



The Economic Behavior of Municipalities During the COVID-19 Pandemic (Evidence from Slovakia)

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Abstract: The article presents a study of the economic response of local self-government to the COVID-19 pandemic in the Slovak Republic in 2022. The aim is to analyze changes in 10 economic indicators and their correlation with the pandemic. The research problem is to determine how local self-government in Slovakia economically adapted to the impacts of the COVID-19 pandemic in 2022. The research methodology includes analyzing ten economic indicators based on data from 2010-2022. Data were obtained through the study of budget documents, sources from INEKO, and the Ministry of Finance of the Slovak Republic. The results indicate that some economic indicators, such as total debt and current account balance, deteriorated, while others, such as liquidity, improved. These findings are presented in tables and graphs. The study concludes that the COVID-19 pandemic had a significant impact on the economic behavior of local self-government in Slovakia in 2022.

1. INTRODUCTION

The COVID-19 pandemic has caused significant global impacts, penetrating all national entities and sectors, and leading to extensive consequences for the majority of the world's population. Considering the negative effects on healthcare, social security, security, and the economy, all states and public administrations had to address the pandemic's aftermath. From an academic standpoint, there is a need to respond to the necessity of summarizing studies that identify changes in the economic and fiscal behavior of local self-governments in Slovakia. Although this topic is peripheral, local self-government plays a key role in political and social life and maintains high public trust in the long term. Several fragmented works by experts (e.g., Šamalik & Horváth, 2022; Nemec & Špaček, 2020; Papcunová & Hudáková, 2021; Mihaliková & Koreňová, 2021) focus on monitoring the impacts of the COVID-19 disease on local self-governments, primarily within the EU, but this area is not adequately explored in the Slovak context.

The European perspective on the situation of public finances at regional and local levels during the COVID-19 pandemic is found in the works of several authors who analyze the situation at the NUTS and regional levels (Capello & Caragliu, 2021; McCann et al., 2022; Amdaoud et al., 2021; Brada et al., 2021). Research on local self-government includes various countries such as Austria, Belgium, Bulgaria, the Czech Republic, Denmark, England, Estonia, Finland, France, Germany (Saliterer et al., 2021), Greece (Kolliniati et al., 2021), Hungary, Ireland, Italy (Padovani & Du Boys, 2021), the Netherlands, Poland, Portugal, Slovenia, Spain, Sweden, and Switzerland (Wortmann & Geissler, 2021).

For these reasons, our aim is to complement the knowledge base with the economic response of the Slovak local self-government to the impacts of the COVID-19 disease. Our results could contribute to the current and often-discussed topic of possible reforms to the financial framework of

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local self-governments from the perspective of policymakers, the professional public, as well as representatives of towns and municipalities.

2. METHODOLOGY

The aim of our contribution is to research the economic response of local self-government to the impacts of COVID-19. To achieve this goal, we decided to identify the behavior of ten economic and financial indicators in the conditions of local self-government in Slovakia during the years 2010-2022. The research objective is conceived based on the analysis of 10 economic and financial indicators, which are as follows: Total debt, Debt service, Current account balance, Liabilities overdue in relation to current income, Liabilities unpaid 60 days or more overdue in relation to current income, Basic balance, Investment intensity, Net assets, Immediate liquidity, and Quick liquidity. These are cross-sectional relative indicators of financial health, whose primary level was assessed in the period 2010-2022. Subsequently, we performed a mathematical operation to determine the average value (secondary data) for the “pre-crisis” period 2010-2018 and graphically depicted the linear trend line, which we compared with the situation in 2022.

Overall, we included 100 units of local self-government in our research objective. The specific research sample includes a total of 79 municipalities, 18 urban districts, two city councils, and the most populous municipality in Slovakia (Smižany). It is a cross-sectional research sample targeting the most important centers of settlement in Slovakia.

