IS THE COMMERCIAL DEBT DEFAULT RATIO A RELIABLE INDICATOR OF THE SHORT-TERM FINANCIAL SUSTAINABILITY OF PORTUGUESE LOCAL GOVERNMENTS?

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Abstract: The Directive 2011/7/EU implementation is assessed through the Commercial Debt Default (CDD) ratio. However, there is not a common measure of that ratio amongst the Member States. This paper aims to analyse whether the CDD defined by Portugal is a reliable indicator for measuring the short-term financial sustainability of Portuguese local governments. The research is based on the IMF's transparency framework and European and Portuguese legislation on late payments. Statistical analysis was performed using Pearson's correlation and simple linear regression to assess whether the unpaid commitments of goods and services explain the short-term debts. Thus, by evaluating the budget and financial information consistency, the paper approach represents a novelty in this research area. The findings identify that the CDD of Portuguese local governments is not a reliable indicator of their short-term debt sustainability. The information is not consistent, and the indicator is permeable to creative accounting practices that give the illusion of a financial situation that may not be real.

Keywords: accountability, consistency, local governments, financial sustainability, transparency.

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Introduction

The governments' financial sustainability is a global concern, intensified by unfavorable economic contexts, such as the latest international crisis and the COVID-19 pandemic. Being financial sustainability one of the major current challenges of public governance, several international organizations have recommended governments to take measures to ensure it (European Parliament [EP], 2009; European Commission [EC], 2011; International Monetary Fund [IMF], 2014).

Sustainability has been understood as the ability to finance all commitments, ensuring intergenerational equity (CICA,2009; EC, 2011; IFAC, 2013; IPSASB, 2013; Law 151/2015, September 11), whether they respect the ability to meet medium and long-term financial obligations (solvency) or the ability to meet short-term financial obligations (liquidity) (EC, 2019).

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Excessive indebtedness has been pointed out as a risk factor for the governments' financial health and to intergenerational equity (Cabaleiro, Buch and Vaamonde, 2013), reinforcing the need to have comparable, reliable and timely information, which allows the early warning of possible financial problems (Cohen and Karatzimas, 2015; Oulasvirta, 2014; Christiaens, Reyniers and Rollé, 2010).

Debt concerns led the European Union (EU) to identify the need to develop policies on short-term financial sustainability. Then, the Directive 2011/7/EU was published, which set a 30-day deadline for commercial transactions payments, aiming to change the late payments culture (EP, 2009).

Despite the need of monitoring the commercial debt default ratio, the Directive has not established the methodology to do so, which has already been identified by the EP (2018) as calling into question comparability amongst the Member States, stressing the need for a standard measure and methodology for defining it.

This research aims to study whether the methodology defined by Portugal is compatible with the Directive 2011/7/EU and reliable for measuring the financial condition of public governance. The proposed assessment bears in mind the obligation to report the payment behavior of the European public entities and that the control measure is defined by each Member State. The study will focus on Portuguese local governments, a public subsector that has suffered from serious and chronic financial problems (Santos and Martinho, 2019; Veiga and Veiga, 2014).

The accounting standards for the Portuguese local governments provide information on an accrual basis and on a modified cash basis (budget accounting), being indispensable that the two accounting subsystems are consistent. The financial information quality determines its usefulness to stakeholders. Therefore, for having quality information, it is essential to ensure that it is consistent, as the existence of discrepancies can raise serious doubts regarding its reliability (IMF, 2018).

Thus, since the commercial debt default ratio is obtained on an accrual basis, it is aimed to analyse the reliability of this indicator to assess the financial condition of local governments by studying the consistency of the information disclosed by the two accounting subsystems. Recent examples show that governments under pressure may be tempted to design accounting solutions that give the illusion that problems are being solved rather than taking effective measures to do so (Irwin, 2012).

The contributions of this research are twofold: first, the analysis of the consistency regarding the information reported as debt to suppliers in the Portuguese local governments; second, to assess the reliability of the methodology used to measure their short-term financial sustainability.

This paper has six sections. This first explains the objectives and relevance of this research. The second one presents the literature review. The following section is dedicated to the research question and the methodology. Results and analysis are in section four, and the discussion of study results is in the fifth. Finally, the main conclusions, limitations and future investigations are presented in section six.

Literature Review

The governments' financial distress is a global phenomenon that has captured the researchers' attention aiming to contribute to their financial sustainability. The debt volume has been identified as one of the major challenges of governments, particularly at the local level, being essential to know its effects on financial sustainability (Bolívar, Galera, Muñoz and Subires, 2016; IMF, 2014; Pérez-López, Plata-Díaz, Zafra-Gómez and López-Hernández, 2013; United States Agency for International Development [USAID], 2011).

