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THE EVALUATION AND FINANCIAL SITUATION FORECAST OF THE SELECTED CITIES OF THE EASTERN POLAND¹

Summary

Purpose – The article attempts to answer the question about the current and future financial capabilities of local governments. This study was conducted on the basis of financial situation in 18 cities located in the eastern part of the country, which vary in terms of demographics and functions.

Research method – Recognizing and evaluating many processes and financial phenomena occurring in cities is possible due to the financial analysis. Its subject is the diagnosis of their financial situation and the forecast of future money inflows. The analyses' results, obtained on the basis of the financial forecast model developed with that aim, may constitute a starting point for the local governments' decisions regarding future financial policies.

Results – Maintaining the existing historical trends, resulting in the operational surplus decrease, might cause the limited development potential of the studied cities. In order to counter this situation, it is crucial to take steps to reverse negative identified trends, including the improvement of the net operating result. It seems that in order to achieve that, it is necessary for local governments to take action, and to change central authorities' policy in relation to the local government subsector.

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Originality/value/implications/recommendations – Theoretical research was carried out on the financial condition of selected cities in eastern Poland, assessing their current and future financial potential. A financial forecast model was developed and used in the implementation of this research.

Keywords: local government finances, Covid-19 pandemic, local development.

JEL Classification: H70, H72, H74

1. Introduction

The Covid-19 pandemic, the unstable international political situation as well as the changes in the tax system, especially those regarding the income tax rates from natural persons, have had a negative impact on the functioning of local governments, often emphasizing the already existing problems. For many years, the cities of eastern Poland have undertaken actions aimed at bridging the gap in infrastructure development. Basing on their own budget means, having received national and foreign donations, they have realized investments aimed at the improvement of provided communal and social services. In crisis conditions, one very important question concerns cities' abilities to generate means to finance current and future development tasks. The paper attempts to answer that question on the basis of the analysis of the financial situation in 18 cities located in the eastern part of the country, which vary in terms of demographics and functions. The aim of the article is to evaluate the historic trends identified in their financial economy in the years 2012–2020 and to assess the ability to finance development tasks in the 2027 prospect, which ends the current EU financial perspective.

Recognizing and evaluating many processes and financial phenomena occurring in cities is possible due to the financial analysis. Its subject is the diagnosis of their financial situation and the forecast of future money inflows. The analyses' results, obtained on the basis of the financial forecast model developed with that aim, may constitute a starting point for the local governments' decisions regarding future financial policies.

The following hypotheses were put forward in the study: the crisis caused by the Covid-19 pandemic will have a long-term impact on the financial situation of Polish cities, and cities located in regions with a lower level of socio-economic development are particularly at risk. In the conditions of crisis, maintaining the necessary level of public services requires ensuring the stability of the system of supplying city budgets.

In the first part, the publication contains theoretical considerations regarding the investment potential of cities as a factor determining the implementation of public tasks. In the empirical part, historical budget analyses of selected cities in Eastern Poland and forecasts of their financial situation along with an indicator analysis were performed. The results obtained in this area allow to demonstrate the interdependence between the occurrence of crisis situations and the implementation of local public tasks. The results of the forecasts make it possible to introduce instruments stabilizing the economy and the social sphere of cities in proper advance.

2. Cities' financial potential as the determinant for the realization and financing of public tasks

Cities' potential may be defined as the total of their in-kind and financial means, in relation to which legislative and executive authorities make their management decisions. In a broader sense, this notion is defined by B. Filipiak, as a collection of in-kind, environmental and human resources available to the municipality, and the knowledge and competences as well as the ability to use and create resources [Filipiak, 2016, p. 77].

The subject of the research described in this paper is the cities' investment potential, which is equated with their development potential. D. Wyszowska equates the municipality's investment potential with the ability to allocate or gather financial means, which may be used to realize investments, regardless of their origin [Wyszowska, 2018, p. 158]. According to M. Mackiewicz, E. Malinowska-Misiąg and W. Misiąg, the investment (development) potential are the financial means, which local authorities may, at a certain point, allocate to finance new investment ventures, on condition that they will perform all current tasks, exchange the necessary equipment and retain a safe level of debt [Mackiewicz, Malinowska-Misiąg, Misiąg, Tomalak, 2007, p. 8]. M. Jastrzębska emphasizes that calculating the investment potential requires the assessment of: the amount of income and expenditure, the amount of operational surplus, the acceptable level of local governments' debt and the due amount of debt repayment in the period of the investment ventures' realization [Jastrzębska, 2005, pp. 97–100]. The importance of operational surplus is also noted by K. Surówka [2018, pp. 7–8], who states that the lack of it makes it virtually impossible for the local authorities to conduct development activity, which lowers the level of fulfilling current needs in the future and M. Poniatowicz [2014, p. 102], who claims that the existing

surplus of free resources guarantees the fulfillment of investment aims. A significant part of financial operations and other activities carried out primarily in the property sphere causes effects whose period of occurrence significantly exceeds the horizon of budget planning. This applies primarily to the capital (property) part of the financial plan, and above all to investment outlays and debt financial instruments financing these outlays [Mikesell, 2007, pp. 246–248; Nice, 2002, pp. 120 and 130]. Many investment projects of cities are carried out for a number of years, and commissioning facilities, on the one hand, causes the need to incur maintenance costs, and on the other hand, it is associated with obtaining specific economic benefits, often of a monetary nature. In addition, the liabilities incurred to finance these projects will, on the one hand, provide the necessary funds in several budget years, while their current service and repayment will be extended over a much longer period, usually reaching a dozen or more years. Since a significant number of economic decisions taken on an ongoing basis affects the shape of future budgets, it is impossible to make such decisions reasonably and responsibly without adopting a sufficiently long horizon of forecasting and budget planning [Mikesell, 2007, p. 250; Nice, 2002, p. 120; GFOA 2008]. Depending on the purposes for which forecasting is to be used, the scope of data on which forecasting is to be based, and the forecast period, the methods of constructing forecasting models are selected. [Schroeder, 2004, pp. 104–132; Mikesell, 2007, pp. 516–525; Cirincione et al., 1999, pp. 26–46].

