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Individual Debt Ratio as a Way of Assesing the Financial Conditions of Local Government Units

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Abstarct:

Purpose: *The aim of the study is to analyze existing methodological approaches and developments used to assess the financial condition.*
Design/Methodology/Approach: *The methodology was based on the methods of analysis and logical construction, the basics of descriptive statistics (to determine the phenomenon of debt), as well as the basic approach typical of the heuristic method.*
Findings: *Despite the development of methods of assessing the financial condition, practice very often confirms that the primary direction of assessing the financial condition is the ability to absorb debt. This approach forces a search for an answer to the question, can the individual debt ratio (IWZ) be a measure that answers the question about the financial condition of local government units?*
Practical Implications: *The IDR applied in Poland seems to be an effective instrument for controlling the debt of local government units. The structure of this indicator allows, on the one hand, systemic control of the debt of the entire public finance sector, and, on the other hand, it is flexibly adapted to the specificity and level of affluence of a given entity. Therefore, it is worth promoting such solutions in individual European Union countries as an effective tool for limiting LGU's uncontrolled debt.*
Originality/Value: *Results of the study reflect that IDR concerns the possibility of debt service, but it cannot be a measure of financial condition, because in local government units there are liabilities not only classified as debt obligations. The omission of these obligations and their impact on the financial condition makes the information value of IDR imperfect and incomplete. It is difficult to indicate the optimal solution that would fully reflect the current financial condition. It is possible as well as from the point of view of additional workloads, difficult to implement in practice.*

Keywords: *Debt ratio, local government units, long-term financial forecast, maximum repayment ratio.*

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1. Introduction

In the case of LGUs, the assessment of the efficiency of the tasks performed is very often based on the assessment of achievements. This approach is related to the concept of new public management (NPM). When measuring efficiency based on performance measurement, it is necessary to build a system of indicators or an indicator that will show what specific goals, products and services are to be achieved by local government units and how they are performed (Osborne and Gaeblerm, 1993; Nazmul Ahsan Kalimullah, Ashraf Alam, and Ashaduzzaman Nour, 2012). Undoubtedly, the implementation of goals, the provision of products and services by local government units in the form of implemented tasks will affect the financial condition (Filipiak, 2018).

The analysis of the literature on the subject allows to indicate two basic directions for measuring the financial condition of local government units based on many empirical measures or on a synthetic measure. The authors of the studies emphasize that the financial condition cannot be described with a single indicator (Clark, 1977; Groves *et al.*, 1981; Hendrick, 2004; Mercer and Gilbert, 1996; Dylewski, Filipiak, and Gorzałczyńska-Koczkodaj, 2011; Cabaleiro-Casal *et al.*, 2013; Kowalczyk, 2017; Stanny and Strzelczyk, 2017) based on the available financial statements or data from the accounting books of local government units.

The multi-empirical approach identifies three basic indicators for assessing financial health: 1) Net debt / Total income; 2) Operating surplus less interest expense / Interest expense and 3) Operating surplus less interest expense / Net debt (Peterson, 1998; FITCH, 2012; S&P, 2014; Kluza, 2017) .

The single measure approach is to use a financial health index based on a financial reporting model that uses 11 ratios. The reliability of the indicators used is tested in order to examine whether all the given dimensions and indicators can be included in the measurement of financial condition in parallel, assuming their correlation. Metrics and dimensions should be correlated to ensure that they evaluate similar elements of the financial health measure. The financial health index is calculated by summing up and averaging the standardized results of all indicators (Wang, Dennis, and Tu, 2007).

2. The Essence of the Individual Debt Ratio Concept

Since 2020 every territorial self-government unit planning an amendment to the budget can exceed the relation specified in Article 242 of the Act on Public Finance (Act on Public Finance - APF) by the amount of planned deficit in income due to the COVID-19 pandemic (Act on specific solutions related to prevention, counteracting and fighting COVID-19). This means that current expenditure can exceed current income by the expenses incurred when performing tasks related to prevention of COVID-19 in a part in which they were financed with own means. This relation concerns rules of limiting debt – at present planned expenditure cannot exceed planned current income increased by revenues from surpluses from previous years, repayment of loans granted in the past and unused cash on the current account.