According to the EC (2019), liquidity and solvency problems are related and relevant in assessing financial sustainability. The international financial crisis of the past decade led the EU to identify the need to legislate and monitor the sustainability of short-term public debt. Therefore, Directive 2011/7/EU established that public authorities must pay for goods and services within 30 days, being defined reporting mechanisms concerning the payment behavior of the European public entities.

Although the Directive implementation is assessed by those reporting mechanisms, there is no such standard methodology to measure the commercial debt default ratio, and the absence of such a harmonized indicator does not contribute to its comparability amongst Member States (EP, 2018). This has already led the EC to notify Spain about the need to change its legislation, considering that the methodology used to assess the financial situation of public entities was not compatible with the Directive 2011/7/EU. Following, this led Spain to change its methodology in April 2018.

The local governments' debt sustainability shows their ability to finance the acquisitions of goods and services (Caba-Pérez, Rodríguez-Bolivar, López-Hernández, 2014). Thus, they are requested to disclose information about their ability to meet financial obligations (Garrido-Rodríguez, López-Hernández, Zafra-Gómez, 2019), which can influence the cost of external financing (Tejedo-Romero and Araujo, 2021).

Complying with the 30-day deadline set out in the Directive is an indication that the commercial debt is sustainable (Organic Law 2/2012, April 27), and has served as a reference for entities to be considered in a good financial situation (Alaminos, Fernández, García and Fernández, 2018).

However, Irwin (2012) points out that history has shown that governments, when pressured to meet specific targets, may be tempted to replace genuine measures with accounting practices that give the illusion of changes that are not effective.

McDonald III (2017) highlights a phenomenon – known as gamming or indicator shopping, in which, whenever different ratios can be selected, management will be tempted to choose ratios that provide a better "picture" of financial health.

The literature suggests that accounting information has a relevant role in the governments' accountability (Ehalaiye, Redmayne and Laswad, 2020). However, for being effective, it is essential to report transparent information (Caamano-Alegre, Lago-Penas, Reyes-Santias and Santiago-Boubeta, 2013; Zuccolotto and Teixeira,

2014), which encourages good governance, helps financial sustainability and tends to reduce creative accounting practices by governments (Wehner and De Renzio, 2013).

According to IMF (2018), transparency refers to information disclosure, allowing stakeholders to hold governments accountable for their performance and public resources management. However, transparency cannot be limited to disclosing information since that, to be useful, information must have quality (Lindstedt and Naurin, 2010). The literature says that the quality of accounting information is being affected by managerial pressures (Homola and Paseková, 2020).

One of the pillars of transparency is the information quality, which concerns its international comparability, and internal and historical consistency. Internal consistency is considered essential to ensure information reliability (IMF, 2018). Papík and Papíková (2021) highlight that the use of various financial ratios makes it possible to detect accounting errors.

The transparency of the information reported by local governments facilitates the early detection of financial difficulties. Unlike poor accounting practices, it promotes financial sustainability (Zafra-Gomez, Lopez-Hernandez and Hernandez-Bastida, 2009), which undermine that sustainability (Krueathep, 2014).

Thus, quality reports are essential to ensure that the governments' decisions are based on the best possible information, being the main mechanism through which citizens assess public governance (Androniceanu, 2021; IMF, 2018).

The concern with the public entities' late payments was particularly felt in Portugal at the beginning of the latest international crisis, leading to the publication of the Resolution of the Ministers Council (RMC) 34/2008, February 22, which approved the "pay on time" programme. That resolution set goals, seeking that the payments were made within a maximum of 30 days.

In 2011, Portugal needed to request international financial assistance, subject to a Financial Assistance Programme between 2011 and 2014, which established financial consolidation targets for the national public accounts. One of the specific measures aimed at reducing late payments, having defined penalties for those who do not comply with the 30 days objective.

The country's financial situation, and specifically the solvency and liquidity problems of the local governments, addressed the creation of a specific programme for these entities to regularize the debt to suppliers. The accumulation of deficits for decades led to a significant debt (Veiga and Veiga, 2014). In 2013, 25% of the municipalities debt exceeded the threshold imposed by law (Santos and Martinho, 2019). It should be highlighted that local governments that joined that Programme had medium and long-term financing at a granted or increased interest rate, depending on whether or not the payment deadline target was met, respectively.

Directive 2011/7/EU was transposed to Portugal through Decree-Law No. 62/2013, May 10, which established that public entities should comply with the 30 days term in commercial transactions payments. Portugal chronically suffers from late payments, having been identified by the EP (2018) as one of the slowest countries to

pay, with a commercial debt default (CDD) ratio of 129 days in 2015. In April 2017, the EC sent a formal letter of notification to Portugal for misapplication of Directive 2011/7/EU, pointing out that public authorities pay, on average, within 90 to 100 days, identifying the situation in the health sector as critical, with payment terms exceeding 300 days.