The size of the cities' development potential depends on many factors, which include: geographical location, spatial, demographic and social conditions, urbanization level, and regulations which significantly affect the economic situation of local governments [Malinowska-Misiąg; Misiąg, 2013, p. 25; Surówka, 2013]. M. Dylewski emphasizes the importance of the municipalities' income base as well as the range of obligatory tasks that municipalities have to perform. Of great importance are also legal regulations that determine the acceptable level of cities' debts [Dylewski, 2015, p. 23]. On the other hand, M. Czekaj draws attention to the macroeconomic conditions, which are connected with the susceptibility to prosperity fluctuations, stating that the rapid income decrease may drastically limit the operational surplus level [Czekaj, 2017, p. 70]. The local authorities' policy is also of great importance. The assessment of future investment potential requires using efficient and functional tools, which may reinforce management processes. These include, among others, historical budget analyses and financial forecasts. A financial forecast is, to a certain degree, a projection of the assumed financial state in the future, developed on the basis of the most credible plans and the knowledge of those who developed it. It is based on: the most precise

evaluation of the revenue budget and the current expenses possible, calculating operational surplus and establishing the current and the future financial and investment potential as well as defining solvency and the conditions of retaining accounting liquidity.

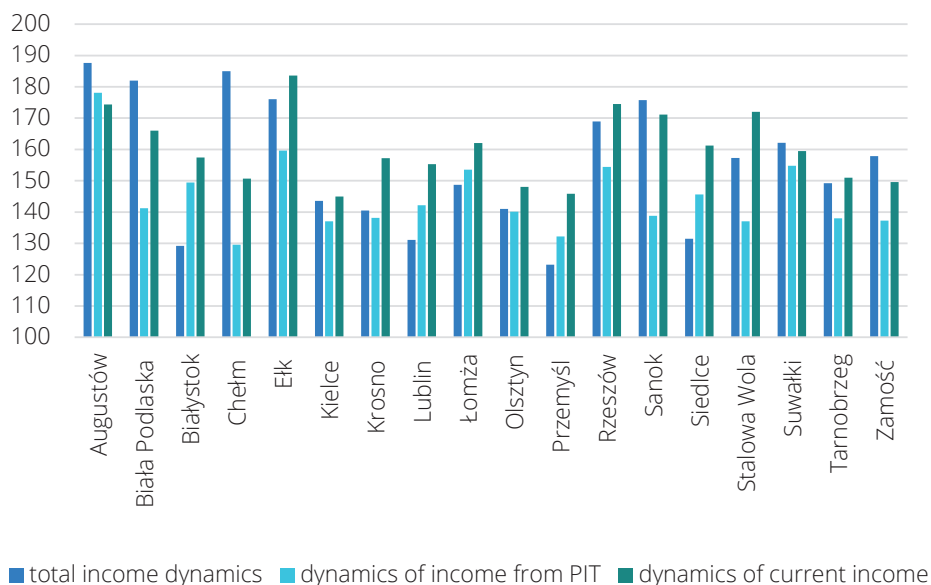
3. The results of the historical analyses of the examined cities' financial situation

3.1. Income dynamics

The examined cities were characterized by a large diversification of budget income levels. Those differences have various reasons, result from demographic factors, the potential of the local economic base and the functions and tasks of particular cities and the scope of the tasks they perform (some of them are cities with powiat rights, which have a wider range of tasks than the typical cities – municipalities).

FIGURE 1

Income dynamics of the analyzed cities in 2014–2020 (2014 = 100)



Source: author's calculations based on GUS data.

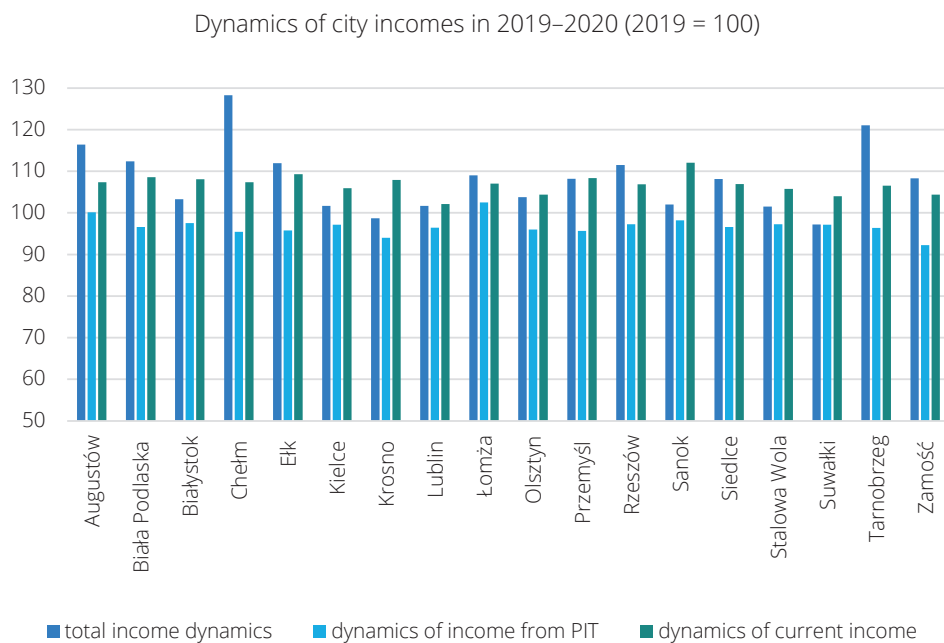
In the analyzed group, the biggest cities were characterized by the highest level of income, for obvious reasons: Lublin (PLN 2.4 bn), Białystok (PLN 2.24 bn), Rzeszów (PLN 1.64 bn), Kielce (PLN 1.52 bn), and the smaller cities by a significantly lower level: Augustów (PLN 168 million), Sanok (PLN 196 million), Ełk (PLN 329 million) and Stalowa Wola (PLN 342 million). In the years 2014–2020 all the examined entities noted an overall income increase. Augustów (88%), Chełm (85%), Biała Podlaska (82%) and Ełk (76%) were characterized by the greatest dynamics, and Przemyśl (23%), Białystok (29%), Lublin (31%) and Krosno (40%) by the smallest. The increase of the cities' socio-economic potential is indicated by the pace of the changes in PIT income, which amounts on average to 45% in the analyzed cities' group. In the years 2014–2022, the income from the PIT tax increased the most in Augustów (78%), Ełk (60%), Suwałki (55%) and Rzeszów (54%), and the least in: Chełm (29%), Przemyśl (32%) as well as in Kielce, Stalowa Wola and Zamość (37%).

