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ECONOMIC DEVELOPMENT OF REGIONS IN POLAND IN THE FACE OF THE RISK OF CHANGES IN THE MACROECONOMIC ENVIRONMENT

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Purpose: The purpose of the study was to analyse and assess the current conditions and opportunities for economic development in the face of changes in the level of risk of secondary impact of crisis phenomena on regional development in Poland.
Design/methodology/approach: The work included theoretical and empirical research on the conditions and possibilities of regional development in the face of economic changes and increased risk of negative effects of post-crisis phenomena. The research used statistical methods of aggregating data within time series and presenting results, including descriptive statistics methods.
Findings: Research results indicate that negative trends in the economy, particularly in production and consumption, have been consolidated in 2022-2024. This has had an impact on economic activity, which has been limited, but also on the prospects for further development in the regions. The general risk of doing business in Poland has increased.
Research limitations/implications: Dynamic socio-economic changes meant that the scope of research had to be limited to selected categories and factors. In some areas, there were difficulties with access to current data sources.
Practical implications: The directions of economic changes have revealed the occurrence of development difficulties in the regions and limited possibilities of returning to the path of sustainable development in a short time. The scope of negative effects resulting from the impact of crisis factors has been expanded.
Social implications: Economic changes were associated with specific social consequences. This applies in particular to the labor market and mass layoffs, but also to the public finance sector. Given the growing budget deficit, difficulties arose in the financing of social tasks.
Originality/value: The article addresses the research problem related to the prolongation of negative crisis phenomena. This poses a threat to development in the medium term. The research results revealed a slowdown in economic activity and an increase in the risk of conducting business activity, which may have long-term effects.
Keywords: Finance, economic development, regional development, investment risk, macroeconomic factors.
Category of the paper: Research paper.

1. Introduction

The economic transformation in Poland and in the global economy indicates a broad context of changes, conditioned by numerous factors with a diverse background and scope of impact. This leads to the destabilization of economic and social connections, which may concern an extended horizon of impact. In 2024, we continue to observe the impact of crisis phenomena, including geopolitical factors, escalation of armed conflicts (Ukraine, Middle East) and the shifting of economies of states to war tracks. This is not without impact on the economic and social situation, disruptions of development processes continue with varying intensity, although forecasts from the beginning of 2024 indicated realistic scenarios of rapid development. The research topic is still relevant in view of the directions of changes in the macroeconomic environment and the ongoing socio-economic changes of a quantitative and qualitative nature and a wide scope of impact.

The occurrence of secondary crisis phenomena in the economy has been noted, which have an impact on the economic slowdown and cause difficulties in returning to the path of sustainable development. The scope of the conducted research refers to economic changes caused by crisis phenomena and is associated with determining losses and expected directions of changes in the context of economic development of regions in the future. The undertaken research was an attempt to monitor macroeconomic changes in the conditions of cumulative impact of diverse crisis phenomena and their possible medium- and long-term effects. Empirical research and forecasts of international financial institutions, banks and independent expert communities indicate the possibility of extending and flattening the effects of earlier crisis phenomena from the years 2000-2023. There is a risk of perpetuation of changes on the demand side, production and fluctuations in the level of prices of goods and services and investment works. Therefore, the long-term effects caused in the public finance sector, including in particular the budget deficit and deepening public debt, cannot be omitted (Jarosiński, 2023).

Public debt is associated with the need to pursue long-term savings policy and systemic settlement of liabilities. As for the budget deficit, it can cause difficulties in balancing transactions on the current account of the balance of payments. Negative results are visible, some European Union member states, in accordance with the applicable regulations, have been covered by the excessive budget deficit procedure with all the consequences resulting from it: Belgium, France, Italy, Hungary, Malta, Poland and Slovakia (PAP, 2024).

The aim of the study was to conduct an analysis and assessment of the current conditions and possibilities of further economic development in the face of mitigating the impact of crisis phenomena and weakening the direct impact on the development of regions in Poland. At the regional level, there are clear differences in economic development in Poland. This state has historical conditions and is related to spatial development, as well as natural

conditions, which contribute to stimulating economic development to a varying extent. Crisis phenomena can overlap with the above-mentioned processes and generate changes in the mechanisms of socio-economic development. Hence the need for research on the formation of real and hypothetical development trends and assessment of directions that could be maintained in conditions of stable economic development and in the face of observed post-crisis changes.

2. Literature review and methodology of empirical research

Socio-economic changes in regions have always shown differences in the level of development. Differences resulted both in the past and at present from specific conditions, most often classified on the side of public administration and on the side of economic entities operating in a given area of the region. The distinction is of fundamental importance when it comes to stimulating development processes in the long term. Public sector entities and organizational units operating within the competences and powers of public administration units and financed from public funds through the budget have a slightly different range of goals and preferences in the conditions of a market economy, which result from the need to implement public tasks identified in the strategic planning process (Edwards, 2007). In private enterprises we have a different situation, they are responsible for the implementation of specific development tasks in accordance with the adopted set of goals and strategic arrangements. The market dimension of activity refers to a wide range of instruments available to entrepreneurs within the framework of a market economy. Here we are dealing with a set of goals, where financial surplus takes up only one of the important places. In the event of crisis phenomena, the balance between support from public sector organizational units and the actual economic processes implemented by enterprises may be disrupted. As a result, changes in the economic development of the region may occur.

The economic development in regions may be significantly influenced by a friendly environment for the development of entrepreneurship and opportunities to support companies. This should be done in an unwavering manner, while maintaining the principle of sustainable development. Crisis phenomena limit this balance and lead to unforeseen consequences of the future. In the long term, the mutual connections between the activities of public administration and the public investments undertaken by this administration and the activity of private entities are important, which can create a specific economic architecture of the region (Strojny, 2013).

From a theoretical perspective, reference can be made to considerable achievements relating to both the problems of economic development from a macroeconomic perspective as well as economic development from a regional perspective. Studies indicate the evolutionary nature of changes in terms of views on shaping the directions of regional development. In economic development, the recognition of the links between regional development and location factors

of industry and related sectors, initiated by A. Weber, generally dominated. It is also necessary to point out the possibilities of implementing transport links, distances in transport, infrastructure development, as well as demographic factors. In A. Marshall's approach, the scope of activity, specialization and possibilities of obtaining economies of scale in production and possibilities resulting from the expansion of sales markets and the development of foreign trade were not without significance. In the 1930s, an important turn took place in terms of shaping the theory of regional development, when W. Christaller proposed a theory based on the identification of central units, hierarchizing places in space according to their rank and functions (Antonescu, 2014).

