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Cohesion Policy and the Common Agricultural Policy: assessing their role in reducing socio-economic disparities at the subregional level in Poland

Abstract: The study examined how European Funds contribute to reduce socio-economic disparities across Polish sub-regions. It did not confirm either opposing or complementary effects of Cohesion Policy and the Common Agricultural Policy. Cohesion Policy showed a clearer pro-development impact, especially on employment growth and entrepreneurship, although with a slight increase in disparities between sub-regions. Expenditures supporting enterprises, human capital, the information society and R&D were particularly important for regional development dynamics. By contrast, investments in quality of life and CAP spending did not influence the reduction of relative or absolute poverty. The modernisation-oriented character of CAP may have contributed to growing disparities in registered unemployment, but the mechanisms behind this relationship require further, including qualitative, research.

Keywords: Cohesion Policy, Common Agricultural Policy, regional development, convergence, factors of development

Introduction

The objectives of the European Communities as enshrined in the founding Treaties can be achieved through a variety of policies, instruments and actions. The objectives of economic, social and territorial cohesion are undoubtedly strongly influenced by the Cohesion Policy (CP) and the Common Agricultural Policy (CAP), which account for the largest share of EU budget expenditure. The former policy is usually considered to be pro-development in nature and is referred to as regional policy due to its strongly emphasised spatial dimension (Barca et al. 2012). The second, although often considered “spatially blind”, but due to the fact that it is mainly targeted at agricultural areas also contains a spatial component.

Each of these policies individually has been covered by a number of research and evaluation studies, which, in the first case, focused mainly on the impact of CP on processes of regional convergence and changes in regional disparities and, in the case of CAP, its impact on agricultural and rural development. In contrast, so far there have been relatively few attempts to show their combined impact on regional development, including taking into account the interactions between them (Crescenzi et al. 2015, Calegari et al. 2021).

In this context, the new EU Member States represent an interesting field of research, since, usually their entire territories are covered by the convergence objective of the Cohesion Policy and, moreover, agriculture is an important sector of their economies, which makes them important beneficiaries of the Common Agricultural Policy. Poland may be a particularly interesting case in this regard, as the volume of outlays on both these policies is among the highest in the EU, and their importance is particularly evident with the relatively modest resources allocated to other national policies (Wieliczko 2017). At the same time, previous research has not provided a clear answer as to what is the impact of these policies on the development processes of regions, indicating that their impact may offset each other due to the differentiated allocation of funds, which in the case of the Cohesion Policy was greater in urban regions and in the case of the Common Agricultural Policy in peripheral rural areas (Gorzela, Smętkowski 2010, Rudnicki et al. 2019). At the same time, there have been no comprehensive attempts to assess the impact of these policies on social cohesion expressed in terms of the scale of socio-economic deprivation of the regions' inhabitants (Smętkowski et al. 2015).

Against this background, the aim of the study is to examine the extent to which the two main EU policies implemented in Poland – the Cohesion Policy and the Common Agricultural Policy – are associated with regional development and the reduction of socio-economic disparities at the level of sub-regions. Since these policies follow different allocation logics and pursue different objectives, the analysis does not seek to determine which of them is more effective. Instead, it focuses on identifying their potential spatial effects. Given the objectives and the structure of expenditures under these policies, it can be expected that the Cohesion Policy should contribute primarily to levelling differences in the level of economic development across sub-regions. In contrast, the Common Agricultural Policy – which contains a large component of direct payments to farmers and operates in the context of the highly fragmented agrarian structure in Poland – may play a more significant role in reducing income disparities. However, existing evidence for Poland suggests that the CAP may generate opposing effects on labour-market outcomes. While direct payments contribute to income stabilisation and may slow down structural adjustment by sustaining agricultural employment, CAP-related structural changes may also lead to labour shedding in agriculture, particularly in regions with limited non-agricultural employment opportunities.

The following specific research questions and hypotheses, including auxiliary ones, can therefore be formulated:

- Q1. Which policy – cohesion or agricultural – is more important for dynamising the economic development of regions in Poland and what implications does this have for territorial cohesion? H1: The Cohesion Policy in Poland is more significant in dynamising regional economic development than the Common Agricultural Policy H1a. This may, paradoxically, lead to an increase in the scale of regional disparities as a result of the use of funds by more developed sub-regions.
- Q2. Does the structure of the Cohesion Policy’s inputs have an impact on regional development processes and what is this impact? H2: The structure of Cohesion Policy inputs has an impact on regional economic development processes. H2a Pro-developmental expenditures targeting business innovation and human capital development may be the most important in dynamising the development process of regions. H2b On the other hand, outlays earmarked for improving the quality of life of the population may be of greatest importance in reducing the rates of socio-economic deprivation.
- Q3. Is the impact of the two policies differentiated with respect to economic and social cohesion outcomes at the sub-regional level? H3 The Common Agricultural Policy may have a stronger association with changes in income disparities at the sub-regional level, due to the importance of direct payments in supporting farmers’ incomes. H3a The effects of CAP may be particularly visible in the case of extreme poverty rather than relative poverty, as improvements in farmers’ incomes may primarily affect the poorest rural population. H4 The impact of CAP expenditures on unemployment rates may be ambiguous, as agricultural support can simultaneously stabilise farm incomes while contributing to structural adjustments in agriculture. H4a Positive income effects for farmers may not necessarily translate into overall reductions in poverty rates if restructuring processes in agriculture lead to employment losses in rural areas where alternative non-agricultural jobs are limited.

