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Article

Towards Territorial Cohesion in Rural Areas: A Chrono-Spatial Insight into the Second Pillar of CAP

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Abstract. Reducing regional disparities is a central objective of the EU, with a significant portion of the budget allocated to enhancing territorial cohesion. To achieve this, funds have been directed to disadvantaged areas. This paper presents a chronospatial analysis of funds allocated to rural areas across European regions (NUTS2 level) from 1994 to 2022. The aim is to evaluate whether this financial support has effectively met the EU's territorial cohesion goal by either bridging regional gaps or exacerbating wealth accumulation in already economically prosperous areas. We conducted a chronospatial and multiscalar analysis of EU fund absorption (Objective I) and examined the relationship between fund absorption and GDP evolution (Objective II). Results reveal a growing percentage of disadvantaged regions unable to absorb funds effectively between 1994 and 2022. This trend indicates weaknesses that negatively affect territorial cohesion and questions the effectiveness of the funding and EU policies. The findings align with previous research, highlighting the need for reform in EU funding allocation policies. Specifically, there is a call for more "place-sensitive" policies to promote better territorial convergence and address disparities (Medve-Bálint, 2016; Iammarino et al., 2018).

Keywords: territorial cohesion, EAFRD, rural areas, disparities, absorbtion capacity, European regions

Résume. La réduction des disparités régionales constitue un objectif central de l'Union européenne, une part significative du budget étant consacrée au renforcement de la cohésion territoriale. Pour y parvenir, des fonds ont été alloués aux zones défavorisées. Cet article propose une analyse chronospatiale des fonds destinés aux zones rurales dans les régions européennes (niveau NUTS2) entre 1994 et 2022. L'objectif est d'évaluer si ce soutien financier a permis d'atteindre l'objectif de cohésion territoriale de l'UE en réduisant les écarts régionaux ou, au contraire, en favorisant l'accumulation de richesse dans les zones déjà prospères. Nous avons mené une analyse chronospatiale et multi-échelle de l'absorption des fonds européens (Objectif I) et examiné la relation entre cette absorption et l'évolution du PIB (Objectif II). Les résultats révèlent une augmentation de la part des régions défavorisées incapables d'absorber efficacement les fonds entre 1994 et 2022. Cette tendance met en lumière des faiblesses nuisant à la cohésion territoriale et remet en question l'efficacité des fonds et des politiques de l'UE. Ces conclusions rejoignent les recherches antérieures, soulignant la nécessité de réformer les politiques

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d'allocation des fonds européens. En particulier, elles appellent à des politiques plus « sensibles au territoire » pour favoriser une meilleure convergence territoriale et réduire les disparités (Medve-Bálint, 2016 ; Iammarino et al., 2018).
Mots-clés: cohésion territoriale, FEADER, zones rurales, disparités, capacité d'absorption, régions européennes

Introduction

Territorial cohesion officially entered the EU discourse and agenda in the early 2000s as a concept referring to a balanced development throughout the European territory that can be achieved by focusing on reducing disparities between regions and fostering cooperation. In pursuit of this goal, a complex set of policy, instruments and measures were put into operation, such as Cohesion Policy, European Structural and Investment Funds (ESIF), Common Agricultural Policy (CAP), European Agricultural Fund for Rural Development (EAFRD) etc. Nowadays territorial cohesion continues to be one of the main objectives pursued at EU level, the largest share of the EU budget being directed towards achieving an economic, social and territorial cohesive Europe (European Union, 2024).

When discussing about territorial cohesion, rural areas receive special attention due to their vast representation, constituting half of the EU territory, but being the least favoured regions within the EU, characterized by a GDP per capita significantly lower than the European average (European Commission, 2024a). The Common Agricultural Policy is the longest-standing EU policy currently active that provides financial assistance to rural areas with the aim of reducing disparities and fostering sustainable development. One third of the EU budget is dedicated to CAP and divided into two pillars, namely European Agricultural Guarantee Fund (EAGF) and European Agricultural Fund for Rural Development (EAFRD), in order to sustain the vitality and economic sustainability of rural regions. While the first (EAGF) primarily deals with income support and market stabilization for farmers, the second (EAFRD) is dedicated to promoting rural development, sustainability, and diversification in rural areas. The total allocation for the CAP in the following programming period (2021-2027) reaches €386.6 billion, of which €95.5 billion is reserved for financing rural development through the EAFRD (European Commission, 2024b). Even if EAFRD represents only 25% of the current total CAP available funds, looking at historical data the overall contribution brought by EAFRD is highly significant, reaching a total of €243.5 billion from 1994 to 2022. Thus, considering the amount of funds invested in rural areas, EAFRD - as a part of CAP - plays an important role in ensuring territorial cohesion of EU regions. This is done by financing projects aimed at diversifying and innovating rural economies, improving rural infrastructure, supporting environmentally sustainable practices in agriculture and rural areas and stimulating cooperation and linkages between rural and urban areas. All of this contribute to promoting territorial

cohesion by addressing economic, environmental and social challenges in rural areas and ensuring a balanced and sustainable development across the EU.

The present study focuses on examining the results of EAFRD over an extended period, spanning from 1994 to 2022, in order to highlight how this financial instrument contributed to territorial cohesion. This will be done by analysing the spatial distribution of funds between developed and disadvantaged territories and by assessing the performance of EU regions in absorbing the financial help provided by EU through EAFRD. At the level of EU member states, EAFRD is part of the National Rural Development Programs and administered by managing authorities at regional and national level. Access to funding from EAFRD is available to a wide range of beneficiaries, such as public authorities, private entities, non-profit organizations, education or research institutions and individuals. In order to access the funding at regional level, potential beneficiaries are required to formulate and submit project proposals within the calls for applications. Subsequently, these proposals undergo evaluation resulting in a decision regarding their eligibility to receive financial support.

