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On the Tenth Report on economic, social and territorial cohesion

Chapter 4.3 Macroeconomic impact of cohesion policy programmes

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Chapter 4.3
Macroeconomic impact of cohesion policy programmes

4.3.1. Introduction

Cohesion policy accounts for around a third of the EU budget, with its resources amounting between 0.3% and 0.4% of EU GDP. This raises several questions. Can a policy of this size make a measurable difference to growth and regional convergence? The policy implies a redistribution of resources among Member States and regions but where do its benefits materialise? Do they stay in the regions where funds are spent, or do they reach the wider EU economy? What are the returns from the investments financed by the policy and what are the key factors affecting its impact?

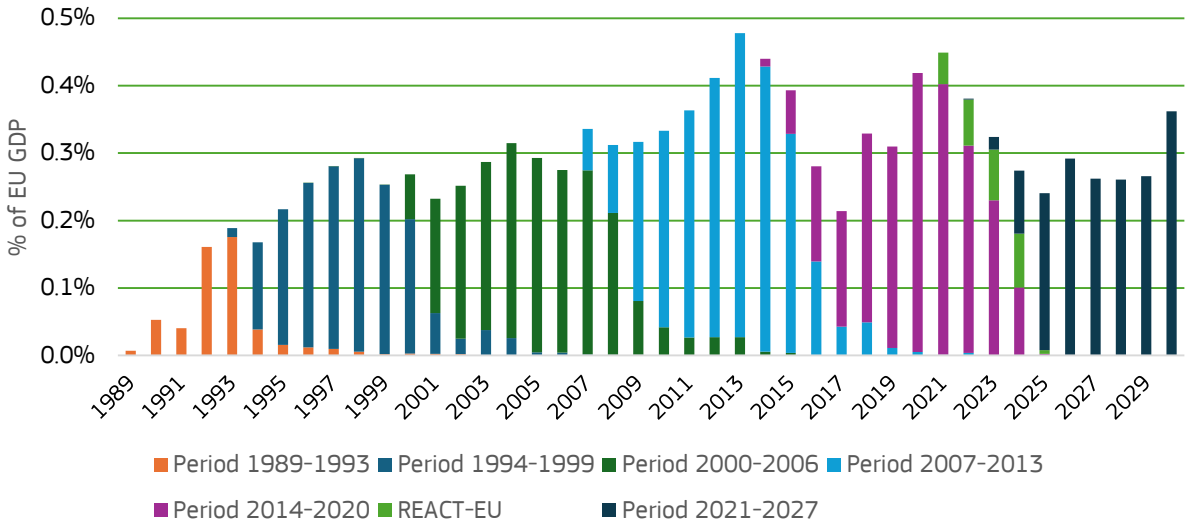
This section brings elements of responses to these questions. Section 4.3.1 shows how the policy's resources are distributed across Member States, categories of regions and fields of intervention, and how they are concentrated where needs are greatest. Section 4.3.2 summarises the findings of the economic literature on the effects of cohesion policy on growth, convergence and the wider EU economy. Section 4.3.3 reviews academic and national counterfactual studies that estimate the causal effect of funding on regional GDP, employment and productivity. It also examines how this effect varies across regions, funds and programming periods. Section 4.3.4 presents simulations with RHOMOLO, the Commission's regional macroeconomic model, that project the impact of the 2014-2020 and 2021-2027 programmes up to 2045. These simulations quantify spillovers across regions and Member States and identify the factors that determine the return on each euro invested. Taken together, the econometric and model-based evidence shows whether the policy works, and also where it works, through which channels and under which conditions.

4.3.2. Cohesion policy in the macroeconomic context of the EU

With around a third of total funding, cohesion policy is the second biggest item in the EU's 2021-2027 budget, right after the common agricultural policy. From levels corresponding to less than 0.05% of EU GDP at the end of the 1990's, the resources allocated to the policy have grown to an average of between 0.3% and 0.4% of EU GDP during the most recent programming periods (Figure 4.3.1). If cohesion policy investments tend to be concentrated at the end of a budget's implementation period ([252]), the various periods overlap which implies that support to the EU Member States and regions remains continuous.

([252]) The N+2/N+3 rule allows funds to be used up to two/three years after they have been committed, which implies that the programmes are actually implemented over a period of 9/10 years rather than seven.

