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IMPACT OF EU FUNDS ON LOCAL INFRASTRUCTURE DEVELOPMENT IN THE POMERANIAN VOIVODESHIP

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Purpose: The aim of the article was to assess the impact of EU funds on local development, with particular emphasis on technical and social infrastructure.
Design/methodology/approach: Based on the analysis of statistical data and reports, a significant impact of EU funds on the development of the Pomeranian Voivodeship was demonstrated, including the implementation of numerous investment projects and a noticeable increase in GDP. The application of multiple regression analysis revealed a strong correlation between the share of local government revenues and the level of implemented investments.
Findings: Over the 20 years of Poland's EU membership, the GDP of the Pomeranian Voivodeship increased from PLN 52.6 billion to PLN 191.4 billion (from 50% to 75% of the EU average), and exports also rose. Approximately PLN 20 billion in EU funds were invested. The region obtains EU funds per capita at a level comparable to the national average. The main beneficiaries are local governments, for which grants constitute a significant source of investment financing. A key factor determining the level of these expenditures is the share of local governments in co-financing the projects.
Research limitations/implications: Due to the lack of detailed statistical data, the study did not make it possible to present the variation in the impact of EU funds at the level of individual municipalities within the voivodeship.
Practical implications: Co-financing EU projects by local governments significantly influences investment levels. Limited own revenues may hinder required contributions, causing debt. Authorities should monitor investment indicators and EU fund efficiency to better plan locally needed investments.
Social implications: Research can contribute to shaping a positive image of Poland's membership in the European Union by highlighting its tangible socio-economic benefits.
Originality/value: The research highlights the significance and impact of EU funds on the development of the Pomeranian Voivodeship during the twenty years of Poland's membership in the European Union, with particular emphasis on the role of local governments in the investment process involving EU funding. The article may be of interest to both national and local authorities, as well as to residents—especially those of the Pomeranian region.
Keywords: EU funds, investment expenditures, local infrastructure, local government units.
Category of the paper: Research article, case study.

1. Introduction

EU funds play a key role in the development of local infrastructure by supporting modernization and improving the quality of life for residents. Community financial resources contribute to the implementation of projects that often exceed the financial capabilities of local governments. One of the main strategic objectives of the European Union is to reduce disparities in the level of development among its regions. EU funds represent one of the most important external sources of financing, influencing the scale of investment policy implemented in Polish cities (Koj et al., 2023).

The article presents a review of the relevant literature and an analysis of available statistical data concerning the funds obtained from the European Union by local government units in the Pomeranian Voivodeship, as well as the scope of investments co-financed with own-source revenues in the years 2020-2023. To examine the significance of EU funds for the investment development of local governments, a multiple regression model was applied using data analysis tools in the R environment. The summary was based on reports by the Board of the Pomeranian Voivodeship, covering 20 years of EU fund absorption.

Local development should be viewed in a multifaceted way, as achieving the ultimate goal—a positive civilizational change in the living conditions of residents within a given local system—depends, among other things, on improving economic indicators. This places an important responsibility on local governments to manage public finances rationally (Psyk-Piotrowska, 2011; Wojarska, Marks-Bielska, 2015).

Investments in a municipality's technical infrastructure have a direct impact on improving the living conditions of the local population. They include facilities and initiatives related to: the transport of people and goods; sewage and water supply systems; energy, encompassing the production and distribution of electricity, heat, liquid fuels, and gas; communication and connectivity, including postal, telecommunications, and internet services; as well as waste management and environmental protection (Adamowicz, Stolarczyk, 2022).

The primary focus of activities financed by European funds is infrastructure projects. Investments co-financed by EU funds enable the construction of modern roads, sewage systems, and cultural centers, which directly contribute to improving the quality of life for residents (Churski, 2014). Investments in educational and cultural infrastructure are also an important element of EU support. Projects supported by EU funds contribute to the construction of modern schools, libraries, and cultural centers, thereby strengthening social capital. Krasowska (2021) points out the positive impact of these funds on the implementation of the idea of sustainable development in small towns, provided that expenditures are directed toward activities that stimulate such development.

One of the main areas of support is transport infrastructure. The acceleration of road infrastructure development would not have been possible without substantial financial support from the European Union's structural funds, particularly the Cohesion Fund. It is estimated that approximately 80% of the value of road investments was financed from this source (Śleszyński, 2024). It was precisely after Poland's accession to the European Union that spectacular investments in this area took place. This was due to the significant infrastructural backlog compared to developed countries. In 2004, Poland had only 784 km of motorways and expressways. By 2022, this length had increased to 4,872 km. As a result, in the first decade following accession to the EU, time–space accessibility improved significantly—referred to as the "big push" (Rosik et al., 2015)—along with comfort and traffic safety (Koziarski, 2018).

