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Author: **Maciej Smętkowski\***

\*Centre for European and Regional Studies (EUROREG), University of Warsaw

e-mail: [msmetkowski@uw.edu.pl](mailto:msmetkowski@uw.edu.pl)

ORCID: <https://orcid.org/0000-0002-3978-192X>

## **Cohesion Policy Impact on Poverty and Social Inclusion in EU Member States at Regional Level**

Abstract:

Cohesion Policy has been a fundamental pillar of the European Union integration, aimed at reducing disparities among its Member States and promoting social and economic cohesion. This paper delves into the intricate relationship between Cohesion Policy and its impact on poverty and social inclusion within EU Member States, focusing on regional-level analysis. Drawing on a review of literature, this paper highlights the multifaceted ways in which Cohesion Policy interventions influence socio-economic deprivation at the regional level. By examining various dimensions, such as value and structure of funds allocation, types of regions, and role of market and post-market factors, this study sheds light on the broader implications of Cohesion Policy for the EU's socio-economic landscape. The results demonstrate small but significant role of Cohesion Policy in reduction of poverty and social exclusion through general improvement of regional situation rather than specific intervention in the field of social policies. However, the impact of Cohesion Policy and its instruments proved to be not significant to improve situation at regional labour markets that too much large extent are depended on regional economic growth and national social policies. This corroborates the results of some other recent research and supports the changes in the orientation of Cohesion Policy towards preventing social and material exclusion.

Key words: poverty, social exclusion, Cohesion Policy, regions, European Union

JELO18, R11, R58

## Introduction

Cohesion policy is one of the key elements of the European Union's agenda, which aims to reduce disparities between Member States and promote social, economic and territorial cohesion. In doing so, cohesion policy has evolved considerably since its inception, adapting to the changing needs and challenges of an expanding EU (**Bachtler 2020**). More recently, the importance of its social dimension has increased, which, thanks to the European Social Fund (ESF), has been one of its main objectives since its inception, focusing on improving the labour market situation, reducing poverty and increasing social inclusion, including particularly at regional level (**Graziano, Polverari 2020**). However, while the importance of cohesion policy for regional development processes and the convergence of less developed regions has received much attention (e.g. **Becker et al. 2018; D' Dall'Erba, Fang 2017**) - albeit in the absence of indisputable conclusions (**Fratesi, Wislade 2017**) - its impact on social cohesion has been much less studied. At the European level, analysis has been particularly concerned with the use of alternative development indicators to GDP, such as well-being (**Ferrara et al. 2022**) or social welfare (**Callegari et al. 2023, Rodriguez-Poze, Tselios 2015**), rather than in the direct assessment of the effects of policies vis-à-vis poverty reduction or against social exclusion.

Considering the impact of Cohesion Policy on changes in levels of poverty and social exclusion is a complex issue and requires taking into account both market forces that shape the relationship between economic growth and income inequality, as well as non-market factors in the form of national social policies aimed at income redistribution. The academic debate on the interplay between economic growth and income inequality is turbulent (**Pickety 2014, Scheidel 2018**). This is because this interaction is two-sided. For, on the one hand, it is pointed out that an increase in wealth tends to be accompanied by an increase in income and wealth inequality, while on the other hand, it is argued that a lack of social cohesion limits long-term development prospects. The issue of redistributive policies is also a matter of controversy (**Stiglitz 2015**). On the one hand, the neoclassical perspective points out that redistribution - especially excessive redistribution - can reduce incentives to work and invest (**Okun 1975**). On the other hand, it is noted that improvements in the income situation of the middle and lower classes are beneficial for economic resilience and create conditions for sustainable growth (**Ostry et al. 2016**). Leaving aside the validity of the above approaches to the relationship between growth, inequality and redistribution, it is undoubtedly the case that both the dynamics of economic growth and national social policies provide an extremely important context for assessing the impact of Cohesion Policy on the scale of socio-economic deprivation.

Most empirical research on the interplay between growth, inequality and redistribution focuses on cross-country comparisons. Meanwhile, it should be noted that social problems have a strong tendency to be spatially concentrated, which is due, among other things, to the selectivity of migration processes (**Pregi, Novotny 2019**). As a result, the territorial dimension is extremely important for the analysis of the impact of public policies. This also applies to the Cohesion Policy, which, when allocating resources, is based largely on differences in the level of development between regions, as well as on the existence of specific social problems in these regions, such as unemployment. Given its multi-fund architecture, Cohesion Policy encompasses instruments that influence social outcomes through different channels. Some funds, most notably the European Social Fund (ESF), have a direct social orientation and target employment, skills and inclusion. Others, such as the European Regional Development Fund (ERDF) or the Cohesion Fund (CF), operate primarily through economic and infrastructural investment, potentially affecting social deprivation in more indirect ways. Distinguishing between these components is important for assessing which types of Cohesion Policy expenditure are more strongly associated with improvements in regional social conditions..

In the evaluation literature, several methodological approaches have been developed to assess the effects of Cohesion Policy. Counterfactual econometric designs, such as matching or difference-in-difference frameworks, are frequently employed to estimate causal impacts of EU funds (**Becker et al., 2018**), while regression discontinuity designs have been used to exploit eligibility thresholds in funding allocation (**Crescenzi & Giua, 2020**). Meta-analytical syntheses further summarise evidence across diverse empirical settings (**Dall’Erba & Fang, 2017**). However, the application of such designs at the EU-wide regional level is constrained by gaps, breaks and inconsistencies in annual NUTS 2 data, particularly for Cohesion Policy expenditure. For this reason, the present study adopts a long-term perspective based on changes between 2009 and 2019, which reduces measurement noise associated with year-to-year variation and provides a robust and comparable basis for cross-regional analysis. The aim of the paper is to assess whether the European Union’s Cohesion Policy constitutes a significant factor associated with regional differences in the evolution of social deprivation levels. The paper attempts to answer two research questions:

- 1) To what extent are Cohesion Policy expenditures associated with changes in social cohesion at the regional level, measured through indicators of unemployment, poverty, material deprivation, and social exclusion, when compared with the influence of economic growth and national social transfers?
- 2) To what extent do different components of Cohesion Policy expenditure (total vs. socially oriented spending) show differentiated associations with changes in regional social deprivation, including differences between less and more developed regions?

The article first presents selected studies on the relationship between income inequality and economic development and social policy, including Cohesion Policy in particular. It then shows the data sources and the indicators used to illustrate socio-economic deprivation and justifies the choice of the temporal scope and spatial dimension of the analyses. In the empirical part, the relationship between changes in the regional situation in terms of socio-economic deprivation and the Cohesion Policy was examined using multiple regression models. Relating these results to the current state of knowledge made it possible to formulate final conclusions, as well as to propose some recommendations for changes in Cohesion Policy directions.