The article is structured as follows. The first part presents selected studies on the impact of European funds on the socio-economic development processes of regions, with particular emphasis on analyses that took into account both the Cohesion Policy and the Common Agricultural Policy. The next two parts show the scale of disparities at the sub-regional level in Poland and its evolution in recent years, as well as the allocation of Cohesion Policy and Common Agricultural Policy funds in sub-regional terms in the period studied. The results of empirical research on the impact of European funds on the socio-economic development processes of regions in Poland are then presented. The empirical analysis focuses on the 2007–2013 programming period and its effects observed up to 2017–2019, which allows for capturing both demand- and supply-side impacts of EU funds under relatively stable macroeconomic conditions. In conclusion, the obtained results are discussed in the light of the current state of knowledge and final conclusions are formulated, together with policy implications.

Literature review

The literature review focuses on showing the results of works that have investigated the simultaneous impact of these two policies on the socio-economic development processes of regions, including the results of such studies devoted to the situation of Poland. However, the introduction briefly summarises the most important findings on the effects of the Cohesion Policy and the Common Agricultural Policy, which, as a rule, indicate the lack of their clear impact on regional convergence processes in the European Union. At the same time, recent studies emphasise that the relationship between EU Cohesion Policy, regional growth and socio-economic dissatisfaction may be more complex than previously assumed. While European funds may contribute to economic growth in many regions, their impact on social perceptions of inequality and territorial cohesion may be more ambiguous. In particular, Rodríguez-Pose (2018) points to the growing political and social consequences of persistent regional inequalities, described as the “revenge of the places that don’t matter”. In this context, Petrakos (2026) emphasises the importance of addressing potential endogeneity between regional growth dynamics, socio-economic discontent and the allocation of cohesion policy resources across EU regions. This perspective highlights the need to analyse not only the economic effects of EU policies but also their broader territorial implications.

The impact of the European Union Cohesion Policy and the European Regional Development Fund on territorial development has been the subject of numerous studies. However, the conclusions of research are not fully conclusive (Dall’Erba, Fang 2017, Fratesi, Wislade 2017, Bachtrögler et al. 2020, Berkowitz et al. 2020). At the same time, it should be noted that many of the studies – unlike some of the reports commissioned by the European Commission – are critical of Cohesion Policy measures on the grounds that they do not achieve their objectives (Boldrin et al. 2001, Dall’erba, Le Gallo 2008), including, in particular, a failure to reduce territorial inequalities (Percoco 2005, Mohl, Hagen 2010). In the case of the Common Agricultural Policy, its anti-cohesion effects related to the allocation of resources to the wealthiest farmers in selected regions have also been pointed out (Eposti 2007). On the other hand, it is pointed out, however, that the shift from coupled payments to area-based payments may have eliminated this problem, which may have been particularly relevant for the new Member States, which benefit from the CAP mainly through a flat rate per hectare decoupled independent of production (Crescenzi et al. 2015). In doing so, there is generally no evidence of a link between the amount of CAP support and regional growth and convergence dynamics. This lack of attention may be due to the fact that the CAP has the greatest impact on agriculture, which is a relatively low-productivity sector compared to non-agricultural activities (Kuokkanen, Viuhinen 2006).

To sum up, while the Cohesion Policy is explicitly designed as a territorial development policy aimed at promoting convergence between regions, the Common Agricultural Policy follows a different allocation logic. CAP is primarily a

sectoral policy supporting agricultural production and farmers' income. Its spatial effects are largely indirect and depend on the distribution of agricultural land and the structure of the farming sector. Consequently, CAP expenditures are not primarily intended to reduce regional disparities, although they may generate territorial effects through income and demand channels. As a result, relatively few studies have analysed the combined impact of European funds under CAP and CP on regional convergence. Among their findings, it can be pointed out, firstly, that the CAP has not been found to cancel out the positive effects of cohesion policy (Esposti 2007) and, secondly, that there are rather favourable synergies between these policies, which is especially true for less developed regions (Montresor et al. 2011). By comparing the two policies, it is possible to conclude that also the CAP has a certain contribution to make to the development of the less developed areas of the EU by favouring regional convergence (Crescenzi, Giua 2014).

At the same time, the need for coordination between the Cohesion Policy and the CAP is pointed out in order to maximise labour productivity growth as a result of European intervention (Giannakis, Bruggeman 2018). All the more so as this coordination, as well as the positive impact of these policies on territorial cohesion, has not always improved as a result of reforms (Cresenzi et al. 2015). At the same time, recent studies on their impact on agricultural productivity have shown that in less developed regions their individual impact is negative, but these effects are mitigated when the policies are implemented together, while, on the contrary, in more developed regions their separate impact is positive, but the overall impact is reduced when the two policies are implemented in parallel (Calegari et al. 2021).