When analyzing the above data, it is difficult to indicate a constant relation between the examined variables and the size or the functional structure of the particular cities. The positive changes were the result of the fast pace of the GDP growth, of the enterprises' income increase and of the increase in employment and the level of earnings. While the dynamics of the whole period may be the basis for formulating positive forecasts, the situation in the years 2019–2020 slightly changes this perception. The pandemic caused temporary restrictions in economic activity. It was dangerous not only for the enterprises, but also led to the lower income tax of local governments. As a result, the PIT income in almost all examined cities was lower than in the previous year. The increase in its value was observed only in Łomża (by 2.5%), a stable level was retained in Augustów, and in all the other entities an income decrease was noted – it was most noticeable in Zamość (8%), Krosno (6%) and Przemyśl, Chełm and Olsztyn (4%). Big cities mostly noted a decrease by 3%.

That tendency results in a negative change in the financing structure of local governments reflected in the growing dependence on external transfers. The main reasons of the decrease in the tax income in 2020 were the recession caused by the pandemic and lockdown as well as the changes in the tax law introduced in July 2019. As a part of the anti-crisis measures in 2020, the legislative authorities of many cities introduced lower tax rates. The cities also introduced tax breaks and exemptions from local taxes and charges for entrepreneurs and some actions within the framework of the so-called government anti-crisis shields. The negative consequences of the pandemic were much more noticeable in the cities with higher tax income and the greatest income decrease was observed in the group of cities

with powiat rights. The negative changes affected also smaller cities where lower earnings resulted in the lower tax income for their budget.

FIGURE 2



Source: author's calculations based on GUS data.

As a result of the decreasing cities' own revenue, they were forced to search for other sources to finance their tasks in order to balance the deteriorating relation between income and current expenditure. Those sources were property income and debt funds.

3.2. Dynamics of expenditure

In the years 2014–2020, all the examined cities noted the increase in the amount of the budget expenditure but its dynamics were very different. The expenditure increased the most in: Ełk (+91%), Augustów (+88%), Biała Podlaska (+82%) and Sanok (+76%), and the lowest increase was noted in Lublin (+22%), Kielce (+40%), Olsztyn (+41%) and Tarnobrzeg (+44%).

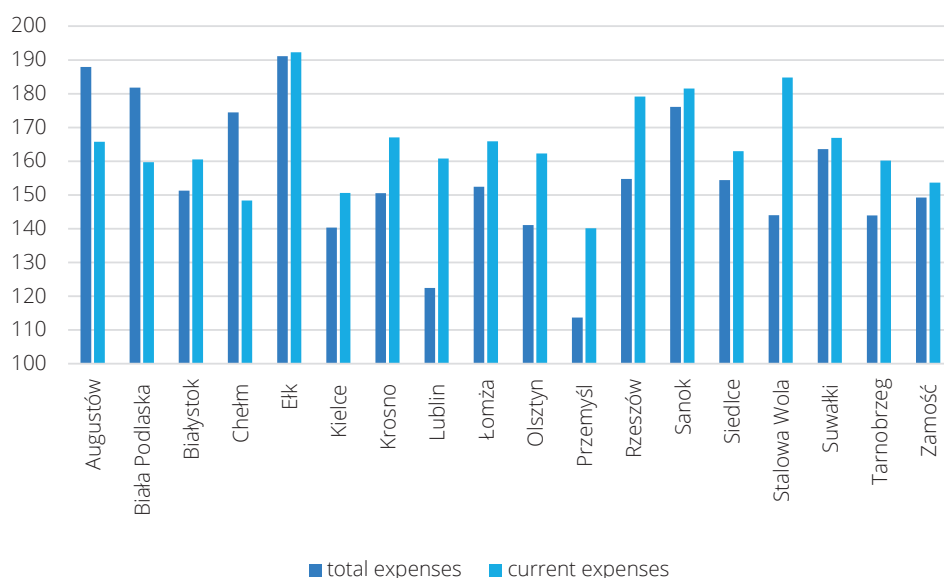
To compare the value of each entity one might use the index of budget expenditure per inhabitant. In 2020 its highest level was noted in: Krosno PLN 9.9 thousand, and further in Rzeszów PLN 8.2 thousand, Zamość and Kielce

PLN 8.0 thousand and Chełm PLN 7.9 thousand, and much lower in: Augustów PLN 5.3 thousand, Sanok PLN 5.3 thousand, Ełk PLN 5.4 thousand and Stalowa Wola PLN 5.6 thousand.

One of the basic dilemmas concerning the allocation function of public finances is a rational division of resources for current and investment expenditure. In the division of public funds, the amount of resources allocated to financing particular areas of the city's functions is of utmost importance. Another important decision-making dilemma is connected with the proportions of the budget division into operational and property parts. The rational allocation of funds should lead to achieving the expected quantitative and qualitative level of communal and social services, and, at the same time, enable to finance development expenses, taking into account investments' efficiency.

FIGURE 3

Dynamics of city spending in 2014–2020



Source: author's calculations based on GUS data.