The author's intention was not to present a systematic theory of regional and local development, but only to draw attention to an extensive and at the same time well-ordered set of concepts and theoretical achievements. It is assumed that the evolution of views on the theoretical premises of regional development has not ended. In retrospect, one can indicate important periods in the formation of the theory of economic development with elements of regional development (Antonescu, 2014). It is necessary to mention the creators of classical economics, supporters of the dominance of industry in the development process: A. Smith and D. Ricardo and their successors, J.H. von Thünen (location of agricultural activity), A. Weber (location of industry), T. Palandek (monopolistic competition), W. Christaller (location of services), A. Lösch (market identified as a key location factor), G. Myrdal (the concept of circular and cumulative causality), J.R. Boudeville, W. Isard, A.O. Hirschman, J. Paelinck (polarized economic growth), M. Greenhut, P. Krugman (new economic geography and spatial general equilibrium model) and others (Gałązka, 2017).

Within the framework of the conducted research on shaping the economic development of regions and their differentiation, three research trends should be indicated. Theories based on the assumption of endogenous growth should be indicated, where a large component is investment in human capital, investment in research and development activities, infrastructure development and the use of internal development factors. In this group of factors, an important role is played by public institutions, including the state and local government units. The new economic geography should be indicated, according to which the main factors leading to the concentration of economic activity in space, and consequently to differentiation in the level of development, are market integration of production, striving for economies of scale, optimization of transport costs, as well as easy access to specialized labor resources. The institutional economy should also be indicated, where public institutions have a significant impact on development processes and the use of potentials and the degree of use of available resources and, as a result, the level of economic development in the region depends on their capabilities (Sokołowska-Woźniak, 2010).

According to the growth pole theory by F. Perroux, the occurrence of regional differences in development is justified. It is in selected places constituting growth centers that the concentration of economic and innovative processes is to occur (Piętak, 2014). Subsequently,

the effects of growth may spread. The diffusion of economic benefits occurs as a result of phenomena occurring in central centers in relation to the surrounding areas. This also applies to the regional approach, where the impact of such centers on peripheral areas becomes a natural process of change. The course of economic processes is uneven in terms of spatial location. According to the concept of A. Hirschman, development shows features of polarization. It is observed both in the regional and industry perspective. This results from location factors, mainly industry, which as a result does not provide the opportunity for proportional and even distribution of economic activity in the regional system. Mainly the increase in the number of people in urban centres and the processes of innovation and concentration of economic activity may lead in the further course to the transfer of effects generated in growth centres and lead to the improvement of the standard of living of inhabitants in peripheral areas. Differences in regional development in the indicator approach are therefore an immanent feature of development processes and will probably take place in such a form in the long term (Hirschman, 1967). Public investments may be of great importance, as they contribute to positive economic effects. Investments in the public sector would lead to the generation of multiplier effects, which have an impact on the general acceleration of the pace of economic development in the regions. The context of the regional economy is broad, referring to both strictly economic issues, but also encompassing a wide range of interdisciplinary issues, including social ones (Nijkamp, 1984).

Crisis phenomena may temporarily affect the course of development processes in the regional and local systems, but do not introduce significant changes in the short term in terms of differences in the level of economic development of regions. The occurrence of diverse macroeconomic conditions in the national system, as well as those resulting from conditions resulting from globalization processes, may lead to deepening development disparities at the regional level. In addition to changes in regional relations, there may be deepening differences in subregional relations, as well as in other territorial systems with different levels of productivity, between cities of different sizes and rural areas (Bachtler, Méndez, Vironen, 2014). The risk of the impact of crisis factors may necessitate the development of changes in the assumptions of regional policy and may have financial consequences, both in terms of the possibilities of external support for regional development, as well as in terms of the use of endogenous resources in the regions (Rubacha, 2014).

In economic practice, the scope and strength of the impact of diverse macroeconomic factors can be determined by defining the level of risk associated with the difficulties in achieving the planned results of development activities in the private sector, and despite the differences, in the public sector. The key problem is the future directions of socio-economic development in the system of countries and regions in the face of the risk of secondary effects and negative multiplier effects. This risk is so large that already in the short term, i.e. taking into account the years 2023 and 2024, negative trends in the economy have been noted (Rich, 1997). In Poland, a decline in the sales of industrial production, a decline in interest in

consumer spending, and a reduction in business investments have been noted. There was a shift in the primary effects of the crisis phenomena in the regional system. The reduction in economic activity was associated with the administrative impact of public authorities and the temporary exclusion of industries and sectors from activity, but it was also associated with the disruption of the relationship between demand and supply in many markets.

In macroeconomic terms, the need to develop and implement coordinated stabilization measures to eliminate negative economic and social phenomena arose already in 2020. The measures were addressed to the corporate sector in the regional system, as well as more broadly to diverse social groups. The solutions used were incidental in nature. They concerned the financing of protective packages in the field of health, economy, public finances, as well as in the field of social assistance (Barrett et al., 2021). The economic crisis caused the need to make administrative decisions that led to clear disruptions in the functioning of enterprises and the state of public finances. The pandemic was the primary cause of implementing corrections in the rules of functioning of the global economy, including in particular reducing the risk associated with the disruption of supply chains in the economic system. Difficulties in supply chains, as well as aversion to consumption on the part of buyers, became one of the main reasons for the extension of economic difficulties and the risk of extension for the following years (Marvasi, 2022). Changes in the level of inflation can be considered, on the one hand, as a result of economic changes, but it can also be assumed that inflation has become the cause of other complex economic phenomena. In such a situation, it became necessary to launch mechanisms to limit the level of expenditures by changing the base interest rates (Ciżkowicz, 2010) and could not remain without impact on the economic situation of enterprises, including development investments (Easterly, Fischer, 2001).

The economic situation therefore leads to questions regarding the directions of changes in the economic situation in the future, nationally and regionally. The year 2024 revealed the occurrence of unfavourable trends in enterprises, which can be easily indicated in a number of reports on the state of the economy and the probable directions of its development (GUS, 2024). In addition to macroeconomic conditions, it has become necessary to recognise risk factors occurring in the investment environment, such as threats related to the instability of economic processes (Bock, Trück, 2011).