Summarising the work analysing the impact of the two policies on territorial cohesion processes, it can be concluded that there is a need for a proper combination of bottom-up (local initiative) and top-down (policy framework) approaches, which should enable resources to be directed to the area's most in need and prevent the negative effects of institutional weaknesses, helped by both CP and CAP, as well as the joint impact of these policies (Mikuš et al. 2019). In assessing the impact of these policies, attention should also be paid to the differences in the impact of European funds on achieving cohesion in economic and social terms (Novosak et al. 2017). It is also often important to take into account the parallel impact of national policies on regional development (Copolla et al. 2023).

Research carried out in Poland at the level of sub-regions shows that the importance of European funds in their development processes was lower and was inferior to the initial value of GDP, population dynamics and the value of business fixed assets at the beginning of the analysed period (Dubownik et al. 2019). The structure of the intervention was significant in this regard. According to some findings, the development of basic technical infrastructure was particularly important (Dubownik et al. 2019). However, this may have resulted not so much from the positive effects of the modernisation processes of these investments (supply effects), but from the largest scale of outlays incurred in this case, which may have resulted in clear demand effects (Smętkowski et al. 2022). Nevertheless, the European funds in Poland has so far not led to the goal of reducing

interregional disparities. This was due, *inter alia*, to significant structural differences between individual areas, which, under conditions of small supply effects of the expenditures incurred, may also persist in subsequent programme perspectives (Mogila et al. 2022). At the same time, the economic growth of Polish regions was not significantly related to the size of the Cohesion Policy allocation. Potentially more important for the dynamics of regional development could have been not so much the size of the acquired European funds, but the efficiency of the use of existing economic capital, i.e. fixed assets of enterprises and infrastructure, as well as the efficiency of new investments, which indirectly indicates the importance of innovation in contemporary development processes (Smętkowski et al. 2022).

However, European funds in Poland have significantly improved the quality of life, including in rural areas (Gorzela 2022). In the latter case, it was important to increase farmers' incomes, which had synergistic effects when combined with measures for the development of enterprises, as well as the improvement of social and technical infrastructure implemented in rural areas under other programmes (Dubownik et al. 2019). On the other hand, studies at the local level show that municipalities with a higher level of absorption of European funds from agricultural programmes were characterised by a higher level of development and a high degree of de-agrarianisation of the local economy, i.e. greater multifunctionality, which increases differences in the level of socio-economic development (Komorowski et al. 2019). CAP rural development support measures and cohesion policy instruments can generally be considered complementary to each other (Chmieliński, Gospodarowicz 2018). However, the CAP is still too strongly oriented towards supporting agriculture, which results in an insufficient pool of funds being directed to sectors of the rural economy other than agriculture (Wieliczko 2017). As a result of the concentration of EU rural development policy in Poland on farm support, regions with a better agricultural structure are favoured, and thus regional disparities are deepening, both in Polish agriculture and rural areas (Kiryłuk-Dryjska et al. 2020).

Data and methodology

The scale of territorial disparities in Poland is relatively high, which results from the dichotomy of economic structures (low-input agriculture vs. advanced services) associated with delayed urbanisation, which is especially true for the eastern part of the country (Gorzela, Jałowiecki 2002) and the existence of internal peripheries corresponding to the partition borders in the central part of the country (Churski, Perdał 2022), as well as the high polarisation of the level of development within metropolitan regions (Smętkowski et al. 2011). Territorial disparities have both an economic dimension, related not only to GDP per capita, but also to the number of people working outside agriculture and the level of entrepreneurship, as well as a social dimension illustrated by the unemployment rate and relative poverty, which indicates the level of income distribution, and

extreme poverty, which shows the scale of socio-economic deprivation of the population. Below is an analysis of the dynamics of indicators illustrating these two approaches in the 2009–2019 period, as well as the scale and change of disparities at the sub-regional level in this period. The analysed period was deliberately limited to the years 2009–2019. The starting year was chosen in order to avoid the direct effects of the global financial crisis of 2008. At the same time, the analysis excludes the years after 2019 due to the strong disturbances caused by the COVID-19 pandemic, which significantly affected both economic activity and labour market indicators. These shocks could distort the interpretation of the relationship between EU policy interventions and regional development dynamics. For this reason, the study focuses on the last relatively stable phase of the Polish economy before the pandemic.

At the outset, it should be noted that Poland was one European country that did not experience a recession as a result of the global financial crisis of 2008, and economic development even in the post-crisis period was relatively dynamic and led to an increase in real GDP of more than 30% over the analysed period (Fig. 1a). This favoured, on the one hand, an increase of around 10% in the number of employees in enterprises employing more than 9 people, as well as a similar increase in the number of business entities, indicating a clear increase in labour productivity. The improvement in economic indicators was at the same time conducive to a reduction in the number of people at risk of relative poverty by around 20%. Also, the number of people at risk of socio-economic deprivation, after an initial very marked increase between 2010 and 2014, recorded a spectacular decline, decreasing to a similar extent as the above indicator. Also in the case of the registered unemployment rate, after an initial deterioration since 2014, there has been a very clear reduction of around 60% compared to the base year. In doing so, it should be noted that for the first two indicators, social transfers may also have played a role, having clearly increased after 2015.

