

## CONDITIONS AND CHALLENGES OF MANAGING DEVELOPMENT INVESTMENTS IN POLAND IN THE FACE OF CONTEMPORARY CHANGES IN THE ECONOMIC ENVIRONMENT

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**Purpose:** To assess the conditions and mechanisms of development investment management in Poland in the context of changes in the economic environment. The aim of the study covered the theoretical principles of investment management as well as the practical aspects of assessing the directions of public spending in conditions of uncertainty and volatility.

**Design/methodology/approach:** The study used critical analysis of the literature on the subject, comparative analysis and time series analysis using selected descriptive statistical methods in the field of empirical and statistical data in a generic and territorial system according to selected categories of public sector entities.

**Findings:** The importance of public investment was highlighted and the methodological conditions for distinguishing development expenditure were identified. Through the perspective of the classification of development expenditure, the possibilities for improving strategic management methods to strengthen the effects of socio-economic development were assessed. The directions and intensity of spatial differences in investment potential in regions in Poland were determined, considering changes in the economic environment.

**Research limitations/implications:** The results are limited by the availability of empirical data in public statistics. Due to the currently observed factors of socio-economic instability, it is advisable to resume data updates and further analyses.

**Practical implications:** The practical dimension of the analysis refers to possible applications in the preparation of diagnoses and socio-economic development plans at various levels of public administration.

**Social implications:** The results of the research may provide information for public sector entities to support public investment programming processes in order to achieve socio-economic cohesion, reduce social disparities and development potential.

**Originality/value:** The paper presents the results of analyses concerning the improvement of strategic management methods in the area of public investment in response to changing crisis phenomena affecting the national economy and the capacity of selected components of the economy to undertake investment expenditure. The territorial approach used provides up-to-date knowledge that can be used in further detailed scientific research and in the decision-making process concerning investment policy at national and regional level.

**Keywords:** public management, investment, regional development, public sector.

**Category of the paper:** research paper.

## 1. Introduction

Contemporary investment process management in Poland takes place in a dynamically changing economic environment and crisis conditions. The continuing unfavourable changes in investment activity in the economy, affecting both the public sector and private sector investments, generate the need to give appropriate priority to the management of development investments in Poland in the current short-term as well as in the long-term strategic period. Development investments, understood as activities aimed at long-term growth of socio-economic potential, are an important element of the development strategies of the state and local government units.

The aim of this paper is to assess the conditions and mechanisms of development investment management in Poland in the context of changes in the economic environment. The subject of the study covered both the theoretical foundations of investment management and the practical aspects of assessing the directions of public spending in conditions of uncertainty and volatility. The analysis is based on the use of various research methods, including a review of the literature on the subject, strategic documents, selected studies and public statistics (e.g. GUS, AMECO), time series analysis using selected descriptive statistics methods, and comparative analysis.

The time horizon presented in the paper covers the period from 2015 to 2024. This period was chosen as it reflects the dynamics of the changes occurring in the economic environment and the deterioration of the public finance sector due to the economic consequences of the Covid-19 pandemic, the military conflict in Ukraine, and the growing threat of spreading hybrid warfare.

## 2. Conditions for managing investment processes and development investments against the backdrop of challenges and changes to the economic environment in Poland: a literature review

An investment project can be defined as the comprehensive material scope of a tangible investment (development objective), which is planned for implementation at a specific time and in a specific place for a specific purpose. According to this definition, some researchers consider the concept of an investment project to be a document or study that forms the basis for the implementation of an investment (Borowiecki, 1995; Brzozowska, 2003). Therefore, a project is a process-based representation of an investment, defining a set of activities related to the commencement of the investment and then operating the project until its closure. A permanent element of the project is the documentation and procedures that precede the commencement of

the investment and facilitate the decision to implement or reject the project (Rogowski, 2013; Kawa, Wydymus, 1998).

In classical terms, investment management comprises three basic phases, i.e. project preparation, implementation and control of results. Each of these phases requires the use of appropriate analytical, financial and organisational tools. Particular importance is attached to risk analysis and the assessment of the economic and social effectiveness of investments (Olszowy, Sepioło, 2023). In the literature on the subject, development investments are defined as long-term projects aimed at improving the quality of life, increasing competitiveness and promoting the sustainable development of regions and countries (Mieleszko, 2021).

The economic significance of the public sector stems largely from its role as an important driver of socio-economic development. The scope of competences and responsibilities of public sector entities extends to many areas of investment activity, supporting the creation of favourable conditions for development in the short and long term (McCartney, 2015). The activities of public sector entities and organisational units, both governmental and local government, should be directed towards achieving the overarching strategic goals of the entire socio-economic system, and in this context, the issue of investment activity management and its effectiveness in this sector should be examined (Miłaszewicz, 2014; Jarosiński, Opalka 2016). In view of the factors mentioned above that shape the level of instability of economic conditions, the importance of a strategic approach to public investment is increasing, and it is justified to undertake a quantitative analysis of public expenditure at the level of government, regional and local administration, which could confirm the importance of developing new approaches for better management of public resources.

In Poland, investment process management is strongly linked to regional policy and European Union structural funds. Instruments such as the National Recovery Plan and EU cohesion policy operational programmes form the basis for financing many infrastructure, social and environmental projects. At the same time, changing macroeconomic conditions, such as inflation, exchange rate volatility, volatility in the prices of strategically important raw materials and geopolitical tensions, influence investment decisions and require a flexible approach to management (Jarosiński, 2025). Contemporary approaches to development investment management also consider aspects of participation, sustainable development and innovation. The role of stakeholders in the decision-making process, both public institutions and local communities, is increasingly emphasised (Lipiński et al., 2025). Investment management is becoming not only a technical process, but also a political and social activity. In this context, it is worth emphasising once again that the concept of development investments should be defined in close connection with activities that are aimed at long-term growth of socio-economic potential.