Regional development depends on identified endogenous factors that determine development potentials that can be used. In an open economy, the process of transferring goods, services and production factors is facilitated by the development of transport and means of communication. This means that it is possible to launch new, previously underutilized distribution channels for the free movement of material and non-material resources. This process can be considered natural, consistent with the possibilities and their use. Crisis phenomena can introduce new and unpredictable variables into the system of connections, which can lead to significant negative changes in the global economic system and affect the shape of the regional economy. The increase in the level of economic risk leads to

the need for research on the impact of various factors on the course of development processes in the future.

The research process used the method of critical analysis of theoretical literature, qualitative research methods and statistical methods in the field of quantitative research, the method of trend function analysis based on empirical source data and data analysis to extrapolate the trend function. Tools from the field of descriptive statistics were also used. The research used available data sources within the resources of international institutions (European Central Bank, OECD, World Bank, International Monetary Fund, Ameco, Eurostat), national statistical resources, central banks and non-governmental organizations.

3. Results of empirical research and discussion

A group of macroeconomic measures has been distinguished in the literature that can illustrate changes in the socio-economic situation (GUS, 2024, 2024b). The research took into account measures that may have the relatively greatest impact on the course of economic processes and affect current development processes, and may also shape processes in the future. The study took into account the following macroeconomic measures: indicators of changes in the prices of goods and services (inflation), basic interest rates in Poland and interest rates in selected countries, changes in the value of gross domestic product (GDP), registered unemployment, public debt in total and in relation to GDP, deficit of the general government sector in relation to GDP, investment outlays in the economy and in the private sector in the voivodship system, total investment volume, investments in the private sector and the share of private investments in total investments. The research on regional development differences took into account: registered unemployment rate in the district system, number of small and medium-sized enterprises (SMEs) in the district system, number of enterprises per 10 thousand inhabitants. (SMEs) in total by district.

Table 1.
Selected macroeconomic indicators in Poland in 2019-2023 (in %)

Specification	2019	2020	2021	2022	2023
Total industrial production sold, previous year = 100%	105.1	98.1	114.7	109.1	98.1
Industrial processing previous year = 100% (in %)	105.4	97.9	114.0	108.9	98.2
Consumer durable goods previous year = 100% (in %)	103.1	104.5	122.2	98.4	
Mining and quarrying previous year = 100% (in %)	101.4	94.5	101.6	111.5	95.7
Total construction and assembly production sales, previous year = 100% (in %)	102.1	95.6	105.8	109.3	104.1
Debt of the government and local government sector (in PLN million), GDP, constant prices	1046153	1337044	1410966	1512778	1691216
Public debt in relation to GDP (in %)	45.2	56.6	53.0	48.8	49.7
Unemployment registered (in %)	5,2	6,3	5,4	5,2	5,1

Cont. table 1.

Total internal expenditure on research and development activities, current prices (in PLN million), including by financing source:	30285	32402	37676	44702	53116
Government sector (in %)	38.8	39.0	37.4	33.5	31.9
Enterprise sector (in %)	50.7	50.6	50.9	54.8	54.8
Higher education sector (in %)	3.0	2.7	3.1	3.3	3.5
Private non-commercial institutions sector (in %)	0.5	0.5	0.4	0.3	0.3
Internal expenditure on research and development in relation to gross domestic product (GDP), (in %)	1.32	1.39	1.43	1.44	1.56
Internal expenditure on research and development per capita (in PLN)	789	849	992	1182	1409
Current account balance of payments, (in EUR million)	-1424	12612	-7781	-14872	13485
Total retail sales of goods constant prices, (in %)	104.7	96.3	106.9	102.6	95.5

Source: own study based on Macroeconomic Data Bank, https://bdm.stat.gov.pl, 15.11.2024.

According to the data presented in Table 1, in the years 2019-2023 there were significant changes in the basic macroeconomic indicators in Poland. In particular, attention should be paid to the change in the level of sold industrial production in general, changes in the level of production of consumer goods and construction and assembly production. It is also worth pointing out the change in the level of debt of government and local government institutions, which increased significantly in the years 2019-2023. The increase in debt in this period amounted to 61.2%. As a result, the public debt ratio expressed in relation to GDP also changed. However, here we were dealing with multidirectional changes in the value of the indicator. This was related to the nominal increase in GDP caused by inflation. It is also worth paying attention to unemployment, which was also relatively low, subject to changes, but the disclosed level of registered unemployment in comparison with the results obtained in other countries of the world should be considered satisfactory.

Despite the crisis phenomena in 2019-2023, there was an increase in nominal expenditure on research and development activities. This is important because the main trend of these changes took place in the enterprise sector, followed by the activities of the government sector, the remaining types of activity fell on the local government sector and diversified organizational units of the public sector. It is also worth noting the increase in the value of expenditure on research and development activities per capita. In the period under review, nominal expenditure almost doubled.

An unfavorable phenomenon was the low dynamics of retail sales of goods and services at constant prices. In 2020, there was a decrease in sales compared to 2019. The situation repeated itself in 2023, when a decrease was also recorded compared to the previous year. As it results from the first market information, the situation did not improve in 2024 either. The decrease in consumption, combined with other factors, resulted in a reduction in production, as well as the definitive withdrawal of some entrepreneurs from conducting business in Poland through the liquidation of enterprises and the transfer of production to other countries of the world. This mainly concerns the industrial processing industry, which, due to its sensitivity, was the first to feel the negative effects of the decrease in consumption. Inflation had a significant impact on the economic situation in the regions in Poland.

Symptoms of a possible increase in the prices of goods and services appeared in 2020. It was already known then that the monetary policy pursued, as well as administrative restrictions on the functioning of the market, would have to lead to an increase in the prices of goods and services. An unfavorable situation occurred in 2022, with inflation at 14.4%. In the following years, inflation decreased slightly. In 2023, the consumer price index was at 11.4%, while in 2024, it was at 5.0% over 10 months, with a decreasing trend in November 2024. The first half of 2024 was the end of a significant decrease in the inflation rate compared to 2023. The third quarter saw an increase in the inflation rate year-on-year. This was therefore a temporary improvement on the market. The inflation rate began to increase again in mid-2024, which may have negative effects on the directions of economic changes in 2025-2026 (NBP, 2024).