Current expenditure

In the examined group of cities, in the years 2014–2020 current expenditure increased on average by 65%. It improved the most in Ełk (+92%), Stalowa

Wola (85%), Sanok (82%) and Rzeszów (79%). The lowest increase was noted in: Przemyśl (40%), Chełm (48%), Kielce (51%) and Zamość (54%). A high increase of these expenses was noted during the pandemic (years 2019 and 2020). In that period, the greatest dynamics was observed in Rzeszów (30%), Sanok (29%) and Elk (27%), while it was considerably less noticeable in Chełm, Zamość and Przemyśl (15% each). In Lublin the increase amounted to 19%, in Olsztyn to 22%, and in Białystok to 23%. The dynamics of changes in big cities also varied.

The amount and structure of current expenditure in recent years were highly affected by the rising prices of energy, building materials, consumables and services, water, sewage and waste collection charges, as well as the higher costs of remuneration. In the last two years, local government spending was also under pressure due to the pandemic effects connected with the long-term freeze of economic activity; social benefits were also extended. It is also worth noticing the significant increase in the spending on social benefits for natural persons connected to the novelization of the act about the state's help in raising children².

The education and upbringing means, benefits (mostly payments due to the Program Family 500+) and social help, transport and communication and municipal engineering mostly dominated the cities' expenses structure. In some cities expenses for public administration decreased.

Investment expenditure

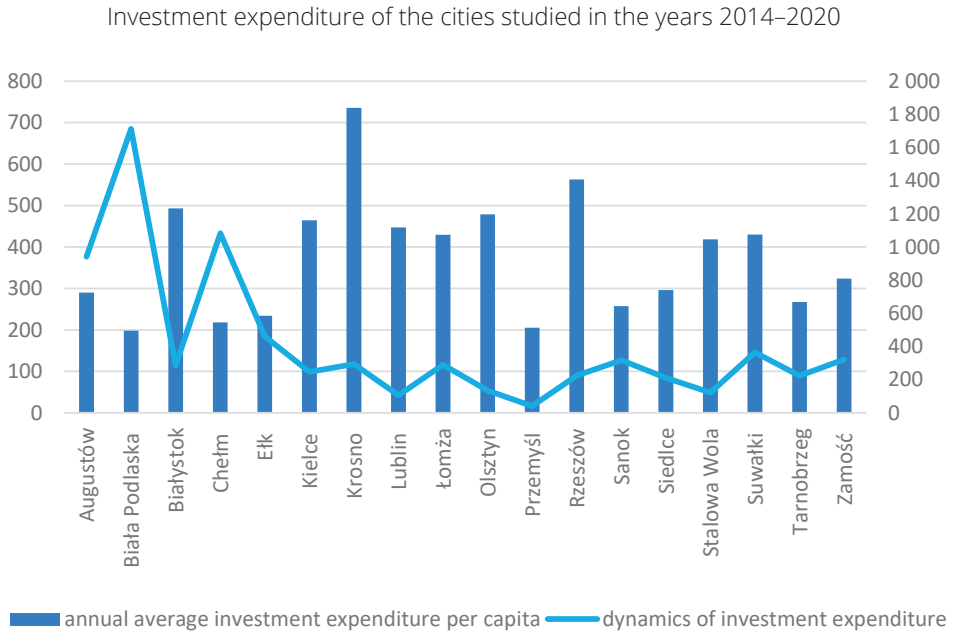
In the studied period, all the examined cities realized a wide range of investment tasks. Their size was varied and strictly connected to the budget amount and the authorities' investment policy. The highest average annual value of investment calculated for the period of 2014–2020 characterized, for obvious reasons, the big cities: Lublin (PLN 381 million), Białystok (PLN 366 million), Rzeszów (PLN 267 million), Kielce (PLN 229 million) and Olsztyn (PLN 208 million), while the lowest: Augustów (PLN 22 million), Sanok (PLN 24 million), Biała Podlaska (PLN 28 million) and Tarnobrzeg (PLN 32 million).

Other results were achieved when presenting the average annual investment value per inhabitant. The highest expenditure in the studied period was noted in: Krosno (PLN 1838), Rzeszów (PLN 1408), Olsztyn (PLN 1196) and Kielce

² The novelization of the act about the state's help in raising children introduced on July 1, 2019, consisting of extending the program 'Family 500+' to each child.

(PLN 1160), and the lowest in Biała Podlaska (PLN 495), Przemyśl (PLN 514), Chełm (PLN 545), Ełk (PLN 585) and Sanok (PLN 643). The average value for the studied group amounted to PLN 938, while 9 cities achieved the results below and 9 cities achieved the results above the average for the whole examined group.

FIGURE 4

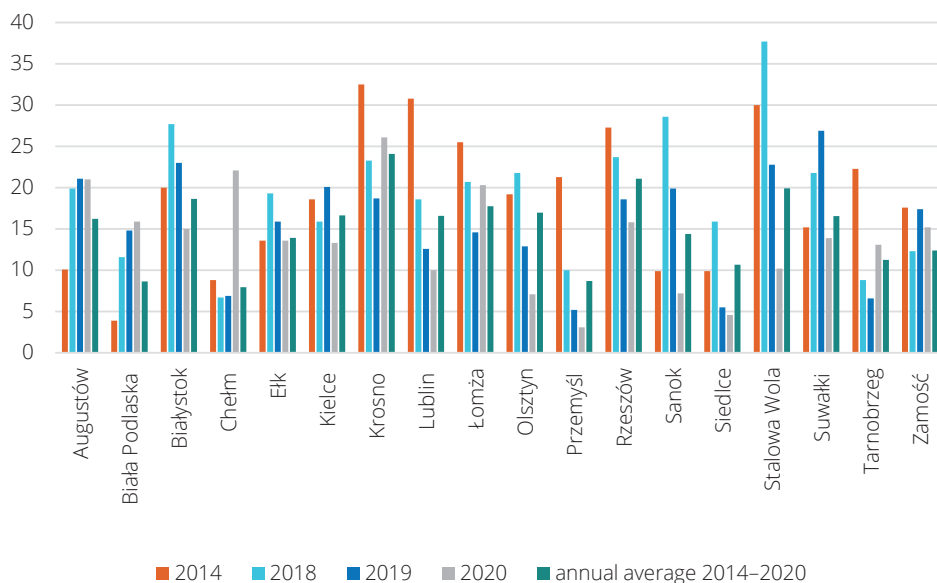


Source: author's calculations based on GUS data.