The economic activity of public sector entities should contribute to improving the welfare of society, but the conditions governing the functioning of this sector are complex and extend beyond strictly economic issues. The macroeconomic and macrosocial level concerns the

management of the entire economy and the effects created by the public sector as a whole (Kleer, 2005). Investment process management refers to planning, financing and implementation, which requires the use of specific measures of expenditure and results achieved. In the public sector, the effects of the various tasks carried out have both a quantitative and qualitative dimension, which often makes it difficult to measure them directly and sometimes causes problems of immeasurability in terms of numbers (Sawant, 2010; Satoła, 2017). Therefore, it is important to have the competence to select the appropriate evaluation measures and correctly interpret the results obtained.

From the perspective of the government and local government sector, when planning budget expenditure for development purposes, it is important to construct and implement budgets in a way that optimises the effects achieved through the expenditure of funds in terms of the tasks that should be performed for the state, society and the economy. An information system that ensures precise monitoring of the programming, planning and implementation of these expenditures can be considered the basis for optimal budgeting of development expenditures. Such a system should also enable comprehensive identification of the effects, where they occur, identification of the beneficiaries of development expenditure, monitoring and empirical data for the purpose of assessing the effectiveness of the use of funds allocated from the budgets of government and local government institutions for development purposes (GUS, 2020).

Recognizing the need to improve the process of implementing development activities by public sector entities at various levels of management, Poland has attempted to create and implement a system for monitoring development expenditure that could support management processes. The proposed system made it possible to observe the variation in the amount of development expenditure incurred by the government and local government sector as a whole, as well as by individual institutional sub-sectors. The theoretical basis for identifying and separating expenditure for development purposes was the methodological approach proposed in the study by M. Bitner and J. Sierak 'Classification of development expenditure and its application to the budget expenditure of local government units' carried out as part of the activities of the Ministry of Investment and Development – currently the Ministry of Funds and Regional Policy (MFiPR). In accordance with the adopted methodology, development expenditure was defined as '... funds spent as part of the state's development policy by government and local government institutions for entities not belonging to this sector, leading to positive socio-economic changes, in particular an increase in competitiveness, productivity, and enhanced social and economic cohesion' (Bitner, Sierak, 2017).

The practical dimension of the concept of monitoring development expenditure was implemented in a research project carried out by the Central Statistical Office entitled 'Development of a system for monitoring development expenditure, including calculations of development expenditure for the government and local government sector broken down by institutional sub-sectors'. The aim of the project was to create an integrated IT system for monitoring development expenditure and to develop a calculation methodology for the

government and local government sector. It was assumed that the implementation of the development expenditure monitoring system would serve to better target public funds spent on the national development (GUS, 2020).

The research work focused on providing access to an innovative classification of statistical data describing the development expenditure of the government and local government sector broken down by institutional sub-sectors. The formula for the availability of data organised in a systematic manner can constitute an information resource supporting public resource management processes and, consequently, facilitating development activities undertaken by various entities at different levels of management. It also constitutes a comprehensive solution, limiting the dispersion of information and promoting tools for improving the efficiency of public spending, including European funds (GUS, 2020).

The general assumption adopted in the Classification of Development Expenditure (CDE) concept is to demonstrate that the impact of the redistribution of budgetary funds by government and local government institutions on maintaining and stimulating social and economic development in accordance with the objectives of development policy is achieved through the support of specific public tasks. The determination of the level of development expenditure is interpreted as a measure of its importance or effectiveness in relation to the development policy pursued, the type or area of activity financed from public funds, broken down by economic category. The expected practical effect of introducing the system is to improve the planning of public expenditure allocated to the country's development within the framework of individual regional strategies, as well as its allocation in areas such as transport, infrastructure, health care and education (Bitner, Sierak, 2017).

The economic environment is a key context for investment decisions. In Poland, as in other developing countries, the volatility of macroeconomic, regulatory and institutional conditions affects the effectiveness and direction of development investments. In recent years, significant changes in the structure of the economy have been observed, which determine new approaches to investment management (Opalka, 2024). The Polish economy has undergone a number of significant changes, from political transformation and integration with the European Union to the challenges and crises associated with the Covid-19 pandemic and the war in Ukraine. Since 2004, as a member of the European Union, Poland has been subject to the influence of EU policies, including the European Green Deal, the digitalisation strategy and innovation policy. Global trends such as decarbonisation, automation and demographic change present both opportunities and threats for development investments. In addition, geopolitical tensions, changes in supply chains and growing international competition require investment managers to take a strategic approach and be adaptable. In this context, scenario analysis and the assessment of projects' resilience to changes in the environment are becoming increasingly important. Rising inflation, exchange rate volatility and increasing energy costs affect investment calculations and require greater flexibility in project planning.