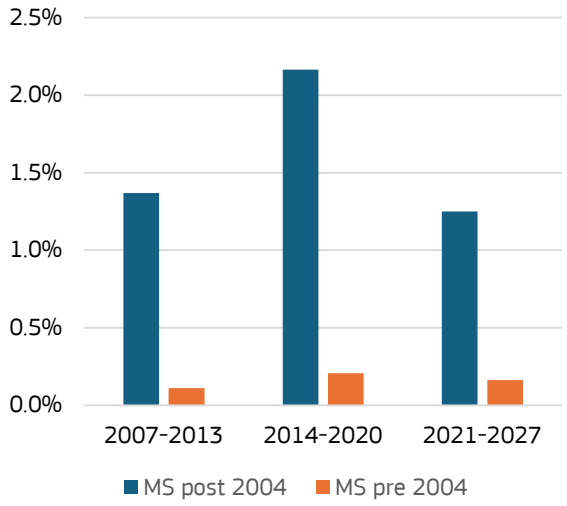
Figure 4.3.1: Cohesion policy funding as % of EU GDP



(1) For the 2021-2027 period, the figures for the final years are based on the assumption that 100% of funds will be spent by 2030.
Source: EUROSTAT (nama_10_gdp) and DG REGIO.

Even if cohesion policy represents a significant share of the EU budget, the resources it is allocated may seem too little to make a real change in terms of its main objective of fostering cohesion and reduce regional disparities throughout the EU. However, the funding is highly concentrated on vulnerable groups and on the less developed parts of the EU, in particular the 13 Member States that joined the EU in 2004 and after. During the last three programming periods, cohesion policy funding corresponded to around 1.4% of their GDP on average per annum, peaking at 2.2% in the 2014-2020 period (Figure 4.3.2), much more than in the other Member States where it has only represented around 0.2% of GDP on average.

Figure 4.3.2: Cohesion policy funding as % of EU GDP, Member States (MS) who joined the EU in 2004 and after and pre-2004 Member States

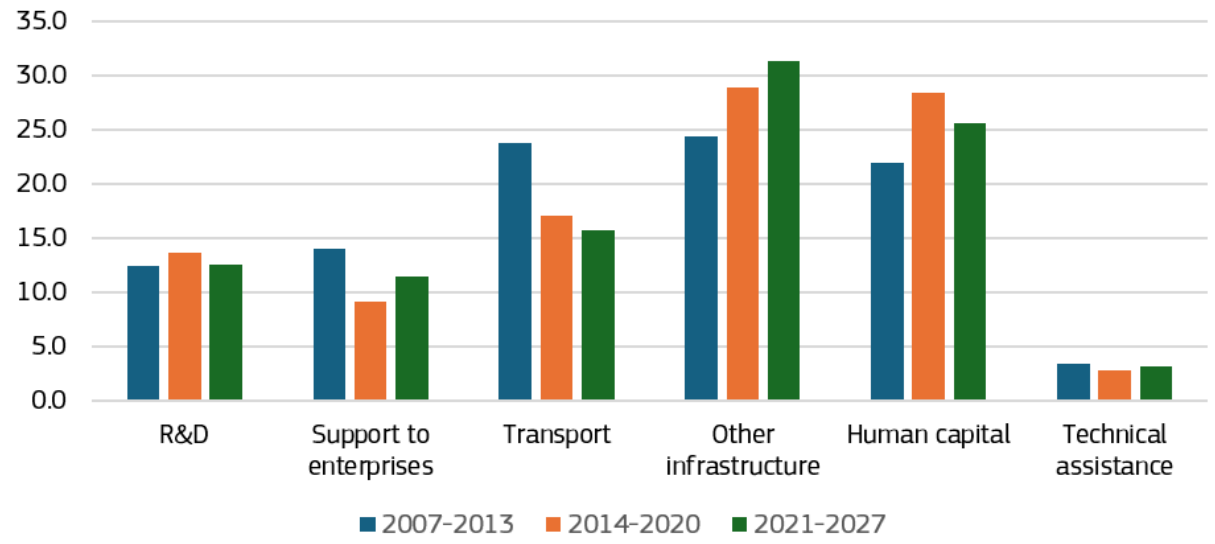


Source: EUROSTAT (nama_10_gdp) and DG REGIO.