While evaluating the investment activity of the local governments in the years 2014–2020, the average annual share of investment expenditure in the total expenditure was calculated for each city. The analyzed 7-year period constitutes the basis for formulating conclusions regarding the investment policy of local authorities. The results of calculations indicate a varied level of the macro-economic indicator in the studied cities. Its highest values were noted in: Krosno (24.1%), Rzeszów (21.1%), Stalowa Wola (19.9%), Białystok (18.7%) and Łomża (17.8%), while the lowest in: Chełm (8.0%), Biała Podlaska (8.7%), Przemyśl (8.7%), Siedlce (10.7%) and Tarnobrzeg (11.3%).

FIGURE 5

Share of investment expenditure in total expenditure of cities



Source: author's calculations based on GUS data.

In the last two years, a decrease in the share of investment in the total expenditure was noted in cities. In the conditions of economic slowdown and the limited level of financial independence, they were not able to allocate the right amount of capital. It might constitute a serious barrier for completing communal infrastructure projects, which are important for both raising the level of living conditions of local communities and increasing cities' attractiveness in terms of housing, services and tourism.

3.3. Financial result and debt

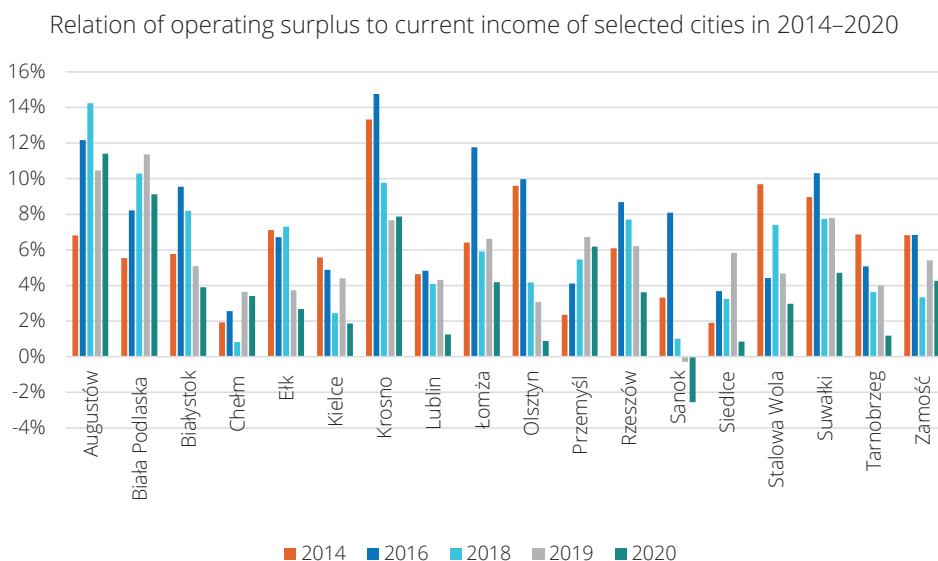
The budget outturn is an important piece of information about the financial condition of a city. The basic measure is the operational surplus, which constitutes a positive difference between revenues and current expenditure. It illustrates the ability to finance investments independently and to repay liabilities.

In 2020 the budgets of the examined cities amounted to a total operational surplus of PLN 391.6 million. Its highest value was achieved by Białystok (PLN 51 million), then Biała Podlaska (PLN 34 million), Krosno (PLN 29 million),

Lublin (PLN 28 million) and Przemyśl PLN 27 million). The lowest operational results were achieved by: Sanok (PLN -4.6 million), Tarnobrzeg (PLN 3.5 million), Siedlce (PLN 4.6 million) and Ełk (PLN 7,9 million).

To compare the potential of each city, an indicator of the operational surplus in relation to the current expenditure was used. In 2020 its highest value was achieved in: Augustów (9.6%), Biała Podlaska (4.3%), Krosno (7.0%), Przemyśl (6.0%) and Suwałki (4.3%), and the lowest in: Sanok (-2.3%), Olsztyn and Siedlce (0.8%), as well as Tarnobrzeg (1.0%). The average indicator value for the whole studied group amounted to 3.3%. Calculation results do not indicate a constant relation between the indicator value and the size of the city, in different cities it amounted to different values. However, the financial policy of the cities' authorities, the adopted management strategy and the efficiency in realizing public tasks, especially in terms of current public services, were of utmost importance.

FIGURE 6



Source: author's calculations based on GUS data.

All the examined cities of the eastern Poland used the debt market tools. These means, which balanced the total budget deficit, funded investment enterprises, especially the building, extending and modernizing of roads and investments in communal and social infrastructure. In 2020, in the examined group of cities, the ones with the highest amount of debt were: Lublin – PLN 1.65 bn, then: Kielce PLN

1.02 bn, Białystok PLN 979 million and Rzeszów PLN 895 million. The ones with the lowest debt were: PLN Augustów 46 million, PLN Biała Podlaska 51 million, PLN Sanok 93 million and Ełk PLN 106 million. When calculating the amount of debt per inhabitant, the cities with the highest debt were: Krosno PLN 5686, Kielce PLN 5287, PLN Lublin 4877, and Rzeszów PLN 4551, while with the lowest: Biała Podlaska PLN 904, PLN Augustów 1548, PLN Ełk 1710 and PLN Olsztyn 1793.

Studies on the amount of debt in total and per inhabitant in the examined group emphasized serious differences. In 2020, the biggest cities were the ones with the highest amount of debt, which resulted from the rising costs of providing current public services, including the increase in the costs of energy, fuels, materials and remuneration, accompanied by the limited dynamics of the current income increase, including PIT tax income. Due to the decreasing cities' own development potential, it was necessary to procure new debts in order to retain their material scope. Moreover, it was often the requirement of ensuring the conditions of co-financing the EU projects.