## **1. The role of market and post-market forces with special focus on Cohesion Policy in solving problem of poverty and social exclusion**

Deprivation can be defined as the inability of people to meet their basic needs, especially in relative terms to the general population or to the local social environment (**Townsend et al. 1987**). Deprivation is therefore a broader concept than material well-being/poverty, as it can touch on a variety of areas ranging from physiological to social to emotional needs (**Sen 1995**). In social terms, deprivation is therefore part of a process of marginalisation and can lead to social exclusion. Deprivation understood in this way has a number of dimensions ranging from economic, to the ability and opportunity to participate in the labour market, to access to a variety of public goods and services.

Issues of material and social deprivation, as well as income and wealth inequality, occupy an important place in contemporary public debate (**Picketty 2014**). At the same time, it should be borne in mind that, thanks to the progressivity of tax systems and the efficiency of welfare systems, this problem is often not considered pressing in many European countries. On the other hand, however, it is pointed out that the scale of these problems is increasing, as manifested, among other things, by the fact that the poorest decile of the population is losing its share of the overall income, so that inequality still remains relatively high (**Bubbico, Freytag 2018**). One reason for this is structural unemployment, which has a significant impact on income inequality (**Cysne 2009**). Such unemployment also has a negative

impact on medium- and long-term economic growth, as remaining unemployed results in skills erosion and discourages labour market participation (**Darvas et al. 2014**). Furthermore, country studies show a clear negative impact of inequality on economic growth, including related to inequality of opportunity (**De Dominicis et al. 2006**).

In territorial dimension, there is a convergence of European regions with regard to the scale of income disparities among their inhabitants. It should be emphasised, however, that this convergence is occurring upwards, i.e. to a higher level of income inequality, and this process is particularly true for regions with similar socio-economic characteristics (**Savoy 2020**). This is in line with the first part of the **Kuznets curve (1955)**, which shows that market forces in the first period of the impact of a development impulse lead to an increase in income disparities and only in the subsequent stages can this process be expected to stop or even decrease. In spatial terms, however, some authors express doubts as to whether the emergence of subsequent development impulses will not lead to a perpetuation of income disparities between regions or even their further increase (**Capello 2008**). This is also confirmed by the results of empirical studies of income disparities in Europe, which show that they are largely due to within-country and within-region variation rather than differences between countries (**Rodriguez-Pose, Tselios 2009**).

Inequalities can be significantly influenced by redistribution through public policies. The impact of the latter on economic growth is, however, debatable (**De Dominicis et al. 2006**). Their negative impact may be related, among other things, to the weakening of incentives to work and invest as a result of higher taxes and social transfers (**Okun 1975**). However, many authors argue that redistribution is not necessarily incompatible with achieving high growth rates (**Ostry et al. 2016**). It is also pointed out, for example, that the austerity packages adopted in response to the 2008 economic crisis had a negative impact on social indicators, in leading to an increase in poverty (**Darvas et al. 2014**). In doing so, it is emphasised that increasing the wealth of the middle and lower classes may be more beneficial to economic growth than capital accumulation in the hands of the wealthiest (**Dabla-Noris et al. 2015**). Hence, it is pointed out that economic policies need to be redirected from strictly pro-growth measures to those in which social inclusion will play a greater role, which may serve to make the economy more resilient in the long term (**Legarde 2017**).

In doing so, most studies of inequality are based on cross-country comparisons, and only a few take into account the considerable within-country variation indicated above. This is important insofar as deprivation can be strongly differentiated territorially as a result of the tendency for problem phenomena to be spatially concentrated as a result of cumulative causality mechanisms (**Myrdal 1957, Martin 2016**). This is because areas affected by deprivation are considered less attractive as a place to live, which may lead to an exodus of wealthier and better-educated people to areas offering better living conditions and, as a result, to the phenomenon of spatial segregation (**Pregi, Novotny 2019**). In doing so, the spatial scale of deprivation can vary from deprived residential neighbourhoods within cities (**Tammaru et al. 2020**), to entire cities or counties affected by socio-economic degradation due to loss of economic base or poor adaptation to changing external conditions (**Boulant et al. 2016**), to less developed regions where concentrations of social problems can be observed (**Pilati, Hunter 2020**).

Cohesion policy aims - in addition to reduce regional disparities, promote economic growth - to support social cohesion, which, thanks to the European Social Fund (ESF), has been one of the pillars of the European Community from the beginning. The inclusive growth is one of the key objectives of the Europe 2020 strategy, and the 2015 report 'Social triple A for Europe' and the proposal for a 'European Pillar from Social Rights' show the great importance of the social dimension of European policies (**Dheret 2017**). As a result, although the key objective of the European Union is still economic growth

and improving competitiveness, especially of less developed regions in order to achieve territorial cohesion, the importance of social issues in Cohesion Policy is growing (**Graziano, Polverari 2020**).

One of the purposes of levelling out inequalities is the allocation mechanism of the Cohesion Policy. These funds are distributed among regions based on criteria such as GDP per capita, unemployment rates, and other socio-economic indicators. The importance of the territorial dimension of the Cohesion Policy can be evidenced by the fact that the latter (below 75% of average GDP per capita PPS) have been allocated around 50% of the Cohesion Policy budget for the period 2014-2020, while the most developed (above 90% of average GDP per capita PPS) only receive around 15% of the funds (**Dheret 2017**). In addition, three of the thematic categories of the Cohesion Policy 2014-2020 expenditures: quality employment and mobility; social inclusion; and better education and training - have a social dimension and aim to deliver inclusive growth. Moreover, 20% of total ESF resources are dedicated to fighting social exclusion and poverty. Social cohesion is also implemented through various ERDF objectives, and their social dimension can be estimated at EUR 21.5 billion (**Dheret 2017**). The impact of these actions shifting from measures focused on increasing employment towards fighting poverty and social inclusion is still largely unexplored, and the entrepreneurial role of socially oriented EU bodies focused on reducing unemployment and improving the quality of human capital still strong (**Fargion, Profeti 2016**).

Several studies have analysed the effectiveness of this allocation mechanism in reducing social inequalities. A recent study that takes into account the heterogeneity of European regions in terms of eligibility for cohesion policy funds (**Calegari et al. 2023**) highlights the role of cohesion policy in supporting regional well-being and individual income levels during the double dip recession of 2008 and 2011, as well as the contribution to the process of convergence between regions. On the other hand, other studies that do not take this issue into account show an almost zero impact of the policy on regional indicators, including economic, educational, health, social and environmental outcomes, which, according to the authors, is due to the importance of the context related to the quality of local institutions, human capital and urbanisation (**Albanese et al. 2022**). Moreover, for example, the impact of Cohesion Policy on employment issues - although visible - was limited to selected EU countries (including the then member state, the UK) and in many countries did not survive the great recession of 2008 (**Crescenzi, Giua 2020**). In contrast, other studies conducted in EU15 countries (**Ferrara et al. 2022**) show that Cohesion Policy affects regional welfare, with higher spending generating higher welfare growth, albeit in a way that confirms the diminishing marginal returns to investment diagnosed by **Becker et al. (2018)**. Previous studies have also shown that differences in social well-being measured as proposed by **Sen (2000)** between European regions (EU15) have been decreasing. At the same time, it has been noted that regions with high levels of social well-being may remain advantaged, while regions with low levels of social well-being continue to lag behind, with the result that their level of development may not be equalised as a result (**Rodriguez-Poze, Tselios 2015**). At the same time, the relationship between more and less developed countries and regions points to the need to ensure adequate social standards in less developed regions in order not to undermine labour markets and social security in the former (**Kotios 1990**).