In terms of gross domestic product, Poland has experienced significant changes in the value of gross domestic product. In the years 2015-2023, they occurred in a balanced manner with a stable price level. The differences between individual years in terms of the dynamics of changes were relatively small and did not play a major role in shaping public expenditure, especially on development investments. They also did not have a significant impact on the private sector, where a fairly rapid development of enterprises and new investments were noted. Figure 1 presents the dynamics of changes in gross domestic product in the years 2015-2023 and presents a prospective analysis of changes in the level of gross domestic product in the years 2024-2028.

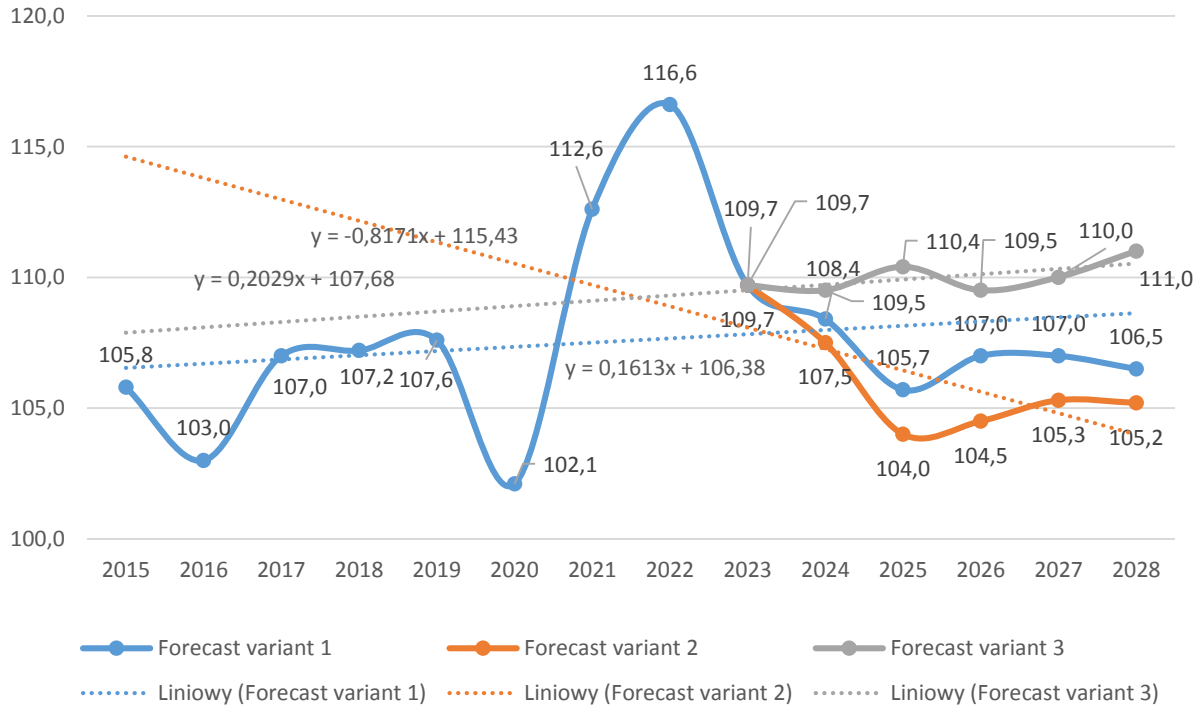

Figure 1. Dynamics of GDP change in 2015-2023 and projection for 2024-2028 in Poland, current prices (in %).

Source: own study based on Macroeconomic Data Bank, https://bdm.stat.gov.pl, 15.11.2024.

The situation changed significantly in 2020, in nominal terms there was a significant decline in gross domestic product, which was associated with the previously mentioned administrative solutions, limiting production and services and, as a result, ultimately resulted in a permanent decrease in the volume of GDP. The years 2021-2023 were characterized by varied dynamics of changes in gross domestic product. In Poland, particularly high growth was recorded in 2021, when the total GDP value increased nominally by 12.6% compared to 2020. A jump in the value of GDP by 16.6% in nominal terms was also recorded in 2022 compared to 2021. One of the reasons was excessive inflation, which caused an inflationary increase in the value of GDP.

In the following years, further increases in gross domestic product were recorded in nominal terms, and these increases were also associated with price increases. It is also worth noting the expected directions of changes in the gross domestic product in nominal terms until 2028. There are 3 scenarios that may take place depending on the development of the socio-economic situation and the accompanying values of macroeconomic indicators. Therefore, we have scenario 1, optimistic, where a fairly high year-on-year growth in gross domestic product should be expected, and scenario 2, balanced, can also be indicated, which is characterized by slightly lower indicators, but generally also with a relatively high level of growth. Variant number 3, pessimistic, can also be indicated, where in nominal terms the GDP growth rate may reach lower values. The further course of economic events depends on economic stability in national terms, but also on the general situation in the international system. In the second half of 2023 and in 2024, a number of negative phenomena were recorded in the enterprise sector, as well as in the field of individual consumption. One of the important factors that indicate unfavorable economic changes may be the reduction of production, as well as group layoffs and liquidation of enterprises and transfer of production outside Poland.

Real GDP changes in Poland should be assessed slightly differently using constant prices, i.e. after eliminating the impact of inflation on the result in individual years of the study. Figure 2 presents changes in GDP dynamics year-on-year in the years 2015-2028. This part of the study uses actual data for the years 2015-2023, as well as forecast values for the years 2024-2028.

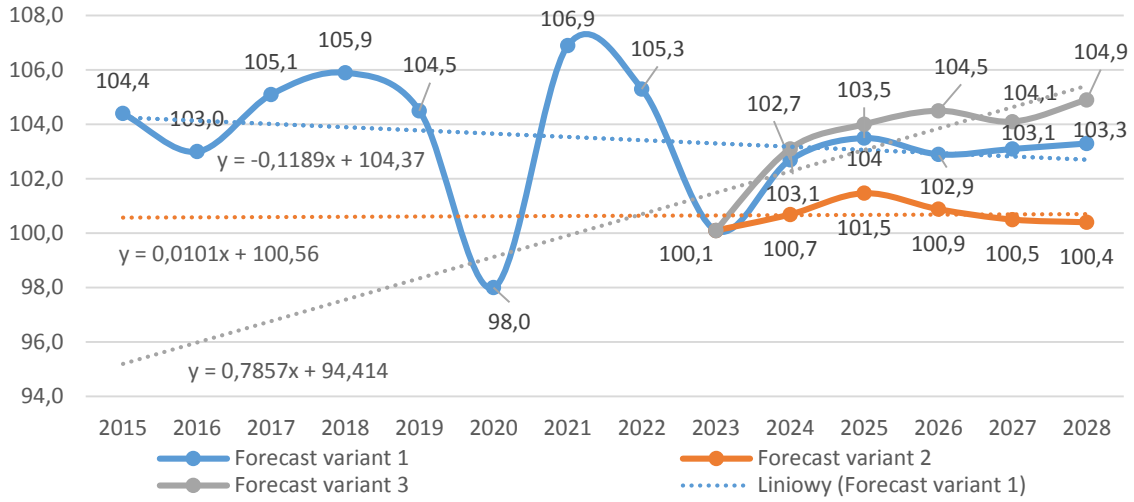

Figure 2. Dynamics of GDP changes in the years 2015-2023 and projection for the years 2024-2028 in Poland (constant prices, in %).