The geographical concentration is even more apparent when looking at the regional level, as in some cases the funding injection represents close to or more than 4% of the region's GDP, as in some Hungarian regions during the 2014-2020 period. In line with its legal basis (Art. 174 of the Treaty on the Functioning of the European Union), the EU's less developed regions are the main beneficiaries of cohesion policy ([253]). While home

([253]) For the 2021-2027 period, the group of less developed regions includes regions with a GDP per capita of less

Figure 4.3.3: Share of cohesion policy funding allocated to various fields of interventions, EU-27, 2007-2013, 2014-2020 and 2021-2027



Source: DG REGIO.

to around 27% of the EU's population (2024 estimate), they have been allocated more than 69% of the 2021-2027 funding, against 19% for the transition regions (25% of the EU population) and 12% for the more developed regions (48% of the EU population). Aid intensity (i.e. the amount allocated per person per year) also reflects this concentration on less developed regions, where it reaches close to EUR 303 against EUR 87 and EUR 30 in the transition and more developed regions respectively ([254]).

Table 4.3.1: Distribution of population, cohesion policy funding and aid intensity by categories of regions, 2021-2027

	Share in total funding	Share of population	Aid intensity
Less developed	69.3%	27.0%	302.8
Transition	18.7%	25.4%	87.1
More developed	12.0%	47.6%	29.7
EU-27	100%	100%	118.0

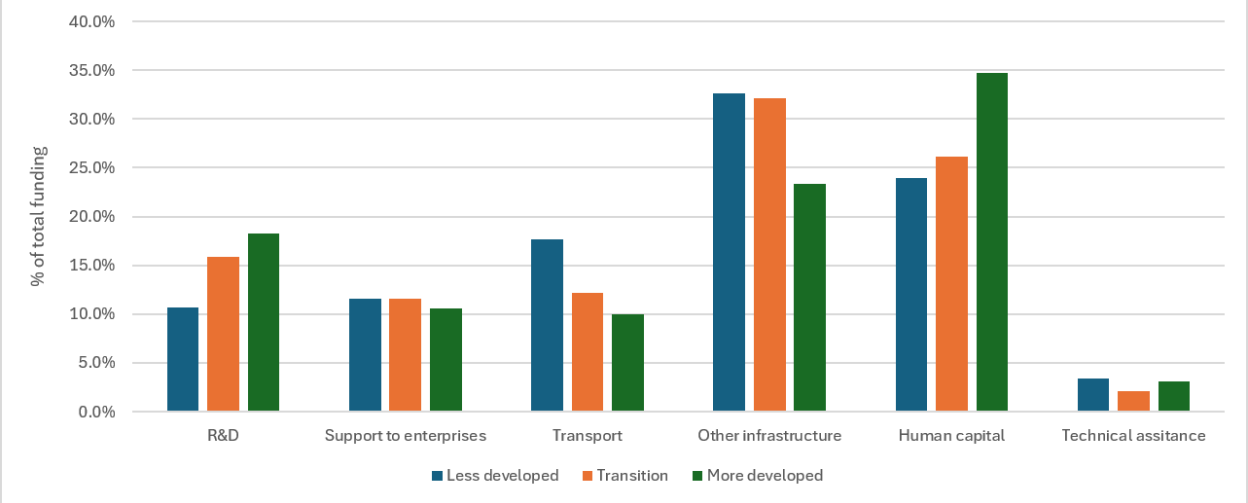
Source: EUROSTAT (nama_10_e_p) and DG REGIO. Aid intensity is EUR per person per year.

Cohesion policy funding is also concentrated on fields of interventions that are essential to foster growth and development, such as research and development (R&D), support to enterprises, investment in transport and other infrastructure, human capital and technical assistance. At the level of the EU, the largest share of funding is directed to infrastructure although the weight of investment in transport has steadily declined during the last three programming periods (Figure 4.3.3).

than 75% of the EU average, transition regions have a GDP per capita between 75% and 100% of the EU average, and more developed regions have a GDP per capita above 100%.

([254]) This concentration is also apparent in the distribution of funding and participations under Priority Objective 4 (PO4) for the European Social Fund (ESF). More than 57% of the EU funding is allocated to less developed regions, reaching more than half of all participants.

Figure 4.3.4: Share of cohesion policy funding allocated to various fields of interventions, by categories of regions, 2021-2027



Source: DG REGIO.

The policy mix varies significantly between regions and Member States, reflecting the fact that the programmes adapt to local needs. Less developed regions and Member States have a greater latitude to allocate the funding to infrastructure while more developed ones tend to allocate a bigger share to support for R&D and human capital. For example, in less developed regions, almost 51 % of the 2021-2027 funding has been allocated to transport and other infrastructure while in the more developed regions only 33 % is allocated to these fields, with the largest shares going to human capital (35%) and R&D (18%).