An additional institutional aspect relevant for understanding how public policies influence social deprivation is the multi-level governance (MLG) structure of the European Union. As emphasised by **Hooghe and Marks (2001)**, EU policymaking operates through overlapping levels of authority in which the European, national and regional tiers jointly shape the design and implementation of interventions. In the case of Cohesion Policy, these interactions affect the allocation, targeting and absorption of funds, and thus condition the extent to which different components of the policy can influence regional

socio-economic deprivation (**Bachtler et al. 2019**). Incorporating this perspective helps to link regional socio-economic outcomes with the institutional mechanisms underlying policy delivery.

## 2. Data and methodology

Three main sources of data were used in the empirical research. The first was the indicators illustrating socio-economic deprivation developed in the EU-SILC framework (**Benedetti, Crescenzi 2023**), as well as GDP dynamics at regional level based on EUROSTAT data. The second group concerned national expenditure on social transfers and its evolution over the period under study also based on EUROSTAT data. Data on national social transfers (social benefits) came from the European System of Integrated Social Protection Statistics (ESSPROS), which was developed in the late 1970s by Eurostat. Social transfers cover social assistance provided by central, state or local institutional units and include: pensions (annuities) and survivors' pensions (for widows and widowers); unemployment benefits; family benefits; sickness and disability benefits; education-related benefits; housing allowances; social assistance; other benefits. The last group of data was cohesion policy expenditure for the 2007-2013 and 2014-2020 programming period, which used the EU expenditure database (**Gorzalak et al. 2017**) updated with current data from the Open Cohesion Data Platform website.

Five indicators were selected for the study to illustrate the population's risk of socio-economic deprivation, for which there was comparable data at regional level published by Eurostat. In particular, the shares of people meeting the following criteria in line with the objectives set out in the EUROPE2020 Strategy were examined:

- unemployed according to the Labour Force Survey relative to the economically active population, which allowed the calculation of the unemployment rate, which shows on the one hand the employability of a region and on the other hand the motivations of the unemployed to take up work,
- members of very low work intensity rate households - the number of persons living in households where adults (together) work less than 20% of a full time year,
- persons at risk of poverty - the number of persons in households whose equalised disposable income is less than 60% of the national median. The term relative deprivation was used interchangeably in the analysis.
- persons experiencing severe material and social deprivation - the number of persons not able to afford seven of the thirteen items indicative of material and social deprivation (e.g. pay rent or mortgage, utility bills, loan payments; to keep home adequately warm; to face unexpected financial expenses; to get together with friends/relatives for a drink/meal at least once a month; to have regular leisure activities). Absolute deprivation was used interchangeably in the analysis.
- persons at-risk-of-poverty or social exclusion, which is an aggregation of the above three groups of people. The term aggregate indicator was used interchangeably in the analysis.

In the absence of data at regional level, appropriate estimates were made. In the case of single years, regional values were estimated on the basis of national data, assuming that the ratio between the regional value and the national average for the last available observation is maintained. In the absence of longer series, a continuation of the trend was assumed in terms of the ratio between the regional value and the national average. On the other hand, in the absence of data for the regions of a given country, the value of the indicator in each region was estimated using national data stratified by region using correlations with other available variables.

The empirical analysis covers 236 NUTS 2 regions in EU Member States (excluding UK), for which consistent data for all variables were available for the period 2009–2019. The period 2009–2019 was selected because it represents the last fully comparable pre-pandemic decade and encompasses the mature implementation phase of the 2007–2013 Cohesion Policy as well as the early years of the 2014–2020 programming period. It should also be noted that data availability and the structure of EU expenditure differ between programming periods, with the 2007–2013 framework characterised by more traditional investment priorities and the 2014–2020 period marked by a gradual shift towards thematic concentration and social inclusion objectives. These differences, together with the absence of fully harmonised annual regional indicators on CP expenditures, impose limitations on data estimation and require interpreting the findings as long-term associative relationships rather than precise period-by-period effects. Furthermore, the analysis ends before the COVID-19 crisis, during which instruments such as REACT-EU and ESF+ substantially reoriented Cohesion Policy towards resilience and health-related spending. The results should therefore be understood as reflecting a pre-pandemic baseline against which subsequent policy shifts may be contrasted.

There were significant statistical relationships between the different dimensions of deprivation in the EU regions (**Table 1**). In particular, this was the case for the aggregate at-risk-of-poverty and social exclusion indicator, which was correlated very strongly with at-risk-of-poverty, and somewhat weakly but also strongly with the next two. A statistically significant though relatively weak correlation also applied to this indicator and the unemployment rate. In turn, the latter indicator was correlated - quite obviously - most strongly with households with low work intensity. A similar strength of correlation also applied to the relationship between relative deprivation and absolute deprivation.

The change in the value of these indicators between 2009 and 2019, on the other hand, was mutually less correlated, but with the order in terms of strength of association as above. The biggest and rather surprising difference was the lack of a significant correlation between the drop in the unemployment rate and the improvement in the at-risk-of-poverty indicator. This can be interpreted to mean that, despite the improvement in the situation related to members of the poorest households entering work, the increase in their income did not result in a change in the share of households with incomes below 60% of the median. Moreover, the increase in labour force participation also did not clearly translate into an improvement in the satisfaction of basic needs indicative of the existence of extreme material and social deprivation.

**Table 1.** Correlation coefficients between socio-economic deprivation indicators in EU Member States at regional level (NUTS2)\*

a) indicators values in 2019

Value 2019	Mean	Standard deviation	Unemployment rate	Low labour intensity	At risk of poverty	Severe deprivation	Poverty and social exclusion
Unemployment rate	6.7	5.0	x	0.57	0.35	0.33	0.44
Low labour intensity	7.7	4.6	0.57	x	0.61	0.47	0.67
At risk of poverty	16.3	6.6	0.35	0.61	x	0.55	0.94
Severe deprivation	5.8	5.4	0.33	0.47	0.55	x	0.77
Poverty and social exclusion	21.0	8.2	0.44	0.67	0.94	0.77	x

b) indicators change (2009=100)

Change 2009-2019	Mean	Standard deviation	Unemployment rate	Low labour intensity	At risk of poverty	Severe deprivation	Poverty and social exclusion
Unemployment rate	75.8	40.3	x	0.61	0.00	0.25	0.47
Low labour intensity	96.9	49.6	0.61	x	0.10	0.35	0.47
At risk of poverty	102.4	19.7	0.00	0.10	x	0.21	0.62
Severe deprivation	96.4	140.1	0.25	0.35	0.21	x	0.45
Poverty and social exclusion	92.0	18.8	0.47	0.47	0.62	0.45	x

\* values of Pearson coefficient marked in red significant at level 0.05

Source: own elaboration based on Eurostat data

Social transfers accounted for a significant share of individual countries' GDP, but their scale varied strongly among European countries (**Table 2**). On the one hand, especially in the poorest EU countries located in Central and Eastern Europe, their share was around 16% of GDP (Bulgaria, Romania and Latvia), while in the wealthiest Denmark it was in 2009 34%, resulting in an EU average of 25%. The dynamics of outlays for these purposes varied equally strongly. Two EU countries saw a real decline in these transfers over the 2009-2019 period, which was mainly the case for Greece, which was hardest hit by the economic crisis (down almost 18%), but there was also a regression for Hungary (-2%). On the other hand, their real increase was very significant in the case of Poland, by almost 50%, but high, i.e. exceeding 30%, was also in the group of countries allocating relatively the smallest share of GDP to them, such as Romania, Bulgaria, but also Luxembourg, with an EU average of around 15%.