Source: own study based on Macroeconomic Data Bank, https://bdm.stat.gov.pl, 15.11.2024.

After eliminating price volatility, the dynamics of changes in the gross domestic product were characterized by a varied level of indicators, with the largest changes occurring between 2019 and 2020. As shown in Figure 2, in 2020, after eliminating the impact of inflation, the real gross domestic product was 2.0% lower than in the previous year. In the following year, 2021, a clear increase of over 6 percent in the dynamics indicator was noted, which was typical for 2021. Due to the impact of macroeconomic factors stabilizing the economy in the following years, i.e. in 2022 and 2023, the dynamics of changes in the gross domestic product in Poland was decreasing. Thus, in 2023, this indicator amounted to 100.1%, while for 2024 the final values are not yet known, but this increase may be at the level of 0.50%. The gross domestic product dynamics indicator forecasted in January for 2024 seems not to be achieved. The state of the economy at the end of 2024 is characterized by a slowdown, which will not remain without impact on the final result of the GDP. As for the possible development scenario after 2024, especially in 2025, the dynamics of changes in the gross domestic product, depending on the adopted assumptions and the macroeconomic situation, may range from 0.5% to 3.1%. This will depend on the combination of circumstances in terms of the internal situation, including changes in the prices of electricity and other energy carriers. These factors have a strong impact on the Polish economy and will probably have an impact in the future. The presented 3 possible scenarios for the further development of the gross domestic product in Poland are an open question (Macroeconomic Data Bank, 2024).

It should be expected that in the near future, stabilization in the national and international system will facilitate Poland's return to the path of sustainable development. Considering both the development of the economic situation in the past and the changes that may take place in the future, it is worth citing the results of the study on registered unemployment in the years 2019-2024. In the period under review, the unemployment rate was relatively low, ranging from 6.3% in 2020 to 5.1% in 2023. A slightly different situation occurred in the European Union,

where the unemployment rate averaged a stable level of 6-7%. The relatively worst situation occurred in Spain, where in 2019-2024 the unemployment rate periodically reached 15.5%, while in 2023 it is estimated at 12.1% (Ameco, 2024).

In terms of the unemployment rate, disparities are closely linked to the overall macroeconomic situation in individual countries and the economic policy pursued by the authorities of these countries. Generally, it should be stated that the differences in unemployment levels are a secondary effect of the economic situation, which has not yet stabilized in terms of the effects caused by the Covid-19 pandemic. According to experts and the European Commission, 2024 was to be characterized by a significant improvement in the economic situation, including changes in the unemployment level, but as data for 11 months of 2024 show, the actual situation will differ slightly from the expectations that occurred at the beginning of 2024. During the research, the formation of interest rates in Poland and in selected countries of the world in 2022-2024 was identified. It is easy to notice that in the period from April 2020 to September 2022, a systematic increase in interest rates was observed in Poland. This was a reaction to changes related to the increase in inflation and the need to limit its negative impact on the economy and protect the personal income of the population.

The years preceding the emergence of the Covid-19 pandemic were characterized by a stable interest rate policy in Poland. Thus, in the first months of 2020, the base rate was at an exceptionally low level of 0.1%. Since May 2020, a rapid increase in base interest rates has been recorded. They reached their highest value in September 2022. In the following months, a slight decrease was recorded, to the level of 5.75 and 5.25%, respectively. This level was maintained until the end of November 2024. This means that we are dealing with a persistent hard money policy, which is directly related to counteracting a renewed increase in inflation, which at the end of October 2024, year-on-year, reached 5.0% in Poland, which, however, is not without impact on the economic situation in the enterprise sector. For prudential reasons, the Monetary Policy Council has been maintaining a stable level of interest rates since October 2023, which, combined with the risk of rising inflation, is intended to stabilize the market and curb the excessive money supply (NBP, 2024).

The countries studied adopted diverse monetary policies and implemented interest rate scenarios depending on the economic goals set. The relatively fastest reaction took place in Poland. Eurozone countries pursued a slightly different policy, initially trying to pursue a policy of relatively low interest rates within the European Central Bank, which has been consistently maintained to this day. In the United States, the Fed's response was slightly delayed, but in 2022, systematic increases in key interest rates began, which reached their peak at the end of 2023 and lasted until the end of the first quarter of 2024. After that date, slow declines in key interest rates were recorded in line with market expectations. A special case is the central bank in Japan, which maintained key interest rates at a low level with negative values throughout the pandemic. This changed in March 2024, when a slight increase in key interest rates was recorded. The policy of basic interest rates of the central banks of individual countries

depended on the internal situation, as well as on the economic potential and the assessment of the possibilities of further economic development. The differences that occurred should therefore be considered a natural phenomenon that was supposed to contribute to the stabilization of the economies of the countries (Ameco, 2024). An illustration of economic changes in the regional system, divided into total investments and private investments, is presented in Table 2.