The regulatory environment in Poland is dynamic and subject to frequent changes, which may constitute a barrier for investors. Changes in tax law, administrative procedures and public procurement rules affect investment risk. At the same time, instruments supporting investment are being implemented, such as tax relief, European funds and government programmes. The structure of investment demand is also changing due to the growing importance of the service sector, the digitalisation of the economy and the development of information technologies, with projects related to digital infrastructure, green transformation and social innovation playing an increasingly important role. An important element of the institutional environment are regional development strategies and planning documents at the national level, including the National Development Concept 2050, the National Regional Development Strategy 2030 and the National Urban Policy 2030. Their updating and the possibility of maintaining the consistency of local investment plans with the above documents are crucial for effective project management (Opalka, 2025a).

Despite differences between regions, which are often the result of long-standing economic and demographic phenomena and thus shape the autonomy of regional development conditions, the fundamental research and planning problem remains the financing of investments. In terms of the state's economic system, the main source of financing for public sector investments should be own funds collected and spent within the budgets of the relevant entities (Dworakowska, 2015). The structure of public sector entity budgets has been adopted as an important instrument for identifying factors determining investment opportunities, due to the direct dependence of budget revenue sources on the state of the economy in various territorial contexts. This situation is the result of previously established development processes, often with a regional or even local dimension, and also determines the possibilities of obtaining external funding under programmes financed or co-financed by EU funds. Among the above conditions, the phenomenon of financial barriers is becoming increasingly common, affecting the ability to obtain resources for the proper implementation of investments (Kollatz-Ahnen, Roick, 2018).

Based on the results of previous studies, it can be assumed that Poland has experienced a persistent shortage of budgetary funds that could be used by public sector entities to finance development tasks (Cenkier, 2016; Opalka, 2020). Using the observations contained in the above-mentioned studies concerning investment needs and budgetary funds allocated to investments by the above-mentioned entities, it can be concluded that in the public sector, both at the national and regional levels, there are many difficulties in implementing statutory tasks.

This was also confirmed by research conducted by M. Bitner and J. Sierak (2022), which showed high dynamics of changes in the basic financial indicators examined in the area of budgetary management of local government units. It was observed that in the period 2018-2020, there were unfavourable changes, which intensified especially during the Covid-19 pandemic. Simulations of future cash flows carried out as part of the above research, in four scenarios

extending to 2029, clearly show that in many local government units, maintaining the previously achieved level of investment will only be possible if there is a significant reduction of current expenditure growth (Bitner, Sierak, 2022).

Referring to practical conditions in Poland, it can also be noted that a typical phenomenon in times of crisis is the emergence of multidirectional changes in the public sector concerning investment financing, with the effects of crisis factors appearing in investment budgets with some delay, which may require the completion of investments that have already been started, even under crisis conditions. It is also important at this point to address the methodological consideration of incorporating autocorrelation phenomena into the analysis of time series relating to public investment and development expenditure. Autocorrelation, which is related to two distinct dimensions (temporal and spatial), is a key tool in the analysis of public investment expenditure, as it allows relationships that are missed by classical linear models to be captured.

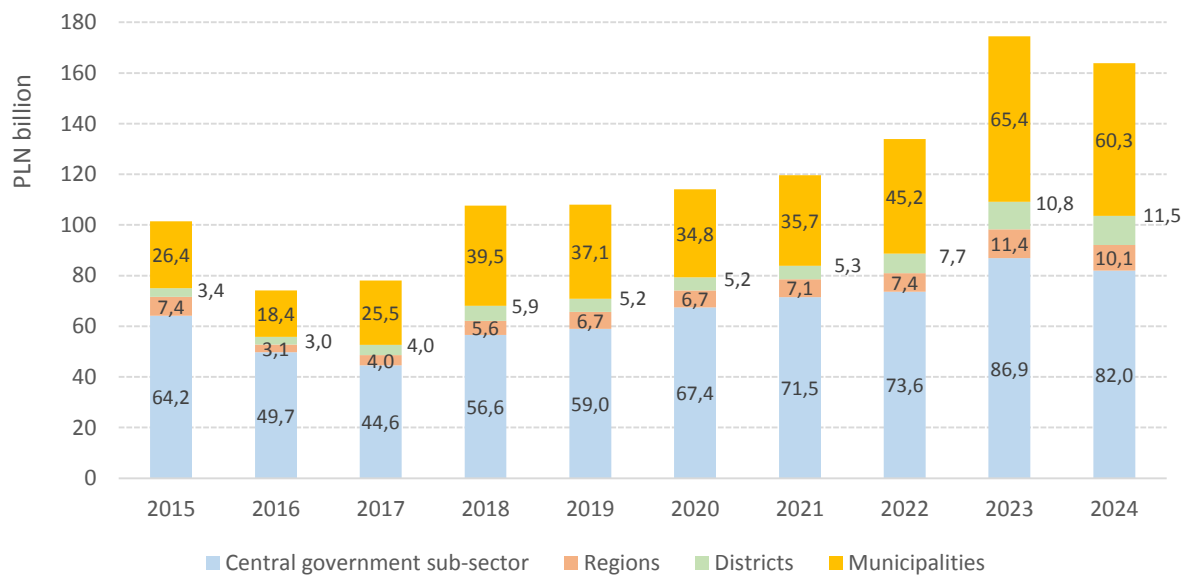
Examining autocorrelation in the temporal dimension provides an assessment of whether public investments, particularly those implemented by local government units, demonstrate durability, cyclicity or decision-making inertia. Positive first-order autocorrelation (ACF(1)) indicates e.g. a strong correlation between current and previous expenditure, reflecting the continuation of multi-year projects and stable investment policy. In Poland, electoral cyclicity is noticeable, with an increase in expenditure in the years preceding local government elections, while fluctuations resulting from the absorption of EU funds are also a significant factor.