**Table 2.** Social transfers as a share of GDP and its change 2009-2019 in EU Member States

Country	Social transfers as % of GDP (2009)	Change of social transfer in constant prices 2010-2019 (2009=100)	Country	Social transfers as % of GDP (2009)	Change of social transfer in constant prices 2010-2019 (2009=100)
Belgium	30.2	110.8	Lithuania	21	115.4
Bulgaria	16.1	134.3	Luxembourg	21.7	133.0
Czechia	19.9	117.9	Hungary	22.6	98.5
Denmark	34.3	112.7	Malta	19.3	144.3
Germany	30.8	120.6	Netherlands	29.6	109.3
Estonia	18.8	127.4	Austria	29.5	112.2
Ireland	24.8	107.1	Poland	20.3	148.7
Greece	24.8	82.6	Portugal	25.8	102.4
Spain	24.7	101.5	Romania	16.2	130.9
France	33.2	116.8	Slovenia	23.7	113.0
Croatia	20.8	113.8	Slovakia	18.4	121.7
Italy	28.4	106.1	Finland	28.9	117.2
Cyprus	19.1	114.7	Sweden	29.8	117.9
Latvia	16.6	124.7	EU average*	24.0	116.9

\* unweighted average

Note: Table presents national-level social transfer data, which are used as explanatory variables in the regional regression models. Social transfers are recorded at country level in Eurostat statistics; therefore, the models combine national social policy variables with regional (NUTS 2) indicators of deprivation and economic performance.

Source: own elaboration based on Eurostat data.

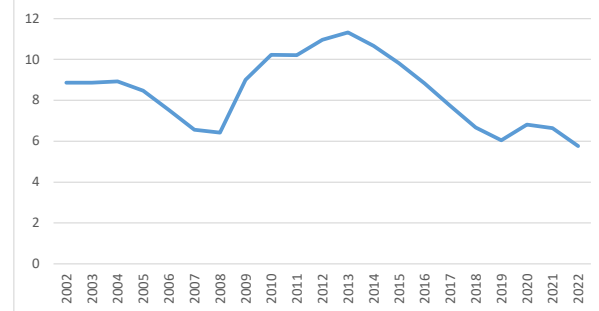
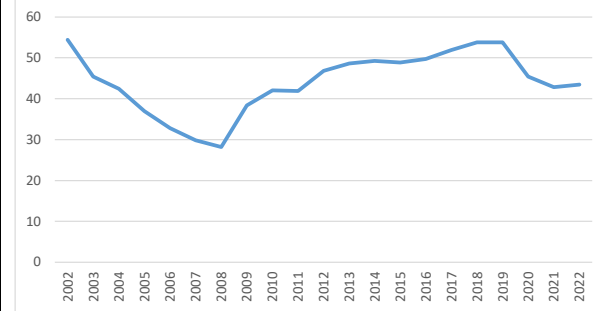
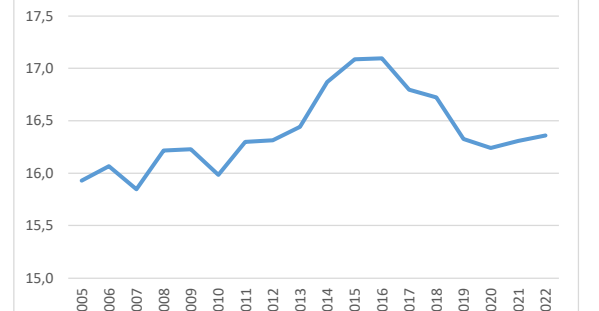
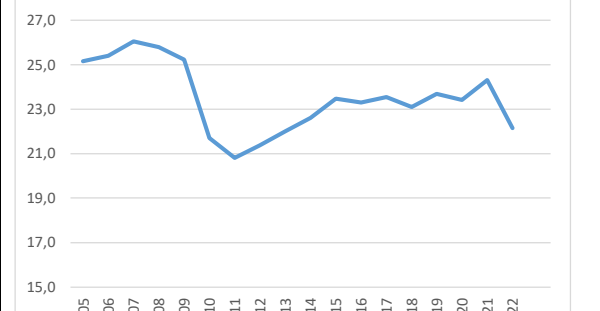
The total social spending of Cohesion Policy in the period 2007-2013, financed from EU sources, amounted to around EUR 82.6 billion, representing approximately ¼ of the total budget of the policy. They allocated funds mainly to improving the quality of human capital (35%) and addressing labour market problems (30%). On the other hand, less funding was foreseen for the development of social infrastructure (21%) and counteracting social exclusion (13.8%). In the next programming period, i.e. 2014-2020, these outlays increased in nominal terms to EUR 97.6 billion, which largely corresponded to an overall European Social Fund allocation of around EUR 104 billion. As a result, their total share of Cohesion Policy outlays increased to around 30%, an increase of around 5 percentage points compared to the earlier period. The categorisation of these outlays also changed, with roughly equal shares of around EUR 31-33 billion allocated to labour market instruments, social infrastructure and education and training.