A similar overdraft of the budget was allowed at the end of the year, after the unit makes a budget report. The law clearly defines the deficit of income. This stands for decrease in income calculated as a difference between tax income of the unit, increased by the health resort and local fee and incomes showed by the unit in its financial report for the first quarter of 2020 planned in the budget amendment due to COVID-19. This decrease is decreased when the unit receives income supplement amounts from the general subvention reserve. The mitigation of the fiscal rule consists in excluding from the limitation concerning debt repayment specified in Article 243 AFP (individual debt ratio) the amounts for buyout of securities, repayment of loan and credit installments together with due interest and discount, respectively issued or contracted in 2020 to the amount of the actual decrease in income of the unit resulting from COVID-19.

The contraction of an obligation cannot threaten the performance of public tasks by a local self-government unit in a particular budget year and in the next years. In addition, when establishing – for 2021 and next years – the relation limiting the amount of debt repayment, the local authority will decrease current expenditure in its budget by detracting current expenditure incurred in 2020 for the performance of tasks related to fighting COVID-19. This solution widens the options local authorities have in debt repayment. Due to the necessity of maintaining financial security of a local authority unit, an additional mechanism was introduced, in the shape of a one-year limit of the local self-government debt at the level of 80% of the unit's income. The limit concerned only 2020, and as an exception it does not have to be achieved by units which observe the limitation concerning repayment of debt specified in Article 243 Act on Public Finance, not taking into account the exclusion specified in the Act on specific solutions related to prevention, counteracting and fighting COVID-19, other infectious diseases and crisis situations they cause on specific solutions related to prevention, counteracting and fighting COVID-19, other infectious diseases and crisis situations they cause (Wołowiec, 2019; Bieniasz, Gołaś, and Łuczak, 2014; Czarny, 2015).

In almost all countries, local government income is comprised of own-revenue and inter-governmental fiscal transfers from central government (and from state governments in federal systems). In addition to the state government, local governments are free to issue debt to finance their local operations (Nickson, 2010). The debt means usually something, especially money, that is owed to someone else, or the state of owing something, that can be expressed in monetary value. The meaning of money should be interpreted broadly, because local governments prefer in practice loans, bonds, notes, and mortgages, which are all typical types of debt.

According to the legal relation, it is generally subject to contractual terms regarding the amount and timing of repayments of principal and interest. In the case of loans, the suitable coverage is important for the lender, who usually sets up strict conditions, which have a restrictive impact on the local budget, however, it is easier for the local government to borrow a higher amount in a short time (Cabaleiro-Casal, Buch-Gómez, and Vaamonde Liste, 2013; Dylewski, Filipiak, and Gorzałczyńska-Koczkodaj, 2011). The bonds are the other typical debt obligation, for which the conditions are defined by the issuing municipality, thus the lenders have no influence on them, but it is a slower process to accumulate the necessary amount (László, 2019; Dylewski, 2012). The purpose of the debt management is the redemption: the way how the local government can escape from the debt burden (Denison and Guo, 2015).

Another major dimension is the confidence, even a temporary inability to repay debt can damage the credit rating of the municipality, which may increase the cost of future borrowing (Spearman, 2007; Filipiak, 2016). In the case of the debt management strategy, several methods and processes can be distinguished, which can be applied parallel, depends on the amount and the structure of the debt and the decision of the local government. But it is difficult to generate a satisfactory general theory.Four categories can be classified for the redemption: changing the conditions (lower interest cost – debt conversion, advance refunding debt consolidation, compromise) repayment strategies (terminal annuity, snowball or stacking method, debt management agency) additional resources (surplus, sinking fund, specialised financial institutions), and finally state intervention (bailout – consolidation, limitations, financial guardian - insolvency administrator) (László, 2019).

In 2020 the local self-government sector witnessed a dynamic growth of capital expenditure. This was due to the implementation of numerous projects co-financed with the European Union funds. Since there were many commercial projects implemented by construction companies, many investments planned by local authorities for 2018 were put off until 2020 or 2021.

Another problem (burden) is the education subvention received by self-government units, which allowed in 2019 to cover, on average, only 60% of expenses on education (there are no signs that in 2020 the funds for education will be increased). It is also worth emphasizing that some of incurred and planned costs resulted from the implemented reform of the education system. The growing disproportion shows that the costs of financing the reform were shifted to the municipalities, which is particularly visible in municipalities with the smallest budgets.