The research on the changes in the amount of debt in the years 2014–2020 did not indicate any clear tendencies. In three cities, the amount of debt decreased (Biała Podlaska by 44%, Przemyśl by 36% and Tarnobrzeg by 4%). It increased by around 29% in Olsztyn and Chełm, from 42% to 48% in Lublin, Białystok, Łomża and Augustów, from 56% to 70% in Siedlce, Ełk and Rzeszów, by 71% in Suwałki, 80% in Kielce, and in all the other cities by over 100% - in Zamość (105%), Krosno (112%), Sanok (118%) and Stalowa Wola (171%). Such a significant differentiation of debt dynamics in the studied entities or even within one entity in the following years results from a varied policy regarding debt policy (the choice of tools, maturity date, the aim of debt procurement) of particular cities' authorities. Moreover, they also result from the differences in the level of cities' own development potential.

In the conditions of higher demand on debt instrument, it is of great importance to provide a safe level of debt. Maturity dates and the costs of debt-servicing should be adjusted to the current and future budgetary capabilities. The excessive increase of debt and of its servicing costs may become an obstacle to the local development processes.

3.4. The forecast method

The structure of the financial projections model is based on the analyses of data on budget completion in the examined cities in the 2012–2020 period and on the forecasts of basic macroeconomic indicators. The forecasts of the feasible

GDP and inflation increase were based on ‘The guidelines regarding the use of homogenous macroeconomic indicators which constitute the basis of evaluating financial results of the formulated laws’³, while the notion of ‘market’ interest rate was used to describe the average interest rate of the investment debts granted to self-government territorial units with repayment dates resulting from the premise of the financial projection.

In the context of base forecasts, the following money flows were projected:

- current income – anticipated for the 2022–2027 period as the ratio between the indicator of their changes’ historic trend and the indicator of the medium-term dynamics of GDP values in constant prices in 2014–2020, the increase rate of feasible GDP in the year t and the amount in the year $t-1$;
- property income – is anticipated as the ratio between the property income of a particular self-government territorial unit and its current income as well as its current income in the year t . The EU property income was evaluated as the ratio between the ‘allocation’ of the EU funds available to the self-government territorial unit in the year t defined in the objectives and the indicator of the share of the particular self-government territorial unit in the income of the EU self-government territorial units altogether;
- current expenditures – anticipated according to the same rules as current income, as the ratio between the indicator of their changes’ historic trend and the indicator of the medium-term dynamics of GDP values in constant prices in 2014–2020, the increase rate of feasible GDP in the year t and the amount in the year $t-1$;
- debt repayment – anticipated as the ratio between the self-government territorial unit’s debt at the end of the year $t-1$ and the rate of debt relief identical for all self-government territorial units and amounting to 10%; the amount of debt repayment at the end of 2020, and interests constitute the ratio between the amount of debt at the beginning of the year t and the anticipated interest rate in the year t ;
- new debt obligations – anticipated separately for each year, in the case when the amount of the anticipated investment property expenditure and debt repayment is higher than the total of property income and operational surplus.

In the whole forecasted period, it is assumed that two fiscal rules will be fulfilled: a ‘deficit’ rule, according to which in no year in the projected period can

³ The guidelines regarding the use of homogenous macroeconomic indicators which constitute the basis of evaluating financial results of the formulated laws. Update – August 2021, Warsaw, 31.08.2021.

the operational budget result be lower than zero; and a ‘debt-servicing indicator’ rule, according to which in no year in the projected period can the debt-servicing indicator exceed the permitted limit⁴.

On the basis of the above assumptions, forecasts for particular money flows of the revenue and expenditure budget sides, separate for current and investment parts, were made. The future demand for new debt obligations, necessary to finance the investment tasks with value exceeding the operational surplus and property income, was also evaluated. For the synthesized presentation of the developed forecasts’ results, the following values were adopted:

- operational surplus and the indicator of operational surplus of current income,
- the self-financing investment indicator (the relation between operational surplus and investment expenditure);
- debt amount and the ratio between debt amount and total revenue.

The time range of forecasts comprises the years 2022–2027.

3.5. Operational surplus forecast and the ratio between the surplus and current income

Assuming that the historical trends concerning the shaping of particular money flows will be retained in 2027 according to the assumptions of the forecast model, six of the examined cities will be able to achieve operational surplus, and even 12 may be, to some extent, in danger of negative flows. In 2027, the following cities may have the biggest difficulty in balancing the operational budget level: Lublin (a negative balance of PLN -117 million), Olsztyn (PLN -94 million), Kielce (PLN -71 million), Białystok (PLN -45 million) and Rzeszów (PLN -23 million). Among the smaller cities the highest negative current budget result is anticipated in: Sanok (PLN -23 million), Łomża (PLN -10 million) and Tarnobrzeg (PLN -9.5 million). The best situation is anticipated in: Biała Podlaska (PLN +55 million), Przemyśl (PLN +36.5 million), Augustów (PLN +28 million) and Siedlce (PLN +19 million).

An indicator which illustrates the ability to generate means of development use is the ratio between the operational surplus and current income. According to the forecast, in 2027 six cities will achieve a positive indicator value, while all the others – negative. The most beneficial situation will be observed in: Augustów (15.9%), Biała Podlaska (12.1%), Przemyśl (6.8%), Siedlce (2.8%) and Chełm

⁴ The permitted limit is calculated separately for the years 2021–2025 and 2026–2029 in accordance with the rules applying to those periods, stated in the Public Finance Act.

(2.8%), while the least beneficial in: Sanok (-10.6%), Kielce (-4.2%), Lublin (-4.0%), Tarnobrzeg (-2.5%) and Łomża (-2.0%).

The comparison between the anticipated value of the ratio between operational surplus and current income for the years 2022 and 2027 indicates the increase of its value only in three cities: Augustów (+2.6 pp), Siedlce (+1.8 pp) and Biała Podlaska (+1.7 pp). Its marginal decrease is anticipated in Przemyśl (-0.4 pp) and Chełm (-0.4 pp), and a significant decrease in: Sanok and Łomża (-4.8 pp), Suwałki (-3.3 pp), Kielce (-3.1 pp) and Zamość (-3.1 pp). According to the above forecasts, retaining historical trends in the economy of the examined cities may result in the limited ability to generate operational surplus, and, consequently, a slowdown in the local development processes.