Spatial autocorrelation, on the other hand, enables clusters of municipalities with similar investment or development expenditure levels to be identified, and allows it to be assessed whether expenditure is concentrated in specific areas or spread to neighbouring units. As Kopczewska (2017) notes, these relationships are described by a spatial weight matrix  $W$ , which is most often based on the criterion of a shared border. The spatial lag, which is calculated as the average in neighbouring areas weighted by the  $W$  matrix, is then compared with the value in the examined region. The presence of positive spatial autocorrelation indicates clustering of phenomena and a lack of spatial independence, which is important when analysing the diffusion of development processes, migration and agglomeration effects (Smętkowski, 2011). The diverse endowment of municipalities with fixed assets generates complex economic processes that cannot be analysed without considering neighbourhood effects.

The financial autonomy of local government units, together with the principle of subsidiarity, means that investment decisions are made locally and are not subject to simple macroeconomic mechanisms (Kopczewska, 2017). Investment determinants stem from the financial capabilities of municipalities, their access to external financing, and the assessment of development needs and the effects of previous actions. These processes are most often modelled using panel methods, including dynamic models with time and space lags (Rios et al., 2017). Spatial effects resulting from spatial autocorrelation can be controlled by incorporating spatial lags into the models for the dependent variable, explanatory variables, and error terms (Elhorst,

2010). The cumulative nature of fixed assets and the multi-year lags in the impact of investments pose a challenge, requiring an appropriate understanding of their sustainability and complementarity. In practice, however, models often operate on nominal annual expenditure, taking into account only a few time lags. This highlights the complexity and multidimensionality of local investment analysis (Fleming, Measham, 2014).

The results of the empirical study presented in this paper indicate that investment expenditure in the public sector in Poland remained at a fairly high level, although its share in total investment expenditure in the Polish national economy gradually diminished. Until 2017, the analysed indicator of the share of public sector investment expenditure gradually decreased, and from 2018 onwards, the share of this expenditure began to increase again. The highest share in recent years was achieved in 2020 (36.9%), followed by a decline in subsequent years, although in 2023 the indicator returned to a higher level of 37.8%. In 2024, the level of investment expenditure in the national economy and in municipalities and provinces declined once again.



**Figure 1.** Investment expenditure in selected groups of public sector entities in Poland in 2015-2024 (in PLN billion).

Source: own study based on Local Data Bank of the Central Statistical Office and Macroeconomic Data Bank of the Central Statistical Office data. Retrieved from: <https://bdl.stat.gov.pl/bdl/dane/podgrup/temat>, 2.02.2026.

According to the results of the analysis presented in Figure 1, in the case of the local government sub-sector, the largest share of investment expenditure was accounted for by expenditure incurred by local government units at the local level, including expenditure incurred by municipalities. This is consistent with the adopted division of competences, in which municipalities are responsible for a wide range of public tasks, including those that require specific investment expenditure. However, the government sub-sector plays a significant role, and the coordinated investment policy of both sub-sectors has an impact on socio-economic development.

The results of previous studies (Opalka, 2025b) indicated that the commitment to meeting social needs is permanent, even in times of economic crisis. This requires adapting such management methods in the public sector at the national level, as well as in the regional and local economy, including the search for solutions to improve the management of development expenditure, which should contribute to improving the efficiency of the use of funds for investments, that are even more limited in conditions of economic instability.

### **3. Development expenditure management using CDE in the context of supporting the quality of planning and implementation of public sector investment projects – research results and discussion**

The role and operating principles of the public sector in a society-based market economy determine the importance of a long-term approach to economic development processes in terms of identifying public needs and ensuring that these needs are met on a sustainable basis. A distinctive feature of the public sector is the significant expansion of the structure of strategic objectives, which consequently determines the arrangement of intermediate and detailed objectives, which are usually identified and precisely defined in the strategic planning process. The identification of objectives is further related to the possibility of determining the scope of economic and social tasks, as well as defining development projects. This justifies the need to examine the effects of the projects undertaken, including the risks and benefits associated with their interrelationships, and emphasises the legitimacy of using strategic analysis tools and creating customised strategic project management mechanisms by public sector entities.

The implementation of project management in an economic context can generate benefits mainly related to improvements in the operational tools of public sector entities in terms of strengthening their strategic planning competencies, strategic analysis tools, as well as methods for evaluating projects in financial and qualitative terms. The ability to adapt methods developed in the private sector strengthens the competence of public entities and provides opportunities to focus on economic effects, apply methods of effective project parameterisation, including risk assessment and the effective use of public resources. In view of emerging or growing crisis phenomena in the economy, associated with a reduction in budget revenues, project management can be an important platform for establishing and maintaining cooperation between public sector entities in the form of partnerships with private entities, including organisational cooperation and co-financing of projects, in particular infrastructure investments aimed at supporting development and socio-economic cohesion.

The development expenditure methodology analysed in this paper falls under the concept of development potential management, focusing primarily on the financial resources of state and local government budgets to ensure optimal allocation and the best possible development

outcomes. The key question is which areas of expenditure can be considered appropriate, i.e. those that stimulate the generation of economic or social results corresponding to the objectives of a given development programme or public policy. As an example, reference can be made here to the results of research conducted on empirical data from OECD countries by O. Barbiero and R. Cournède (2013), which indicate that GDP changes in the long term are most strongly influenced by increases in expenditure on education, health care and transport infrastructure. In their analyses, the authors refer to a functional classification system that divides expenditure into productive and unproductive, in line with the concept presented by R. Barro (1990).