Santos and Martinho (2020) studied the CDD of local governments from 2011 to 2017 and concluded that they have been decreasing. However, the authors identified that these might not reflect best payment practices, but only the adoption of accounting practices that improve those terms. Baleiras, Dias and Almeida (2018), and Carvalho, Fernandes and Camões (2018) also argue that payment terms may be undervalued.

In Portugal, the late payment control indicator follows the methodology defined in RMC 34/2008, presented in Table 1.

| Table 1. Methodology for calc | ulating CDD in Portugal |
|---|--|
| CDD | legend |
| $CDD = \frac{\sum_{i=t-3}^{t} \frac{DS}{4}}{\sum_{i=t-3}^{t} A_i} \times 365$ | DS = Short-term debt to suppliers at the end of the quarter A = Acquisitions |

Source: Adapted from RMC 34/2008.

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It should be noted that the information reported is not harmonized throughout the Public Sector, either in terms of the accounting basis or in terms of the set of accounts to be considered. Thus, in the Direct and Indirect Administration entities, information is obtained on a cash basis (RMC 34/2008), corresponding the short-term debts to suppliers (DS) to the goods and services unpaid commitments, and acquisitions (A) to the goods and services commitments. Commitments are possible liabilities, being assumed by purchase orders or equivalent (Decree-Law No. 192/2015, September 11). Thus, the commitment precedes DS, and there may be commitments that are not debts yet.

In public companies, health sector entities and local governments, the indicator is based on short-term debts, and acquisitions obtained in accrual accounting. Moreover, even in this situation, what is considered DS is not harmonized. In local governments, 'other debts' are not considered (unlike what happens in public companies or health sector entities, where all debts are considered).

Then, if the methodology is not consistent in the various subsectors, it can be concluded that comparable results are hardly obtained. Also, the formula itself has some limitations while considering debts at the end of the quarter. It automatically grants an additional period of up to 90 days, which is not visible. For example, purchases on day 1, paid on the last day of the quarter, will contribute with a zero-day CDD when they were actually paid in 90 days.

Carvalho et al. (2018) identified payment deadlines of zero and one day, which are not realistic in a bureaucratic Public Administration, such as the Portuguese one. This may be due to the practice followed by some local governments, which only recognize invoices close to or on the payment date.

dos Santos and Martinho (2021) concluded that the number of local governments that meet the payment deadline of 30 days has been increasing since 2011. However, that trend is followed by an increase in the amounts recognized in 'other debts' compared to DS for these entities (up to 12.3 times higher).

Research Question and Methodology

Bearing in mind that the CDD is an indicator of the short-term financial sustainability of Portuguese local governments. The questions raised by several authors regarding its permeability to creative accounting practices (Santos and Martinho, 2020; Baleiras et al., 2018; Carvalho et al., 2018), this study aims to answer the following research question: Is the commercial debt default ratio a reliable indicator of the short-term financial sustainability of Portuguese local governments?

The analysis is based on the IMF's conceptual framework for transparency (2018), which argues that the reporting quality determines its usefulness to stakeholders, which is, on the other hand, determined by the consistency of the information it contains.

The study focuses on the 308 Portuguese local governments from 2017 to 2019 (last year available). Financial and budgetary information, as well as the CDD, were obtained from the Directorate-General for Local Authorities (DGAL). All values refer to December 31.

Given the different options to obtain the DS established by RMC 34/2008, the study aims to assess whether the unpaid commitments of goods and services (variable UC) explain DS. It was considered two variables for detailing DS: short-term debts other than 'other debts', as defined for local governments (variable DWO), and total shortterm debts (variable TD), which considers those values. This last variable is used, for instance, by the health sector entities. Table 2 shows the variables.

| Table 2. Variables | |
|--|-----|
| Unpaid commitments to suppliers of goods and services | UC |
| Short-term debts to suppliers other than 'other debts' | DWO |
| Total short-term debts to suppliers | TD |

As statistical techniques, this study uses Pearson correlation analysis and simple linear regression models. The correlation will be used to identify the sign and level of association between two variables. The simple regression analysis, in turn, is an appropriate statistical method to identify, through a pre-defined model, the relationship between the independent and the dependent variable, with its coefficients and signs.