4.3.3. Cohesion policy's impact on the EU's economies – what does the literature say?

The literature on the macroeconomic impact of the policy has grown substantially over the past two decades using a wide range of methods, and converging towards a generally positive assessment of the policy's effects on growth and regional convergence ([255]). Serafini concludes that the empirical literature gives a predominantly favourable assessment of the impact of EU cohesion policy (Serafini, 2026). Results do not differ substantially across publication periods or across the programming periods analysed, and the assessment remains favourable when the analysis is restricted to the most rigorous counterfactual designs.

Overall, the policy is found to be generally effective, especially when taking a long-term view over successive programming periods (see (Alecke et al., 2025); (Dall'Erba and Fang, 2017); (Berkowitz, Monfort and Pieńkowski, 2020); (Di Pietro, Haustein, Conte, D'Adamo, & Winterhager, 2026)). However, its impact seems to be highly dependent on the regional context and investment needs. In the first place, the impact tends to be stronger in relatively less developed regions which implies that the policy is helping to reduce regional disparities both within the EU and within Member States (see for instance (Crucitti et al., 2024)). The impact of the policy is also highly dependent on the composition of the interventions, as some investments have more long-lasting effects on the structure of the regional economies than others whose effects wear off after a short time (see for instance (Crucitti et al., 2024)).

Some contributions have also estimated the fiscal multipliers attached to the policy, providing an indication of how many euro of economic output are generated for each euro invested through the policy. Canova and Pappa found that the ERDF produces a positive although short-lived effect on

([255]) See for instance (Lobo & Bande, 2026); (Bandeira Morais, 2025); (European Commission: DG Regional and Urban Policy, 2025h); European Commission, 2024, (European Commission, 2022); (Serlenga, 2024).

GVA ([256]) while the ESF generates substantial and persistent medium-term effects: an increase in ESF funding equal to 1% of regional GVA is estimated to induce a three-year cumulative GVA multiplier of about 4.4% (Canova and Pappa, 2025). Destefanis and Di Giacinto estimated long-run GDP multipliers of approximately 2.7 for the ERDF and CF (Destefanis and Di Giacinto, 2025) while Crucitti et al. report an EU wide GDP multiplier of around 3 in the long run for cohesion funding as a whole (Crucitti et al., 2024). For the ESF, YEI and REACT-EU combined, Casas et al. estimate that each euro spent generates a total of 1.3 euro in 2030 (Casas et al., 2025b).

Lastly, the economic literature has analysed the spillover effects of cohesion policy, i.e. the impact an investment in a given region has on other regions in the EU, for instance via trade linkages or changes in factor prices. Positive spillover effects were found in (Fiaschi, Lavezzi and Parenti, 2018)([257]) and (Amendolagine, Prota and Serlenga, 2024) ([258]). This finding is consistent with (Crucitti et al., 2023) who stress that these positive spillovers partly explain why the policy benefits all regions in the EU in the long run, even those which are net contributors to its financing.

Two main strands of methodologies have been applied to understand the mechanisms through which the policy produces its effects and to quantify its impact on cohesion and the performance of the EU economies: model-based simulations and econometric analyses. The two approaches and the results of recent analyses are reviewed in the next sections.

([256]) Note that, if the authors report large contemporaneous fiscal multipliers for the ERDF (i.e. at the moment of the policy injection), their values rapidly drop after as if the interventions had no impact in the long run. However, the method they adopt exponentially increases the data required, while the long, high-frequency, or reliable historical time-series data for government consumption and capital investments needed to obtain accurate estimates with such approach often lacks at the subnational level.

([257]) Which estimate that for every euro of Objective 1 funds directly invested in a target region, an additional EUR 0.52 of economic output is generated across the broader European economy due to positive spillovers into neighbouring regions.