Table 2.
Indicators of changes in investment outlays by regions in 2019-2022 (current prices, in %)

Specification	Total investment			Private investment		
	2020 previous year = 100	2021 previous year = 100	2022 previous year = 100	2020 previous year = 100	2021 previous year = 100	2022 previous year = 100
Poland, provinces total	-3.5	10.4	17.1	-7.2	12.5	19.9
Dolnośląskie	-10.3	0.8	10.8	-11.4	-3.8	9.7
Kujawsko-pomorskie	7.2	10.4	18.8	10.3	13.2	17.4
Lubelskie	0.4	1.0	10.3	-1.7	7.8	32.3
Lubuskie	-5.5	33.3	9.1	-18.9	50.8	8.6
Łódzkie	-6.4	8.1	12.6	-14.6	9.4	10.5
Małopolskie	-0.5	12.0	17.3	-1.8	9.1	21.6
Mazowieckie	-3.9	16.3	20.0	-3.9	20.3	19.5
Opolskie	-14.7	8.5	19.8	-23	12.1	24.9
Podkarpackie	-8.2	12.5	3.1	-20.3	7.9	27.8
Podlaskie	0.5	14.8	18.3	-8.0	10.9	12.7
Pomorskie	1.5	14.5	12.0	-6.7	28.5	13.6
Śląskie	-10.1	2.0	28.5	-15.2	3.1	37.2
Świętokrzyskie	-1.4	10.2	18.5	-1.7	21.3	23.8
Warmińsko-mazurskie	-0.5	15.0	13.2	-14	18.7	13.9
Wielkopolskie	-7.0	12.6	17.0	-5.5	16.4	19.5
Zachodniopomorskie	31.8	4.8	22.6	22.9	4.3	23.8

Source: own study based on Local Data Bank, https://bdl.stat.gov.pl/bdl/, 15.11.2024.

The collected and processed source data indicate a deterioration in the situation in terms of investment outlays in Poland in general and in individual regions. In the initial phase of the crisis, in nominal terms in 2020 compared to 2019, most regions recorded declines in the value of investment outlays compared to the previous year, only in the Kujawsko-Pomorskie, Zachodniopomorskie, Podlaskie, Pomorskie and Lubelskie regions positive change indicators were recorded. Therefore, taking into account the increase in the prices of construction and assembly works, investment outlays in real terms in 2020 compared to 2019 were at an even lower level. We were therefore dealing with a sudden deterioration in the situation in the investment sphere. This applies to both total investment, i.e. investment in the private and public sectors combined, and the private sector, where the declines compared to 2019 were significant (GUS, 2024, 2024a).

The situation improved somewhat in the following years, i.e. in 2021 and 2022. At that time, positive growth rates were recorded for both total investment and investment in the private sector, only in the Lower Silesian region investment expenditures were still lower in 2021 than in the previous year. The following years, especially 2022, were characterized by

a relatively high rate of growth in investments, which in most regions reached a relatively high level both in terms of total investment and investment in the private sector. This phenomenon should be explained by the need to implement investment projects that had already been started even in the conditions of the crisis caused by the pandemic. We were dealing with an increase in the prices of materials, energy prices and prices of investment works, however, large enterprises in particular decided to complete investments that had been started before 2020. A slightly different situation occurred in the small and medium-sized enterprise sector, where, due to the market situation, there was a risk of many bankruptcies and the risk of discontinuing business activity (Local Data Bank, 2024).

The numerical data presented in Table 3 indicate the occurrence of significant changes in the total industrial production sold in the years 2019-2023. In this short period, 2 specific periods can be distinguished, i.e. 2020 compared to 2019 and 2023 compared to 2022. In 2020, an absolute decrease in industrial production sold was recorded compared to 2019. Here again we have a clear effect of the economic slowdown caused by the previously discussed factors resulting from the COVID 19 pandemic.

Table 3.
Indicators of changes in total industrial production sold in the years 2019-2023, constant prices from 2015, (in %)

Specification	2019	2020	2021	2022	2023
Mazowieckie	4.9	6.3	13.1	11.4	-0.8
Dolnośląskie	6.5	5.3	15.5	9.8	-1.9
Kujawsko-Pomorskie	3.6	4.0	9.3	6.0	-2.4
Zachodniopomorskie	7.5	3.5	11.6	16.8	2.4
Łódzkie	-0.4	2.8	12.2	14.4	1.2
Podlaskie	12.9	2.8	8.4	10.1	-0.5
Świętokrzyskie	5.4	-1.8	12.3	10.5	-1.6
Polska	5.1	-1.9	14.7	9.3	-1.9
Opolskie	6.2	-2.7	17.1	6.3	-2.4
Lubelskie	6.5	-2.9	14.9	8.9	-0.8
Małopolskie	10.1	-3.7	18.3	2.6	-2.8
Lubuskie	1.2	-5.3	9.8	3.6	-0.7
Wielkopolskie	7.9	-5.4	11.1	5.5	-0.2
Pomorskie	10.2	-5.5	11.3	-2.4	-2.3
Podkarpackie	10.7	-5.9	15.1	16.8	2.5
Śląskie	0.8	-7.1	13.4	14.3	1.3
Warmińsko-Mazurskie	4.4	-14.9	12.8	4.3	-1.2

Source: own study based on Local Data Bank, https://bdl.stat.gov.pl/bdl/, https://bdl.stat.gov.pl/bdl/, 24.11.2024.

In 2021, clear symptoms of economic growth were recorded, which resulted in a significant increase in the value of industrial production sold in the regions. This situation continued in 2022, but in 2023, a renewed collapse of the consumption market and a decrease in the value of industrial production sold was recorded in almost all regions. It can be assumed that the discussed changes illustrating economic fluctuations resulting from post-crisis phenomena continue to have an impact on the economy in Poland. Similar trends, as shown by the data,

continued in 2024, where significant declines in production and the value of production sold were recorded.

An important part of the research is the characterization of changes in the total number of business entities per 10,000 inhabitants and changes in the number of SME enterprises employing up to 9 employees in 2019 and 2023. Figure 3 graphically presents the directions of changes in terms of the number of entities in the spatial layout. An important phenomenon was the increase in the number of business entities in 2019 and 2023. The increase in the number of enterprises concerned in particular the western part of Poland, as well as some voivodeships in the north and south of the country. Figure 4 graphically presents the directions of changes in the number of business entities registered between 2019 and 2023 classified as small and medium-sized enterprises (SMEs) in the range of up to 9 employees. Entities of this size group constitute the dominant number of enterprises in Poland in total and are usually very susceptible to any unforeseen changes, including those caused by crisis phenomena. In accordance with the adopted legend convention, the same size class ranges have been maintained on both figures 3 and 4. This means that we can see changes in the spatial layout and changes in the number of regions with an increasing number of enterprises.