In the case of most indicators – apart from GDP per capita – there was also an increase in spatial dispersion measured by the coefficient of variation of indicator values at the sub-region (NUTS3) level (Fig. 1b). In particular, this concerned social indicators, i.e. relative and extreme poverty, and to a lesser extent the registered unemployment rate. The latter also went hand in hand with an increase in disparities in terms of the percentage of employees in entities employing 10 or more people. However, it should be noted that this indicator was still the least spatially differentiated of all those analysed. In the case of the number of business entities, there was also some increase in sub-regional differentiation, but, as in the case above, the scale of differentiation was small. It was, however, greater in the case of GDP per capita, the territorial dispersion of which, however, remained relatively stable in the period under study. This means that the improvement in the economic situation was relatively even across the country, while changes in the dispersion of social indicators indicated a polarisation of sub-regions and a concentration of problematic phenomena, albeit at a much lower intensity than at the beginning of the period under study, in selected sub-regions.

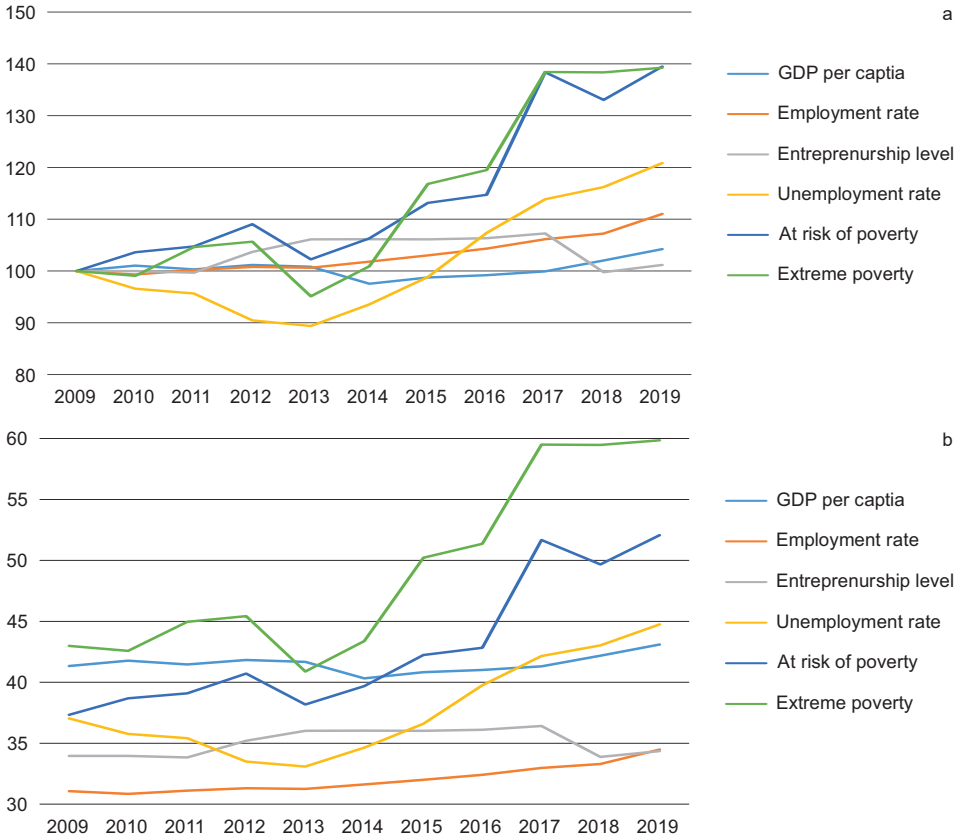


Fig. 1. Changes in values of socio-economic indicators in NUTS3 sub-regions, 2009–2019
 Source: own compilation based on CSO data using US Poznań (2013) estimation for poverty indicators at sub-regional level.

Analysing the distribution of projects financed by European Union funds is not an easy task due to the diversity of the categories of projects implemented, the variation in the extent of their impact, and the difficulty in determining the location of final beneficiaries (Smętkowski, Płoszaj 2011, Gorzelak et al. 2017). In this context, a relatively reliable source of information on EU funds in spatial terms is the Local Data Bank, which presents unified data of ministries and government agencies implementing European programmes. Firstly, it contains information on projects implemented within the framework of programmes included in the National Strategic Reference Framework 2007–2013 (NSRF 2007–2013), which in this study is referred to, in simplified terms, as the “Cohesion Policy”. Secondly, the database contains data on the amount of payments made under the Rural Development Programme 2007–2013 (RDP 2007–2013), as well as on the amount of direct payments to farms. In simplification, these two instruments are referred to as the “Common Agricultural Policy” and were analysed together due to the very high territorial correlation between the two types of payment.

The value of projects implemented under the Cohesion Policy (NSRF 2007–2013), which received EU funding in the 2007–2013 perspective, amounted to over PLN 400 billion, of which 79%, or approximately PLN 320 billion, was their eligible cost under EU regulations. Within the latter, European funds were responsible for nearly 70%, and the remainder was the national contribution. In turn, the outlays of the Common Agricultural Policy in Poland amounted to a total of around PLN 170 billion, of which more than PLN 130 billion, i.e. around 76%, was the EU contribution.