The primary inquiry of this study concerns whether EU support for rural areas has resulted in enhanced cohesion over time by channelling funds into disadvantaged regions, or conversely, has deepened disparities by concentrating wealth in already economically prosperous regions. To address this inquiry, the study pursued two main objectives. First, it conducted a chrono-spatial and multiscale analysis of EAFRD absorption at the NUTS 2 level spanning the period from 1994 to 2020 (objective 1). Subsequently, it examined the correlation between the absorption of funds and GDP evolution (objective 2). The overarching aim of this study is to evaluate the efficacy of European financial support in promoting territorial cohesion.

The remainder of the article is structured as follows. The next section provides a brief literature review on European financing tools, with a focus on their role in reducing disparities and promoting territorial cohesion. It also examines the outcomes of the EAFRD and CAP to contextualize our study in relation to prior research findings. Subsequently, the third section is dedicated to presenting the methodological approach used to identify the trajectories followed by EU regions in absorbing EAFRD funds and to examine how they are related to the economic status. The results section presents the main finding regarding the spatial concentration of funds, the performance of beneficiary regions in national and regional context and the evolution of the relation between performance and economic status. Finally, the discussions and conclusions section will focus on analysing the implications of the trends identified in EAFRD funding and policy recommendation.

1. Literature review

Analyzing territorial cohesion has been in the attention of researchers since the early implementation years of the various financial instruments provided by EU to member states in achieving this objective. Studies on this subject frequently highlight the low efficiency of the allocated funds in reducing regional disparities and, consequently, in contributing to territorial cohesion (Basile et al., 2001; Țigănașu et al., 2018; Dunford & Perrons, 2012; Rauhut & Costa, 2021). This is primarily due to the concentration of financial support in already dynamic areas (Cardenas Alonso & Nieto Masot, 2017; Novosak et al., 2017), while the disadvantaged more peripheral or structurally weak areas and isolated rural areas are left behind, thereby widening the gaps at both intra and inter-regional level (Medve-Balint, 2016; Rodríguez-Pose & Garcilazo, 2015; Crescenzi & Giua, 2020; Nagy & Benedek, 2021; Serbanica, 2021; Rauhut & Costa, 2021). As a result, the dynamic regions become even more dynamic by attracting activities and funding, while the poorest ones fail to break out of this vicious circle.

Focusing on identifying the cohesion trends in Europe, Medeiros et al. (2023) emphasize that although the EU funds are essential for disadvantaged communities, they contribute little to bringing regions closer together. Despite formal commitments to prioritizing disadvantaged areas, funding often flows into regions with higher administrative capacity and absorptive power, reinforcing existing asymmetries (Medve-Balint, 2016). Thus, in countries like Poland and Portugal, rather exclusion then cohesion trends existed in the last programming periods as the bulk of EU investments have been concentrated in the most developed territories. In other countries such as Latvia, Bulgaria, Italy, Czech Republic or in the Scandinavian region results are similar (Bloom & Petrova, 2013; Mantino et al., 2022; Novosak et al., 2017; Țigănașu et al., 2018; Rauhut & Costa, 2021). Moreover, Kyriacou & Roca-Segales (2012) highlight that the current intensity and spatial patterns in fund allocation increase the risk of deepening the preexisting disparities, particularly within new EU member states. Although EU regulations mandate that funds should predominantly target the most disadvantaged regions, there is proof of an unequal competition in fund absorption. Regions with stronger local governance, better infrastructure, and administrative know-how are more successful in preparing and submitting higher-quality project proposals, thereby securing the majority of financial support (Medve-Balint, 2016). To correct this situation and ensure a positive impact of EU financial instruments in territorial cohesion, changes are needed in the current approach to fund allocation. Mantino et al. (2022) argue that the eligibility criteria for territories should be adjusted in favour of lagging regions right from the implementation phase. However, such a measure can also lead to path-dependent inequalities. This reliance on external aid can stifle local initiative and innovation (Tomaney, 2016; Shucksmith,

2018), making these regions overly reliant on continued support rather than fostering sustainable development and self-sufficiency.

Despite the extensive scientific literature analysing the impact of various EU instruments on beneficiary territories, only a few studies focus on evaluating their effects in rural areas. This is notable given that over half of the EU population resides in these regions and rural development is a significant political concern for the EU (Cardenas Alonso & Nieto Masot, 2017; Papadopoulos, 2015). Most research has focused on evaluating the outcomes of the CAP. Analysing the impact CAP brought at the level of EU Member States, Papadopoulos (2015) argue that the CAP demonstrates path dependency and inefficiency in addressing rural inequalities and territorial cohesion. Moreover, rather than mitigating disparities, the CAP exacerbates pre-existing inequalities and divergences within rural areas, failing to support the development of disadvantaged and isolated regions. Despite longstanding criticisms regarding its role in widening inequality, the CAP has yet to provide a meaningful solution to this issue. Martinez Garcia et al. (2024) echo this assessment, highlighting that the CAP's primary weakness lies in the unequal territorial distribution of financial contributions, which disproportionately benefits more dynamic, densely populated, accessible, and well-developed regions. Consequently, the CAP appears to exert a significantly positive influence, particularly in socio-economically advanced rural areas (Crescenzi and Giua, 2016). Additionally, CAP increased the effectiveness of other financial instruments of the EU Cohesion Policy, but primarily in the same socio-economically developed regions (Crescenzi & Giua, 2014). This raises questions regarding the performance of EU policies in achieving their objectives, as evidence suggests that they tend to be more impactful and effective in stronger, more developed regions. In contrast, while there is some impact and notable benefits in smaller, disadvantaged regions, these benefits are less substantial and significant. This is not necessarily because financial support does not reach the underdeveloped regions, but rather because these regions do not receive a significantly larger share of the support compared to more developed areas (Medve-Balint, 2016). However, Lillemets et al. (2022), in their systematic literature review of research on CAPs, observe that most studies focus their analysis on a single region or country. Furthermore, much of the existing research emphasizes that the outcomes of CAP instruments are heavily influenced by local conditions. As a result, these findings are less generalizable, underscoring the need for new research approaches that adopt a broader scale of analysis and distinguish between different CAP instruments.