3.6. Investment expenditure and self-financing indicator forecast

On the basis of the forecast model's assumptions, future investment expenditures were evaluated. According to the estimate, in the studied period, the highest investment increase is anticipated in Olsztyn (+140%), Przemyśl (134%), Lublin (+89%), Kielce (+88%) and Białystok (+85%). The lowest dynamics will be observed in: Augustów (+33%), Sanok (+46%), Siedlce (+52%), Stalowa Wola (+57%) and Chełm (+62%).

To ensure the comparison between the examined cities, a self-financing investment indicator was used, which provided information to what degree the funds gained through the operational surplus are sufficient to finance the anticipated value of investment expenditure. According to the forecast results, the most beneficial situation in the studied area can be observed in Biała Podlaska (indicator level 129%) and Augustów (109%). In the examined group, only these two cities will be able to finance the planned scope of investment tasks with their own budget means. The next three cities will be able to provide the partial own contribution to financing investment project. In Przemyśl, the indicator level will amount to 49%, in Chełm to 26% and in Siedlce to 22%. This might be supplemented by debt funds and national subsidy funds. The rest of the cities might have limited abilities of generating funds for development goals. Ełk will allocate its almost whole budget to current tasks and the rest of the cities might not be able to achieve operational surplus. The biggest gap in financing the anticipated investment tasks occurs in: Sanok (indicator value -70%), Olsztyn (-35%), Lublin (-23%), Kielce (-22%) and Tarnobrzeg (-21%). In the rest of the cities the indicator level also has negative values between -0.3% in Suwałki, -0.5 in Sanok to -9% in Białystok and Łomża.

In the context of the forecasts, the changes of the indicator level in the years 2022–2027 were also evaluated. In almost all the cities, there is a risk of the decrease in the own investment potential. It might occur in the highest degree in: Przemyśl (by 43 pp), Sanok, Olsztyn and Zamość (by 27 pp), Krosno (by 26 pp), Łomża and Biała Podlaska (by 25 pp), Suwałki (by 22 pp), Ełk (by 18 pp), Białystok and Tarnobrzeg (by 17 pp), Rzeszów (by 15 pp), Kielce (by 14 pp), Chełm and Stalowa Wola (by 12 pp) and Lublin (by 11 pp). Only in two cities the capability to finance investment with own budget means increase – these are Siedlce (by 13 pp) and Augustów (by 19 pp).

3.7. Debt and debt indicator forecast

For many years, the nominal debt value of self-government territorial units has been systematically increasing. On one hand, it results from the limited pace of the budget revenue increase (for example, due to the weak economic prosperity in the economic crisis conditions and due to the legislative changes in the PIT tax rates), on the other hand from the increase in the current costs of cities' functioning and remuneration. In the context of the decreasing operational surplus, refundable financing allows cities to function and realize investment on the anticipated level.

According to the forecasts, in 2027 the highest debt level will be observed in Lublin (PLN 5.7 bn), then Kielce (PLN 3.9 bn), Białystok (PLN 3.8 bn), Rzeszów (PLN 3.5 bn) and Olsztyn (PLN 2.4 bn). These are the biggest cities, with the biggest budgets, performing the widest range of public tasks and a wide range of investment tasks. Because of that, their debt value is generally much higher than that of smaller cities. The lowest anticipated debt level in 2027 should occur in Augustów (PLN 21 million), Biała Podlaska (PLN 22 million), Przemyśl (PLN 241 million), Ełk (PLN 258 million) and Chełm (PLN 346 million).

The anticipated value of the ratio between debt and total revenue varies significantly in the examined cities. The best situation in this respect can be observed in Biała Podlaska. This city, with the indicator level of 11.6%, has the lowest value of debt in the whole examined group. This situation results from the cautious debt policy in the years 2014–2020. Further cities with a moderate level of debt are: Przemyśl (22.0%), Augustów (28.6%), Olsztyn (32.9%) and Ełk (39.6%). The highest level of debt in relation to income occurs in: Kielce (93.5%), Lublin (88.5%), Krosno (84.4%), Rzeszów (77.6%) and Stalowa Wola (75.9%).

According to the forecast results, it should be presumed that in the years 2022–2027 in all the examined cities, the dynamics of the debt increase would be greater than the total income change. The highest increase in the debt level may

occur in Łomża (+58 pp), Kielce (+56 pp), Olsztyn (+56 pp), Krosno (+53 pp) and Sanok (+53 pp). The anticipated indicator level decreases in Augustów and Biała Podlaska by 16 pp and 6 pp respectively, and the lowest increase in anticipated in: Przemysł (+6 pp), Chełm (+ 7 pp) and Ełk (+9 pp).

The value of debt of each city evaluated in the forecast model results from the value of the financial gap between the evaluated investment value and their own anticipated financial potential. The total debt increase in the studied period stems mostly from the need to complete new investments, including projects co-funded with the EU means.

4. Analyzing selected interdependencies

The historical analyses' results and the conducted forecasts constitute the basis to search for interdependencies between certain money flows, indicators and making assessments and assumptions. Several of those interdependencies will be described below.

The first selected area concerns studying the interdependence between PIT income dynamics and the investment value and the level of related indicators. The value of PIT income might be connected with the strength of the local economic base and the income increase with its gradual growth. Moreover, it illustrates the local community's affluence. The results of such analyses provide information about the direction of allocating PIT tax revenues, especially whether their increase results in the higher investment expenditure or current expenditure.