On a sectoral basis, Cohesion Policy and Common Agricultural Policy measures have been categorised on the basis of the SIMIK KSI into the following expenditure groups (Smętkowski, Dąbrowski 2019):

- “Basic infrastructure” (transport infrastructure, environmental and energy infrastructure),
- “Innovative environment” (support for business, human capital development, information society, research and development),
- “Quality of life” (social infrastructure, tourism, culture, local development and revitalisation),
- “Agricultural sector” (support for farmers and agriculture, rural development).

Outlays in the different thematic areas had different spatial patterns per capita (Fig. 2). Expenditure on agriculture, rural development and area payments per capita was highest in areas where the average size of farms was higher and population density lower, which was particularly evident in north-eastern Poland. On the other hand, the smallest amount per capita was allocated in the industrialised Śląskie voivodship and the metropolitan areas of the largest cities. In the case of basic infrastructure, the highest per capita investments were made in metropolitan areas of the largest cities, as well as sub-regions where key transport projects were implemented (mainly motorways). Outlays for the creation of an innovative environment were also the highest in metropolitan areas of the largest cities, as well as voivodeship capital cities and in selected industrial regions. On the other hand, the largest amount of resources in relation to the number of inhabitants was allocated to the quality of life in the regions of eastern Poland, which could be related to a special macro-regional development programme for this part of the country, which covered the poorest voivodeships.

At the level of sub-regions, strong correlations were evident especially between total outlays and expenditures incurred under the Common Agricultural Policy, which indicates the important role of the latter in analysing the territorial impact of European funds and the greater pointiness of Cohesion Policy expenditures (e.g. large infrastructure projects) (Table 1). At the same time, it should be noted the different spatial allocation patterns of regional and agricultural policy funds (negative relationship, but not statistically significant). On the other hand, within the structure of Cohesion Policy expenditures, there were weak positive correlations especially for expenditures on basic infrastructure and the innovation environment, indicating a higher allocation of these funds in regions with greater economic potential and better developed infrastructure. Both of these categories were also positively correlated with expenditure on improving the quality

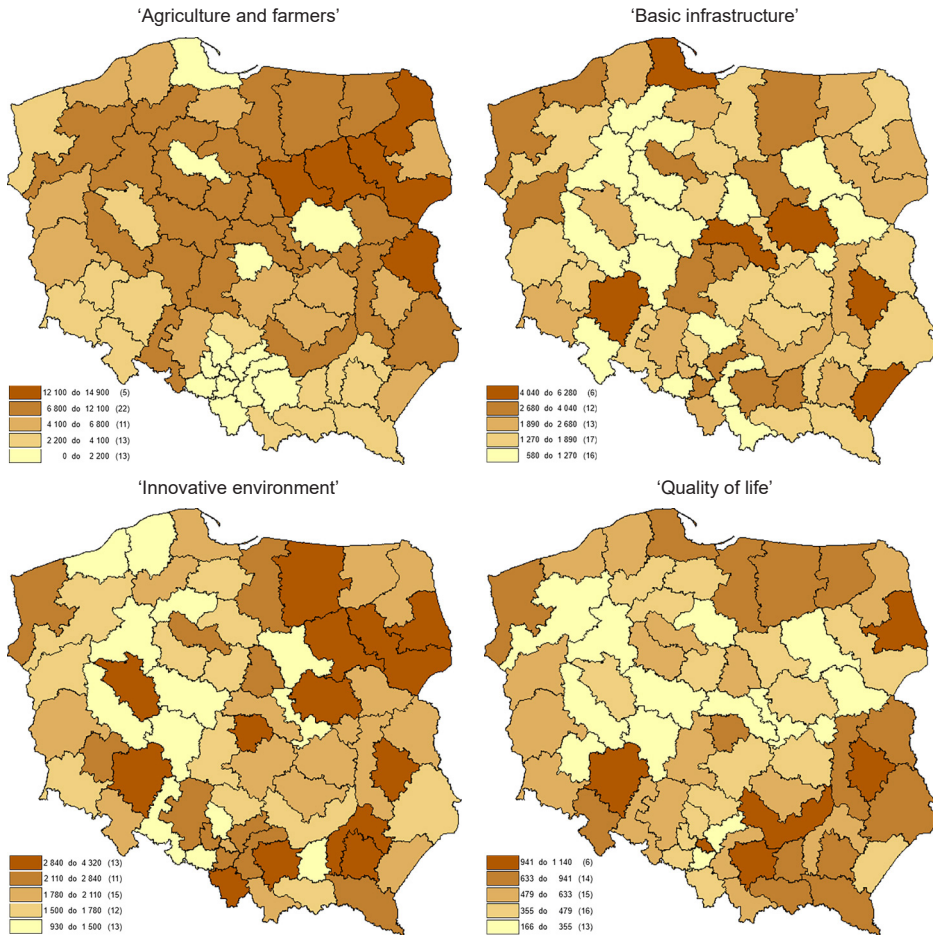


Fig. 2. Value of EU-funded interventions: co-financed projects and direct transfers by the thematic category in the 2007–2013 programming period EUR per capita
Source: own elaboration based on CSO data.

of life – which could be related to the location of key social infrastructure in large urban centres. In summary, there was some complementarity in the expenditure of European funds with a greater concentration of Cohesion Policy funds in functional areas of larger cities and Common Agricultural Policy funds in rural areas.