Research conducted in Poland by A. Moździerz showed that between 2002 and 2015, healthcare expenditure did not fluctuate significantly, while education expenditure decreased. The author of the above-mentioned study identified increasing expenditure on transport infrastructure as the main driver of potential GDP growth in Poland. The conclusions of the study pointed to a growing overall trend in expenditure on development between 2005 and 2011, which was mainly based on an increase in transport infrastructure expenditure, whose share in total expenditure rose from 4.6% in 2004 to 9.7% in 2011, and which was assessed as a positive phenomenon. However, this situation changed in 2011-2013, when expenditure on transport infrastructure was significantly reduced and potential GDP fell from 4.1% to 2.9%. The reduction in expenditure on basic research to 0.2% of GDP in 2009-2013, as well as the persistently low level of expenditure on research and development during this period, not exceeding 0.3% of GDP, were considered as factors unfavourable to the growth of the economy's potential. The highest volume of pro-development funds was spent on the implementation of the state's functions in the field of education and health care (Moździerz, 2016).

Referring to the presented research results, this paper analyses changes in development expenditure in selected categories included in the CDE classification. This classification can be used as a methodological tool to support the identification, specification and definition of the subject areas of statistical indicators used to measure public sector development expenditure, as well as to measure the economic and organisational effects achieved by public sector organisational units and entities outside this sector.

The CDE concept distinguishes three main levels of expenditure classification. Expenditures classified according to 'Groups' reflect the criterion of importance for development processes, where, based on the chapters of the budget classification, it is possible to classify expenditures into CDE groups according to common characteristics. The second level of classification includes 'Economic Categories', according to which the economic criterion of the type of expenditure is determined, based on the budget classification paragraphs, enabling classification into CDE economic categories. At this level of classification, 'Investments' are additionally distinguished as a specific form of development expenditure. This category includes expenditure on construction investments and the purchase of fixed assets

with an initial value exceeding the value specified in the budget classification, as well as subsidies for financing or co-financing investments carried out by entities outside the government and local government sector. The third level of classification is ‘Tasks’, reflecting the function criterion in development expenditure, where the allocation of expenditure to a specific task is based on the chapters of the budget classification (GUS, 2020).

In the theoretical assumptions, the Classification of Development Expenditure mainly refers to expenditure incurred from national budget funds. The above development expenditure is included in the expenditure implemented in terms of the budgetary economy of the government and local government sector, broken down into the sub-sector of government institutions, local government institutions and social security funds. Table 1 presents the results of the study relating to the scope of changes in development expenditure incurred from national funds, examined in general terms and in the form of ‘investments’, in accordance with the methodology for their identification presented above.

**Table 1.**

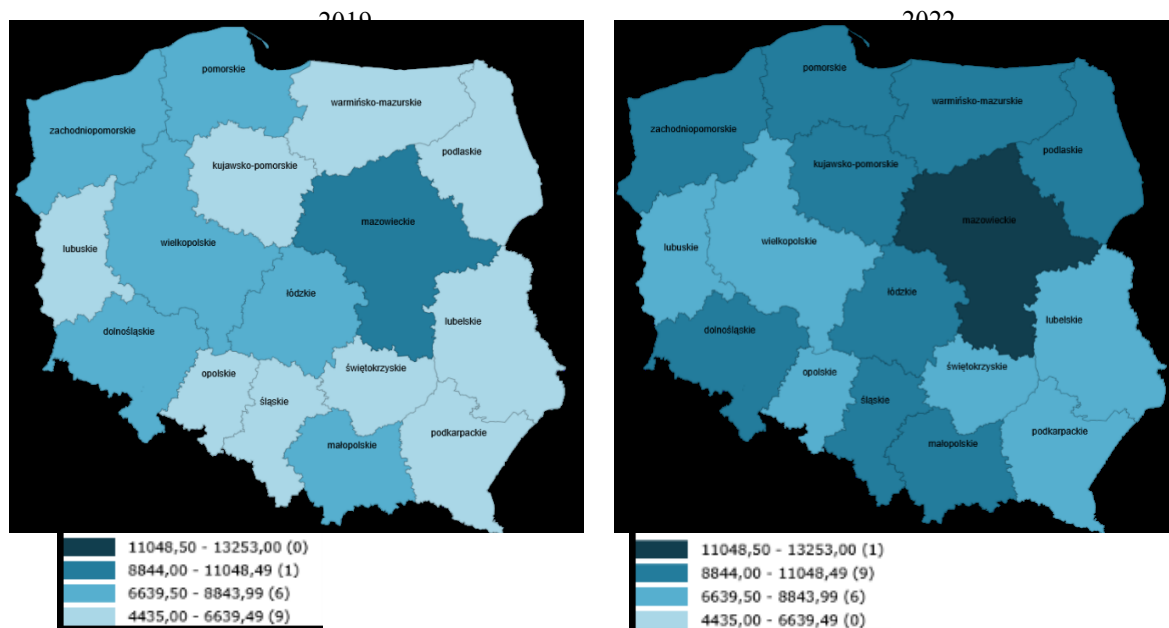
*Development expenditure from national funds in 2015-2022*

Specification	2015	2016	2017	2018	2019	2020	2021	2022
Total development expenditure from domestic funds (PLN billion)	209.0	214.9	231.3	244.9	267.0	284.1	325.2	366.3
Rate of change in total development expenditure from domestic funds (%)	-	2.8	7.6	5.9	9.0	6.4	14.5	12.6
Development expenditure from domestic funds in the form of investments (PLN billion)	33.3	31.8	35.5	45.0	43.3	46.5	51.2	68.2
Rate of change in development expenditure from domestic funds in the form of investments (%)	-	-4.5	11.8	26.5	-3.7	7.6	10.0	33.1
Share of development expenditure from domestic funds in the form of investments in total development expenditure from domestic funds (%)	15.9	14.8	15.4	18.4	16.2	16.4	15.7	18.6

Source: own study based on Local Data Bank of the Central Statistical data. Retrieved from: <https://bdl.stat.gov.pl/bdl/dane/podgrup/temat>, 12.11.2025.