Results and Analysis

Since paying suppliers within a period of up to 30 days is an indicator of the shortterm financial sustainability of the local governments, it is important to assess the number of entities that accomplish this regulatory term (Table 3).

| Table 3. M | Number o | of local govern | ments with | CDD up to an | nd greater t | han 30 days |
|----------------|----------|-----------------|------------|--------------|--------------|-------------|
| | | 2017 | | 2018 | | 2019 |
| CDD | Ν | % | Ν | % | Ν | % |
| \leq 30 days | 196 | 63.6% | 199 | 64.6% | 193 | 62.7% |
| > 30 days | 112 | 36.4% | 109 | 35.4% | 115 | 37.3% |

As can be seen, most local governments pay their suppliers within 30 days. Given that this is the deadline established as a short-term financial sustainability indicator, the analysis will be focused on those who comply with it.

To understand how UC relates to DWO and TD in local governments that pay up to 30 days, Pearson's correlation coefficients values and their significance levels were calculated (the results are shown in Table 4).

| | | UC | TD | DWO |
|-----|---------------------|--------------|--------------|-------|
| | Pearson correlation | 1 | | |
| UC | P-value (2-tailed) | | | |
| | Ν | 588 | | |
| | Pearson correlation | 0.803^{**} | 1 | |
| TD | P-value (2-tailed) | 0,000 | | |
| | Ν | 588 | 588 | |
| | Pearson correlation | 0.415** | 0.277^{**} | 1 |
| DWO | P-value (2-tailed) | 0.000 | 0.000 | 0.000 |
| | Ν | 588 | 588 | 588 |

Table 4. Pearson correlation in local governments with APP \leq 30 days (2017 to 2019)

**. The correlation is significant at the 0.01 level (2-tailed)

It can be observed that the variable UC has a positive and highly significant correlation with the variable TD (0.803, p-value <0.01) and only a moderate effect as regards the variable DWO (0.415, p-value <0.01).

To assess the influence of UC on TD and DWO, a simple regression analysis was used, applying the method of ordinary least squares (OLS), which allows estimating the relationship between the dependent variable and the independent one. This technique aims to compare which type of debt (TD and DWO) is better explained by

UC. In this sense, the respective simple linear regression models were estimated. These models have the following general formulation (1):

 $Y_i = \beta_0 + \beta_1 X_i + \varepsilon_i$ i = 1, 2, ..., N (1) The analysis will use data from 2017 to 2019. The estimation for the model specified in (1) considered TD as the dependent variable and UC as the independent variable, resulting in the following specific equation (2):

$$TD_i = \beta_0 + \beta_1 UC_i + \varepsilon_i \qquad i = 1, 2, ..., N$$
(2)

Before estimating the regression models by using OLS, the applicability assumptions (Poole and O'Farrell, 1971; Gunst and Mason, 1980) were validated through graphical analysis.

The estimation of the regression coefficients and the respective significance tests are presented in Table 5.

| Table 5. Coefficients ^a of simple linear regression model (2) | | | | | | | | | |
|--|------------------|--------------|----------|--------|---------|-----------|-------|--|--|
| | | | Standard | | | | | | |
| _ | Non-standard coe | efficients | coef. | | | | | | |
| | | Standardized | d | | | | | | |
| | В | error | Beta | t | p-value | tolerance | VIF | | |
| (Constant) | -1731433.93 | 325483.8 | | -5.320 | 0.000 | 1.000 | 1.000 | | |
| UC | 1.328 | 0.041 | 0.803 | 32.606 | 0.000 | 1.000 | 1.000 | | |
| - D 1 | · · 11 TD | - | - | - | - | - | | | |

a. Dependent variable: TD

As can be seen, the estimated value of $\beta 1$ (1.328) is statistically significant, given the value of t (p-value < 0.01), this is statistically different from zero. Thus, the estimated model is:

 \widehat{TD}_i = -1731433.93+ 1.328 UC_i , i = 1, 2, ..., 587This means that the amounts of UC positively influence TD. The values, β 1, refer to the slope of the estimated regression line and indicate the change in the mean UC when TD is added by one unit. Together with the results obtained in the analysis of the significance of the estimated models, performed by one-way ANOVA, allow testing that linear regression models are important to explain the TD variable. This analysis was performed, and its values are recorded in Table 6.

| | Table 6. ANOVA results , model (2) | | | | | | | |
|------------|--|-----|----------|----------|---------|--|--|--|
| | SQ | Gl | MQ | F | p-value | | | |
| regression | 5.355E+16 | 1 | 5.36E+16 | 1063.177 | 0.000 | | | |
| residue | 2.952E+16 | 586 | 5.04E+13 | | | | | |
| total | 8.307+16 | 587 | | | | | | |
| D 1 | | | | | | | | |

Table 6. ANOVA results^{a,b}, model (2)

a. Dependent variable: TD

b. Predictors: (Constant), UC

In Table 6, it can be seen that the values of the F test are statistically significant (pvalue < 0.01), which is the same as verifying that it is higher than $F_{(1;585;1\%)} \approx$ 6,047 (critical values of the Fischer F distribution); that is, there is evidence to validate the significance of the estimated regression model.

