

How Effective Is EU Cohesion Policy? Evidence from a Regression Discontinuity Approach

Federico Aresu, Emanuela Marrocu, Raffaele Paci

University of Cagliari and CRENoS

Long abstract

The European Union's Cohesion Policy (CP) is a central component of the Union's strategy to foster balanced development among its member states, particularly in less developed regions. Since its establishment, CP has represented the main supranational instrument aimed at reducing long-standing territorial disparities and promoting economic, social, and territorial cohesion. By supporting productive investments and strengthening regional development capacities, the policy seeks to enhance convergence, improve competitiveness, and mitigate structural disadvantages faced by lagging territories. Within this framework, CP plays a crucial role in sustaining the functioning of the European single market and in fostering long-run macroeconomic stability through a more balanced spatial distribution of economic activity.

Its main funding sources—the European Regional Development Fund (ERDF) and the European Social Fund (ESF)—enable strategic investments in infrastructure, innovation, skills development, and environmental sustainability. While the ERDF, which holds the larger share of CP resources, focuses its efforts on supporting innovation, small and medium-sized enterprises, and information and communication technologies (ICTs), the ESF concentrates on improving employability, strengthening human capital, and fostering social inclusion. Through these complementary instruments, CP addresses both tangible and intangible constraints to regional development, combining physical capital accumulation with measures aimed at enhancing labor market performance and social participation. In this sense, the policy embodies a place-based approach to development, whereby interventions are tailored to local characteristics, needs, and institutional environments.

Over successive programming periods, CP has progressively expanded in scope and complexity, incorporating new priorities related to digitalization, environmental sustainability, and social resilience. At the same time, its governance framework has evolved toward a stronger emphasis on partnership, multi-level coordination, and performance orientation. Despite these institutional developments and the substantial financial resources mobilized, the effectiveness of CP in fostering sustained regional growth remains a central and contested issue in both academic and policy debates. Understanding the conditions under which CP succeeds or fails is therefore crucial for informing future reforms and improving the allocation of public resources.

A large body of literature has examined the impact of CP on regional economic performance using a wide range of empirical approaches. Early contributions were mainly based on growth regressions and panel data models, often exploiting cross-regional variation in funding intensity and controlling for observable characteristics. These studies produced heterogeneous and sometimes contradictory results, reflecting sensitivity to data construction and model specification. As highlighted by Dall'Erba and Fang (2017) in their meta-analysis, estimated effects varied substantially across studies depending on sample composition, time coverage, and regressor selection.

More recently, however, the focus has shifted toward the identification of causal effects, with an increasing number of studies relying on quasi-experimental methods. In this context, Regression Discontinuity Design (RDD) has emerged as one of the most prominent approaches for evaluating CP. RDD is particularly suitable for policy evaluation when treatment assignment is determined by an explicit threshold, as it allows for the comparison of observationally similar units located on either side of the cutoff.

RDD is indeed particularly suitable for the evaluation of CP, as its structure allows the identification of a specific cutoff that is determinant for funding allocation. CP's budget is, in fact, mainly dedicated to "less developed" regions, whose per capita GDP is below 75% of the EU average. This institutional rule generates discontinuities in both eligibility status and funding intensity, creating quasi-random variation in treatment assignment around the threshold. Exploiting this variation enables researchers to overcome many of the endogeneity concerns that characterize conventional observational studies. Recent RDD-based studies, including Percocco (2017) and Bachtrögler et al. (2020), highlight the importance of regional context in shaping the effectiveness of CP. These contributions emphasize the role of intangible and place-based factors—such as human and territorial capital, innovative capacity, and local institutional quality—in mediating the translation of financial support into measurable economic performance. Regions endowed with stronger administrative capabilities, higher skill levels, and more developed innovation systems appear better equipped to transform EU transfers into productive investments and sustained growth.

However, most studies relying on this approach fail to account for the substantial spatial heterogeneity in the allocation of funds. Although CP formally distinguishes less developed (treated) from more advanced regions (non-treated), the latter grouping together EU transition and more developed regions, all EU regions receive support, and funding levels vary widely even within the group of less developed regions.

Against this background, Cerqua and Pellegrini (2018) represent the only contribution to date that extended the RDD framework to explicitly incorporate treatment intensity (i.e., different levels of fund allocation) for CP evaluation over the 1994–2006 period. By modelling treatment as a continuous rather than binary variable, their approach allows for the identification of heterogeneous marginal effects and nonlinear responses to funding. This methodological extension is particularly relevant in a context where the "dose" of policy support differs across territories, potentially generating heterogeneous marginal effects even among regions sharing the same eligibility status.

Building on their contribution, our study evaluates the effects of the policy over the 2008–2023 period, which remains largely unexplored in the existing literature. This period encompasses major macroeconomic and institutional transformations, including the global financial crisis, the sovereign debt crisis, the subsequent recovery, and the COVID-19 pandemic. These events profoundly affected regional economic dynamics and public investment patterns, making the analysis of CP effects over this horizon particularly relevant.

We apply recently developed continuous-treatment RDD approaches, such as that proposed by Dong et al. (2023), which allow for flexible modelling of treatment intensity and robust inference in settings with continuous policy variables. The empirical analysis utilizes regionalized and annualized data on CP payments provided by the Directorate-General for Regional and Urban Policy of the European Commission (EC, 2017). This dataset enables us to move beyond the conventional programming-period framework and to capture the time-varying intensity of EU support at the regional level.

This focus on annualized flows is particularly important because CP investments from different programming periods may overlap due to the "n+2" rule (and more recently "n+3" for the 2014–2020 period), which grants additional time to utilize allocated resources beyond the nominal conclusion of the cycle. As a result, expenditures rarely align neatly with theoretical programming timelines, and reliance on formal periods may obscure the actual dynamics of resource allocation. By exploiting annual expenditure data, our approach provides a more accurate representation of the effective timing and intensity of policy interventions.

In this respect, we further strengthen identification by structuring the empirical design around medium-run impacts rather than short-run correlations. Coherently with the idea that funded projects require time to be implemented and to affect aggregate outcomes, we consider lagged measures of treatment intensity, capturing the temporal gap between disbursement, project completion, and observable effects on regional growth. This lag structure allows us to focus on medium- to long-term impacts, which are particularly relevant in the context of infrastructure, innovation, and human capital investments.

Preliminary results suggest that, among less developed regions, intermediate levels of funding are associated with negative and statistically significant marginal effects, indicating the presence of allocation and absorption inefficiencies in Southern European regions, particularly in Portugal and Greece. These findings point to non-monotonic responses to treatment intensity and suggest that increasing financial resources does not automatically translate into improved economic performance. From a policy perspective, these results underscore the need to move beyond uniform allocation rules and to place greater emphasis on regional preparedness, governance quality, and strategic planning. Enhancing administrative capacity, improving monitoring systems, and strengthening coordination across governance levels may be crucial for maximizing the growth impact of CP. More generally, the findings highlight the importance of integrating financial support with institutional and capability-building measures.