Primary data sources were obtained through the Datacenter (Ministry of Finance of the Slovak Republic) and verified by pilot control through identified Final Accounts and Budgets of specific self-governments. Secondary verification and adjustment are carried out through monitoring indicators of the INEKO organization and its database. Several missing primary data were supplemented through the study of economic and budgetary documents of the affected self-governments. The total primary data set consisted of more than 6000 records, and the secondary data database consisted of approximately another 500. Such a volume of information can be considered sufficient for verifying the research objective and fulfilling the main goal.

Based on the conducted primary analysis and subsequent comparison, we are able to demonstrably identify how the behavior and approach of local self-government in the area of economic and financial indicators, which we associate with the response to the impacts of COVID-19, have changed. From this perspective, it will be significant to compare the average values of the 10 established indicators with the data from 2022 in the context of a longer-term developmental trend.

3. RESULTS AND DISCUSSION

The impacts of COVID-19 were specific to each segment of society and the economy. We intended to monitor the effects that the pandemic has had on the conditions of local self-government in Slovakia and its subsequent economic response to the situation that arose. Divergent behavior and results across the analyzed areas of the sampled Slovak cities, urban districts, and the most populous municipality in 2022 compared to the long-term developmental trend or average are associated with the response of Slovak local self-government to the problems caused by COVID-19.

The partial average results for the sampled set of 79 cities, 18 urban districts, two city councils, and the most populous municipality are captured in the following table.

Table 1. The Economic Indicators 2010-2022 (%)

Indicator / Year	2010	2012	2014	2016	2018	Average	2022
Total debt	27,87	18,84	16,51	13,79	14,31	18,26	17,46
Debt service	5,49	6,11	4,91	5,37	4,81	5,34	4,82
Current account balance	0,97	5,65	6,09	10,74	9,45	6,58	4,45
LO%CI	0,00	0,99	0,60	0,40	0,25	0,45	0,19
LU60D	0,51	0,46	0,28	0,31	0,10	0,33	0,06
Basic balance	-9,13	1,78	-0,93	6,47	-0,12	-0,38	-4,62
Investment intensity	11,62	3,93	7,26	3,59	9,55	7,19	9,29
Net assets	407,71	431,61	407,11	386,22	342,35	395,00	277,07
Immediate liquidity	225,70	197,96	180,83	270,20	248,73	224,69	249,57
Quick liquidity	284,94	257,74	234,14	315,76	286,92	275,90	284,67

LO%CI - Liabilities overdue as a percentage of current income

LU60D - Liabilities unpaid 60 days or more past due date as a percentage of current income

Source: Own processing based on **INEKO (2022)**

Throughout the period from 2010 to 2022, some significant developmental trends and average values of economic indicators of local self-government in Slovakia were evident. The total debt gradually decreased, reaching its maximum value in 2010 and its minimum value in 2018. The average value of total debt for the period was 18.26%. Similarly, the debt service fluctuated, being highest in 2012 and lowest in 2018. The average debt service was 5.34%.

The current account exhibited significant fluctuations, peaking in 2016 and reaching its lowest point in 2010. The average value of the current account for the period was 6.58%. Other indicators, such as ratios of overdue debts and unpaid obligations, showed similar developmental trends and average values.

These generalized developmental trends and average values provide insight into the economic situation of local self-governments in Slovakia during the observed period and can serve as a basis for further analytical research and policy formulation to support sustainable local economic development.

The research aim is focused on monitoring the response of a sample of selected local Slovak municipalities in a total of ten areas. These areas constitute a sufficiently dense research base, and their resulting values have been individually graphically represented to enhance interpretability and clarity.

The total debt gradually decreased from 2010 to 2018, with a significant drop from 27.87% in 2010 to 14.31% in 2018. The total debt value in 2022 (17.46%) is lower than the average, indicating a slightly better situation in 2022 compared to the average value for the observed period. Although the total debt slightly increased in 2022 compared to the previous year 2018, it remains relatively low and even lower than the average value for the observed period, suggesting relative financial stability or debt control in 2022 compared to previous years.