A key component of CAP and of EU financing for rural areas in general is EAFRD that aims at bringing a contribution to the balanced and sustainable development of rural space (Sin et al., 2023; Cardenas Alonso & Nieto Masot, 2017). Camaioni et al. (2013) focused on appreciating how much of the EAFRD funding granted through the Rural Development Programs (RDPs) to rural areas has reached

the most isolated and socio-economically disadvantaged territories between 2006 – 2010. Their work shows that funds from RDPs often do not reach the truly rural and isolated communities, but rather tend to be allocated to rural areas located in the proximity of cities, urban centres, or more developed regions. Bonfiglio et al. (2017) reaches the same conclusion when studying the contribution brought by EAFRD through the measures financing knowledge transfer and innovation in rural areas. Similarly, Kiryluk-Dryjska et al. (2020) focusing solely on the results obtained in the primary sector, demonstrate that the second pillar of CAP in Poland tends to benefit regions with better agricultural structures. This proved to be the case for Romania as well, with Sin et al. (2023) stressing the need for better rural development strategies as the current ones favour the concentration of financial resources in the wealthiest regions. The EAFRD contributes significantly to strengthening the economic performance of beneficiary territories. Evidence shows a direct proportional relationship between fund absorption capacity and agricultural exports (Șerbănel, 2021). However, in most of the cases the best performing territories in absorbing EAFRD funds are also the ones with a high level of material well-being (Schucksmith et al., 2005; Cardenas Alonso & Nieto Masot, 2017). Thus, studies show that the EAFRD didn't meet the expectations (Schuler & Noack, 2019) because it has failed to contribute to the economic convergence of EU regions despite its role in their economic development (Dax et al., 2004; Bonfiglio et al., 2017).

Studying the contribution of EU financial instruments to achieving territorial cohesion remains a subject too little explored so far specifically at the level of rural areas. However, rural development and cohesion represent important objectives of the EU agenda, with a substantial portion of the budget dedicated to rural areas through non-repayable funding for various development projects. Considering this, the present study aims to bring a contribution by focusing on the results of EAFRD funding over an extended period, spanning from 1994 to 2022, in order to highlight how this financial instrument targeted at rural areas contributed to territorial cohesion. The limitation of existing studies is that they primarily focus on a limited number of regions or a single country (often as case studies) or they examine the outcomes of only one funding period. All of these hinder the assessment of the funds' effectiveness in reducing disparities and has called for a more fine-grained, territorially-sensitive evaluation of EU interventions (Crescenzi & Giua, 2020; Lillemets et al., 2022). This study addresses these gaps by focusing exclusively on the EU's rural areas, broadening the analysis to the EU level, and evaluating the results across four completed funding periods. Additionally, the multi-scalar analysis will offer a more comprehensive view of each region's performance in fund absorption. These approaches will provide stronger evidence on the effectiveness of the EAFRD in promoting territorial cohesion. Additionally, broadly examining the performance of rural areas in utilizing the

instruments provided by the EU for their development will contribute to better and more informed policy decisions (Mantino et al., 2022).

2. Methodology

The research investigates the level of EAFRD funding uptake among EU regions (at NUTS2 level) from 1994 to 2022. To facilitate analysis, the initial step involved organizing on funding periods the annual data regarding the amount of money absorbed by rural areas. This resulted in four distinct funding periods corresponding to the EU's multiannual financial frameworks over 28 years: 1994-1999, 2000-2006, 2007-2013, and 2014-2020. An extension of two years was incorporated into the final funding period due to delayed financing caused by the COVID-19 pandemic. Consequently, the 2014-2020 funding period encompasses funds allocated to regions throughout 2021 and 2022 as well.

For the first objective of the study – chrono-spatial and multiscale analysis of EAFRD funds – absorption – a series of steps were followed:

- First, a hot-spot analysis was constructed in ArcGIS Pro for each funding period to pinpoint high spatial concentrations of funds and assess any temporal shifts in these patterns.
- Following this, the mean values of EAFRD funds absorbed and GDP per inhabitant were computed at both national and EU levels across the four funding periods. These figures were subsequently utilized as reference points to categorize each NUTS 2 region as either below or above average, both nationally and within the European context, regarding fund absorption and economic status for each funding period. The analysis was constructed using the national and European averages as reference points, as the distribution of values was normal, roughly following the Gaussian curve and free of outliers. Thus, we considered the mean as a better choice than the median.
- Using a cross table, 16 types of regions resulted comprising all possible combinations in relation to the positioning below or above average as level of GDP/inhabitant and amount of funds absorbed. Because the large number of categories can raise problems, being difficult to keep track of, we have limited ourselves to only the most significant ones. Thus, out of the 16 types, special focus was directed only towards 4 types as they consistently represented over 10% of the total 276 EU regions analysed across all 4 funding periods. The dual approach was utilized through the dichotomous method which proved to give better results in the present context than other methods that we have tested previously. Finaly, the 4 categories were mapped to improve the visualization of spatial patterns.

The second objective focused on testing the relation between regions' performance to absorb funds and their economic status. This was achieved by constructing Geographically Weighted Regression (GWR) models for each funding period. This step was essential to complement the dichotomous approach employed in the first objective of the study, having thus a robust foundation and obtaining precise outcomes concerning the influence of wealth on the capacity to absorb funds at macro level (276 EU regions).

The variables used in constructing the regression models were the amount of funds absorbed at NUTS2 level (dependent variable) and GDP per inhabitant PPP (independent variable). Due to the extensive study area, Geographically Weighted Regression (GWR) was employed to construct these models. GWR was chosen because it enables the exploration of how the relationship varies across space by estimating local relationships at different locations. GWR tool in ArcGIS Pro was used in order to construct the regressions.