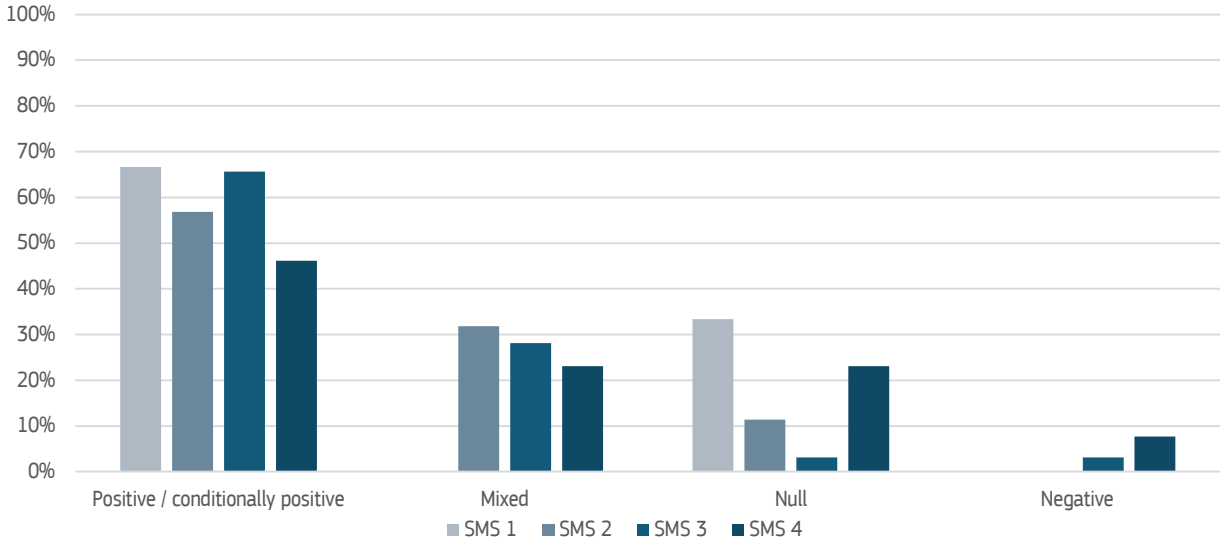
([258]) Which report that about 66 per cent of the regions included in the analysis benefit from significant spillovers generated in other regions while around 60% generate significant spillovers in other regions.

4.3.4. Econometric evidence

The effectiveness of EU cohesion policy in fostering regional economic growth remains a key question for policymakers. Econometric techniques offer the ability to assess the causal effect of cohesion policy interventions compared with what would otherwise have happened without cohesion policy support. To establish this causal effect, recent research projects employ advanced counterfactual methods to assess whether and how EU funding has influenced economic outcomes across regions, with the aim of providing new insights into the policy's impact over time and across different types of regions (cf. also (European Commission: DG Regional and Urban Policy, 2025h) and (Ceccanti, Heidelk and Kloepfer, forthcoming) for a review). Taken together, these recent studies confirm previous findings and tend to indicate (i) the policy's overall positive economic impact, (ii) spatially heterogeneous effects concentrated in less developed regions, central and eastern Europe, and, to some degree, the more industrialised and so-called intermediate regions (regions which are neither highly urbanised nor very rural), (iii) temporal heterogeneity, with impacts tending to increase over time, (iv) that the investment mix matters, with transport infrastructure, the ERDF, and the CF delivering the strongest GDP effects in lagging regions, while the ESF proved more effective for employment and human capital outcomes, and (v) robustness across data sources and levels of analysis, such as NUTS 2 or NUTS 3 investigations as well as EU-level and national assessments.

Overall, econometric evaluations have shifted from earlier methods with weak causal identification towards more robust counterfactual approaches, although methodological and data-related challenges remain; see (Ceccanti, Heidelk and Kloepfer, forthcoming) and (Heidelk, forthcoming) for a review. In a quantitative review of the literature, Serafini analyses the impact of cohesion policy funds described in 92 empirical studies published between 2001 and 2026 (Serafini, 2026). The aggregate evidence is predominantly favourable, with 59% of the body of research reporting positive or conditionally positive headline results and a further 28% reporting mixed results. Compared with all studies considered together, the sub-group of studies using the strongest counterfactual designs returns a more balanced but still predominantly

Figure 4.3.3: Share of directions of results, by quality (academic literature)



Source: DG REGIO based on Serafini (2026). A higher score in the Maryland Scientific Methods Scale (SMS) corresponds to a stronger counterfactual identification strategy (see Serafini 2026).