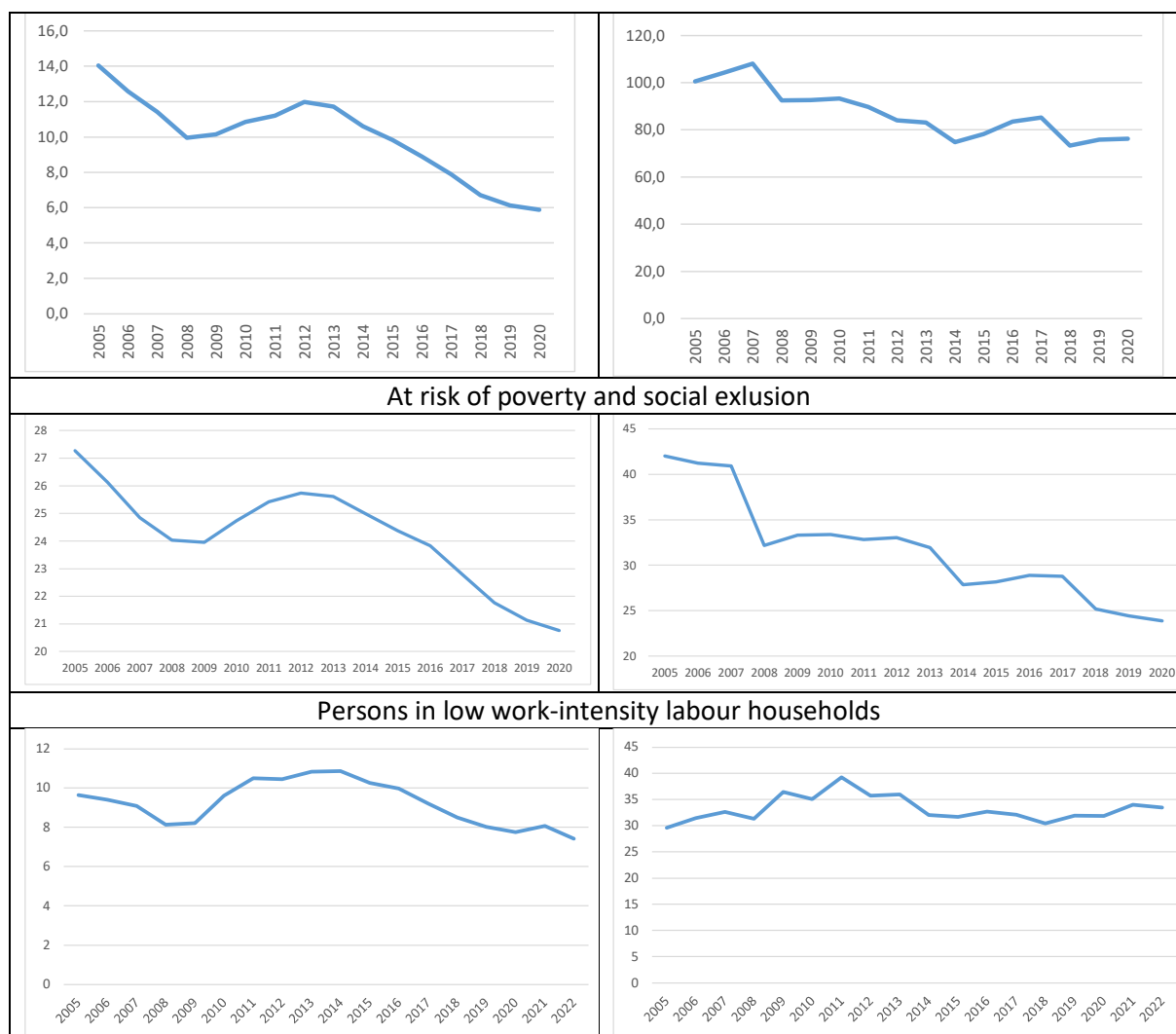
On a regional basis, the Cohesify project database (**Gorzela et al. 2020**) was used to estimate the size of the outlay, which was updated to include an estimate of funding allocations for the next programming period 2014-2020. European regions varied considerably in terms of funding allocated to Cohesion Policy, which was approximately 4.5 times higher per capita in less developed and transition regions than in more developed regions. The difference in terms of social expenditure, on the other hand, was smaller at around 4 times. This justifies verifying the policy impact model in these two such different types of regions.

The external shocks related to the global financial crisis of 2008 and the COVID pandemic starting in 2019 have undoubtedly had a strong impact on the socio-economic situation of EU countries. It is

therefore important to trace the extent to which they have influenced the basic indicators selected for the study in order to properly select the scope of analysis. In doing so, not only the changes in the unweighted average of these indicators for the EU countries were tracked, but also the coefficient of variation, which illustrates the scale of differences between countries (**Table 3**). The unemployment rate in EU countries increased significantly after the financial crisis that began in 2008 and reached its maximum in 2013, only to fall significantly from 11.3% to 6.1% in the following six years. At the same time, the recovery has not been uniform in the EU, as expressed by the increase in the coefficient of variation in 2019 to 53.8, an increase of more than 15 points compared to 2009. The situation with regard to the dynamics of the at-risk-of-poverty rate looked similar to the unemployment statistics with the difference that in the pre-crisis period in 2008, the rate was relatively stable, and in the post-crisis period it reached its maximum level in 2016 (17.1 %). as it then fell to 16.3 % in 2019. The 2008 crisis initially led to a decrease in disparities between EU countries, but since 2011 there has been a renewed increase in disparities between countries. The dynamics of extreme material deprivation overlapped relatively well with the trajectories of changes in the unemployment rate, but the variation in the value of the indicator between countries was relatively greatest and declined steadily over the period studied. When combining the issues of risk of poverty and social exclusion, we obtain the highest percentage of people affected by this situation. On the other hand, this situation is quite pronounced with decreasing disparities between countries. On the other hand, the percentage of people living in households with low work intensity was lower and similar to the unemployment rate, including in terms of dynamics. It was, however, distinguished by a relatively stable level of cross-country variation.

**Table 3.** Indicators of poverty and social exclusion in the EU - dynamics and cross-country variations

Value of indicators (%)		Coefficient of variation at country level	
<b>Unemployment rate</b>			
			
<b>At risk of poverty rate</b>			
			
<b>Severe material and social deprivation</b>			



Source: own elaboration based on EUROSTAT data.

### 3. The impact of Cohesion Policy on socio-economic deprivation in European regions

Separate multiply regression models were created for each of the indicators analysed, which firstly took into account the impact of the size of the Cohesion Policy outlays in the period 2009-2019, including per capita social spending. Their impact was analysed in the context of economic growth at the regional level and changes in the size of social outlays in national budgets (**Table 4**). In this analytical setting, the estimates should be interpreted as long-term associative relationships rather than causal impact measures, which reflects both the cross-country regional scope of the study and the structure of available data.

On this basis, it can be concluded that the most significant factor influencing the change in the unemployment rate was regional economic growth. In particular, the high growth rate translated into a decrease in the unemployment rate, which was also conducive - albeit to a somewhat lesser extent - to a reduction in the proportion of people living in low work-intensity households. In both cases, the improvement was also due to an increase in the value of social transfers in national budgets. On the one hand, this may indicate that, in a good economic situation, larger social transfers did not have a negative impact on the labour market, but, on the other hand, it may also mean that the improvement was due, for example, to the retirement of successive cohorts of workers. At the same time, these were not the only factors explaining the regional variation, as the determination coefficient especially for the second indicator was relatively low at around 28%. In both cases, Cohesion Policy social

expenditure did not play a statistically significant role. In contrast, Cohesion Policy outlays were weakly but paradoxically positively correlated with changes in the labour market situation, which was evident especially in the case of the second indicator. However, this can be interpreted as a greater allocation of Cohesion Policy resources in less developed regions with higher unemployment rate. Under conditions of limited demand effects in the local labour market (e.g. extra-regional imports of goods and services), this may also have meant that there were no clear supply effects that could have resulted in increased employment in the regional labour market.