The steps followed for the two objectives resulted in pinpointing regions at risk and examples of best practice in absorbing EAFRD funds. Additionally, they contributed to forming a comprehensive understanding of wealth's potential influence on fund absorption, shedding light on whether the conclusions drawn from earlier case studies conducted at the national level hold true at the broader EU scale. An outline of the methodological approach employed can be examined in Figure 1.

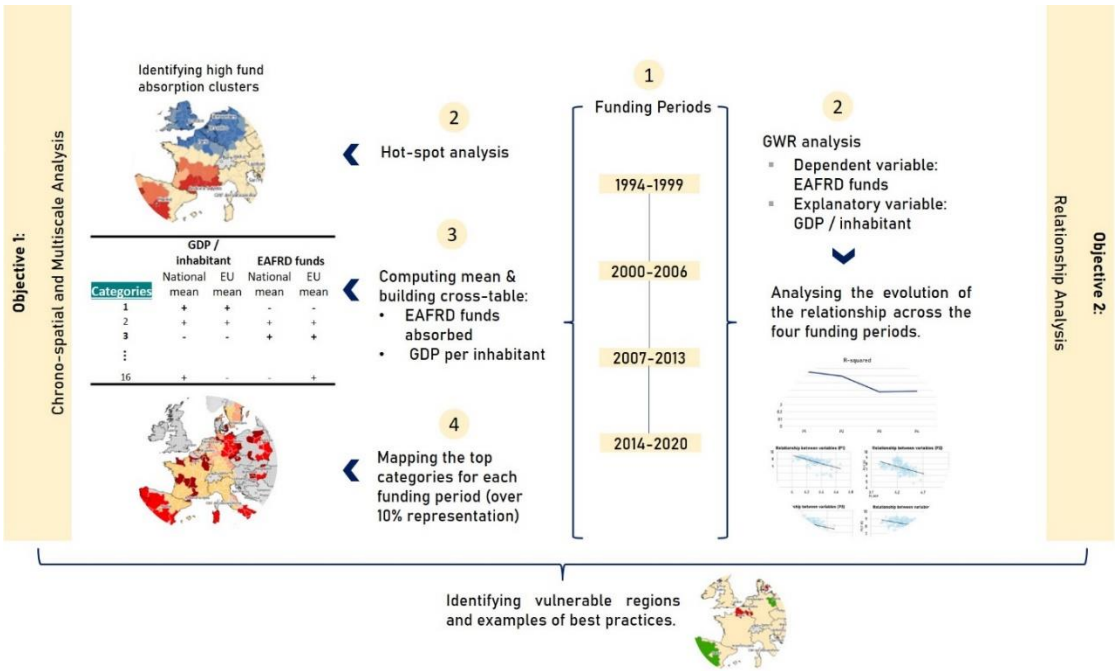

Figure 1. Outline of research methodology
Source: authors

3. Results

3.1. EAFRD funding from 1994 to 2022 – spatial patterns and trends

The total amount of EAFRD funds absorbed by EU regions between 1994 to 2022 reaches a value of €243.5 billion. The distribution of funds between the 4 funding periods has been unequal, however with a consistent growth over the years, starting at €15.4 billion in 1994-1999 and exceeding this amount by more than sevenfold in the latest funding period of 2014-2020 (see Figure 2).

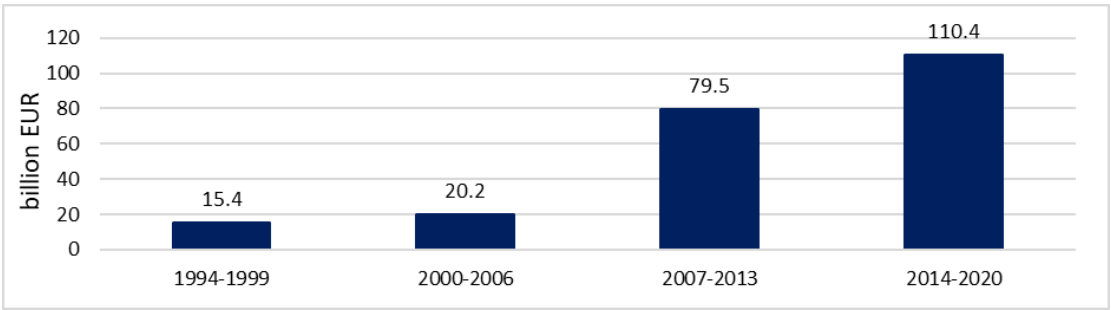

Figure 2. EAFRD funding along 4 funding periods (1994 - 2022)
Source: authors

Regarding the distribution of funds between regions, in the first funding period most of the financing was directed to rural development projects located at the south-western extremity of the EU, in Spain and Portugal, as highlighted by the results of the hot-spot analysis (see Figure 3). Conversely, the heart of the EU received the least support, as evidenced by the emergence of a considerable cold cluster extending from the UK to Italy and closely overlapping regions within the Blue Banana corridor. In large part these patterns persist throughout the next financing period, 2000-2006. The only alterations occur in the southernmost part of the EU, where the previously small hot cluster has expanded its geographical reach, while the central cold cluster has diminished in size. New high concentrations of funds emerge during the third funding phase (2007-2013) along the eastern frontier of the EU in some of the new member states (e.g. Romania), followed by a later concentration in the central part during the final analysed funding period (2014-2020). Analysing the evolution of spatial fund concentrations across the four funding periods, one notable trend is the shift of hot clusters from western regions to eastern areas, a change linked to the EU's eastward expansion since the 2000s.

