditures per capita.	Demonstration of FCI is not the most appropriate tool for measuring financial condition at the local level.

Navarro Galera, A., Rayo Cantón, S., Lara Rubio, J., Buendía Carrillo, D.,	2015	Definition of a financial model that enables local governments to estimate the interest rate payable on a bank loan, based on their credit risk premium, in accordance with the Basel II rules.	Cash surplus, capital or current debt, current assets/current liabilities, current revenue-current expenditure.	Probability of default (PD) is influenced by population, socio-economic and financial factors. A rising per capita income is associated with a lower PD.
Kaldani, D., Carter, A., Kaye-Zwiebel, E., Aroskar, J., Ang, K., Ravi, M., Liu, J.,	2016	Development of a uniquely broad data set and proxy measures of fiscal health in municipal governments of United States.	Indicators: budget balance, asset flexibility, pension funding,	An irresponsible management restricts service provision, and/or raise taxes on its citizens, and constitute an unsustainable cycle.
Robbins, G., Turley, G., McNena, S	2016	Measuring performance of local councils in Ireland, analyzing changes in their financial health.	14 indicators: current ratio, average collection period, self-income ratio, operating surplus, operating surplus per resident, operating surplus ratio, commercial rates collection efficiency ratio, housing rents collection efficiency ratio, commercial charges collection efficiency ratio, housing loans collection efficiency ratio, net financial liabilities, net financial liabilities ratio, gross debt to income ratio, debt to assets ratio.	Some councils regarded as 'good' performers in the media are appearing as those in the best-performing category overall. Others with reputations as good but not excellent performers when performance measures are aggregated are appearing among the best category, with consistently good scores across a range of financial indicators.
Rodríguez Bolívar, M. P., Navarro Galera, A., & Muñoz, L., Lopez Subires, M. D	2016	Analysis of the drivers and risk factors that influence the financial sustainability of local government.	Financial sustainability IPSAS (+negative entries for extraordinary activities – positive entries for extraordinary activities); Net debt.	Rises in the rate of unemployment and the population aged under 16 are risk factors that have a negative impact in the financial sustainability and net debt of local government. No influence of population density on financial sustainability and on net debt.
Gerrish, E., Luke Spreen, T	2017	Analysis of changes with the introduction of a state fiscal benchmarking program is purely performance improvements or is isomorphic in nature.	Dependent variables: total margin ratio, percent change in net assets, charge to expense ratio, debt service ratio, quick ratio, net assets ratio, debt to assets ratio, capital assets condition ratio, operations ratio, intergovernmental ratio, debt service ratio, quick ratio, fund balance as a percentage of expenditures, debt as a percentage of assessed value). Control variables (percentage of residents over age 65, percentage with a college degree, median income, poverty rate, In population, unemployment rate).	Benchmarking tool of North Carolina's local governments tends to isomorphism rather than improvement.

Navarro Galera, A., Buendía Carrillo, D., Lara Rubio, J., Rayo Cantón, S.	2017	Study of political factors that may increase the risk of local government default applying the Basel II rules.	Probability of default: Cash surplus, capital or current debt, current assets/current liabilities, current revenue-current expenditure.	The Mayor having studied an economics-related university degree, the presence of a low proportion of women councillors in the municipal corporation, the left-wing ideology of the governing party and its ideological alignment with the party in power in the regional government are political factors that may increase the default risk of LGs.
Navarro Galera, A., Lara Rubio, J., Buendía Carrillo, D., Rayo Cantón, S.	2017	Identification of risk factors for default by local governments according to Basel II rules.	Probability of default: Cash surplus, capital or current debt, current assets/current liabilities, current revenue-current expenditure.	Risk factors for default by local governments: a lower population density, less dependent population, falling levels of per capita income and the presence of progressive local government.
Trussel, J., Patrick, P.	2017	Development of a model to assess and rank the financial risk of a municipal government	Dependent variable: financial risk. Independent variables(Indicators) : revenue per capita, intergovernmental revenues, expenditures per capita, operating position, user charges, public Works, debt service, debt to revenue, debt per capita, debt to assets, fund balance to revenues, fund balance to assets, cash to revenue, cash to debt, current ratio, pension costs, employee benefits, tax revenue concentration, tax capacity. Control variables: population, capital outlay, type of municipality	Municipalities at risk of financial distress have significantly higher debt service, population, public service operations and tax efforts than those that are not at risk. Municipalities at risk also have less intergovernmental revenues, operating positions, user charges, capital outlays, fund balances, and tax revenue concentrations than those that are not at risk.
Gorina, E., Maher, C., Joffe, M.,	2018	Proposition of a new measure of fiscal distress based on the information from Comprehensive Annual Financial Reports.	Dependent variable: fiscal distress. Independent variables: cash solvency, budgetary solvency, long-term solvency, revenue structure, and service-level solvency. Control variables: population, income, and home prices.	Cash solvency and long-term solvency as well as revenue structure can be used to predict fiscal distress. Budgetary-level solvency, socio-economic indicators, and government type are not as informative. Reliance on property taxes is negatively associated with fiscal distress
Zeemering, E.S.	2018	Suggestion to local managers an integration of sustainability into strategic planning processes in order to advance sustainability as a reform in local government.	Embedded sustainability is the incorporation of environmental, health, and social value into the company's core business with no trade-off in price or quality. The goal is not green or social responsibility for its own stake	Limited environmental programmes may signal temporary interest in the environment, but might not yield broader organizational benefits. Public managers in local government have an opportunity to use sustainability as a transformative reform concept, but to achieve this, sustainability must be used to shape strategy and instigate organizational learning and change.