The data presented indicate an acceleration in the growth rate of total development expenditure in 2015–2022. The change in relation to previous years amounted to as much as 14.5% in 2021 and 12.6% in 2022. In the case of investment development expenditure, the rates of change varied greatly, with declines even recorded in 2016 (-4.5%) and 2019 (-3.7%). A significant improvement in the rate of change occurred from 2020, and in 2022, the value of the indicator under study increased to 33.1% compared to the previous year.

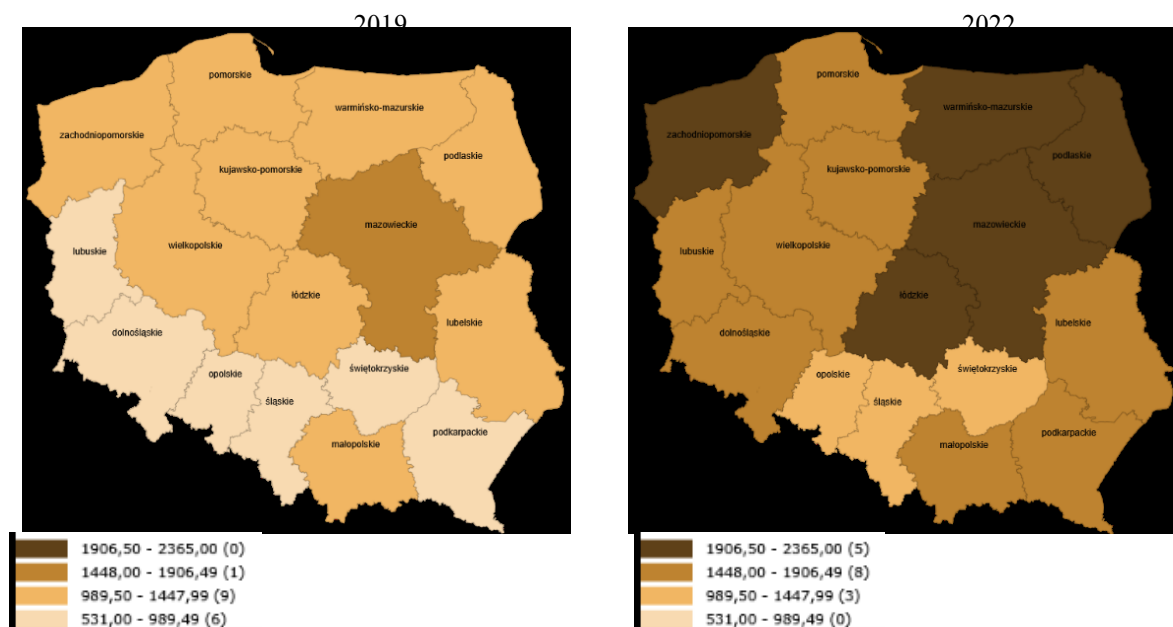
The analysis also highlights regional differences in selected indicators. Figures 3 and 4 present a graphical interpretation of the indicator of total development expenditure and investment development expenditure per capita by region for 2019 and 2022.



**Figure 3.** Total development expenditure from national funds per capita by region in Poland (PLN).

Source: own study based on Local Data Bank of the Central Statistical data. Retrieved from: <https://bdl.stat.gov.pl/bdl/dane/podgrup/temat>, 12.11.2025.

Between the two periods analysed, there was a significant increase in the level of total development expenditure per capita, particularly noticeable in the Mazowieckie region and in the central and northern regions. There was also a marked increase in the number of regions where the indicator reached relatively high values. In 2022, nine regions recorded values exceeding PLN 8830, whereas in 2019 only the Mazowieckie region had values in this range.