After verifying the significance of the model, the quality of the model was analysed, whose results are shown in Table 7.

| N | R | R^2 | R^2_{adj} | Standard estimation error | D- W |
|-----|---------------------|-------|-------------|---------------------------|--------|
| 587 | 0. 803 ^a | 0.645 | 0.644 | 7097074.43 | 2.052 |
| D | 1 . 17 | | | | |

Table 7. Summary of regression model^{a,b} (2)

a. Dependent Variable: TD

b. Predictors: (Constant), UC

This table shows a summary of the estimated model. The analysis of the adjusted coefficient of determination (R_{adj}^2) allows knowing the total variability of the dependent variable DT that is explained by the independent variable UC. Thus, the DT has a total variability explained by UC in 64.4%. The Durbin-Whatson (D-W) statistic allows ensuring the independence of errors (Bartels and Goodhew, 1981), as shown by the corresponding values in Table 7, close to 2, which leads to the acceptance of the assumption of the residues independence. The multicollinearity analysis was performed using the tolerance index and the variance inflation factor (VIF), both quantified at 1, as shown in Table 5, meaning that there were no multicollinearity problems.

The estimation for the model specified in (1) considered now DWO as a dependent variable and UC as an independent one, as specified in model (3):

 $DWO_i = \beta_0 + \beta_1 UC_i + \varepsilon_i$ i = 1, 2, ..., N(3) The estimation of the regression coefficients and the respective significance tests are shown in Table 8.

Table 8. Coefficients^a of simple linear regression model (3) Standard Non-standard coefficients coef. Standardized В error Beta p-value tolerance VIF (Constant) 628196.4 72752.1 8.635 0.000 1.000 1.000 UC0.101 0.009 0.415 11.056 0.000 1.000 1.000

Dependent variable: DWO

As can be seen, the estimated value of $\beta 1$ (0.101) is statistically significant (p-value <0.01), with the following estimated models:

 $\widehat{DWO}_i = 617789.2 + 0.132 UC_i$, i = 1, 2, ..., 587

The analysis of variance was performed similarly, finding that the values of the F test statistic are statistically significant (p-value < 0.01), also maintaining the statistical evidence to validate the significance of the regression analysis model (OLS). After, it was analysed the quality of the model, whose results are shown in Table 9.

| | Table 9. | Summary | of | regression | model ^{a,b} | (3) |) |
|--|----------|---------|----|------------|----------------------|-----|---|
|--|----------|---------|----|------------|----------------------|-----|---|

| Ν | R | R^2 | R_{adj}^2 | Standard estimation error | D- W |
|-----|---------------------|-------|-------------|---------------------------|--------|
| 587 | 0. 405 [°] | 0.173 | 0.171 | 1586336.8 | 2.055 |

The DWO values have a total variability explained by the UC values of 17.1%. Also, for the estimation of this model (3), the applicability conditions were verified, with the Durbin-Whatson (D-W) statistics being analysed using an analogous formula to ensure the independence of errors (Table 9) and not collinearity through the tolerance index and the VIF, both quantified at 1 (Table 8).

Results show that the UC is more related to TD than to DWO. In this period, the UC explains 17.1% of the DWO variability and 64.4% of the TD variability, so it is considered that some DS is not being considered for the calculation of the local governments' CDD.

Study Results Discussion

Portuguese public entities, namely local governments, have been experiencing chronic liquidity problems that affect their short-term financial sustainability. This problem is not just a national one, with the EU having published Directive 2011/7/EU, from which it intended to monitor the payment behavior of public entities in the Member States.

This monitoring is based on a single indicator (the commercial debt default ratio), whose methodology was not, however, defined by the EU, so it is subject to the legislation of each member state (which, in itself, is already a factor that necessarily limits the desired comparability). In Portugal, the situation is even more critical, as the methodology is not even homogeneous among the various subsectors of Public Administration.

Given that compliance with the 30-day deadline is a credibility factor towards stakeholders and, in local governments, influences the cost of external financing, the investigation was based on local governments' that pay up to 30 days, representing the majority of cases in the period (over 60%).

Based on the analysis presented in the previous section, the findings of this research corroborate McDonald III (2017) and Irwin (2012) as the measure is permeable to creative accounting practices that only give the impression that certain goals were achieved. It is important to stress that Portugal was already pointed out as a bad example in this area (Irwin, 2012).