One of the objectives of the European Union (EU) policy in its member states is the protection of the natural environment. Therefore, an increasing number of investors are taking advantage of funds allocated for environmental protection (Bylicki, 2014).

The scope of operational programmes confirms that structural funds support environmentally friendly investments, such as renewable energy sources, modernization of water supply infrastructure, or the revitalization of degraded areas.

2. The Impact of EU Funds on the Development of the Pomeranian Voivodeship

Thanks to EU funds, the Pomeranian Voivodeship has experienced dynamic development, achieving significant success in infrastructure, social, and economic spheres. In 2004, the region's GDP amounted to 50% of the EU average, and by 2021 it had increased to 75%, which in real terms means growth from PLN 52.6 billion to PLN 191.4 billion in 2022. Exports also increased nearly fourfold – from PLN 22.2 billion in 2004 to PLN 83.3 billion in 2022 – primarily due to access to the open EU market. The Pomeranian Voivodeship invested over PLN 20 billion of EU funds into key areas of development. These funds were allocated to the construction of roads, railways, hospitals, urban revitalization, the development of culture and tourism, support for the elderly and people with disabilities, education, and training programs. Among the most important investments were the Pomeranian Metropolitan Railway (carrying 4 million passengers annually), the expansion of Gdańsk Airport, and the construction of the Pomeranian section of the S7 route. Significant investments were also made in urban mobility, including the modernization of 34 transfer hubs. In the healthcare sector, specialized equipment (e.g., CT scanners, MRIs) was purchased and medical facilities were renovated, which improved the quality of treatment for lifestyle diseases. Social and infrastructural revitalization covered 27 cities, including the adaptation of a former power plant into the seat of the Polish Baltic Philharmonic, the construction of the Shakespeare Theatre, and the establishment of the European Solidarity Centre, which has been visited by 5.7 million people. The Pomeranian region also invested in science and technology, establishing the Pomeranian Science and Technology Park in Gdynia and the STOS Competence Center at Gdańsk University of Technology, featuring the Kraken supercomputer. Educational initiatives included collaboration between vocational schools and employers (19,000 students completed internships) and the creation of over 3300 childcare places for children under the age of 3 and 10,300 preschool places (20 Years of Poland in the European Union – report by the PAP Local Government Service, based on information from the Board of the Pomeranian Voivodeship).

3. Areas of Intervention of the Regional Operational Programme for the Pomeranian Voivodeship for the years 2014-2020

The Regional Operational Programme of the Pomeranian Voivodeship for 2014-2020 (RPO WP 2014-2020) constituted a key tool for regional development, financed by the European Union under the cohesion policy. The programme focused on strengthening the competitiveness of the economy, developing infrastructure, and improving the quality of life of the region's inhabitants. It was one of the best-planned regional programmes, tailored to the needs and potential of the Pomeranian region.

Table 1.
Status of implementation of the ROP PV 2014-2020 as of April 30, 2024

Priority axis	Objective	EU Funds in million PLN	Number of contracted projects
Commercialization of knowledge	Supporting innovation in enterprises and cooperation between R&D units and businesses	352,6	67
Enterprises	Strengthening enterprises, their import activity, development of business support institutions, and improvement of the region's investment attractiveness.	709,3	512
Education	Improving access to educational services, enhancing the quality of general and vocational education, and ensuring high-quality preschool availability.	618,2	377
Vocational education	Increasing the attractiveness and quality of vocational education for young people, both at the level of vocational schools and higher education institutions.	301,4	29
Employment	Increasing employment of people in a difficult situation on the labor market, development of entrepreneurship, lifelong learning, and improvement of health.	933,7	513
Integration	Professional and social integration of people at risk of social exclusion, increasing the availability of social services, and development of the social economy.	549,5	326

Cont. table 1.