The debt service shows some fluctuation over the years, ranging from 4.81% in 2018 to 6.11% in 2012. In 2022, the debt service was 4.82%, relatively close to the average value for the observed period. The debt service value in 2022 (4.82%) is lower than the average, indicating that the debt service was lower in 2022 compared to the average value for the observed period. These findings suggest an improvement in debt management or lower debt payment costs in 2022 compared to previous years.

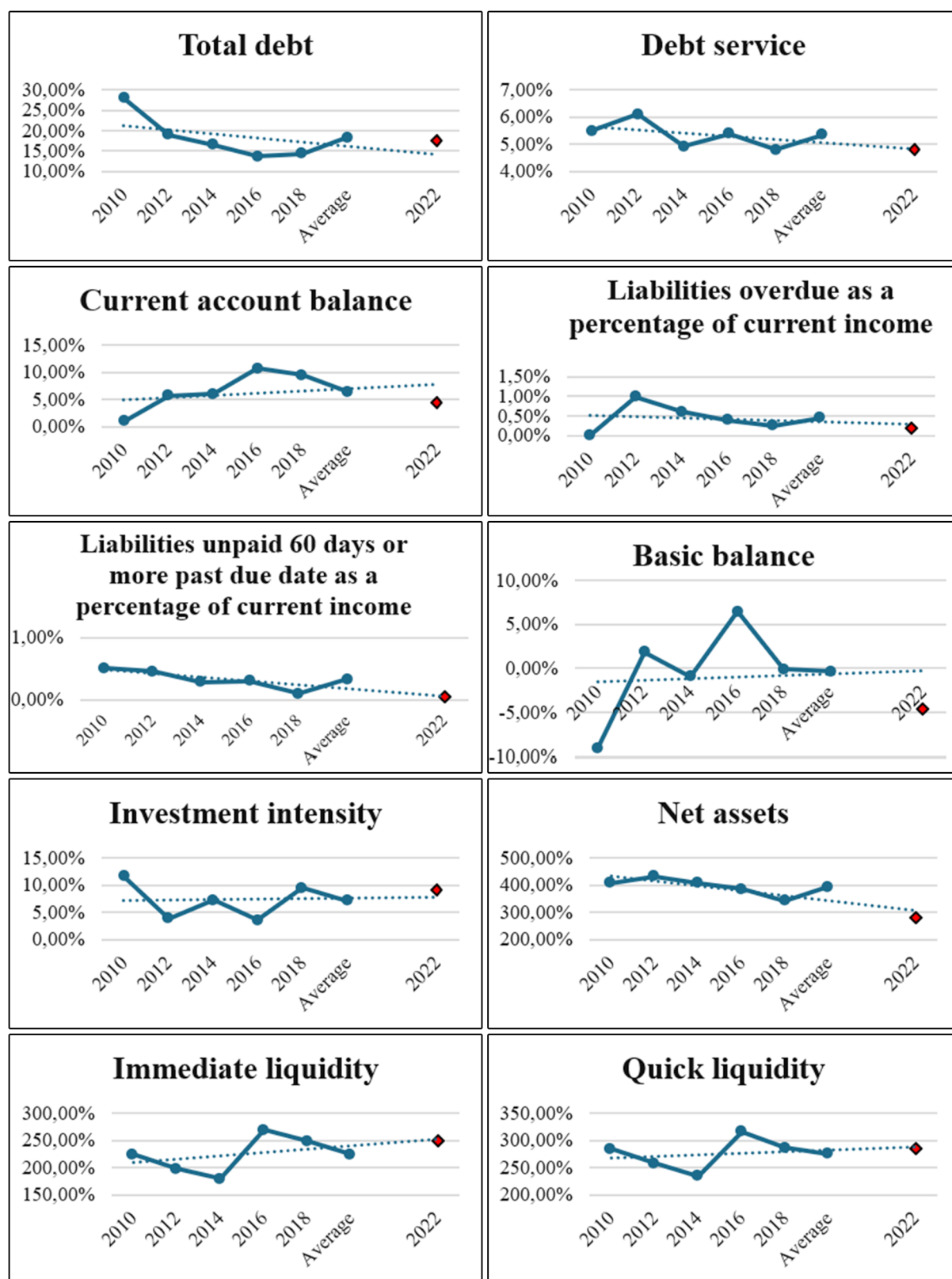


Figure 1. Graphs of Economic Variables 2010-2022

Source: Own calculations based on data from [INEKO \(2022\)](#)