The research used multiple OLS regression models taking into account the above-mentioned factors related to regional development, the intervention structure of European funds and convergence processes. The temporal scope of the analysis was limited to the period after 2009 in order to avoid the direct effects of the global financial crisis of 2008. In the case of the regression analysis, 2017 was adopted as the end year. This makes it possible to capture both the demand effects associated with the implementation of Cohesion Policy expenditures in the 2007–2013 programming period, which according to the $n+2$ rule could be

Table 1. Correlations between categories of European Funds expenditure in Poland – NUTS3 sub-regions, 2008–2015

	Total expenditures	Cohesion policy	Common agricultural policy	Agriculture and farmers	Basic infrastructure	Innovative environment	Quality of life
Total expenditures	1.00	0.55	0.71	0.71	0.29	0.27	0.12
Cohesion policy	0.55	1.00	-0.20	-0.20	0.68	0.63	0.45
Common agricultural policy	0.71	-0.20	1.00	1.00	-0.23	-0.22	-0.24
Agriculture and farmers	0.71	-0.20	1.00	1.00	-0.23	-0.22	-0.24
Basic infrastructure	0.29	0.68	-0.23	-0.23	1.00	0.36	0.27
Innovative environment	0.27	0.63	-0.22	-0.22	0.36	1.00	0.47
Quality of life	0.12	0.45	-0.24	-0.24	0.27	0.47	1.00

* significant at level $p < 0.05$ marked in red
Source: own elaboration based on CSO data.

spent until 2015, as well as the potential supply effects of investments that may become visible several years after their implementation. Spatially, data was used at the level of sub-regions, which in Poland correspond relatively well – at least in the case of larger urban centres – to city regions. This is particularly important given the large intra-regional (NUTS2) disparities in Poland, which are greater than the differences in the level of development between regions (Smętkowski et al. 2011). In addition, in order to limit the impact of the existence of NUTS3 of separated urban centres on the results these cities were included in the surrounding sub-regions, which made it possible to conduct the study for 65 statistical units.

Research results

The analysis of the impact of European funds on socio-economic development processes at the level of sub-regions (NUTS3) was carried out under three models. The first one took into account the differentiation of expenditures incurred under the two analysed European Union policies, which made it possible to assess their complementarity or opposition. The second analysed the impact of the structure of the expenditures on the change in the analysed indicators, which made it possible to show the most effective types of intervention. The last one made it possible to show the ongoing processes of beta convergence/divergence in terms of the indicators analysed, as it took into account their initial values.

On the basis of the results obtained (Table 2), it can be concluded that the Cohesion Policy 2007–2013, to some extent, favoured the processes of economic development of sub-regions in Poland. This impact was largely dependent on the structure of the expenditures incurred. The categories of outlays that favoured

	Unemployment rate				Population at risk of poverty				Extreme poverty			
	R – Pearson	(1) Policies	(2) Structure	Convergence (3)	R – Pearson	(1) Policies	(2) Structure	Convergence (3)	R – Pearson	(1) Policies	(2) Structure	Convergence (3)
Social indicators												
European funds per capita – total	0.36				0.02				0.05			
Cohesion policy per capita	0.12	0.20 (0.12)			0.02	0.03 (0.13)			0.04	0.05 (0.13)		
Common agricultural policy per capita	0.31	0.35*** (0.12)			0.00	0.01 (0.13)			0.02	0.03 (0.13)		
'Agriculture and farms' per capita	0.31	0.39*** (0.12)	0.35*** (0.13)		0.00		0.02 (0.13)	-0.08 (0.16)	0.02		0.06 (0.13)	-0.03 (0.16)
'Basic infrastructure' per capita	0.07		0.07 (0.13)	0.09 (0.13)	-0.07		-0.14 (0.14)	-0.13 (0.14)			-0.10 (0.14)	-0.09 (0.14)
Innovative environment per capita	0.15		0.14 (0.14)	0.16 (0.14)	0.15		0.18 (0.15)	0.24 (0.16)	0.13		0.10 (0.15)	0.16 (0.16)
Quality of life per capita	0.15		0.16 (0.14)	0.14 (0.14)	0.09		0.06 (0.15)	-0.03 (0.17)	0.17		0.17 (0.14)	0.09 (0.16)
Indicator baseline value 2010	0.18				0.11 (0.14)				0.19 (0.17)			0.17 (0.17)

Standard errors in brackets.

Significance * <0.10, ** <0.05, *** <0.01, significant correlation at level 0.05 marked in red.

Positive values indicate a negative relationship, i.e. the greater the scale of the input, the greater the increase in the value of the negative indicator (e.g. registered unemployment).

Source: own elaboration.

the dynamics of the regional economy in this period included those related to the development of the innovation environment, i.e. measures aimed at increasing innovation, enterprise development and improving human capital. This was visible against the background of other categories of expenditures financed from European funds in Poland, and was particularly evident against the background of those sub-regions in which the most resources were allocated to improving the quality of life of the inhabitants. This was even more evident after taking into account the differentiation of regions in terms of initial GDP per capita. This means that among regions at a similar level of development, those in which more resources were spent on the development of the innovative environment and relatively less on improving the quality of life of the inhabitants were characterised by faster economic growth. It should also be noted that as a result of this process, there was a slight convergence in the level of development of the sub-regions in Poland. This means that not only the main metropolitan areas, but also a number of other areas of the country developed thanks to Cohesion Policy funds.