The first of the interdependencies studied in this context is the comparison between the PIT income dynamics and investment expenditure. In many entities, a strong correlation was observed. The examples are the cities: Augustów, Suwałki, Ełk, in which the high dynamics of increase of both these variables was noted (in Łomża and Rzeszów this was visible to a lesser extent). This interdependency occurs also in Stalowa Wola, Tarnobrzeg, and to a lesser extent in Olsztyn. In many entities, the medium dynamics of the PIT income increase was accompanied by the medium increase of property expenditure. There are also some examples of the limited correlation between the examined data, e.g. in Biała Podlaska the medium dynamics of the PIT income growth was accompanied by the high dynamics of property expenditure.

One of the interdependencies examined in this context is also the correlation between the PIT income dynamics and the average annual share of investment expenditure in total expenditure. The achieved calculation results do not constitute

the basis for explicit assumptions. On one hand, it is clear that the low dynamics of the PIT income limits cities' investment capabilities. It is confirmed by the example of Chełm, which is the city with the lowest PIT income dynamics and the lowest share of investment in the budget, as well as the examples of Przemyśl, Zamość and Tarnobrzeg. Another confirmation of this correlation might be the example of the cities with the high PIT income dynamics and a high share of investment expenditure in total expenditure. These are, e.g., Rzeszów, Białystok and Łomża. On the other hand, Augustów, Ełk and Suwałki are the cities with a high share of investment and medium pace of the PIT income increase, while the cities with a high PIT income growth and a low share of investment expenditure in total expenditure are: Krosno, Stalowa Wola, Olsztyn and Kielce. The opposite situation is observed in Suwałki, Siedlce, Biała Podlaska.

Another area of research is the interdependence between the current expenditure dynamics and the value of the investment self-financing indicator. In this context, many correlations are clearly visible. They are noted in the cities with the low current expenditure dynamics and the high value of the self-financing indicator. The cities which belong in this group are Przemyśl, Chełm, Zamość, Suwałki, and to a lesser extent Ełk, Augustów and Krosno. These are mostly smaller or medium cities in the examined group. The opposite relation is also observed in Sanok and Stalowa Wola, which are the cities with a high growth of current expenditure and a limited capability to self-finance. An interesting situation might be observed in Kielce, which, on one hand, limited its pace of current expenditure increase, but, on the other, was in the group of cities with the lowest capability to self-finance investment. It shows a certain structural problem of the city, which stems from its historical financial policy – the high pace of expenditure growth and the growing debt of the city. Lately, debt restructuring and partial rationalization of current expenditure have been introduced. Biała Podlaska constitutes, on the other hand, a negation of the interdependency as it noted both the high increase of current expenditure and a high level of the self-financing indicator.

The next area of research on interdependencies is debt and property expenditure dynamics. Taking into account that debt is a source of investment financing, significant correlations between these variables should appear. This fact is confirmed by the situation in those cities where the low debt increase dynamics and a low share of investment expenditure in total expenditure appeared. One example of them is Biała Podlaska, and to a lesser extent also Chełm, Siedlce, Ełk, Przemyśl and Białystok. These correlations are also notable in the cities with the medium values of both indicators, e.g., Kielce, Tarnobrzeg and Lublin. On the other hand, none of the cities with the highest debt increase dynamics (Olsztyn,

Łomża, Zamość, Suwałki) were among the entities with the highest share of investment expenditure. Similar results are achieved when comparing debt and property expenditure dynamics.

5. Summary – conclusions of conducted research

On the basis of the conducted research it is possible to indicate the following problems in terms of current and future financing of investment tasks in the examined cities:

1. a significant growth of both current and investment budget expenditure was observed in the analyzed cities' group. It resulted both from the wider range of tasks as well as the increase in their realization costs;
2. the tendency to increase the share of current expenditure and to lower property expenditure was retained. The increase in the current functioning costs was reflected not only in current expenditure, but also in the prices of local public services. Cities which observed a significant decrease in own expenditure usually limited their spending on communal economy, but rarely on education, social security or culture;
3. historical analyses' results and forecasts show some symptoms of a crisis in local governments' finances and the risk of a further downturn. In previous years the pace of the increase in budget expenditure was higher than that of the income dynamics, which resulted in the budget deficit;
4. the results of the pandemic affected most local governments, however, to a different extent. The greatest negative influence was visible in the cities with high tax revenue. It stemmed mostly from the decrease in the PIT and CIT incomes. The highest income loss was observed in the cities with powiat rights, but a difficult situation was also present in smaller cities⁵;
5. the ability to perform development tasks is dependent on achieving an appropriate value of operational and budget surplus. These funds are necessary to finance investments, including co-financing of the EU projects, and to repay debts. An appropriate value of surplus is the basis of retaining short-term and long-term financial liquidity;

⁵ According to the report by the Association of Polish Cities, almost 89% of district cities noted lower own income in 2020 than in the previous year, in the case of cities with powiat rights the percentage amounted to a little more than 81%.

6. in the examined period, especially since 2017, the nominal value of the studied cities' debt has been systematically increasing. This difficult situation may grow worse in the case of a further tax revenue decrease. Forecast estimates indicate a further increase in the cities' debt obligations, which will be necessary to realize new investment tasks, including projects co-financed with the EU funds (as a condition of providing cities' own contribution);

Maintaining the existing historical trends, resulting in the operational surplus decrease, might cause the limited development potential of the studied cities. In order to counter this situation, it is crucial to take steps to reverse negative identified trends, including the improvement of the net operating result. It seems that in order to achieve that, it is necessary for local governments to take action, and to change central authorities' policy in relation to the local government subsector.

Cities' authorities should shape their policy in the conditions of stability and as high financial independence as it is possible. This fosters rational decision making in terms of the local financial policy (current and investment tasks). For this purpose, it is necessary to introduce a stable legal framework of funds gathering and performing tasks of self-government territorial units, with full compliance with the constitutional rule of suitability of tasks and means employed to perform them. The necessary conditions are both income stability based on relatively stable own revenue, as well as expenditure stability based on the system of realized tasks and rules of financing them.

On the other hand, local authorities are responsible for effective gathering and spending of financial means within the framework of the existing system of tasks and rules of financing them. In case of a difficult macroeconomic situation, one of the most important challenges is rational, long-term and pro-development budget planning, using strategic management tools.

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