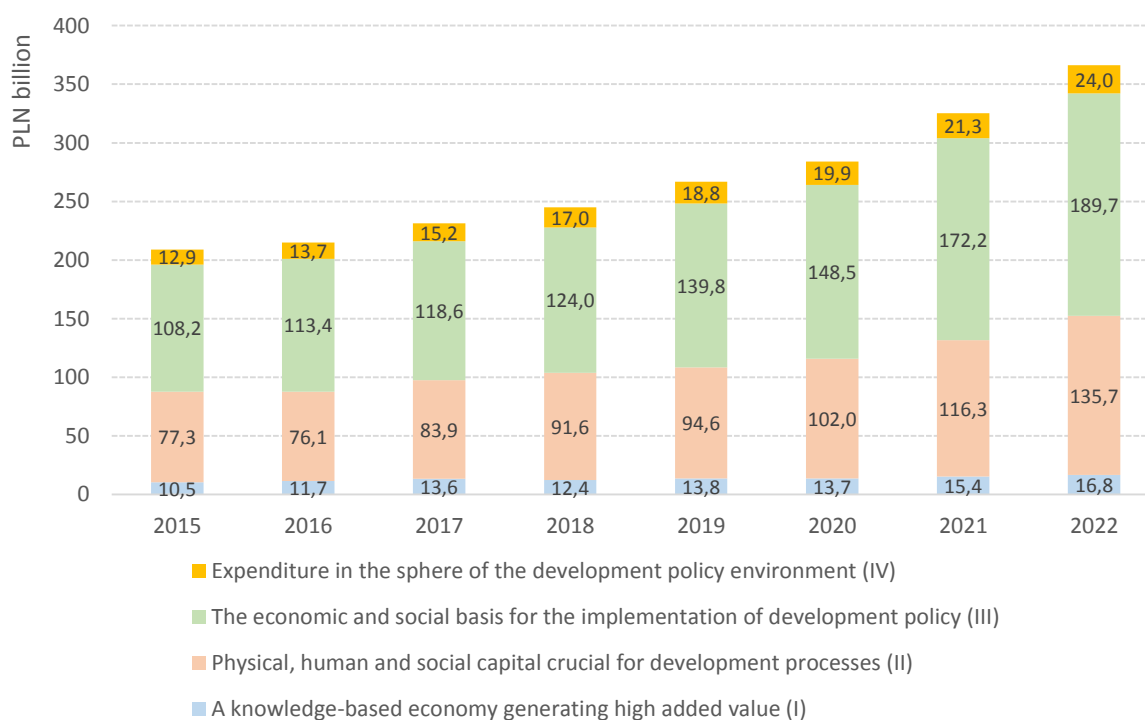


**Figure 4.** Development expenditure from national funds in the form of investments per capita by region in Poland (PLN).

Source: own study based on Local Data Bank of the Central Statistical data. Retrieved from: <https://bdl.stat.gov.pl/bdl/dane/podgrup/temat>, 12.11.2025.

The development expenditure indicator in the form of investments per capita in 2019 was highest in the regions in the central and northern parts of the country. This phenomenon intensified in 2022, with a higher concentration of high values of the indicator in the regions of Łódź, Mazovia, Warmia-Masuria, Podlasie and West Pomerania. A distinctly unfavourable situation in terms of the indicator value persisted in the Opole and Świętokrzyskie regions, but also in the Silesian region.

In 2015-2022, there was a significant increase in development expenditure on a nationwide scale, from PLN 209 billion to PLN 366.3 billion. The largest volume of expenditure was realised in group III, 'Economic and social base conditioning the implementation of development policy', where expenditure reached PLN 189.3 billion in 2022. The second group with a high level of expenditure was 'Physical, human and social capital key to development processes (II)', where PLN 135.7 billion was spent in 2022.



**Figure 5.** Development expenditure from national funds by group in 2015-2022 (PLN billion).

Source: own study based on Local Data Bank of the Central Statistical data. Retrieved from: <https://bdl.stat.gov.pl/bdl/dane/podgrup/temat>, 3.11.2025.

Despite the overall upward trend observed in each of the four expenditure groups, the rates of change in the period 2015–2022 varied significantly. As shown by the calculations presented in Figure 5, the most stable growth was recorded in group IV, 'Expenditure in the area of development policy environment', with an average annual rate of change for this group of 9.27%. The greatest volatility was observed in the expenditure group 'High value-added knowledge-based economy (I)', where significant fluctuations in the rate and direction of change were particularly evident in 2017-2020, with an average annual rate of change of 6.99%.

The years 2021-2022 were a clear period of stabilisation in all the groups studied, with relatively high growth rates compared to the previous year.

The analysis conducted in the sub-sector structure indicated the leading role of the local government institutions sub-sector in the implementation of total development expenditure. As shown in Table 2, the volume of development expenditure incurred by the above-mentioned group increased in the analysed period from PLN 130.1 billion to PLN 235.3 billion, which represented a change of 179.9%. An increasing trend was also observed in the central government sub-sector, where the change between 2015 and 2022 reached 177.6%. In contrast, development expenditure by entities in the social security funds sub-sector showed a year-on-year decline in some periods and a significantly lower overall level of expenditure compared to the other two sub-sectors.

**Table 2.**

*Development expenditure from national funds in 2015-2022*

Specification	2015	2016	2017	2018	2019	2020	2021	2022
Central government sub-sector	64.3	64.7	71.8	75.5	83.0	86.3	102.5	114.8
Local government sub-sector	130.1	135.0	143.3	153.3	170.2	182.0	207.1	235.3
Social security funds sub-sector	14.6	15.2	16.3	16.1	13.8	15.8	15.6	16.1

Source: own study based on Local Data Bank of the Central Statistical data. Retrieved from: <https://bdl.stat.gov.pl/bdl/dane/podgrup/temat>, 3.11.2025.

The results of the analysis indicate minor changes in the structure of total development expenditure by sub-sector. In 2015-2022, over 60% of development expenditure was incurred at the level of local government institutions, and this share gradually increased, reaching 64.2% in 2022. A similar increase in the share indicator was recorded in the case of the government institutions sub-sector, with the value of the above-mentioned indicator slightly exceeding 30% throughout the entire period under review. At the same time, the share of the social security funds sub-sector decreased, where, with a significantly lower volume of expenditure, this share fell from around 7% at the beginning of the period analysed to just 4.4% in 2022.