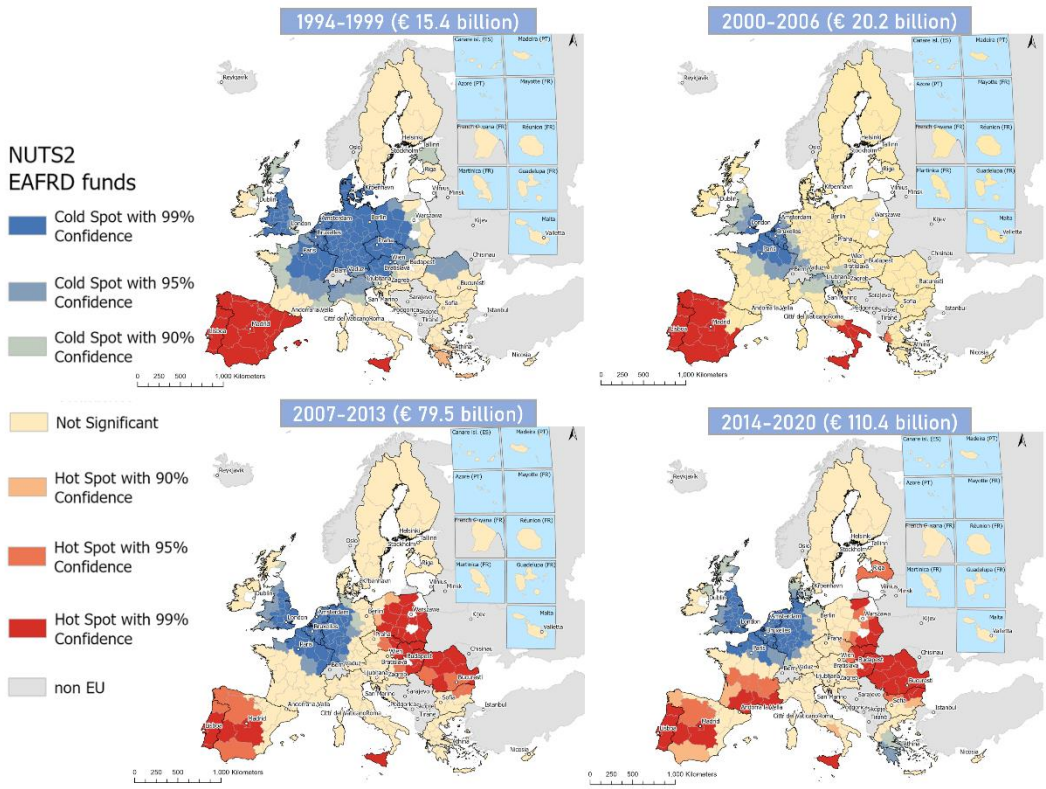

Figure 3. Hot and cold clusters of EAFRD funding across EU regions
Source: authors

3.2. Types of regions in a multi-scalar context

The hot-spot analysis has highlighted spatial differences in the capacity of EU regions to make use of the EAFRD funding, with some regions absorbing a high amount of money, while others performing very low in this regard. To assess the extent to which the spatial accumulations of funds have been conducive to the cohesion of EU regions, the positioning of regions within national and EU contexts in terms of material well-being and their capacity to absorb EAFRD funds has been closely examined. The dual-scale analysis was necessary because differences in development levels are apparent not only on a broader scale (between EU regions) but also on an internal, national scale (among regions within the same member state) (Ezcurra, 2019; Geppert et al., 2005).

The status of each region was assessed using the dichotomous method, with national and EU averages serving as benchmarks to evaluate material well-being (measured by GDP per inhabitant) and absorption capacity (represented by EAFRD funds). After constructing a cross-table, this analysis yielded 16 distinct region types. Among these types, particular attention was given to four (see Figure 4), as they

consistently accounted for over 10% of the total 276 EU regions studied across all four funding periods.

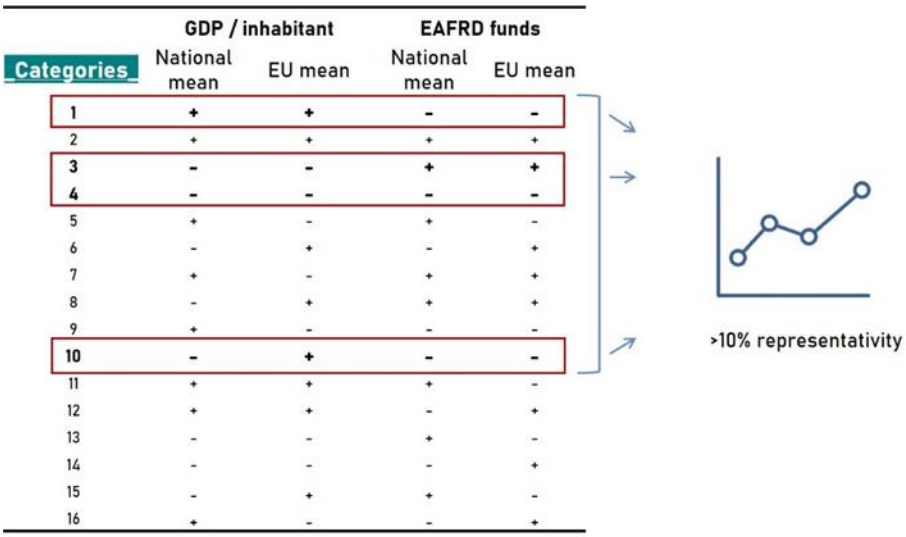

Figure 4. Types of regions in national and EU context
Source: authors

- The first type (overall wealthy – uninterested): includes the regions situated below the national and EU average as absorption capacity, but above average when it comes to GDP/inhabitant. In essence, these regions exhibit a high level of material well-being but show little interest in accessing EU financial assistance.
- The second category (EU wealthy-uninterested): includes regions that exceed the EU average in GDP per inhabitant (though below the national average) but fall below both national and EU averages in terms of EAFRD funds. Consequently, these regions exhibit a similar behavior to the previous category, which is generally positive as it enhances the likelihood of poorer regions accessing funding. This can be seen as a supportive measure for territorial cohesion.
- The third type (disadvantaged-competent): comprises disadvantaged regions that excel in absorbing funds. Thus, they score below average in GDP per inhabitant but above average in absorption capacity at both the national and EU levels. These regions can be seen as exemplars of best practices, as this conduct is optimal for territorial cohesion by guaranteeing that funds are directed to the communities or areas that require them most.
- The last category (disadvantaged-incompetent): includes regions that fall below the national and EU averages in both material well-being and absorption

capacity. Put differently, these regions are among the most vulnerable ones as they are in great need of financial assistance but struggle to absorb it.