**Tab. 4.** Regression models of socio-economic deprivation change at regional level (NUTS2) in EU countries (N=236)

Change 09-19	(1) Unemployment rate change		(2) Population in low labour intensity households change		(3) Population at risk of poverty		(4) Severe material and social deprivation		(5) Exclusion (aggregate 2-4)	
Cohesion Policy Allocation 09-19 per capita	0,05		0,13**		-0,12*		-0,14**		-0,27***	
Cohesion Policy – social themes 09-19 per capita		0,01		0,03		-0,11*		-0,17***		-0,21***
Real GDP growth 09-19 (regions)	-0,43***	-0,42***	-0,26***	-0,25***	-0,10	-0,11	-0,17**	-0,18**	-0,29***	-0,31***
Social expenditures change 09-19 (country)	-0,34***	-0,36***	-0,32***	-0,35***	0,00	0,02	-0,35***	-0,33***	-0,35***	-0,30***
R2 (corrected)	0,46	0,46	0,28	0,27	0,01	0,01	0,20	0,21	0,33	0,31

\*\*\*p<0,01

\*\* p<0,05

\* p<0,10

Source: own elaboration.

On the other hand, a positive - albeit very small - impact of Cohesion Policy measures became apparent in the case of changes in the percentage of people at risk of poverty and at risk of severe deprivation. This was especially true for the second indicator, and in particular for the higher allocation of Cohesion Policy funds to social objectives. In both cases, a positive impact of the regional economic growth rate was evident, but its effect was small (statistically insignificant in the first case). This may mean that the incomes of those entering the market did not translate into a significant relative improvement in their material situation. On the other hand, on the other hand, it allowed them to meet their basic needs to a greater extent, which more strongly reduced the scale of severe material and social deprivation. In the latter case, on the other hand, the greater importance of national intervention in the form of an increase in social transfers was evident, which probably resulted in a greater redistribution of income. This intervention, on the other hand, did not prove to be effective in the case of relative income, which may mean that part of it also went to wealthier social groups without leading to changes in income stratification. However, it should be noted that the model was nevertheless unreliable due to the very low coefficient of determination in the first case.

Integrating the different dimensions of deprivation, the summary indicator in the form of the percentage of people at risk of poverty and social exclusion showed a relatively equal importance at regional level - of the market factor, but also of national social policy expenditures. In the latter case, this was particularly evident in the case of the convergence objective regions, as in the other regions, the increase in social transfers had no significant impact on the percentage of people at risk of deprivation (**Table 5**). The improvement in the situation of regions in terms of the proportion of the

population at risk of social deprivation was also similarly influenced by the allocation of Cohesion Policy resources, both overall and dedicated directly to social objectives.

**Table 5.** Regression models in less developed and transition regions vs. more developed regions

A) Less developed and transition regions (N=108)

Change 09-19	(1) Unemployment rate change		(2) Population in low labour intensity households change		(3) Population at risk of poverty		(4) Severe material and social deprivation		(5) Exclusion (aggregate 2-4)	
Cohesion Policy Allocation 09-19 per capita	0,08		0,11		-0,14		-0,10		-0,21**	
Cohesion Policy – social themes 09-19 per capita		0,01		-0,08		-0,11		-0,17*		-0,11
Real GDP growth 09-19 (regions)	-0,49***	-0,46***	-0,33***	-0,26**	0,14	0,11	-0,14	-0,13	-0,12	-0,17*
Social expenditures change 09-19 (country)	-0,31***	-0,36***	-0,28***	-0,38***	-0,11	-0,06	-0,41***	-0,42***	-0,59***	-0,50***
R2 (corr)	0,54	0,54	0,32	0,32	0,02	0,01	0,22	0,24	0,39	0,36

B) More developed regions (N=128)

Change 09-19	(1) Unemployment rate change		(2) Population in low labour intensity households change		(3) Population at risk of poverty		(4) Severe material and social deprivation		(5) Exclusion (aggregate 2-4)	
Cohesion Policy Allocation 09-19 per capita	0,01		0,12**		-0,02		-0,13		-0,25***	
Cohesion Policy – social themes 09-19 per capita		0,01		0,15**		-0,07		-0,10		-0,24***
Real GDP growth 09-19 (regions)	-0,40***	-0,40***	-0,19**	-0,19**	-0,23**	-0,24**	-0,20**	-0,21**	-0,45***	-0,47***
Social expenditures change 09-19 (country)	-0,25***	-0,24***	-0,39***	-0,41***	0,02	0,00	-0,29***	-0,26***	-0,07	-0,01
R2 (corrected)	0,28	0,28	0,26	0,27	0,04	0,04	0,15	0,15	0,29	0,28

\*\*\*p<0,01

\*\* p<0,05

\* p<0,10

Source: own elaboration.

For both types of regions, the impact of Cohesion Policy was relatively small and mainly limited to the impact on the value of the aggregate index of poverty and social exclusion. For less developed regions, overall Cohesion Policy expenditures were more important than socially targeted expenditures. This may indicate a multi-channel impact of Cohesion Policy measures on socio-economic deprivation. Meanwhile, in more developed regions, higher Cohesion Policy outlays did not lead to a decrease in the share of people in low work-intensity households, which may indicate their low effectiveness of measures despite relatively higher spending on this objective.

In less developed regions, improvements in labour market indicators were driven more by economic growth, but with a significant contribution from increases in social expenditure. In more developed regions, by contrast, the importance of economic growth was clearly greater than that of social expenditure. The opposite was true for the share of people in low work-intensity households, where the situation was driven more by social policy expenditures than by economic growth, which was more pronounced in the more developed regions. In these regions, economic growth was also key to improving the situation especially in terms of relative poverty, while in the less developed regions it did not have such a pronounced impact on the income of the population and the degree to which basic needs were met. In the latter case, an increase in social expenditure played a significant role. As a result, while in underdeveloped regions improvements in terms of exclusion were achieved primarily through an increase in national social transfers, in more developed regions the dynamics of economic growth played a key role.

### **Discussion, conclusions and recommendations**

The multivariate analysis of the impact of the Cohesion Policy on socio-economic deprivation on a regional level allowed us to contribute to the discussion on the importance of this intervention for reducing the scale of material and social exclusion. The study of this dimension of the impact of the Cohesion Policy-in the context of the non-conclusiveness of analyses on its impact on the dynamics of regional growth and the scale of regional disparities (**Fratesi, Wislade 2017**), as well as the greater focus of the Cohesion Policy on the achievement of social objectives (**Graziano, Polverari 2020**)-is clearly gaining importance, although the number of works devoted to this issue is still relatively small (**Ferrara et al. 2022, Callegari et al. 2023**).