Health	Improvement of the health status of the inhabitants of the voivodeship.	723,9	45
Conversion	Comprehensive revitalization of cities along with the development of regional tourist products.	712,4	105
Mobility	Improvement of public transport efficiency in cities and enhancement of road and rail connections within the region.	1,6	48
Energy	Improvement of public transport efficiency in cities and enhancement of road and rail connections within the region.	989,4	147
Environment	Protection of natural resources, efficient management of municipal waste, organization of water and wastewater management, and protection of biodiversity.	527,4	116
Recovery and Resilience	Restoration of business resilience, mitigation of the health impacts of the pandemic, and increased use of renewable energy sources (RES).	111,7	14
Integration of Immigrants	Assistance for individuals arriving from the territory of Ukraine.	25,6	3

Source: Own elaboration based on the Report on the Implementation of the Regional Operational Programme of the Pomeranian Voivodeship for 2014-2020, Pomeranian Voivodeship Government.

In total, under the Regional Operational Programme of the Pomeranian Voivodeship for 2014-2020, as of April 30, 2024, 2315 contracts were signed for a total of PLN 8.5 billion, of which PLN 7.7 billion has already been disbursed to beneficiaries. Out of the PLN 8.5 billion, PLN 6.1 billion constitutes funding from the European Regional Development Fund designated directly for infrastructure investments.

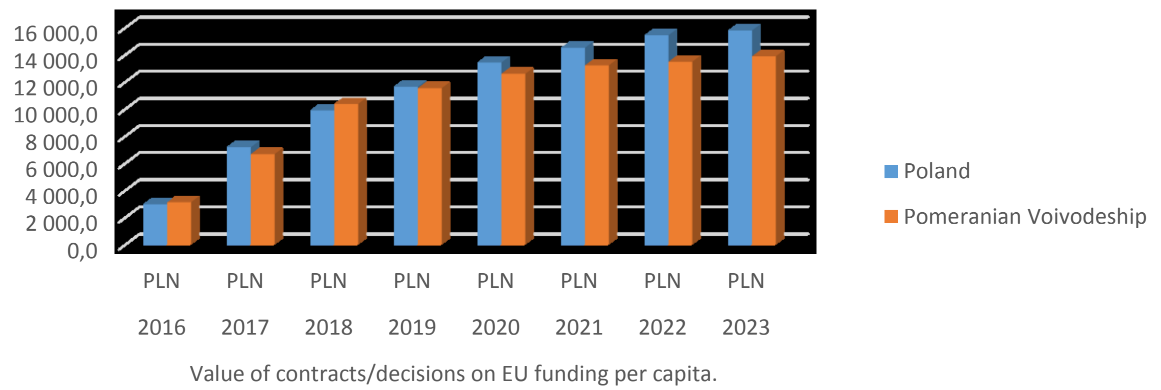

Figure 1. Comparison of the amount of EU funds per capita (based on the value of contracts/decisions) in Poland and the Pomeranian Voivodeship.

Source: Statistics Poland (GUS). Local Data Bank.

The Pomeranian Voivodeship does not statistically differ from the national average in terms of EU funds obtained per capita.

4. The Importance of EU Funds in the Development of Local Government Units in the Pomeranian Voivodeship

EU funds play a key role in the development of local government units (LGUs) in Poland, including in the Pomeranian Voivodeship. The amount of funds obtained by municipalities fluctuates over time due to the European Union's seven-year financial programming. This means that LGUs must adapt their development strategies to the changing possibilities of EU fund financing (Wyszkowska, Wyszkowski, 2021).

A long-term analytical perspective allows for a more comprehensive understanding of the effects of investments co-financed by EU funds and their impact on the socio-economic development of regions. By taking into account programming cycles as well as the time required for project implementation and settlement, it is possible to more accurately assess the effectiveness and efficiency of fund utilization and their actual contribution to the development of local governments.

As noted by Wiatrak (2011), Poland's accession to the European Union contributed to the growing importance of strategic planning in local development, although it has not always delivered the intended outcomes. Therefore, it is essential to seek answers to the question of the role of planning as a tool for economic development and public engagement, as well as the conditions that determine the effectiveness of development instruments.