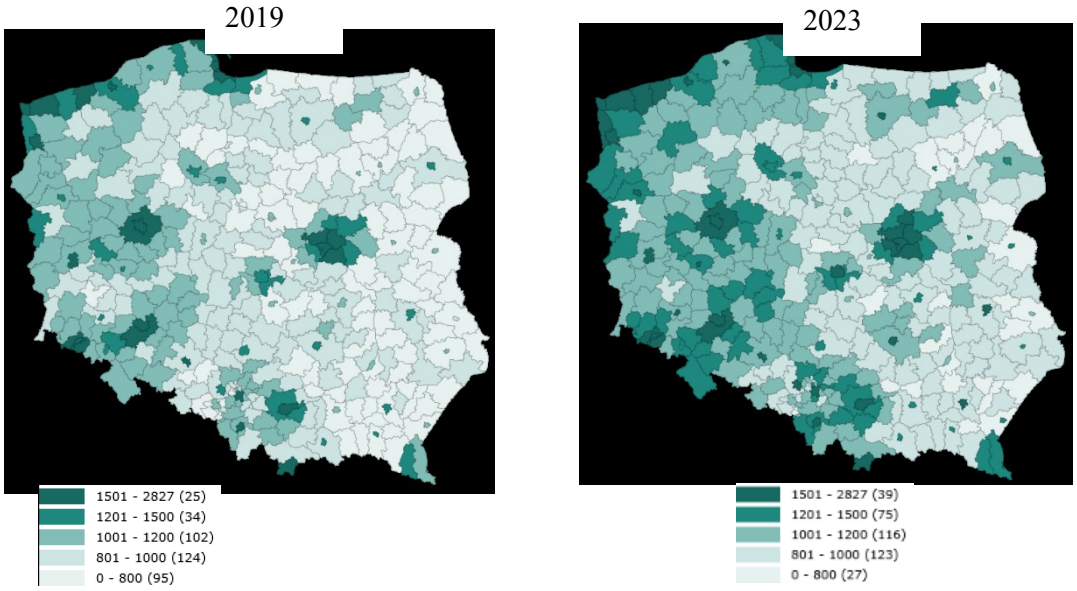

Figure 3. Entities entered in the REGON register per 10 thousand inhabitants in 2019 and in 2023.
Source: own study based on Local Data Bank, https://bdl.stat.gov.pl/bdl/, 15.11.2024.

The situation in the area of small and medium-sized enterprises is presented in Figures 3 and 4. The spatial distribution of SMEs employing up to 9 people clearly indicates that there has been further development of small businesses in urban centres with a large population, as well as in their immediate vicinity. Therefore, it is necessary to indicate the area of central Pomorze, Małopolska, Dolny Śląsk, Warsaw and its metropolitan area, as well as Białystok, Lublin, Rzeszów and Poznań. Changes in the number of the smallest enterprises indicate high motivation and entrepreneurship potential in the group of people planning or already running

a business. This group is exceptionally susceptible to change and is also able to react to changes quickly.

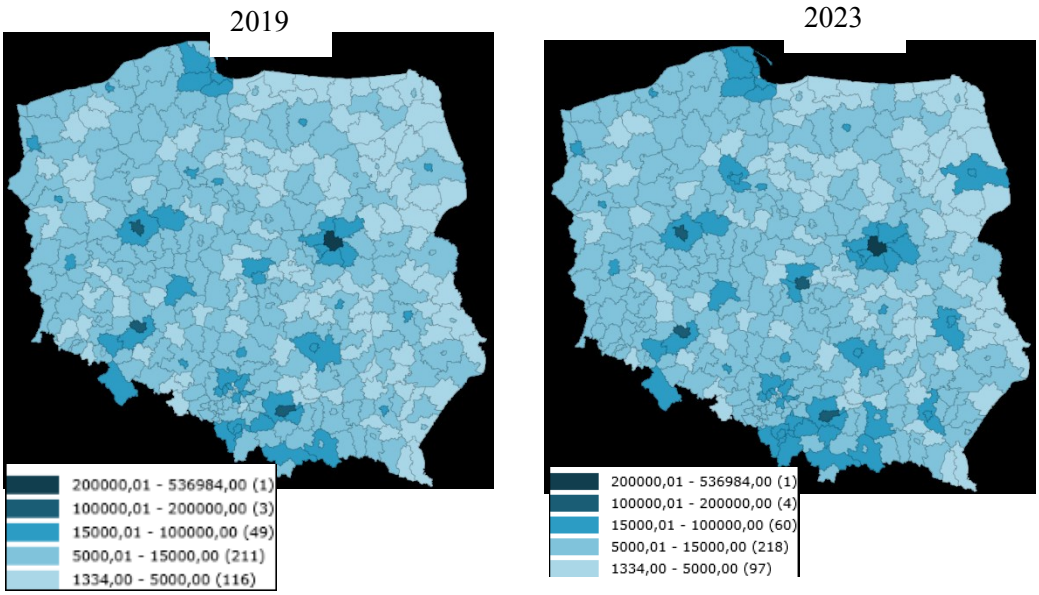

Figure 4. Number of SMEs in the 0-9 group employed by districts in 2019 and 2023.
Source: own study based on Local Data Bank, https://bdl.stat.gov.pl/bdl/, 15.11.2024.

The smaller areas, districts, have maintained their function as growth centers and in these regions, relatively larger changes in the number of small and medium-sized enterprises have been recorded. Changes in the number of SMEs in Poland are a characteristic phenomenon, as they indicate a relatively high mobility of the population, as well as a relatively high level of entrepreneurship, which as a result contributed to rapid reactions to changing conditions resulting from the Covid-19 pandemic. The position of small and medium-sized enterprises turned out to be better than that of large enterprises, which in 2023 and 2024 recorded economic difficulties, given the limited consumer demand and the parallel reduction or decrease in interest in new investments on the part of enterprises became factors slowing down development.

4. Summary

The second decade of the 21st century in Poland was characterized by stable socio-economic development, as well as maintaining a relatively high level of private and public investment. This period was beneficial for the Polish economy compared to the changes taking place in the economies of highly developed countries. It was therefore a period of gradual, accelerated elimination of development differences within the European Union.

The crisis caused by the 2020 pandemic forced the introduction of certain organizational and financial changes and involved the launch of various administrative mechanisms, which were intended to quickly implement changes consisting in actions to improve the health situation of society and to influence the economy in order to limit the negative economic effects on the side of enterprises. In the period covered by the study, changes in economic and social factors resulted in an increase in the risk of conducting business activity, including an aversion to investment due to the uncertain market situation and the increase in the price of credit money, as well as due to a significant decrease in consumption. The temporary improvement in economic results and a slight economic recovery in 2022 were short-term in nature.