3. Generalization of the Main Statements

In 2014 the lawmakers introduced a structure limiting the level of repayment of financial obligations, expressed in Article 243 APF, thus abandoning the fixed ratio formula which had been used by self-government units for many years. The current formula establishes the limit of repayments that can be planned in the budget year, for obligations indicated in Article 243 APF. The lawmakers based it on the category of operational surplus, which – in their opinion – honestly characterizes the financial situation of a self-government unit. In order to obtain greater reliability of the result, the lawmakers decided that when calculating the self-government unit's ability to repay debt (maximum repayment ratio) data is taken for a few years preceding the budget year for which we determine the maximum repayment ratio.

For relations determined for 2020-2025 this is a three-year period, and for those for 2026 and the next years financial values will be related to seven previous budget years (2020-2025). It should be remembered that in the relation specified in Article 243 of APF the lawmakers excluded the possibility of adding to current income in a given year revenues from previous years (for example due to budget surplus), which is contrary to the solution adopted in Article 242 APF. Therefore it is possible that the passed budget will maintain the relation described in Article 242 APF, but the annual value of the ratio used in calculating the maximum repayment ratio will be negative (Wołowiec, 2020; Jurkiewicz, 2017; Kata, 2015).

According to the current valid regulation, included in Article 243 section 1 of APF, the decision-making body of the self-government unit cannot pass the budget whose execution will cause that in the budget year and in each year following the budget year the relation of total amount due in the budget year of:

1) repayment of installments of credits and loans specified in APF, along with interests on credits and loans due in a given year, as specified in Article 89 section 1 and Article 90 APF;
2) buyout of securities issued for purposes specified in Article 89 section 1 points 2-4 and Article 90 APF, along with due interests and discount on securities issued for purposes specified in Article 89 section 1 and Article 90 APF;
3) potential repayment of amounts resulting from granted guaranties and warranties

– to planned total budget income will exceed an arithmetic mean from calculated for the past three years relations of its current income increased by income from sale of assets and decreased by current expenditure, to total budget income, calculated according to the following formula:

$$\left(\frac{R+O}{D}\right)_n \leq \frac{1}{3} \times \left(\frac{Db_{n-1}+Sm_{n-1}-Wb_{n-1}}{D_{n-1}} + \frac{Db_{n-2}+Sm_{n-2}-Wb_{n-2}}{D_{n-2}} + \frac{Db_{n-3}+Sm_{n-3}-Wb_{n-3}}{D_{n-3}}\right)$$

where:

R – planned for a budget year total amount for repayment of credit and loan installments and buyout of securities issued for purposes determined in APF,

O – planned for a budget year interest on credit and loans specified in APF, interest and discount on securities issued for purposes specified in Article 89 and Article 90 APF, and repayments of amounts due to guarantees and warranties,
D – total income of the budget in a given budget year,
Db – current income,
Sm – income from selling capital (assets),
Wb – current expenditure,
n – budget year for which the relation is determined,
n – 1 – year preceding the budget year for which the relation is established,
n – 2 – year preceding the budget year by 2 years,
n – 3 – year preceding the budget year by 3 years.

The relation expressed in Article APF assumes that we compare two values – annual debt repayment ratio (left side of the equation) and maximum debt repayment ratio (right side of the equation). Debt repayment covers both expenses and disbursements. The latter include, repayment of credit, loans and buyout of bonds, expenditure comprises payment of interest and discount on the above obligations and additionally interest and discount on credit, loans and securities which finance the transitional budget deficit of self-government units. Credit, loans and securities as money claims are debt titles. Potential expenses due to guaranties and warranties granted by self-government units are different, because these obligations do not constitute a component of state public debt, but, as intended by the lawmakers, they are reflected in the subject relation on the left side.

Expenses due to guaranties and warranties granted by self-government units must be included in the plan of current expenditure in the budget resolution, according to Article 122 APF. It should be remembered that budget planning does not comprise the whole amount that was covered with guaranty or warranty, but only expenses to be paid in a given budget year, as in the concluded contract. If the contract of the credit (loan) guaranteed by the self-government unit stipulates that in the situation when the client stops repaying their debt, the sum of unpaid credit or loan becomes due immediately and the self-government unit should secure in its budget the whole amount of guarantee (in the plan of expenditure). This amount of guarantee must be taken into consideration when calculating annual debt repayment ratio.