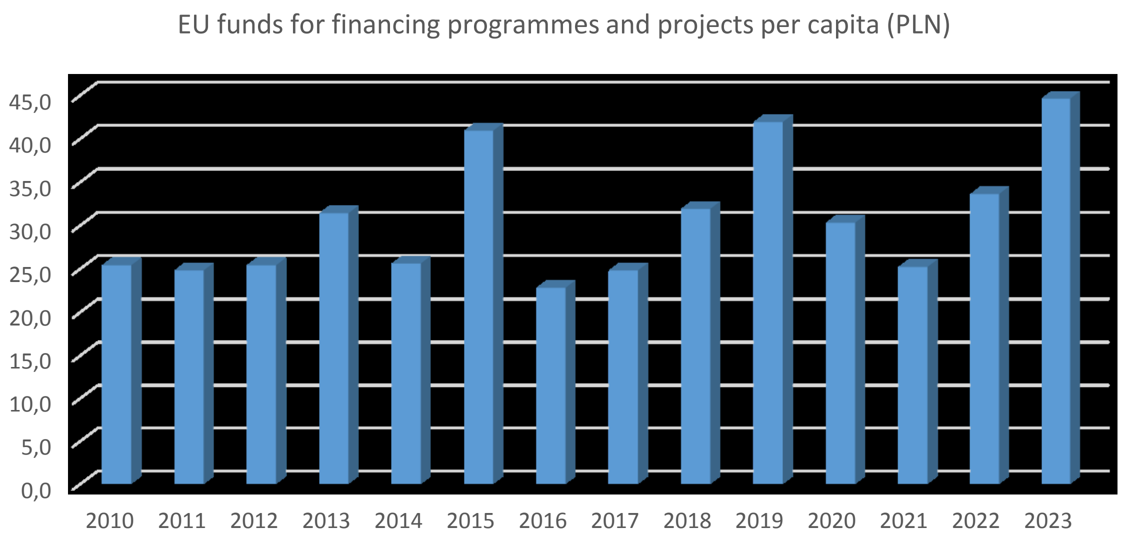

Figure 2. EU funds for financing programmes and projects per capita obtained by local government units of the Pomeranian Voivodeship in the years 2010-2023.

Source: Statistics Poland (GUS). Local Data Bank.

Taking into account the programming periods and the conditions related to the implementation and settlement of projects, the analysed period 2010-2023 primarily covers funds obtained under the EU financial perspectives 20072013 and 2014-2020. The chart of funds obtained by local governments in the Pomeranian Voivodeship confirms the variation of this indicator over the years. Wojarska (2020) notes that, while the overall significance of European funds for local government units is relatively limited, it increases in the budgets of specific municipalities, significantly influencing their investment plans. This means that although, on a macro scale, EU funds constitute a moderate part of local government budgets, they can be crucial for the implementation of investments in individual municipalities.

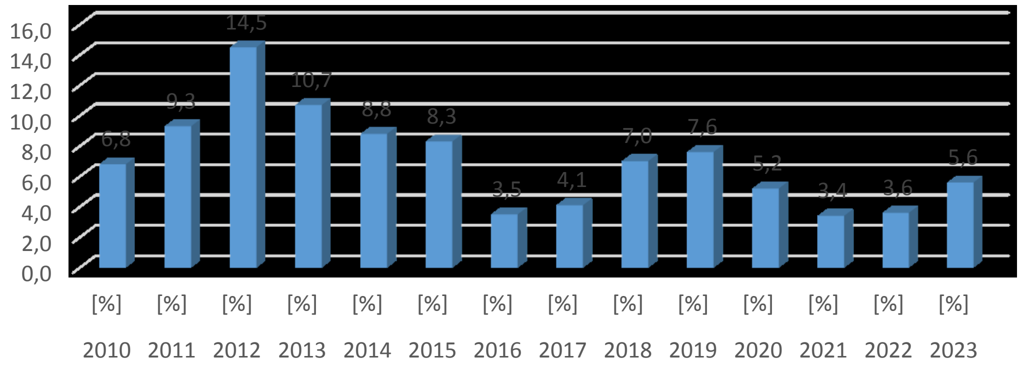

Figure 3. Share of local government revenues allocated for financing and co-financing EU projects and programmes in total revenues in the Pomeranian Voivodeship (%) in the years 2010-2023.

Source: Statistics Poland (GUS). Local Data Bank.

The share of EU support in the total value of projects amounts to a maximum of 85%, but is usually much lower. The remaining amounts are supplemented by the local governments' own funds. Often, the share of own contributions is increased by so-called non-eligible expenditures, which refer to tasks not covered by EU funding but necessary for the rational implementation of the investment. Therefore, the share of own-source revenues in the financing of EU projects is higher than it would appear from the project's financial structure.