Recognising the significant role of development expenditure implemented by local government units, particularly municipalities, a scenario analysis of changes in expenditure levels within the local government subsector was undertaken. This allows for the estimation of further changes in periods for which statistical data are no longer published. Table 3 shows the expenditure recorded, as well as the expenditure projected for 2023-2024, calculated using the average annual rate of change in development expenditure between 2016 and 2022.

The comparative scenario was based on rate-of-change indicators relative to the previous year, calculated for total budget expenditure incurred by municipalities, districts and regional governments between 2016 and 2024. This reflects expenditure dynamics across the entire local government institution subsector in Poland. As emphasised in this paper, development expenditure goes beyond investment expenditure in budget classification terms, encompassing a broader scope of financing tasks that influence development processes in the economy. Socio-economic instability often leads to an increase in current, emergency budget expenditure,

reflecting emerging threats or the need for public intervention. Therefore, the rate of change in total budget expenditure can be used to forecast changes in the value of development expenditure, reflecting the actual potential for local government units to engage public financial resources. The base point for the included forecast was the level of development expenditure achieved in 2015; then, the expenditure estimates for subsequent years were calculated by multiplying the expenditure values by the relevant rate of change indicator for each year.

**Table 3.**

*Scenario analysis with a forecast of total development expenditure from domestic funds in the local government subsector in 2015-2024*

Specification	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total development expenditure incurred (in PLN billions)	130.1	135.0	143.3	153.3	170.2	182.0	207.1	235.3	256.3*	279.1*
Rate of change in total development expenditure (%)	-	3.8	6.1	7.0	11.0	6.9	13.8	13.7	8.9**	8.9**
Rate of change in total budget expenditure (%)	-	4.9	11.7	12.7	8.0	6.8	5.6	12.0	8.8	12.3
Development expenditure scenario according to the rate of change in total budget expenditure (in PLN billions)	130.1	136.5*	152.4*	171.8*	185.6*	198.2*	209.3*	234.4*	255.0*	286.3*

\* - forecasted values

\*\* - average annual rate of change in development expenditures in the period 2016-2022.

Source: own study based on Local Data Bank of the Central Statistical data. Retrieved from: <https://bdl.stat.gov.pl/bdl/dane/podgrup/temat>, 19.03.2026.

The results obtained indicate that, assuming the adopted scenario, total development expenditure in the local government sector would have been significantly higher and exhibited a faster growth rate until 2020. From 2021 onwards, development expenditure increased faster than total budget expenditure. However, the collection and publication of development expenditure data in statistical form was suspended from 2023 onwards. According to the method adopted for the 2023-2024 forecast, based on the average annual rate of change, the expected level of development expenditure in 2024 would have been lower than the corresponding value obtained using the annual rate of change of total budget expenditure.

The use of the CDE classification at the central level of state administration by entities with competences in shaping development and allocating financial resources can significantly improve the rationality and effectiveness of budgetary resource distribution. At the same time, determining the priorities for expenditure on various objectives, dividing them into optional and mandatory development objectives and 'non-development' objectives remain current and important decision-making issues. As indicated by the observations contained in the submitted

paper, this shapes the scope and quality of the implementation of public tasks and development programmes financed through the budgets of government and local government units, and at the same time contributes to the maintenance and growth of the existing social and economic potential in a particular territory.

#### **4. Summary**

The continued socio-economic instability in Poland is creating barriers to financing investments in the national economy. In practice, this means that there are more frequent cases of aversion to investing in the private enterprise sector, as well as a change in attitude towards public investment, especially in highly capital-intensive projects. Despite the crisis phenomena observed earlier and the current economic instability, entities classified as part of the public sector at the central, regional and local levels have carried out a significant range of investment activities. Thus, despite political and economic turbulence, these entities have strengthened their role as important participants in economic processes, sharing responsibility for stabilising development processes and improving the living conditions and economic activity of local communities.

The European Union's cohesion policy is implemented in accordance with the principles of strategic planning and through the implementation of programmes covering the financing of development expenditure from public, government and local government budgetary funds. However, given the complex structure of public objectives, there is a need to improve the management of development investments, which requires a strategic approach and flexibility in government and local government institutions. Key challenges are identified at the strategic planning level, covering the most important stages identified in strategic management methodologies, i.e. prioritisation of objectives, coordination of multiple projects, and optimisation of resource use. The current situation and forecasts for further development also indicate a continuing strong need to develop the competences of administrative staff and beneficiaries and to continuously improve management tools.

In developed economies that are open and knowledge-based, development expenditure determines a country's economic and social potential in the medium and long term, as well as the level of efficiency and competitiveness of the economy. Development expenditure incurred by the government and local government sector, which is meso- and macroeconomic in nature, is particularly significant. Based on the analysis, it can be assessed that the use of the Classification of Development Expenditure in Poland is in line with the favourable conditions contributing to economic and organisational effects, the final beneficiaries of which are society and economic entities outside the public sector. The possibilities for the practical application of the CDE as a universal methodological tool using statistical indicators for planning, measuring

and evaluating public expenditure aimed at achieving the above-mentioned effects should also be assessed positively. The presented results of the empirical study based on the use of the CDE system made it possible to assess the differences in selected aspects of the allocation of total development expenditure for Poland and in the territorial breakdown of regions.

The results of the study also lead to the conclusion that achieving the best possible long-term resource management results involves the need to implement appropriate management processes not only strictly for investments, but also for development expenditure, taking into account current conditions and future financial possibilities. Effective management contributes to long-term social and economic benefits, which reflects the concept of development expenditure as a tool of national development policy.

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