The analysis of the impact of European funds on the other two indicators illustrating economic development, i.e. employment and entrepreneurship, showed that expenditures related to the innovative environment favoured both the growth of the number of employees in entities employing 10 or more people and the growth of the number of economic entities, i.e. the development of entrepreneurship among residents. In the latter case, the overall impact of the total Cohesion Policy funds was visible – although the development of basic infrastructure and expenditures on the quality of life were not as important after taking into account the size of funds for the development of the innovative environment. On the other hand, in the case of the number of employed, similarly to GDP, high spending on quality of life was negatively (but not statistically significantly) correlated with the change in the number of employed, indicating that it rather did not favour the growth of the number of new jobs. In contrast to GDP per capita, there was a divergence between regions in terms of the number of employed per 1,000 inhabitants. On the other hand, Cohesion Policy expenditures, which were conducive to the development of entrepreneurship, may have contributed to a decrease in the diversity of sub-regions in this respect in terms of the number of entities per 1,000 inhabitants.

Expenditure under the Common Agricultural Policy did not, in the light of the analysis, have a statistically significant impact on the economic development process. However, positive sign values at the regression coefficient suggest that they may have tended to favour GDP and employment growth. On the other hand, in the case of entrepreneurship development, the negative value of the coefficient could potentially indicate a reduced interest in starting one's own business in a situation of significant financial transfers directed to farmers and the agricultural sector.

In the social sphere, on the other hand, the potentially negative impact of the Common Agricultural Policy was visible in the case of a change in the registered unemployment rate (Table 2). It should be noted, however, that to some extent this could also apply to the Cohesion Policy, where the value of the coefficient

was also positive although not statistically significant. This may indicate that measures for the development of agriculture and rural areas, as well as subsidies for farmers financed by the Common Agricultural Policy, were not conducive to reducing the unemployment rate, which may have been related to the reduction of employment as a result of the modernisation of this sector. However, another explanation for this correlation could be the fact that incentives for seasonal work in agriculture are created, which may not affect registered unemployment statistics. This is due to the fact that irregularly earning people may seek to maintain their unemployment status, which enables them to benefit from free public health care (UMK 2018).

The lack of a positive impact of European funds on the registered unemployment rate also had potential implications for changes in the scale of relative and extreme poverty at the sub-regional level. In both of the above cases, there was no statistically significant impact of any of the policies analysed and the structure of expenditure on changes in this respect. Instead, a small but not statistically significant polarisation of sub-regions in this respect could be observed. This indicates that the magnitude of the reduction in the risk of poverty and exposure to extreme socio-economic deprivation depended on other factors, among which one can point to the marked increase in social transfers after 2015.

Discussion, conclusions and policy implications

The research did not confirm the contrasting effects of the two main European Union policies on the socio-economic development of sub-regions in Poland. At the same time, they did not show their complementarity in terms of both economic and social development suggested by some studies conducted at the European level (e.g. Montresor et al. 2011). It should be noted that, in both cases, a certain role for the development of subregions may have been played by demand effects related to the realisation of investments and an increase in the income of beneficiaries within the framework of programmes and instruments financed from European funds, which is also confirmed by studies realised at the county level (Smętkowski et al. 2022). In line with the hypothesis, the pro-development character of the Cohesion Policy was more pronounced, which became apparent especially in relation to the increase in the number of employed and the development of entrepreneurship. A side effect in this case, however, was a slight increase in disparities between sub-regions, which were, however, relatively small. On the other hand, this did not have a negative impact on the convergence processes taking place in terms of GDP per capita, which, however, may have been due not so much to the impact of European funds, but to the processes of spreading development from better to less developed sub-regions related to the search by manufacturing companies for cheaper labour costs in less developed regions postulated by neoclassical theories. This hypothesis is confirmed by the very rapid decline in the unemployment rate in Poland after 2014, including in

non-metropolitan areas. In summary, the expectation of a significant increase in regional economic disparities was only partially confirmed.

The results obtained in the above study indicate the importance of the structure of expenditure implemented under the Cohesion Policy. Of particular importance for the dynamics of regional development processes was expenditure considered to be pro-development, related to support for enterprises, the development of human capital resources, as well as building the information society and supporting research and development. This confirms the results of other studies which, for example in Estonia, showed that cohesion policy measures had a positive impact on employment and productivity (Ferraro et al. 2023). In turn, the relevance of expenditure on education in less developed regions is shown by the research of Rodriguez-Poze, Fratesi (2004). Importantly, the relevance of this category of expenditures in the light of the study was significant not only for economic growth, but also for an increase in the number of employed (although no longer for a decrease in the registered unemployment rate) and the number of businesses. On the other hand, the expectation that European Funds resources allocated to improving the quality of life, mainly through the development of social infrastructure, would affect social development indicators, including in particular the reduction of extreme socio-economic deprivation, was not confirmed.