The findings also reinforce previous studies (dos Santos and Martinho, 2021), pointing out that the methodology followed by Portugal does not allow reliable information on the local governments' payment behavior.

Conclusions

The findings of this paper identify that, from 2017 to 2019 (latest period for which data are available), the unpaid commitments of goods and services explain better the total debts to suppliers when compared to the debts other than 'others'. Thus, this paper found that, in the local governments' that report payment terms of up to 30 days, certain types of debts are not being monitored, as they are being recognized within 'other debts'. Furthermore, it can be concluded that the commercial debt default ratio of Portuguese local governments is not a reliable indicator of their short-term debt sustainability.

Considering that accounting is essential for accountability, the problem under assessment cannot be dissociated from Portuguese local governments' dependence on medium and long-term loans, whose rates depend on the reported payment deadlines, as well from Portugal's credibility with the EU, which has already notified Portugal for not complying with the Directive 2011/7/EU.

The quarterly disclosure of the payments practices is not sufficient to assess the financial situation of local governments, nor whether if they comply with the law. According to IMF (2018) transparency framework, the nonconsistency of the reported information mitigates its reliability and quality and, therefore, its usefulness for stakeholders.

The main limitation of this study results from the unreliability of some of the financial, budgetary and payment deadline information gathered from the local governments, even though they were obtained from an official source.

As suggestions for future investigations, it is proposed to study the comparability of the information reported by Member States concerning reporting under the application of Directive 2011/7/EU. Also, and for a wider perspective, the analysis might include a different set of variables, based on accounting and demographic data, such as size, sector and employees' characteristics. Finally, other methods can be applied to assess the data gathered, including decision trees and the structural equation model.

This research contributes to the knowledge of the local governments' transparency and accountability by incorporating the analysis of the information consistency. Based on the conclusions provided by this research, it is proposed that a common and transparent methodology must be adopted by the EU to allow the effective monitoring of payment behavior of the public sector, based on timely and comparable information amongst Member States, which is essential for forecasting situations that threaten the financial sustainability of this sector.

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References

- Alaminos, D., Fernández, S.M., García, F. and Fernández, M.A., (2018). Data mining for municipal financial distress prediction. Advances in Data Mining. Applications and Theoretical Aspects, 10933, 296-308.
- Androniceanu, A., (2021). Transparency in public administration as a challenge for a good democratic governance. Administratie si Management Public, 36, 149-164.
- Baleiras, R., Dias, R. and Almeida, M., (2018). Local finance: economic principles, institutions and the portuguese experience since 1987, 1. Coleção Livros do CFP. https://www.cfp.pt/uploads/publicacoes_ficheiros/cfp-2018-livro-financas-locais.pdf.
- Bartels, R., Goodhew, J., (1981). The robustness of the Durbin-Watson test. The Review of Economics and Statistics, 63(1), 136-139.
- Bolívar, M., Navarro-Galera, A., Muñoz L. and Lopez Subires, M., (2016). Analysing forces to the financial contribution of local governments to sustainable development. *Sustainability*, 8, 925.
- Caamano-Alegre, J., Lago-Penas, S., Reyes-Santias, F. and Santiago-Boubeta, A., (2013). Budget transparency in local governments: an empirical analysis. *Local Government Studies*, 39(2), 182–207.
- Cabaleiro, R., Buch, E. and Vaamonde, A., (2013). Developing a method to assessing the municipal financial health. *The American Review of Public Administration*, 43 (6): 729– 751.
- Caba-Pérez, M., Rodríguez-Bolívar M. and López-Hernández, A., (2014). The determinants of government financial reports online. *Transylvanian Review of Administrative Sciences*, 10(42), 5-31.
- Carvalho, J., Fernandes, M., & Camões, P., (2018). Financial yearbook of portuguese municipalities - 2017. Lisbon: Order of Certified Accountants.
- CICA (2009). Public Sector Statements of Recommended Practice (SORP) 4. Indicators of financial condition. Toronto: Canadian Institute of Chartered Accountants.
- Christiaens, J., Reyniers B. and Rollé, C., (2010). Impact of IPSAS on reforming governmental financial information systems: a comparative study. *International Review* of Administrative Sciences, 76(3), 537–554.
- Cohen, S., Karatzimas, S., (2015). Debate: Reforming Greek government accounting. Public Money & Management, 35(3), 178–180.
- European Commission (2011). Council Directive 2011/85/EU of 8th November 2011 on Requirements for Budgetary Frameworks of the Member States. *Fiscal Sustainability Report 2018, 1.*
- Decree-Law 192/2015 of September 11, (2015). Approved the accounting standardization system for public administrations. The Portuguese Republic.
- Decree-Law 62/2013 of May 10, (2013). It establishes measures against delays in the payment of commercial transactions and transposes Directive 2011/7/EU of the European Parliament and the Council of 16 February 2011. The Portuguese Republic.