The research carried out has shown that the Cohesion Policy - at least in the period under review - may have had some impact on reducing poverty and counteracting exclusion, especially in the combined approach, i.e. material and social exclusion at the regional level. At the same time, it is important to note its positive impact in those aspects where economic growth did not have statistically significant effects, i.e. the reduction of absolute and relative deprivation, which is the subject of criticism of the neoliberal approach to economic development processes (**Piketty 2014**). In the case of severe material and social deprivation, however, the increase in social transfers at the national level played a greater role, but this still did not negate the importance of Cohesion Policy interventions for reducing extreme material and social deprivation. In contrast, in the case of the risk of poverty - which, however, did not change significantly during the period under study - the Cohesion Policy proved to be the only statistically significant factor that positively influenced income distribution at the regional level. The results obtained confirm the findings of recent studies on the positive assessment of the impact of the Cohesion Policy on social well-being (**Callegari et al. 2023, Ferrara et al. 2022**) and thus do not confirm the doubts about some regions lagging behind in this respect (**Rodríguez-Pose, Tselios 2015**).

In contrast, the impact of the Cohesion Policy on the labour market in the light of the results obtained - despite numerous studies indicating significant effects of this intervention on the labour market (**EC 2022**) - turned out to be insignificant. In the case of the percentage of people in low work-intensity households, even a positive correlation with the allocation of Cohesion Policy resources was revealed. This may indicate, on the one hand, a large allocation of funds for this purpose in problem regions and, on the other hand, potentially low effectiveness of the instruments used. The situation on the labour market turned out to be much more dependent on the one hand on the dynamics of economic growth, which affected the ability to take up work, which also influenced the percentage of people living in low-work-intensity households, and on the other hand on the increase in social transfers, which also helped to reduce these problems. The latter, as it turned out, on the one hand, did not weaken the willingness of the unemployed to take up work and, on the other hand, may have provided income for

those leaving the risk of working due to reaching retirement age. The results obtained thus confirmed the observation of the relatively low impact of Cohesion Policy on the labour market (**Crescenzi, Guida 2020**), as well as doubts about the effectiveness of Cohesion Policy instruments aimed at addressing unemployment (**Canziano et al. 2023**). This may show the rationale of redirecting the attention of the Cohesion Policy from labour market instruments to the alleviation of material and social exclusion, which has already occurred in the current programming perspective 2021-2027 (**Lecerf 2019**).

The differentiated pattern of associations observed for Cohesion Policy—stronger than national social transfers in some social dimensions and weaker in others—should be interpreted in the context of policy complementarity rather than as an indication of limited effectiveness. Cohesion Policy operates as a supplementary instrument to national welfare systems and is shaped by co-financing requirements, alignment with domestic social interventions, and the administrative capacity of national and regional authorities. Recent studies underline that the degree of coordination between EU funds and domestic redistributive instruments, as well as the institutional conditions underpinning implementation, can substantially influence the magnitude of observable policy effects (**Ferrara et al., 2022; Calegari et al., 2023**). Moreover, the effectiveness of EU-funded interventions is mediated by institutional quality, implementation capacity, and the ability of regional actors to allocate and absorb resources effectively.

The added value of the results was firstly to show the differential impact of the Cohesion Policy on diverse dimensions of socio-economic deprivation on a regional level. As a result, it integrated findings made by other studies on the impact of the Cohesion Policy on the labour market and social well-being taking into account issues related to income redistribution and material and social deprivation. Secondly, it allowed to position the impact of the Cohesion Policy on socioeconomic deprivation in the context of the interaction of key market (economic growth) and post-market (social policy) factors on this phenomenon. The research also showed, despite the differences between different types of regions in terms of the interaction of the above, a certain universality of the impact of Cohesion Policy measures on social cohesion.

The results obtained should be treated with some caution, due to a number of factors. The first is related to the imperfectness of statistics on Cohesion Policy spending, resulting in the need to estimate it, which is - in the context of weak correlation relationships - subject to the risk of making errors in terms of the significance of the results obtained. One solution to this problem was to have more indicators, which could reduce the risk of incorrect inference. Nevertheless, access to better estimates, especially for the 2014-2020 programming period, may encourage verification of the results obtained. Another limitation was also related to the need to carry out analyses at the regional level, which in turn did not allow us to show the differences in the urban-rural dimension, which is of great importance in terms of socio-economic deprivation in individual EU countries. Indeed, while in some countries the greater risk of socio-economic deprivation affects the urban population, in others social problems are concentrated in rural areas (**Želinský 2022**). It should also be borne in mind that inferences about the impact of Cohesion Policy have been based on the statistical significance of the models, which should be verified by in-depth quantitative studies in the national snapshots (**Hümbelin et al. 2022**), including supplementation with qualitative case studies (**Carvalho, White 1997**).

The results obtained - despite the limitations indicated above - can be used to formulate some general recommendations for the implementation of the Cohesion Policy and the evaluation of its effects. Firstly, it is necessary to increase the effectiveness of instruments targeted at socially and economically deprived groups, keeping in mind the proper integration of these instruments in the general socio-economic context at the regional level. This is because, as research has shown, other measures influencing this context can also be effective in solving social problems. In particular, attention should

be paid here to the quality of institutions and the fit between the education system and social and market needs, as other studies have pointed out. On the other hand, one should be cautious about the real possibilities of the Cohesion Policy to influence the regional labour market in the context of the general processes of economic development and the impact of national social policies on motivation and employability. At the same time, it should be borne in mind that the declared effects of the Cohesion Policy in terms of job creation may not always be reliable (**Gorzalak et al. 2017**). Therefore, it would make sense to expand statistics on unemployment rates of vulnerable groups and strengthen the instruments dedicated to them in the Cohesion Policy.

In a broader perspective, the findings point to the importance of viewing Cohesion Policy within its wider institutional and governance architecture. As Cohesion Policy operates through the European Structural and Investment Funds and depends on coordination between EU, national and regional authorities, the effectiveness of interventions increasingly relies on complementarities with domestic welfare systems, institutional capacity and coherent territorial governance frameworks. This insight is consistent with seminal contributions on multi-level governance (**Hooghe, Marks, 2001**) and with empirical studies demonstrating the role of institutional quality and administrative capability in shaping policy outcomes (**Charron et al., 2014**). More recent analyses also emphasise the need for closer alignment between EU-funded interventions and domestic policy systems to enhance effectiveness and territorial cohesion (**Ferrara et al. 2022**). These considerations are expected to become even more relevant in the 2021–2027 programming period and beyond, given the evolving governance architecture of Cohesion Policy, including the stronger influence of national-level decisions and the reduced salience of regional actors noted in recent analyses of the MFF reform (**Bachtler et al. 2019**). In this context, the shift towards more flexible, place-sensitive and socially oriented interventions requires not only adequate EU-level strategic direction but also closer alignment with domestic welfare systems and coordination mechanisms across governance levels.