The remaining 12 categories were not displayed on the maps to enhance the visibility of the most dynamic and representative four previously discussed.

Referring to the spatial distribution of the main four types, in the first financing period (1994-1999), the core of EU was mostly characterized by regions falling in the first category, meaning regions overall wealthy but not very performant in absorbing EAFRD funds. An opposite pattern was specific to EU extremities where disadvantaged regions with a high fund absorption capacity predominated (disadvantaged-competent). Notable is the emergence of spatial clusters of regions adopting the same behaviour. Thus, clusters of best practice examples can be found in Spain, south of Italy, Greece and northeastern Germany (see Figure 5). The remaining two types are less visible in the first funding period. However, along the following 3 financing schemes the number of underprivileged regions with low absorption capacity has increased significantly, from a total of 7 to nearly eightfold this value at the end of 2014-2020 funding period. The vulnerable regions not only registered the highest increase (see Figure 5) but also showed a trend of spreading gradually from the central areas towards the eastern and south-eastern periphery of the EU.

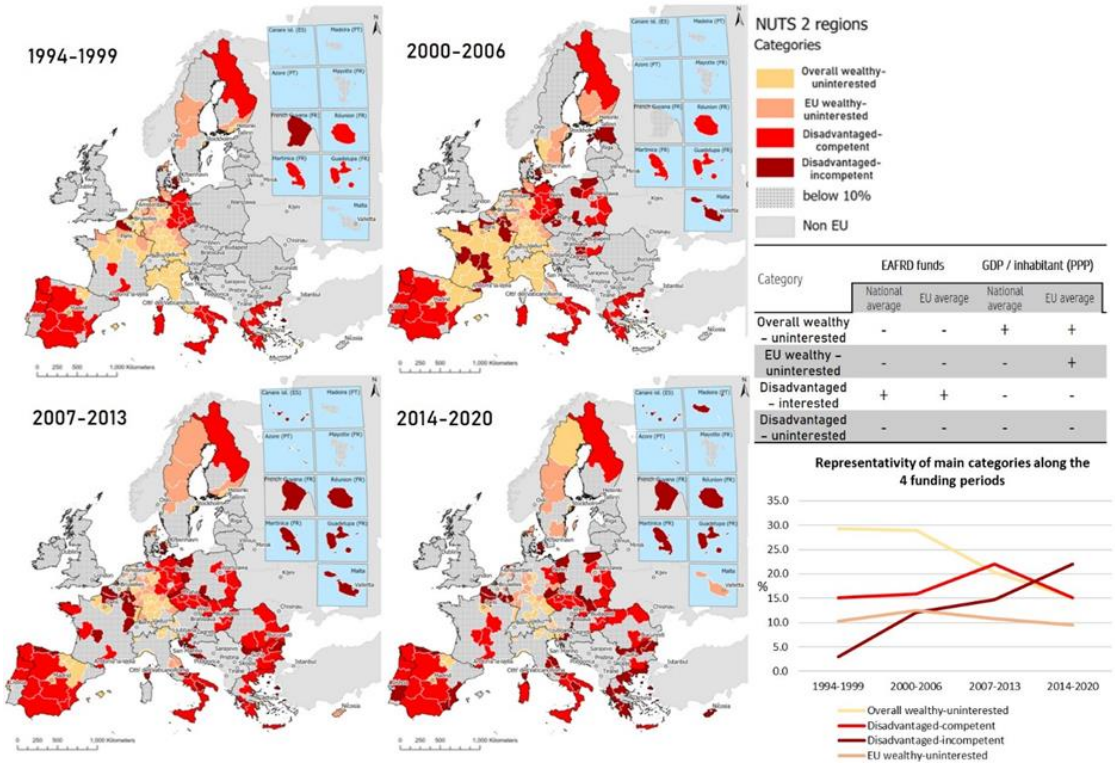

Figure 5. The evolution of the main types of regions in national and EU context
Source: authors

Among the four main types of regions examined, two stand out due to their contrasting impacts on cohesion. On one hand, economically underperforming regions with high absorption capacity are of particular interest as they exemplify best practices, contributing positively to cohesion through their high ability to access EAFRD funds. Conversely, regions facing similar economic challenges but with low absorption capacity have a detrimental effect on cohesion. These regions have not remained static across the four funding periods, with some showing improvements in fund absorption while others experienced declines. However, at the EU level, out of the total of 85 regions with economic levels below both the EU and national averages, 15% have consistently maintained a high funds absorption capacity exceeding both averages (EU and national). These top-performing regions can be viewed as exemplary models of best practices (see Figure 6). Conversely, there is a subset comprising 12% of disadvantaged EU regions that have consistently struggled to absorb funds throughout all four funding periods. These regions represent the most vulnerable ones and demand heightened attention in future programming schemes (see Figure 6).