- Directive 2011/7/UE of the European Parliament and of the Council of 16 February 2011 on combating late payment in commercial transactions. Official Journal of the European Union.
- dos Santos, P., Martinho, C., (2021). Measures to Assess the Payment Behavior of the Portuguese Subnational Governments. *Eurasian Economic Perspectives. Eurasian Studies in Business and Economics*, 16(1), 37-53.
- Ehalaiye, D., Redmayne, N. and Laswad, F., (2020). Does accounting information contribute to a better understanding of public assets management? The case of local government infrastructural assets. *Public Money & Management*, 41(2) 88-98.
- European Parliament (2009). Proposal for a Directive of the European Parliament and of the Council on combating late payment in commercial transactions. Online, available at: http://www.europarl.europa.eu/RegData/docs_autres_institutions/commission_europeen ne/com/2009/0126/COM_COM(2009)0126_EN.pdf. Accessed on January 02, 2021.
- European Parliament (2018). Directive 2011/7/EU on late payments in commercial transactions. European Implementation Assessment. Online, available at: http://www.europarl.europa.eu/RegData/etudes/IDAN/2018/621842/EPRS_IDA(2018)6 21842_EN.pdf. Accessed on January 07, 2021.
- Garrido-Rodríguez, J., López-Hernández, A. and Zafra-Gómez, J., (2019). The impact of explanatory factors on a bidimensional model of transparency in Spanish local government. *Government Information Quarterly*, 36(1), 154-165.
- Gunst, R., Mason, R., (1980). Regression Analysis and Its Application: A Data-Oriented Approach, Marcel Dekker, New York.
- Homola, D., Paseková, M., (2020). Factors influencing true and fair view when preparing financial statements under IFRS: evidence from the Czech Republic. *Equilibrium. Quarterly Journal of Economics and Economic Policy*, 15(3), 595–611.
- IFAC (2013). Recommended Practice Guideline. Reporting on the Long-Term Sustainability of an Entity's Finances. Online, available at: https://www.ifac.org/publicationsresources/recommended-practice-guideline-reporting-long-term-sustainability-publicsect. Accessed on January 12, 2021.
- IMF (2018). Fiscal transparency handbook (1st ed.). International Monetary Fund. Fiscal Affairs Dept. Online, available at: https://www.elibrary.imf.org/view/books/069/24788-9781484331859-en/24788-9781484331859-en-book.xml. Accessed on January 15, 2021.
- IMF (2014). International Monetary Fund Annual Report 2014: From stabilization to sustainable growth. International Monetary Fund. Secretary's Department. Online, available at:

https://www.imf.org/en/Publications/AREB/Issues/2016/12/31/International-Monetary-Fund-Annual-Report-2014-From-stabilization-to-sustainable-growth-41823. Accessed on January 15, 2021.

- IPSASB (2013). Reporting on the long-term sustainability of an entity's finances, International Federation of Accountants. https://www.ipsasb.org/projects/reporting-longterm-sustainability-public-finances
- Irwin, T., (2012). Accounting Devices and Fiscal Illusions. Washington, International Monetary Fund.
- Krueathep, W., (2014). Bad luck or bad budgeting: an analysis of budgetary roles underpinning poor municipal fiscal conditions in Thailand. *Public Budgeting & Finance*, 34(3), 51-72.

Law 151/2015, of September 11. Budget Framework Act. The Portuguese Republic.