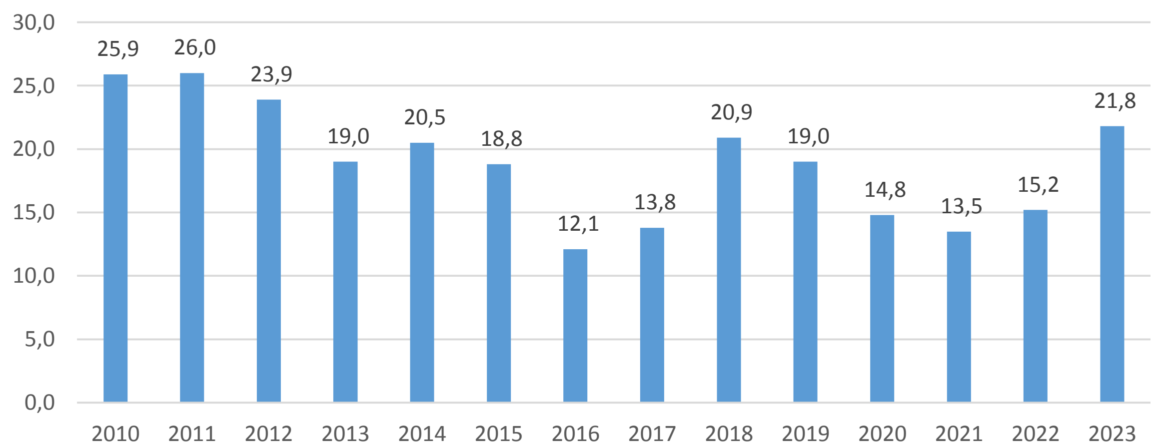

Figure 4. Share of investment expenditures of local government units (LGUs) in total expenditures in the Pomeranian Voivodeship (%) in the years 2010-2023.

Source: Statistics Poland (GUS). Local Data Bank.

The use of European funds by municipalities is significant, although it varies greatly in scope. A large portion of the grants is allocated to investment expenditures. The highest amounts are utilized by cities with county rights, both in absolute terms and per capita. The volume of funds obtained by municipalities fluctuates over time, which results from the seven-year financial programming cycles of the European Union (Wyszkowska, Wyszkowski, 2021).

To examine the significance of EU funds in the investment development of local government units (LGUs), a multiple regression model was applied using data analysis tools in the R environment.

Dependent variable:

- Share of LGU investment expenditures in total expenditures in the Pomeranian Voivodeship (Y).

Independent variables:

- EU funds obtained by LGUs per capita for financing programs and projects (X1).
- Share of LGU revenues allocated for financing and co-financing EU programs and projects in total revenues (X2).

The data covers the period from 2010 to 2023. Multiple regression model:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \epsilon \qquad (1)$$

It aims to examine the impact of two independent variables: “EU funds for financing programs and projects per capita” and “The share of local government revenues in the financing of EU projects” on the dependent variable, which is “The share of local government investment expenditures in total expenditures”. The model shows the extent to which these variables influence the level of investment expenditures of local government units. The analysis was conducted in accordance with the adopted assumptions of the model, and the results were verified using statistical diagnostics. A significance level of 0.05 (p-value) was adopted. The study shows that the variable “EU funds per capita obtained by local government units in the Pomeranian Voivodeship for financing programs and projects in the years 2010-2023” does not have a significant impact on the share of investment expenditures in total local government expenditures (p-value = 0.70261 > 0.05). Although the increase in EU funds per capita influences the growth of investment expenditures, this effect is statistically insignificant in this model. It is also important to note that investments supported by EU funds were carried out using the local governments’ own resources, with EU funding provided as a reimbursement (in recent years, advance payments during project implementation were also possible). This means that the two analysed indicators do not always correlate in specific years. The analysis of the indicator "The share of local government revenues used to finance and co-finance EU projects and programmes in total revenues in the Pomeranian Voivodeship" and its correlation with the share of investment expenditures in total local government spending shows that this variable has a very strong and statistically significant impact on the dependent variable (p-value = 0.00903 < 0.05). The higher the share of local government revenues in financing EU projects, the greater the share of investment expenditures in the total expenditures of local governments. Co-financing of EU projects by local authorities is a key factor determining the level of investment spending. It confirms the involvement and significant impact of EU funds on the scale of investments in local governments in the Pomeranian region. A high share of local government revenues in these projects may lead to greater investment in infrastructure and local development. Although EU funds theoretically influence expenditure, the funds alone—even in large amounts—may not be a sufficient factor to increase investment spending if local governments do not allocate their own revenues to co-finance these projects. Therefore, local governments should focus not only on the effective use of available EU funds but also on mobilizing their own resources to co-finance EU-funded projects. Local government units (LGUs) should prioritize investments, especially those that can be co-financed with EU funds. Additionally, actions should be taken to increase the efficiency of EU fund utilization in investment areas, particularly in the context of infrastructure and sustainable development.