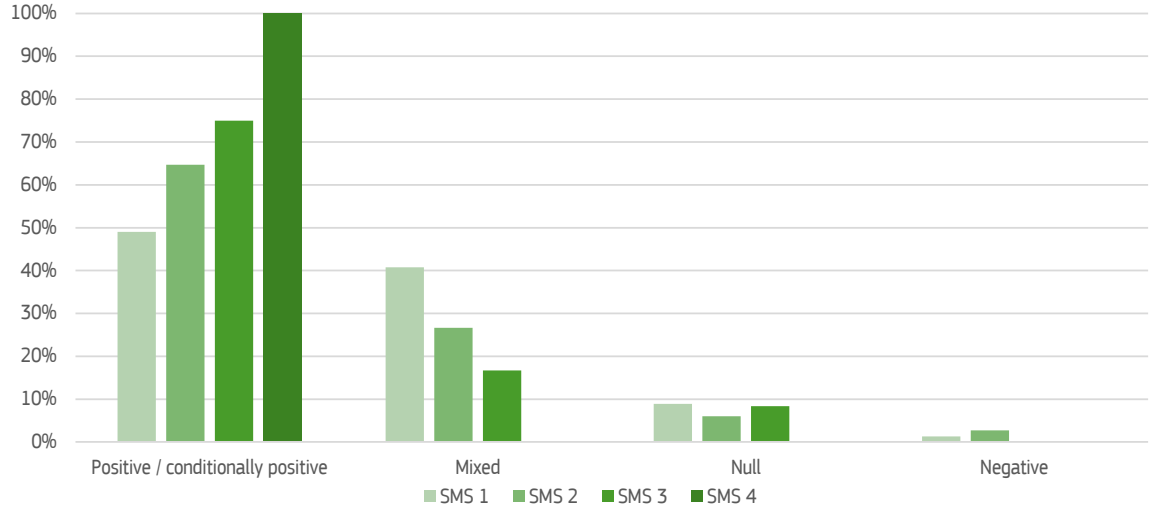
favourable distribution of findings (Figure 4.3.5). Such studies narrow the causal focus to specific local thresholds and regional margins, providing a more precise picture of where, when, and under what conditions the policy is most effective.

This pattern also holds across the main macroeconomic outcome domains, though with varying degrees of consistency. Evidence is strongest for regional GDP, income, and convergence, where the large majority of studies find positive effects regardless of the methodological approach employed. Employment is also often favourable: 21 of 33 readings are positive (64%), with 11 null (33%) and 1 negative (3%). Labour productivity and total factor productivity also show mostly positive results, though they rely on a thinner evidence base and are more sensitive to the type of intervention and regional context analysed.

Box 4.3.1: Evidence from Member State evaluations

Evidence from Member State evaluations points in the same direction. Serafini (2026) reviewed more than 350 Member State and regional evaluations using quantitative methods. While of the 350 studies 44% had an SMS score of 1 and 52% a score of 2, Serafini found that most report positive or conditionally positive results (Figure below). On GDP, income, and convergence, 95% of the studies displayed positive results. However, the evidence base focuses mainly on micro- and meso-level outcomes, such as employment, firm profitability, and innovation, rather than aggregate macroeconomic indicators, which is broadly in line with evidence from recent meta-analyses (e.g. Serrano Alarcon and Aragon Aragon (2026) on labour market outcomes and Haepp (2025) on education) which also tend to find positive findings.

Share of directions of results, by quality (Member State evaluations)



Source: DG REGIO based on Serafini (2026). A higher score in the Maryland Scientific Methods Scale (SMS) corresponds to a stronger counterfactual identification strategy (see Serafini 2026).

Looking at the aggregate effect of all cohesion funds combined, the observed findings tend to be conditional on contextual factors and unequally distributed across the regions of the EU. Most studies find that the effects are focussed on less developed regions ((European Commission: DG Regional and Urban Policy, 2025h); (Serafini, 2026)). Studies using a regression discontinuity design (RDD) approach generally find a significant and positive impact of cohesion policy funds on growth in the main recipient regions, estimating that every euro spent in such regions generated approximately EUR 1.20 of additional GDP ((Becker, Egger and von Ehrlich, 2010); (Becker, Egger, & von Ehrlich, Absorptive capacity and the growth and investment effects of regional transfers: a regression discontinuity design with heterogeneous treatment effects, 2013); (Becker, Egger, & von Ehrlich, Effects of EU regional policy: 1989-2013, 2018)). European Commission evaluations of the 2007-2013 period using propensity score matching have estimated that funding raised the growth rate of supported regions by between 0.5 and 0.7 percentage points on average (European Commission, 2016), while other studies found that effects varied markedly across Member States (Crescenzi & Giua, One or many Cohesion Policies of the European Union? On the differential economic impacts of Cohesion Policy across member states, 2020b). Earlier literature also finds that effects tend to be stronger in regions with higher institutional quality and human capital, and more limited elsewhere ((Crescenzi & Giua, One or many Cohesion Policies of the European Union? On the differential economic impacts of Cohesion Policy across member states, 2020b).; (Di Caro & Fratesi, 2022); (Rodríguez-Pose & Garcilazo, Quality of government and the returns of investment: examining the impact of cohesion expenditure in European regions, 2015)).