4. Discussion

Beginning with budgets passed for 2020 the maximum debt repayment rate forecasted for 2026 and further years will be established as arithmetic mean (from the past 7 years) from the calculated relation of its current income (Dbei), decreased by current expenses (Wbei) to the current income of the budget. In addition to prolonging the period for which the arithmetic mean is determined (from 3 to 7 years), the lawmakers modified the formula by eliminating income from sales of property and total income replaced the category of current income (as well as on the left side). Moreover, all parameters on the right side of the relation are subject to the following modifications (Wołowiec, 2018; Kluza, 2017):

1) the amount of current income – Dbi (the denominator of the formula on the right side of the relation) – to which the difference between current income and current expenditure is referred, is subject to decrease by subsidies and means allocated to current goals (the amount of current income defined in this way is used in calculation, beginning from 2020);
2) the amount of current income decreased by current expenditure – Dbei (the numerator of the formula on the right side of the relation) – is decreased by subsidies and current means for implementation of a program, project or task financed with participation of means specified in Article 5 section 1 point 2 APF (the amount of current income defined in this way is used in calculation, beginning from 2020);
3) the amount of current expenditure – Wbei (the numerator of the formula on the right side of the relation) – is decreased by: current expenses due to repayment of obligations contracted in connection with the debt title, other than credits and loans (Article 243 APF), current expenditure on servicing debt and current expenditure on implementation of a program, project or task financed with participation of means specified in Article 5 APF. The amount of current income defined in this way is used in calculation, beginning from 2020, but decreasing current expenditure by amounts of current expenditure due to repayment of installments of obligations included in the debt title, other than credits and loans, concerns exclusively obligations contracted after 1st January 2019. The amounts of current expenditure when calculating the relation for 2020-2025 is not decreased by current expenditure on servicing debt (decreasing by current expenses on servicing debt will take place when determining the relation beginning from 2026).

When preparing budget for 2021 and the next years, each self-government unit must establish the relation of the repayment of obligations applying two methodologies. According to the content of Article 9 APF, for the 2020-2025 period the determined relation of total amount of repayments and buyouts due in a given budget year to planned current budget income cannot exceed the arithmetic means for the relations between current income, increased by income from sale of property and decreased by current expenditure to current income of the budget, calculated for the past 3 years.

Therefore, it should be emphasized that ultimately self-government units will determine the relation of the repayment of obligations following the formula below:

$$\frac{(R+O)}{Db} \leq \frac{1}{7} \times \sum\nolimits_{i=1}^{7} \frac{(Dbei - Wbei)}{Dbi}$$

where:

R – planned for a budget year total amount for repayment of installments of obligations included in the debt title, as specified in Article 72 APF, and buyouts of issued securities, excluding amounts of repayment of credits and loans and buyouts of securities contracted or issued for the purpose specified in APF.

O – planned for a budget year current expenditure on servicing debt, including interest on obligations included in the debt title, as specified in Article 72 APF, interest and discount on securities and repayment of the amounts resulting from granted guaranties and warranties,

Db – planned for the year for which the relation is determined, current income of the budget, decreased by subsidies and means allocated to current goals,

Dbei – current income in the year preceding by i-years the year for which the relation is determined, decreased by subsidies and current means for the implementation of a program, project or task financed with participation of the means specified in Article 5 APF,

Dbi – current income in a year preceding by i-years the year for which the relation is determined, decreased by subsidies and means allocated to current goals,

Wbei – current expenditure in a year preceding by i-years the year for which the relation is determined, decreased by current expenditure due to repayment of the installments of obligations included in the debt title, as specified in Article 72 APF, current expenditure on servicing debt and current expenditure on the implementation of a program, project or task financed with participation of means defined in Article 5 APF.