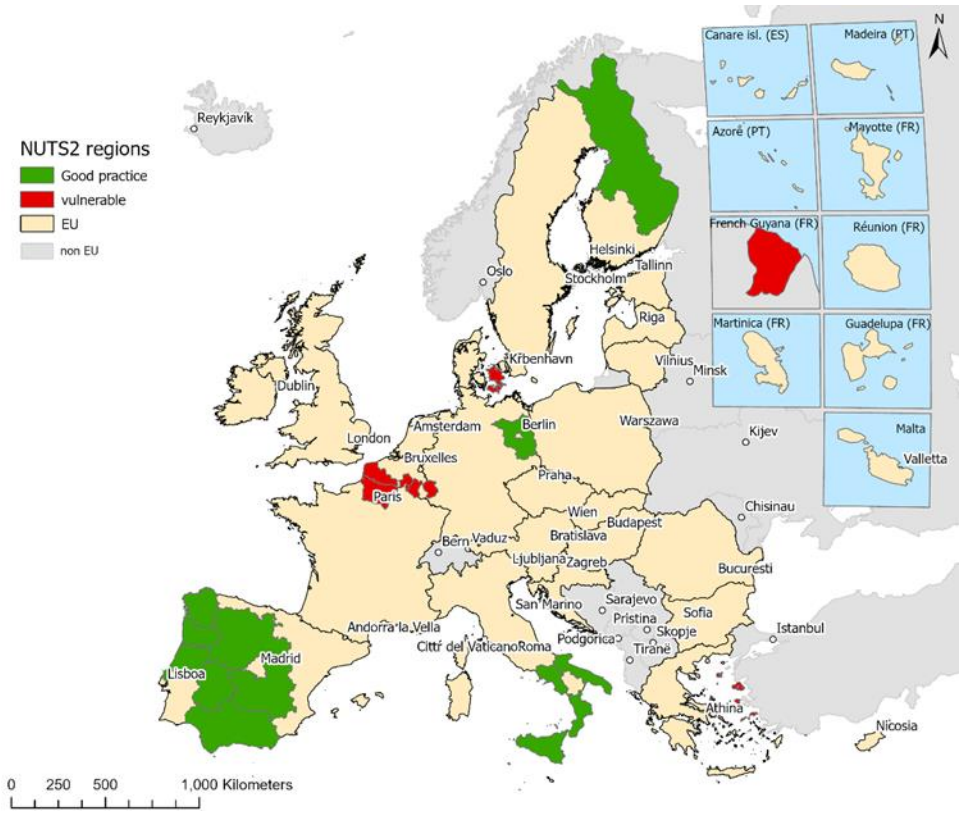

Figure 6. Best performing vs. vulnerable regions in absorbing EAFRD funding
Source: authors

Coming back to the evolution in representativity of the 4 main types of regions along the 4 funding schemes, it can be noticed that the percentage of regions surpassing both EU and national averages in material well-being but facing low absorption levels of EAFRD funds has seen the most notable decrease. An opposite evolution is specific to the vulnerable regions, while the least dynamic where the regions that serve as examples of best practice (disadvantaged-competent) and the ones that underperform in absorbing funds although having an economic situation above the EU average (EU wealthy-uninterested). The most notable aspect that emerges after analysing the evolutions is the tendency of both economically performant and disadvantaged regions to change significantly their fund absorption behaviour, yet these changes do not contribute positively to EU cohesion. The main question arising from these trends concerns the connection between economic status and absorption capacity, particularly how this relationship has evolved over time.

For testing this, a Geographically Weighted Regression model was built for each funding period having the amount of funds as dependent variable and GDP per inhabitant (PPP) as explanatory variable. The results for the 1994-1999 interval show an R-squared of 0.75, indicating that 75% of the variation in absorption performance can be attributed to economic status. However, over the subsequent three funding periods, the strength of this relationship has diminished, with an R-squared value dropping to 0.48 by 2014-2020 (see Figure 7). In terms of the nature of the relationship, it has consistently been inversely proportional throughout the entire analysed period, highlighting the superior ability of disadvantaged regions to absorb EAFRD funds.

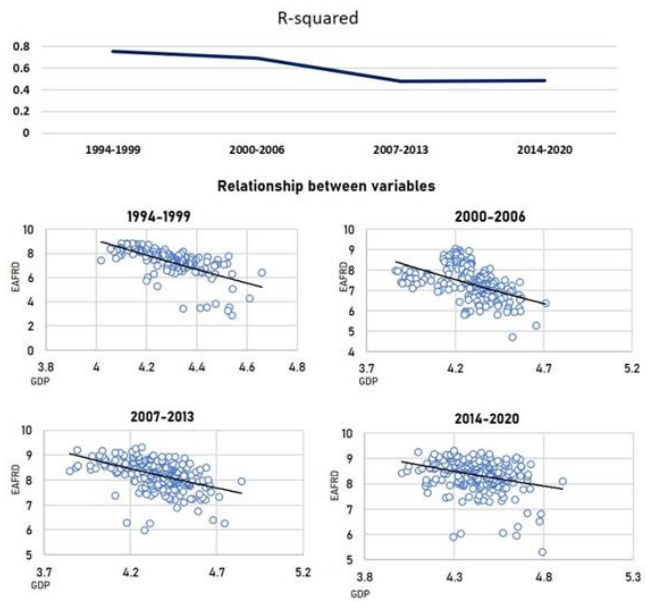

Figure 7. Wealth and fund absorption capacity over time - GWR results
Source: authors

4. Discussions

EAFRD funding serves as one of the EU's financial instruments for rural areas helping them address development challenges and support cohesion among EU regions. Looking at the history of EAFRD funding, it can be noticed that regions have registered different performances in making use of this financial instrument and presented a variety of trajectories in their evolution but not always beneficial for the EU cohesion. The hot-spot analysis conducted for the four financing schemes spanning from 1994 to 2022 has highlighted spatial patterns in fund distribution that closely mirror existing development disparities. Thus, high-value clusters predominantly concentrate in regions with lower economic levels, while cold spots of funding are situated in the economic core of the EU. This shows an inverse proportional relation between economic status and absorption capacity of EAFRD funds, which is undoubtedly beneficial to cohesion. However, the main trajectories followed by regions in their absorption capacity across the four funding schemes indicate a decline in the ability of disadvantaged regions to utilize the financial assistance provided by the EU, coupled with a decrease in the number of affluent regions disinterested in this support. This doesn't just negatively affect cohesion; it also raises new questions about whether an uneven competition is emerging between regions with differing economic statuses or what factors are contributing to the rise in vulnerable regions.