Table 5. The Organic Law on Budgetary Stability and Financial Sustainability and SPSCA adapted to Local Administration indicators Descriptive Statistics

	No outlier correction			Outlier correction		
	N	Mean	SD	N	Mean	SD
Budgetary sustainability	941	0.83	0.37	941	0.83	0.38
Non-financial budgetary balance	939	26,000,000.00	116,000,000.00	932	16,253,690.11	25,125,054.26
Public debt	1,001	145,000,000.00	523,000,000.00	994	104,132,553.90	154,645,221.00
Payment period average	907	56.64	55.63	899	51.95	46.94
Current solvency	873	1.17	2.56	871	1.07	1.38
Short-term Solvency	874	2.84	9.89	872	2.39	2.06
Solvency ratio	873	1.52	4.24	871	1.36	1.22
Debt per capita	877	1,142.40	2,833.50	876	1,104.62	2,604.79
Debt	882	0.38	0.29	873	0.37	0.25
Debt ratio	873	1.85	13.51	850	1.15	2.88
Cash flow	904	-36.93	1,157.45	904	-36.93	1,157.45

Table 6. Social and Economic Control Variable Summary Statistics, 2012-2016.

	N	Mean	SD
Percent of residents over age 65	999	17.34	32.15
Percent with a college degree	428	27.85	56.39
Income average	1,001	27,024.63	4,554.83
Poverty rate	1,001	0.27	0.83
ln(Population)	1,001	11.63	0.81
Unemployment rate (county)	797	0.24	0.08

Table 7. Pre and Post Percent Change in the Organic Law on Budgetary Stability and Financial Sustainability indicators (2012), and SPSCA (2015) Mean and SD¹.

	Pct Chg in Mean	Pct Chg in SD	Evidence of...
Budgetary sustainability	-0.07	0.07	Isomorphism
Non-financial budgetary balance	-10.39	14.11	Isomorphism
Public debt	27.36	6.39	Improvement
Payment period average	2.48	0.29	Isomorphism
Current solvency	1.16	0.19	Improvement
Short-term Solvency	0.16	0.22	Isomorphism
Solvency ratio	-0.68	0.17	Improvement
Debt per capita	0.58	0.23	Isomorphism
Debt	2.34	0.17	Isomorphism
Debt ratio	1.21	0.20	Isomorphism
Cash flow	-1.16	0.35	Improvement

¹ As an alternative, the Levene's test and the Brown-Forsythe test are also used. These results are analogous to those using Bartlett's test.

Table 8. Pre and Post Percent Change in the Organic Law on Budgetary Stability and Financial Sustainability indicators (2012), and the SPSCA (2015) Interquartile Range

	Pct Chg in IQR	Evidence of Isomorphism?
Budgetary sustainability	-100.00	Yes
Non-financial budgetary balance	-27.60	Yes
Public debt	26.91	No
Payment period average	-3.11	Yes
Current solvency	-27.64	Yes
Short-term Solvency	-23.76	Yes
Solvency ratio	40.00	No
Debt per capita	-7.96	Yes
Debt	-26.67	Yes
Debt ratio	-14.04	Yes
Cashflow	-79.03	Yes

Table 9. Percent Change Performers by Percentile

	Percentile	Pre	Post	%Δ
Budgetary sustainability	10	0.00	1.00	N/A
	25	0.00	1.00	N/A
Non-financial budgetary balance	75	21,086,180.92	219,91,818.85	4%
	90	36,790,720.91	37,513,250.80	2%
Public debt	90	174,341,654.90	233,336,792.80	34%
	95	288,057,702.20	376,150,873.90	31%
Payment period average	75	92.44	53.34	-42%
	90	117.13	95.26	-19%
Current solvency	75	1.42	1.09	-23%
	90	3.13	2.20	-30%
Short-term Solvency	90	5.03	4.14	-18%
	95	6.68	5.65	-15%
Solvency ratio	75	1.48	1.95	32%
	90	2.39	3.16	32%
Debt per capita	75	1,286.11	1,106.08	-14%
	90	1,956.93	1,643.91	-16%
Debt	10	0.36	0.07	-80%
	25	0.39	0.14	-64%
Debt ratio	25	0,44	0,42	-4%
	50	0,65	0,62	-5%
Cashflow	75	12,91	6,79	-47%
	90	31,69	14,72	-54%

Table 10. Pre and Post Percent Change in the Organic Law on Budgetary Stability and Financial Sustainability indicators (2012), and SPSCA (2015) Interquartile Range

	Pct Chg in Mean	Pct Chg in SD	Evidence of...
Budgetary sustainability	-0.07	0.07	Isomorphism
Non-financial budgetary balance	-0.26	15.28	Isomorphism
Public debt	23.04	6.79	Isomorphism
Payment period Average	2.46	0.29	Isomorphism
Current solvency	1.18	0.19	Improvement
Short-term Solvency	0.14	0.22	Isomorphism
Solvency ratio	-0.69	0.16	Improvement
Debt per capita	0.58	0.23	Isomorphism
Debt	0.17	0.03	Isomorphism
Debt ratio	1.22	0.19	Isomorphism
Cashflow	-1.16	0.35	Isomorphism