The composition of the investment also matters, with evidence of complementarities between hard infrastructure, such as transport, and soft investments such as R&D and business support

(Cristofoletti et al., 2024; Fratesi and Perucca, 2019). However, there are diminishing returns to funding intensity above certain thresholds ((Cerqua & Pellegrini, Are we spending too much to grow? The case of Structural Funds, 2018); (Becker, Egger, & von Ehrlich, Too much of a good thing? On the growth effects of the EU's regional policy, 2012)), although this has not been confirmed in later assessments. Beyond GDP, studies have assessed impacts on employment, labour productivity and total factor productivity, with results varying across funds and regions. The diversity of funds is reflected in the heterogeneity of outcomes, with the ERDF tending to support productivity, the ESF favouring employment and human capital, and the CF proving particularly effective in lagging regions ((Bourdin, Destefanis, Coppola, & Kubara, 2025); (Canova and Pappa, 2025)). A recent contribution to the research also finds that the allocation of the fund allocation is only partially responsive to regional needs, with institutional and political factors shaping distribution (Petrakos, Sotiriou, & Alexiou, 2026) as well. Meta-analyses of the early literature noted a learning effect whereby more recent estimates tend to be more positive ((Dall'Erba and Fang, 2017); (Mohl, 2016); (Pieńkowski & Berkowitz, 2016)).

Building on the previous econometric literature, both and apply RDDs. Focusing exclusively on the 2014–2020 programming period, the evidence shows a positive impact on real GDP growth, but only under restrictive assumptions (Daminger, Huber, & Nowotny, 2026). Under different assumptions, the effect cannot be interpreted as causal. Using data across three programming periods, the impact of cohesion policy was found to be stronger and more robust for 2014-2020 than for earlier periods, suggesting that effectiveness has improved over time (Bachtrögler-Unger, J, 2026). For 2014-2020 specifically, an additional EUR 100 per capita in ERDF and ESF payments was associated with 0.15 to 0.21 percentage points higher average annual real GDP per capita growth between 2014 and 2022. This is equivalent to about 1.2 to 1.7 percentage points in cumulative terms, for regions just below the threshold of 75% of EU average GDP per capita that defines less developed regions, compared with regions just above it. The causal interpretation of these estimates calls for caution, as regions on either side of the threshold already differed in sectoral structure before the programming period, and the sample of regions is relatively limited. Even so, the findings for 2014–2020 align with and expand on (Daminger, Huber, & Nowotny, 2026), while also suggesting that cohesion policy effectiveness has strengthened over time.

Exploiting new NUTS 3 level funding data (Heidelk, Musmeci, Traets, & Kulkarni, 2026) and an inverse probability weighting approach, cohesion policy investments is found to have a positive effect on real GDP per capita growth (Nowotny, K., 2026). A 1% increase in cumulative per capita funding above the level of an otherwise comparable NUTS 3 region yields an increase of about 0.017 to 0.032 percentage points in cumulative real GDP per capita growth. Focusing on the most conservative estimate, an additional EUR 100 per person in EU cohesion policy payments is associated with 0.65 percentage points of additional cumulative real GDP per capita growth, against an average NUTS 3 cumulative growth rate of 15.6% during the period in question. However, the study explores cumulative effects, which may be underestimated given that labour market and infrastructure interventions take time to have an impact. Nowotny also shows that the substantial negative COVID-19 shock depressed the observed effects, suggesting that outcomes may have been more positive in the absence of such disruption.

To substantiate the overall effect, Nowotny also explores how the effect of the policy varies with aid intensity. In contrast to studies such as (Becker, Egger, & von Ehrlich, Too much of a good thing? On the growth effects of the EU's regional policy, 2012) or (Ehrlich, M.V.; Overman, H.G, 2020), Nowotny finds that each additional euro has a similar effect regardless of aid intensity. In other words, unlike in previous programming periods and/or methods, policy effectiveness does not appear to decline at higher levels of funding, in line with (Letta M. , 2025). He also finds that the observed effects may be driven by supply-side rather than demand-side effects, again pointing to the importance of the policy's investment mix. Finally, beyond the overall effect, Nowotny confirms previous findings that the main effects are particularly strong in less developed regions.

Spruk ((Spruk R. , 2025), (Spruk R. , 2026)) finds that, in a difficult macroeconomic context, cohesion policy helped stabilise regional economies in the EU, mainly by reducing unemployment gaps. GDP effects were smaller,

but long-term effects appear stronger than short-term ones, especially where infrastructure and productivity gaps were initially large. Results vary across regions. Better institutional quality, as a proxy for absorptive capacity, is linked to stronger labour market outcomes, while more rural characteristics are linked to weaker ones. This suggests that both administrative capacity and economic geography shape policy effectiveness.