The current account balance exhibits significant fluctuation over the years, being low in 2010 (0.97%) and then significantly increasing to 10.74% in 2016. The average current account balance for the observed period (2010-2018) was 6.58%. The analysis of the current account balance as

a percentage of current income showed significant changes in 2022, with a decrease to 4.45%, which is a significant reduction compared to the average for the observed period (6.58%). This decline suggests a possible change in economic dynamics and the behavior of local governments in 2022. The lower value of the current account balance may be interpreted as a decrease in financial stability or worsening economic conditions during this specific period.

The ratios of overdue liabilities to current income show a decrease from 2010 to 2018, ranging from 0.99% in 2012 to 0.25% in 2018. The value in 2022 (0.19%) is lower than the average, indicating that in 2022, this ratio was even lower than the average for the observed period. These data indicate a decrease in overdue liabilities ratios from 2010 to 2018, reaching a lower value in 2022 than the average for the observed period. This suggests an improvement in debt management and the ability of local governments to manage their debts and financial obligations over time.

The percentage of unpaid obligations 60 or more days past due date in relation to current income shows a decrease from 2010 to 2018, ranging from 0.51% in 2010 to 0.10% in 2018. In 2022, this value was even lower, reaching 0.06%. In conclusion, significant changes in the percentage of unpaid obligations 60 or more days past the due date in relation to current income occurred in 2022. Their value significantly decreased to 0.06%, representing a significant improvement compared to the average value for the observed period (0.33%). This decline indicates a significant improvement in debt management and the ability of local governments to effectively manage their debts and financial obligations in 2022.

The analysis of the basic balance as a percentage of current income reveals significant dynamic changes in 2022. The value of the basic balance decreased to -4.62% in this period, representing a significant decrease compared to the average value for the observed period (-0.38%). This significant decrease may indicate a possible deterioration in economic stability in 2022 compared to previous years. The negative value of the basic balance indicates a possible deficit in public finances or a disproportion between income and expenditure of the local government.

The analysis of investment intensity showed significant fluctuation in values, especially regarding the year 2022. In this year, the investment intensity experienced a slight increase to 9.29%, which is somewhat higher than the average for the observed period (7.19%). This increase in 2022 may indicate increased activity in investment by local governments, likely due to various factors such as stimulus programs, infrastructure renewal, or increased demand for public projects. Although this increase is a positive indicator of investment activity, it is important to pay attention to its long-term consequences.

The analysis of net assets indicates a significant decrease in 2022 compared to previous years. The value of net assets decreased to 277.07% in this year, significantly lower than the average value for the observed period, which reached 395.00%. This noticeable decrease may have various causes and consequences that require further detailed examination.

Instant liquidity values show a certain trend during the observed period. It appears that instant liquidity values fluctuate, with some years recording higher values and others recording lower values compared to the average for the entire period. The value of instant liquidity in 2022 reached 249.57%, slightly higher than the average for the observed period. This suggests that in 2022, the instant liquidity of the local government was relatively higher compared to the average value for the observed period.

Quick liquidity values exhibit some fluctuation during the observed period. The average value of quick liquidity for the observed period is 275.90%. This average provides a reference point for comparison with the value of quick liquidity in 2022. This value is slightly higher than the average for the observed period, indicating that in 2022, the quick liquidity of the local government was relatively higher compared to the average value for the observed period. This increase in 2022 may be the result of improved financial management, increased income, or other factors contributing to increased liquidity.