The results of the study showed that support targeted at the agricultural sector, rural areas and farmers did not have a significant impact on reducing poverty in relative and real terms, nor on reducing regional disparities in this respect. This confirms the results of other studies indicating that the CAP may be addressed primarily to regions that are more agriculturally developed, i.e. with a smaller scale of problems related to socio-economic deprivation of the population (Komorowski et al. 2021). This was not prevented by area payments, which were not significant in densely populated areas with dispersed agriculture such as the area of south-eastern Poland. On the other hand, the assumptions that the acceleration of the modernisation of the agricultural sector could favour the consolidation of sub-regional differences in terms of the registered unemployment rate were confirmed. This could also be one of the reasons why results were not achieved in terms of poverty reduction and socio-economic deprivation. At the same time, the restructuring relevance of CAP is in line with the findings of earlier studies on the interest in the use of rural development programme funds (Kiryłuk-Dryjska et al. 2020). In their light, greater activity took place in areas with more developed agriculture, which may exacerbate territorial disparities in terms of agricultural sector efficiency and may tend to increase further in the future (Kiryłuk-Dryjska et al. 2022).

In conclusion, the research showed the differentiated impact of the Cohesion Policy and the Common Agricultural Policy on sub-regional development processes in Poland. To a certain extent, they confirmed the pro-developmental significance of the former, in particular thanks to outlays on the increase of innovativeness of enterprises and the development of human capital, which, however, contrary to fears, did not lead to an increase in the scale of subregional disparities in Poland in terms of GDP per capita. On the other hand, there was no equalising

effect of the Common Agricultural Policy in the social dimension. This may have been related to the pro-modernising effect of this policy in areas with higher agricultural efficiency, which may have had consequences in the form of an increase in sub-regional polarisation in terms of the registered unemployment rate, but under conditions of a very significant reduction in its scale in Poland. The research showed the great importance of other factors in the development of regions, as the models developed explained only a small part of the observed variation of subregions in terms of the indicators studied. Among these factors, development spillover processes were undoubtedly important, leading to significant improvements in the labour market situation also in more peripheral and less developed regions. At the same time, it should be noted that the research carried out was based on correlation/regression relationships, which should be verified in detail using case studies and in-depth qualitative research, which would make it possible to show the nature of the relationships shown in a more complex way, as well as to take into account some regional development factors other than those addressed in the research like quality of institutions or social capital.

Regarding recommendations the results suggest that cohesion policy interventions should prioritise expenditure categories with a demonstrable impact on employment and entrepreneurship, particularly support for enterprises, human capital development and innovation-related activities. These types of interventions appear to generate stronger development effects at the sub-regional level than other forms of spending. At the same time, the absence of measurable effects of social infrastructure investments on indicators of socio-economic deprivation points to the need for a more careful evaluation of such interventions. Policies aimed at improving quality of life should therefore be more closely linked to labour market activation and income-generating mechanisms.

The findings also indicate that CAP instruments, particularly direct payments, may have limited effectiveness in reducing socio-economic deprivation in less developed rural areas. This suggests the need to reconsider the territorial targeting of agricultural policy instruments, especially in regions characterised by fragmented agriculture and lower productivity. As the modernisation of the agricultural sector may contribute to increasing labour market polarisation in rural areas, rural development policies should be complemented by measures facilitating the structural transformation of local economies, including the diversification of employment opportunities outside agriculture.

The results further underline the importance of spatial spillover processes associated with the diffusion of economic activity from more developed areas. This implies that Cohesion Policy should place greater emphasis on strengthening functional linkages between metropolitan and non-metropolitan regions. Finally, given that the statistical models explain only a limited share of sub-regional variation, further research should combine quantitative analysis with case studies and qualitative approaches in order to better capture the institutional and social mechanisms underlying regional development processes.

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Conflict of interest

The author declares no conflict of interest and assures that the work is the result of his own creation.

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Polityka Spójności i Wspólna Polityka Rolna: ocena ich roli w ograniczaniu różnicowań społeczno-ekonomicznych na poziomie subregionalnym w Polsce

Zarys treści: W badaniu przeanalizowano, w jaki sposób fundusze europejskie przyczyniają się do redukcji różnicowań społeczno-ekonomicznych pomiędzy polskimi podregionami. Wyniki nie potwierdziły ani przeciwstawnych, ani komplementarnych efektów Polityki Spójności i Wspólnej Polityki Rolnej. Polityka Spójności wykazała bardziej wyraźny wpływ prorozwojowy, zwłaszcza na wzrost zatrudnienia i przedsiębiorczości, choć jednocześnie odnotowano jej niewielkie oddziaływanie na wzrost różnic między podregionami. Wydatki wspierające przedsiębiorstwa, kapitał ludzki, społeczeństwo informacyjne oraz B+R okazały się szczególnie istotne dla dynamiki procesów rozwojowych. Natomiast inwestycje w jakość życia oraz wydatki WPR nie wpływały na zmniejszenie ubóstwa względnego ani absolutnego. Modernizacyjny charakter WPR mógł przyczynić się do wzrostu różnicowań w zakresie bezrobocia rejestrowanego, jednak identyfikacja mechanizmów tego zjawiska wymaga dalszych, również jakościowych, badań.

Słowa kluczowe: Polityka Spójności, Wspólna Polityka Rolna, rozwój regionalny, konwergencja, czynniki rozwoju

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