In the regional system, development disparities were observed to be deepening, and development differences and disparities between regions were consolidated. The consequences of the discussed phenomena were a deterioration of the general situation in the regions, a slowdown in the GDP growth rate, and changes in the unemployment level. In the districts system, a relatively low level of entrepreneurship development was noted, although the number of SMEs in the group of companies employing up to 9 people in the years 2019-2023 increased slightly.

Studies have shown the need to use factors that promote the diffusion of development impulses to underdeveloped areas and to use available funds to curb the deepening of development differences. The main growth factors should be private consumption and wage growth, but also increased spending at the state level. Reducing inflationary pressure and improving foreign exchange results are also important. Studies have shown the negative impact of increased general risk of conducting business activity, especially investment risk. The increase in general risk was influenced by external factors, i.e. those related to price fluctuations, especially of energy carriers, financial factors, manifested by limited access to capital, changes in the legal environment and new regulations and random factors characteristic of the crisis period. Based on the conducted studies, it can be assumed that the effects of the crisis will be felt in the long term due to the instability of macroeconomic factors in the system of countries and regions. It should be assumed that the coming years may be a period of fluctuations, especially when it comes to shaping the basic measures of economic and social activity.

References

1. Ameco (2024). Retrieved from: https://dashboard.tech.ec.europa.eu/qs_digit_dashboard_mt/public/sense/app/667e9fba-eea7-4d17-abf0-ef20f6994336/sheet/2f9f3 ab7-09e9-4665-92d1-de9ead91fac7/state/analysis, 9.10.2024.

2. Antonescu, D. (2014). Theoretical approaches of regional Development. *MPRA Paper, No. 60627*, pp. 1-14.
3. Bachtler, J., Méndez, C., Vironen, H. (2014). *Regional development and policy in Europe Contributions for the debate in Latin America*. Madrid: European Policies Research Centre, pp. 6-88.
4. Barrett, P., Das, S., Magistretti, G., Pugacheva, E., Wingender, P. (2021). After-Effects of the Covid-19 Pandemic: Prospects for Medium-Term Economic Damage. *IMF Working Paper, WP/21/203*, pp. 2-6.
5. Bock, K., Trück., S. (2011). Assessing Uncertainty and Risk in Public Sector Investment Projects. *Technology and Investment, No. 2*, pp. 105-123.
6. Bojarski, W. (1984). *Podstawy analizy i inżynierii systemów*. Warszawa: PWN, p. 259.
7. Ciżkowicz, P. (2010). *Inflacja, inwestycja, polityka pieniężna*. Warszawa: PWE, pp. 93-97.
8. Easterly, W., Fischer, S. (2001). Inflation and the Poor. *Journal of Money, Credit and Banking*, *No. 33(2),* pp. 160-179, https://doi.org/10.2307/2673879.
9. Edwards, M.E. (2007). *Regional and Urban Economics and Economics Development.* New York: Auerbach Publications, pp. 327-361.
10. Gałązka, A. (2017). Teoretyczne podstawy rozwoju regionalnego – wybrane teorie, czynniki i bariery rozwoju regionalnego, *Studia BAS*, *No. 1(49)*, pp. 9-61.
11. GUS (2024). *Macroeconomic factors*. Retrieved from: https://stat.gov.pl/wskazniki-makroekonomiczne/, 20.12.2024.
12. GUS (2024a). Socio-economic situation of the country –the 1st quarter to the 3rd quarter of 2024. *Statistical analyses, 9*, pp. 3-89.
13. GUS (2024b). Sytuacja społeczno-gospodarcza kraju w 1 półroczu 2024 r. *Analizy statystyczne, 6*, pp. 14-80.
14. Hirschman, A. (1967). *Die Strategie der wirtschaftlichen Entwicklung*. Stuttgart: Fischer Verlag, p. 77.
15. Jarosiński, K. (2003). Finansowanie inwestycji komunalnych w Polsce w warunkach samorządności lokalnej. *Monografie i Opracowania*, *No. 523*, pp. 130-133.
16. Jarosiński, K. (2023). Macroeconomic instability and development disparities of peripheral areas in regions in Poland. *Scientific Papers of Silesian University of Technology*, *No. 173*, pp. 241-260.
17. Local Data Bank (2024). Retrieved from: https://bdl.stat.gov.pl/bdl/, 24.11.2024.
18. Macroeconomic Data Bank (2024). Retrieved from: https://bdm.stat.gov.pl
19. Marvasi, E. (2022). Global Value Chain Resilience and Reshoring During Covid-19: Challenges in a Post-Covid World. *Departmental Working Papers of Economics, No. 271*, pp. 1-22.
20. NBP (2024). Retrieved from: https://www.google.com/search?client= firefox-b-d&q=nbp, 10.11.2024.

21. Nijkamp, P. (1984). A multidimensional analysis of Regional Infrastructure and Economic Development. In. A.E. Ånderson, W. Isard, T. Puu (Eds.), *Regional and Industrial Development Theories, Models and Empirical Evidence* (pp. 267-294). Amsterdam: North-Holland.
22. PAP (2024). *Excessive budget deficit procedure*. Retrieved from: https://www.pap.pl/aktualnosci/ke-objela-procedura-nadmiernego-deficytu-polske-i-szesc-innych-krajow-unijnych, 24.11.2024.
23. Piętak, Ł. (2014). Teoria biegunów wzrostu François Perroux i implementacja jej założeń w Hiszpanii w latach 1964-1975. *Ekonomia XXI wieku*, *No. 1(1)*, pp. 185-205.
24. Rich, D.Z. (1997). *Crisis Theory.* Westport: Praeger Publishers, pp. 124-127.
25. Rubacha, B. (2014). Wpływ światowego kryzysu gospodarczego na kształtowanie polityki regionalnej w Polsce. *Prace Komisji Geografii Przemysłu Polskiego Towarzystwa geograficznego*, *No. 26*, pp. 9-24.
26. Strojny, J. (2013). *Model wykorzystania instrumentów stymulujących rozwój gospodarczy regionu na przykładzie województwa podkarpackiego*. Rzeszów: Oficyna Wydawnicza Politechniki Rzeszowskiej, pp. 3-37.