Discussion on the results of this study reveals a comprehensive picture of the impact of the COVID-19 pandemic on local governments in Slovakia. The total debt gradually decreased until 2018, with the value in 2022 being lower than the average, indicating relative financial stability in that year. Similarly, the debt service in 2022 was lower than the average value, suggesting improved debt management. There were also significant fluctuations in the current account, where the decline in 2022 signals possible changes in economic dynamics and the behavior of local governments. The decrease in the percentage share of unpaid obligations in 2022 indicates a significant improvement in debt management and the ability of local governments to fulfill financial obligations. Further findings, such as the decrease in the value of net assets or the increase in investment intensity in 2022, highlight various aspects of financial management and local government responses to the pandemic. These results support the need for further analysis and measures to ensure long-term economic stability and sustainability of local governments in the context of the COVID-19 pandemic.

4. FUTURE RESEARCH DIRECTIONS

Based on the findings of this study, several avenues for future research can be identified to deepen our understanding of the economic response of local self-government to the impacts of the COVID-19 pandemic in Slovakia, while also considering the international aspect.

Future research could conduct a comparative analysis between the economic responses of local self-governments in Slovakia and those in other countries, particularly within the European Union. By comparing different approaches and outcomes, insights can be gained into best practices and areas for improvement not only at the national level but also in the broader international context. Understanding how various countries have tackled similar challenges can provide valuable lessons for policymakers and practitioners worldwide.

A longitudinal study tracking the economic behavior of local self-governments over a longer period beyond 2022 could provide valuable insights into the sustainability and effectiveness of the implemented measures, both domestically and in comparison to international counterparts. Examining trends over time and across different countries can help identify common patterns, divergent strategies, and potential factors influencing outcomes.

In addition to quantitative indicators, future research could incorporate qualitative assessments to gain a deeper understanding of the underlying factors driving the observed changes, both domestically and internationally. Comparative case studies or interviews with local officials and stakeholders from various countries could provide valuable insights into decision-making processes, cultural influences, and challenges faced, contributing to a more nuanced understanding of international variations in responses to the pandemic.

Further research could focus on evaluating the effectiveness of specific policies and interventions implemented by local self-governments in response to the pandemic, not only within Slovakia but

also in other countries. Assessing the impact of fiscal measures, support programs, and resource allocation strategies on economic recovery and resilience-building efforts can inform future policy decisions and resource management practices both domestically and internationally.

Exploring the resilience and adaptive capacity of local self-government systems in different countries in the face of crisis events like the COVID-19 pandemic is another promising avenue for future research. Comparative studies could shed light on how institutions respond, innovate, and evolve in times of adversity, offering valuable insights into the factors that contribute to resilience across diverse contexts.

By addressing these research directions with an international perspective, scholars can contribute to a more comprehensive understanding of the economic dynamics and governance challenges faced by local self-governments in the aftermath of the COVID-19 pandemic, not only within Slovakia but also in the broader global context. This knowledge can inform evidence-based policy-making, foster resilience, and support sustainable development at both the local and international levels.

5. CONCLUSION

In the final summary of the values of economic indicators for the observed period, it can be stated that the local government in 2022 faced a change in its economic behavior. Some indicators, such as total debt and current account balances, worsened compared to the average for the observed period, while others, such as immediate and quick liquidity, improved.

The COVID-19 disease had disproportionate impacts, which also manifested in the economic response of the examined sample of local territorial self-governments across the ten examined variables. Predominant negative trends in public finances and the economy were also evident in the examined sample, which during the pandemic years experienced a deterioration in the indicator of total debt and current account balance compared to the long-term average. Paradoxically and unexpectedly, we also recorded positive developments in several indicators compared to the long-term average or trend. These findings point to the complex nature of the financial situation of the local government, which requires further monitoring and analysis to ensure financial stability and sustainability in the future.

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