The analysis suggests that local government units (LGUs) that are able to allocate a larger share of their revenues to financing EU projects may achieve better outcomes in terms of investment expenditure. Therefore, it is advisable to develop financial management strategies that allow for greater commitment of own resources to projects, which will, in turn, lead to more effective use of EU funds and a higher share of investments in the budget. It should be noted that most local governments have insufficient revenues to cover expenses, including the required own contributions for EU-funded projects. Local government units must plan their finances with a long-term perspective, taking into account both the EU funds obtained and the obligations related to their own contributions (Banaszczak-Soroka, Mosionek-Schweda, 2017, pp. 293-311). Often, when municipalities take advantage of the opportunity to co-finance investment projects, it also means they must finance their own contributions through revenues from loans or bond issuance. This implies that in order to access EU funds, local governments may create or increase their public debt.

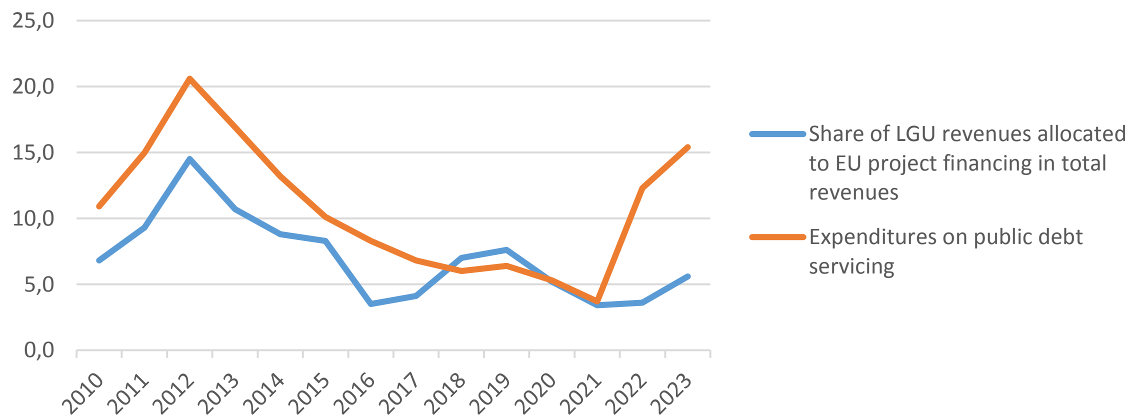

Figure 5. Comparison of trends in the share of local government revenues allocated to the financing and co-financing of EU programs and projects in total revenues (%) and expenditures on public debt servicing by local governments at all levels per PLN 1000 of local government budget revenues.

Source: Statistics Poland (GUS). Local Data Bank.

Pomeranian local governments, by increasing the financing and co-financing of EU projects, also increase their debt levels—although this is not the only factor driving local government indebtedness. Inflation (including high interest rates on loans) and a decline in revenue shares from personal income tax (PIT) may also contribute. However, the trends of the indicators presented in the chart for the years 2010-2023 appear to support this conclusion.

5. Summary

Over the 20 years of Poland's membership in the European Union, the GDP of the Pomeranian Voivodeship increased from 50% to 75% of the EU average, which in real terms means a rise from PLN 52.6 billion to PLN 191.4 billion. Exports nearly quadrupled. Approximately PLN 20 billion in EU funds were invested. Thanks to EU support, many spectacular projects were implemented in the Pomeranian region. Under the ROP of the Pomeranian Voivodeship, as the main source of regional support for 2014-2020, more than PLN 6 billion was allocated for investments. The Pomeranian Voivodeship obtains EU funds per capita at a level close to the national average. The largest beneficiaries of EU assistance include local governments, particularly in the form of non-repayable aid such as grants. While EU support may be less significant in the context of overall local government budgets, it constitutes an important source of investment financing for individual units. The co-financing of EU projects by local government units (LGUs) is a key factor determining the level of investment expenditure. The own-source revenues of local governments in the Pomeranian Voivodeship may be insufficient to cover the required contributions to EU-funded projects, potentially generating public debt. Local government units (LGUs) should regularly monitor investment indicators and the effectiveness of EU fund expenditure. The analysis of outcomes should be an integral part of decision-making processes in order to better plan and implement investments that address the needs of local communities.

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