- Organic Law 2/2012, of 27 April, on Budgetary Stability and Financial Sustainability. Boletín Oficial del Estado.
- Lindstedt, C., Naurin, D., (2010). Transparency is not enough: making transparency effective in reducing corruption. *International Political Science Review*, 31(3), 301–322.
- McDonald III, B., (2017). Measuring the fiscal health of municipalities. Lincoln Institute of Land Policy.
- Oulasvirta, L., (2014). The reluctance of a developed country to choose international public sector accounting standards of the IFAC: A critical case study. *Critical Perspectives on Accounting*, 25(3), 272–285.
- Papík, M., Papíková, L., (2021). Application of selected data mining techniques in unintentional accounting error detection. *Equilibrium. Quarterly Journal of Economics* and Economic Policy, 16(1), 185–201.
- Pérez-López, G., Plata-Díaz, A., Zafra-Gómez, J. and López-Hernández, A., (2013). Municipal debt in a context of economic crisis: analysis of the determinant factors and forms of management. *Revista de Contabilidad-Spanish Accounting Review 16*(2), 83– 93.
- Poole, M., O'Farrell, P., (1971). The assumptions of the linear regression model. *Transactions of the Institute of British Geographers*, 52, 145-158.
- Resolution of the Council of Ministers 34/2008 of 22 February. The program "Pay on Time and Hours". The Portuguese Republic.
- Santos, P., Martinho, C., (2020). Sustainability Assessment of Portuguese Local Governments (2009 to 2017): Accounting Information and Public Governance. *Financial Determinants in Local Re-Election Rates: Emerging Research and Opportunities*, 80-104.
- Santos, P., Martinho, C., (2019). The municipal indebtedness and the effectiveness of RFALEI early warning mechanisms in the identification of municipalities on indebtedness. [in:] "II International Congress of Public Accounting". March 14-15, Lisbon, Portugal.
- Tejedo-Romero, F., Araujo, J., (2021). Factors influencing the dissemination of information and access to information in municipalities. *Transinformation*, 33.
- USAID (2011) Fundamentals of NGO Financial Sustainability. United States: Abt Associates Inc.
- Veiga, L., Veiga, F., (2014). Determinants of Portuguese local governments indebtedness. (NIPE Working Paper 16/2014) Universidade do Minho. Online, available at: http://repositorium.sdum.uminho.pt/handle/1822/30612. Accessed on May 3, 2020.
- Wehner, J., De Renzio, P., (2013). Citizens, legislators, and executive disclosure: The political determinants of fiscal transparency. *World Development*, *41*(1), 96–108.
- Zafra-Gomez, J., Lopez-Hernandez, A. and Hernandez-Bastida, A., (2009). Evaluating Financial Performance in Local Government: Maximizing the Benchmarking Value. *International Review of Administrative Sciences*, 75(1), 151–167.
- Zuccolotto, R., Teixeira, M., (2014). The causes of fiscal transparency: Evidence in the Brazilian states. *Revista Contabilidade & Finanças*, 25(66), 242–254.

CZY WSPÓŁCZYNNIK ZADŁUŻENIA KOMERCYJNEGO JEST WIARYGODNYM WSKAŹNIKIEM KRÓTKOTERMINOWEJ ZRÓWNOWAŻONOŚCI FINANSOWEJ PORTUGALSKICH SAMORZĄDÓW LOKALNYCH?

Streszczenie: Implementacja Dyrektywy 2011/7/UE oceniana jest za pomocą wskaźnika CDD (Commercial Debt Default). Nie ma jednak wspólnej miary tego stosunku wśród państw członkowskich. Niniejszy artykuł ma na celu zbadanie, czy CDD zdefiniowany przez Portugalię jest wiarygodnym wskaźnikiem pomiaru krótkoterminowej stabilności finansowej portugalskich samorządów lokalnych. Badanie opiera się na zasadach przejrzystości MFW oraz europejskich i portugalskich przepisach dotyczących opóźnień w płatnościach. Przeprowadzono analizę statystyczną przy użyciu korelacji Pearsona i prostej regresji liniowej, aby ocenić, czy niespłacone zobowiązania dotyczące towarów i usług wyjaśniają długi krótkoterminowe. Zatem, oceniając spójność budżetu i informacji finansowych, podejście papierowe stanowi nowość w tym obszarze badawczym. Wyniki wskazują, że CDD portugalskich samorządów lokalnych nie jest wiarygodnym wskaźnikiem ich krótkoterminowej zdolności do obsługi zadłużenia. Informacje nie są spójne, a wskaźnik jest przepuszczalny dla kreatywnych praktyk księgowych, które dają złudzenie sytuacji finansowej, która może nie być rzeczywista.

Słowa kluczowe: rozliczalność, spójność, samorządy, stabilność finansowa, przejrzystość

商业债务违约率是否是葡萄牙地方政府短期财务可持续性的可靠指标

?

摘要:2011/7/EU 指令的实施通过商业债务违约 (CDD) 比率进行评估。然而,在成 员国之间并没有统一的衡量标准。本文旨在分析葡萄牙定义的CDD是否是衡量葡萄 **牙地方政府短期**财务可持续性的可靠指标。该研究基于国际货币基金组织的透明度 框架以及欧洲和葡萄牙关于逾期付款的立法。使用 Pearson 相关性和简单线性回归 进行统计分析,以评估商品和服务的未付承诺是否可以解释短期债务。因此,通过 评估预算和财务信息的一致性,论文方法代表了该研究领域的新颖性。调查结果表 明,葡萄牙地方政府的 CDD 并不是其短期债务可持续性的可靠指标。信息不一致, 并且该指标可渗透到创造性的会计实践中,从而产生可能不真实的财务状况的错觉

关键词:问责制、一致性、地方政府、财务可持续性、透明度。