The Geographically Weighted Regression models built for each of the funding periods confirm this as the relation between economic status and absorption of funds proved to be inverse proportional, however weaker and weaker along the years. The increasingly weak relationship underlines the importance of tackling the structural barriers that hinder absorption. Various case studies conducted at the national or regional level have demonstrated the significant role of local governance quality, education levels, and population size in fund absorption (Milio, 2007; Zaman & Georgescu, 2009; Novosak et al., 2017; Tosun, 2014; Cardenas Alonso & Nieto Masot, 2017). In rural areas, these factors may exert an even bigger influence due to the greater diversity of challenges these territories face, particularly following the expansion of the EU to include Eastern countries (Camaioni et al., 2013), challenges such as high out-migration, aging populations, school dropouts, and low educational attainment (Kusio et al., 2022; Gomez-Ullate et al., 2020; Merce et al., 2015; Guzman et al., 2021). Policies aimed at improving governance, strengthening administrative capacity and investing in human capital could help bridge the gap between economically disadvantaged regions and their wealthier counterparts. In addition, raising awareness of available funding opportunities and simplifying application procedures could encourage greater participation from underperforming regions. However, to gain a comprehensive understanding and robust evidence of the impact of these factors across the entire rural territory of the EU, it is essential to conduct an analysis

encompassing all EU member states and spanning an extended time period. This is a subject that can be explored extensively in future research studies. Furthermore, by pinpointing the causes of low fund absorption performance, measures can be implemented in subsequent funding periods to assist vulnerable regions in improving their circumstances.

The presence of an unequal internal competition for funds absorption has been also pointed out in previous research studies run at the level of East Central EU countries (Medve-Bálint, 2016). This has been attributed to the lack of differentiation between regions based on their economic status when granting the funds, favoring already developed areas and exacerbating pre-existing disparities. Others have underlined that the underperformance of economically disadvantaged regions in absorbing EU funds is the result of the „open competition" approach (Mantino et al., 2022) in operation at EU level. Thus, the results of the present study are in line with the findings of previous research underlying the need for changes in current EU funding allocation policies. These policies should be better targeted and operationalized to more effectively support vulnerable regions (Medeiros et al., 2023). The changes refer to introducing more "place sensitive" policies to achieve better territorial convergence (Iammarino et al. 2018). For example, providing additional technical assistance, capacity-building programs, and tailored funding schemes for vulnerable regions could enhance their ability to absorb and utilize funds effectively. Moreover, a different approach from the "open competition" is needed, particularly for vulnerable regions that demonstrate a clear need for additional assistance and consultancy during both the project submission and implementation phases (Sin, 2020). This raises the question of whether top-down interventions could offer a solution for more effective management of these regions and promote sustainable rural development. Evidence indicates that the lack of know-how, low-skilled human resources, and poor awareness within communities about available financial resources are key factors that reduce the effectiveness of the bottom-up approach in sparsely populated and disadvantaged rural areas (Sin, 2023; Cardenas Alonso & Nieto Masot, 2017). While bottom-up approaches are often praised for their ability to empower local communities, they may be insufficient in regions with limited human and institutional capacity. In such cases, a hybrid approach that combines top-down interventions with local participation could give better results. For example, central governments could play a more active role in project design and implementation, while still engaging local stakeholders to ensure that interventions are context-specific and responsive to local needs. Therefore, in the case of disadvantaged rural areas, top-down interventions might be a way to make sure that resources are channelled to the most deprived regions (Crescenzi & Giua, 2014). However, granting full decision-making power and control to the central government for allocating local funds may also increase the risk of bias, potentially favouring certain communities based on their political affiliations

(Medve-Balint, 2016). Given this, it is essential to identify the optimal mix of top-down and bottom-up interventions (Crescenzi & Giua, 2014), especially for vulnerable rural communities, to achieve better results for territorial cohesion.

Conclusions

The primary inquiry of this study concerned whether EU support for rural areas has resulted in enhanced cohesion over time by channelling funds into disadvantaged regions, or conversely, has deepened disparities by concentrating wealth in already economically prosperous regions. The findings of the present study highlight that during the examined period (1994 - 2022), the EU's spatial distribution of EAFRD funds contributed to cohesion by channelling funds primarily to disadvantaged rural areas. Nonetheless, the rise in the proportion of disadvantaged regions unable to absorb funds in a high amount reveals weaknesses that detrimentally affect territorial cohesion. Examining both regions recognized as examples of best practices and those identified as vulnerable can shed light on specific weaknesses that need closer scrutiny. Therefore, conducting future case studies on regions that consistently demonstrated strong fund absorption despite a low economic level across all four funding periods could reveal the factors contributing to optimal outcomes and ultimately achieving the EU's overarching goals of sustainable development and territorial cohesion. Similarly, examining vulnerable regions in depth can uncover the specific factors contributing to their low performance and provide insights into how to manage them more effectively. Consequently, implementing best practice models in these regions would be the next step for enhancing their ability to absorb funds effectively.

The contribution of this study lies in providing a comprehensive view and strong evidence on the effectiveness of EAFRD in promoting territorial cohesion, a key EU objective. By examining the allocation of EAFRD funds at the NUTS2 level over a span of 28 years, the study highlights the varying performance of regions in fund absorption, the changes across funding periods, and their impact on cohesion. These findings offer crucial insights for future fund management in upcoming financing periods. The large scale of analysis and extended timeframe of this study enhance and build upon the results of previous research. Additionally, the study raises new questions about the efficiency of the current fund allocation approach at the EU level and suggests next steps for improving the distribution of EAFRD support to better promote territorial cohesion.

Disclosure statement

No potential conflict of interest was reported by the authors.

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