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The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## References:

- Albanese G., Carrieri V., Ferrara A. Speciali M. M. (2023) Looking for a star: a comprehensive evaluation of the EU Cohesion Policy. SSRN Electronic Journal. 10.2139/ssrn.4458080.
- Bachtler J. (2020) Cohesion policy - Where has it come from? Where is it going?, ECA Journal 1, 7-12.
- Bachtler J., Mendez C., Wislade F. (2019). Reforming the MFF and Cohesion Policy 2021-27: pragmatic drift or paradigmatic shift? European Policy Research Paper No. 107
- Bachtler J., Berkowitz P., Hardy S., Muravska T., (2017) EU Cohesion Policy: Reassessing Performance and Direction. London: Routledge
- Becker, S.O., Egger, P.H., von Ehrlich, M. (2018) Effects of EU regional policy: 1989- 2013. Regional Science and Urban Economics 69, 143–152.
- Bubbico R.L., Freytag L. (2018) Inequality in Europe, European Investment Bank.
- Boulant J., Brezzi M., Veneri P. (2016) Income Levels And Inequality in Metropolitan Areas: A Comparative Approach in OECD Countries, OECD Regional Development Working Papers, No. 2016/06, OECD Publishing, Paris.
- Calegari E., Ferrara A. R., Freo M., Reggiani A. (2023) The heterogeneous effect of European Union Cohesion Policy on regional well-being, European Urban and Regional Studies 30(4), 311–318.
- Carvalho S. White H. (1997). Combining the quantitative and qualitative approaches to poverty measurement and analysis. World Bank Technical Paper Number 366. Washington, DC: World Bank.
- Charron, N., Dijkstra, L., Lapuente, V. (2014), Regional governance matters: Quality of government within European Union member states. Regional Studies, 48(1), 68–90.
- Crescenzi R., Giua M. (2020) One or many Cohesion Policies of the European Union? On the differential economic impacts of Cohesion Policy across member states, Regional Studies, 54(1), 10-20.
- Cysne, R. P. (2009). On the positive correlation between income inequality and unemployment. The Review of Economics and Statistics, 91(1), 218-226.
- Dabla-Norris E., Kochhar K., Ricka F., Suphaphiphat N., Tsounta E. (2015) Causes and Consequences of Income Inequality: A Global Perspective, International Monetary Fund.
- Dall’Erba S., Fang F. (2015). Meta-analysis of the impact of European Union Structural Funds on regional growth. Regional Studies, 51(6), 822–832.
- Darvas Z., Hüttl P., De Sousa C., Terzi A., & Tschekassin, O. (2014). Austerity and Poverty in the European Union. Study for the Committee on Employment and Social Affairs of the European Parliament, Brussels.
- De Dominicis, L., De Groot, H. L., & Florax, R. J. (2006). Growth and inequality: a meta-analysis, Tinbergen Institute Discussion Paper.
- Dheret C. (2017) Achieving social triple A: What role for EU cohesion policy?, Policy Brief, European Policy Centre.
- Fargion V., Profeti S. (2016) The social dimension of Cohesion policy [in] S. Piattoni S. L. Polverar (eds.) (2016) Handbook on Cohesion Policy in the EU, Cheltenham, Edward Elgar Publishing, 475-490.

- Gorzela G., Hryniewicz J., Kozak M., Płoszaj A., Rok J., Smętkowski M. (2017) Data review and mapping of Cohesion Policy implementation and performance. Cohesify Research Paper 7.
- Hümbelin O., Hobi L., Fluder R. (2022) Rich cities, poor countryside? Social structure of the poor and poverty risks in urban and rural places in an affluent country. *Local Economy*, 37(3), 169-193.
- Ferrara A. R., Dijkstra L., McCann P., Nisticó R. (2022) The response of regional well-being to place-based policy interventions, *Regional Science and Urban Economics* 97: 103830.
- Fratesi U., Wislade F. G. (2017) The impact of European Cohesion Policy in different contexts, *Regional Studies*, 51(6), 817-821.
- Graziano P., Polverari L. (2020) The social impact of EU Cohesion Policy [in] B. Vanhercke, D. Ghailani, S. Spasova, P. Pochet (eds.) *Social policy in the European Union 1999-2019: the long and winding road*, Brussels, European Trade Union Institute (ETUI) and European Social Observatory (OSE), 167-182.
- Hooghe, L. & Marks, G. (2001). *Multi-Level Governance and European Integration*. Lanham: Rowman & Littlefield Publishers.
- Bachtler, Mendez & Wislade (2019) *EU Cohesion Policy and European Integration*.
- Kotios A., Schäfers M. (1990) The social dimension and cohesion: Complementary or contradictory?, *Intereconomics*, Verlag Weltarchiv, Hamburg, 25(3), 140-146.
- Kuznets S. (1955) Economic growth and income inequality. *The American economic review*, 45(1), 1-28.
- Lagarde C. (2017). The fruits of growth: economic reforms and lower inequality. IMF Direct Blog post 26 January 2017.
- Martin R. (2016) Cumulative causation, endogenous growth, and regional development. *International Encyclopedia of Geography: People, the Earth, Environment and Technology: People, the Earth, Environment and Technology*, 1-13.
- Myrdal, G. (1957). *Economic Theory and Underdeveloped Regions*. London: Methuen.
- Okun A.M. (1975) *Equality and Efficiency: the Big Trade-Off*, Washington: Brookings Institution Press.
- Ostry, M. J. D., Berg, M. A., Tsangarides, M. C. G. (2014). *Redistribution, inequality, and growth*. International Monetary Fund.
- Piketty, T. (2014). *Capital in the twenty-first century*. Harvard University Press.
- Pregi L., Novotný L. (2019) Selective migration of population in functional urban regions of Slovakia, *Journal of Maps*, 15(1), 94-102.
- Pilati M., Hunter A. (2020) Research for REGI Committee – EU Lagging Regions: state of play and future challenges, European Parliament, Policy Department for Structural and Cohesion Policies, Brussels.
- Rodríguez-Pose A., Tselios V. (2009) Education and income inequality in the regions of the European Union. *Journal of Regional Science*, 49(3), 411-437.
- Rodríguez-Pose, A., Tselios, V. (2015). Toward inclusive growth: Is there regional convergence in social welfare? *International Regional Science Review*, 38(1), 30-60.
- Savoya F. (2020) *Income Inequality Convergence Across EU Regions*, LIS Working Paper Series, 760.

Scheidel W. (2018) *The great leveller. Violence and history of inequality from the stone age to XXI century*, Princeton University Press.

Sen A. (1995) *Inequality Reexamined*, Harvard University Press.

Stiglitz, J. E. (2015). The origins of inequality, and policies to contain it. *National Tax Journal*, 68(2), 425.

Tammaru T., Marcińczak S., Aunap R., van Ham M., Janssen H. (2020) Relationship between income inequality and residential segregation of socioeconomic groups, *Regional Studies*, 54(4), 450-461.

Townsend P., Phillimore P., Beattie A. (1987) *Health and Deprivation: Inequality and the North*, Croom Helm Ltd, London.

Želinský T., Mysíková M. Garner T. I. (2002) Trends in Subjective Income Poverty Rates in the European Union. *The European Journal of Development Research* 34, 2493–2516.