When designing the budget for 2020 and the next years we need to establish the relation of the repayment of obligations using two methodologies. According to the content of Article 9 section 1 APF, for the 2020-2025 period the determined relation of total amount of repayments and buyouts specified in Article 243 section 1 APF in the wording given in the amended APF, to planned current budget income cannot exceed the arithmetic means for the relations between current income, increased by income from sale of property and decreased by current expenditure to current income of the budget. This means that:

- the amount of repayments (left side of the relation) does not include the amounts connected with repayment of installments and servicing other obligations classified as credit and loans;
- the amount of current income, to which the amount of repayments is referred (the annual repayment rate – left side of the relation) will be decreased by the amounts of subsidies and means for current goals;
- the amount of current income (the denominator of the formula on the right side of the relation), to which the result of the calculation from the numerator (Dbei – Wbei) is referred, will be decreased by the amounts of subsidies and means for current goals;

- the amount of current income, increased by the amount of income from selling property, from which the amount of current expenditure is deducted (the numerator of the formula on the right side of the relation) will be decreased by the amounts of subsidies;
- the amount of current expenditure deducted from the amount of current income, increased by the amount of income from selling property (the numerator of the formula on the right side of the relation), will be decreased by current expenditure on the implementation of a program, project, or task financed with the means specified in Article 5 APF (current expenditure due to repayment of installments classified as credit and loans, as far as they are obligations contracted after the implementation of the APF);
- for the year preceding the budget year for which the relation is determined, we adopt the planned values shown in the report for three quarters on the execution of the budget of a self-government unit, and after the annual report is made – the values for this year, provided that in order to calculate the relations for the previous two years we adopt the values obtained, as given in the annual reports.

When determining the relation limiting the amount of debt repayment in 2020-2025, current expenditure of the self-government unit's budget will be decreased by current expenditure on servicing the debt. The adoption of this solution is connected with increasing the possibilities of contracting and repayment of obligations by local authorities. However, it seems that this change will not result in significant support for finances of self-government units and increasing financial potential of municipalities.

Therefore it is possible to make an earlier repayment of the debt if the local authorities have financial means from repayment of a loan granted earlier, free cash, income from privatization or surplus from previous years. The Act states that we can exclude from the ratio only earlier repayments, that is repayments which have been originally planned for the future budget years. Repayments planned for the budget year must meet the limitation requirement. It is possible to restructure the debt, that is to replace one debt with the new one, provided the costs of the new debt are lower than the costs of the restructured debt. The biggest disadvantage of the ratio specified in Article 243 APF has been eliminated since 2020. Now the creditworthiness is calculated as an arithmetic mean of three annual ratios, which are made up from sums of current surplus and sale of property related to total income. This structure accounts for the fact that the higher property subsidies (an element of total income, which is the denominator of the fraction), the lower creditworthiness (that is the value of the percentage constituting the allowable repayment in a particular year).

5. Conclusion

The introduction of a solution based on an individualized approach to calculating the permissible level of debt of local government units should serve two important purposes. The first is the introduction of a rule aimed at limiting the excessive level of indebtedness (Osborne and Gaebler, 1993; Paixão and Baleiras, 2013). The second goal is to use the information value of the IDR to forecast, or actually control the financial condition. The mere reduction of the assessment of the financial condition to the assessment of the impact of debt is undoubtedly too synthetic an approach and does not reflect the potential opportunities for improvement or deterioration of the financial situation in the future. Moreover, the very construction of the IDR shows that:

1. Its value will depend on many factors, which means that only by influencing these factors, LGUs will be able to influence the legal level of their debt.
2. IDR does not show flexibility in terms of changes in the economic situation, as it is based on historical data. It is not possible to correlate it with the currently forecasted economic situation.
3. Local government units may find themselves under pressure to sell their assets, wanting to improve the IDR relation on the right.
4. A creative possibility or necessity in the event of failure to meet the relationship, to shift the expenses related to debt servicing by local governments to the following years, which will result in an increase in related costs and the accumulation of fixed expenses in future years.
5. The IDR, as a formal measure, may subordinate the projection of revenues and expenditures in order to meet the formal requirements for the IWZ in future years.

The IDR applied in Poland seems to be an effective instrument for controlling the debt of local government units. The structure of this indicator allows, on the one hand, systemic control of the debt of the entire public finance sector, and on the other hand, it is flexibly adapted to the specificity and level of affluence of a given entity. Therefore, it is worth promoting such solutions in individual European Union countries as an effective tool for reducing LGU's uncontrolled indebtedness.

It is difficult to indicate the optimal solution that would fully reflect the current financial condition. It is possible, but from the point of view of the practice of local government units, the measures taken to maintain public debt at the level not exceeding the provisions of the Maastricht Treaty, as well as from the point of view of additional workloads, difficult to implement in practice. There are good practice both in theory and in practice regarding the measurement of financial health. It is difficult to decide whether the right direction for practice is solutions based on multiple measures or the use of a synthetic measure.

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