More industrialised regions tend to perform better in GDP, manufacturing, productivity, and innovation, possibly because they have stronger supplier networks, more specialised labour markets and greater capacity to absorb investment. Less industrialised regions benefit more from labour market stabilisation. Intermediate regions (that is, NUTS 2 regions with a mixed urban-rural structure, often combining secondary cities, industry and surrounding rural areas) show the clearest stabilising effects. They demonstrate relatively strong results in labour markets, manufacturing, productivity and professional services. Urban-core, other urban and rural-peripheral regions show more mixed outcomes. This points to the need for targeted rather than uniform policy approaches.

The effects also differ by funding instrument. For example, the CF is most clearly linked to some stabilising GDP outcomes, especially in the longer run, as well as infrastructure, public investment capacity, and unemployment stabilisation. The ESF has the most consistent effects on unemployment reduction and labour market adjustment. Overall, the results suggest that the effectiveness of cohesion spending depends not only on the volume of funding, but also on the capacity to design and deliver high-quality projects.

In a similar direction, machine-learning approaches estimate positive effects on GDP per capita, employment, and labour productivity. For example, on average, a positive and statistically significant increase in GDP per capita of 5.3% and in employment of 3.0% was found, with most benefits concentrated in less developed regions (6.4% for GDP per capita and 4.3% for employment) (Cerqua, Counterfactual impact evaluation of cohesion policy 2014-2020 – Machine Learning Control Method, 2025) and (Letta M. , 2025). The investment mix also correlates with the observed impacts. Regions investing more in transport infrastructure, specialising in service activities and/or receiving and spending more funds per capita experience the greatest positive effects, that is, above 13% for both GDP per capita and employment. However, this relationship does *not imply causal relationships between the predictors and economic growth; they merely [point] to statistical associations between the estimated effects and the regional characteristics more associated with them*. Notably, as with Nowotny (Nowotny, K., 2026), these studies also do not find evidence of decreasing returns from cohesion policy transfers.

4.3.5. General equilibrium effects of the policy – Spillovers, impact on regional disparities and returns on investment

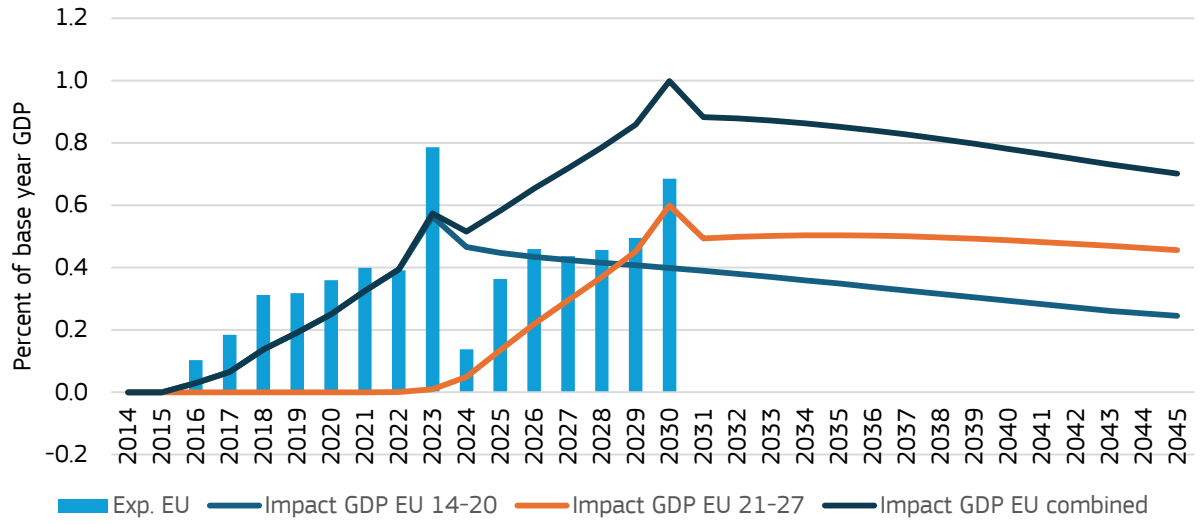
Model simulations have been used to assess the impact of cohesion policy at macroeconomic level for a long time. Next to econometric techniques, they can provide information on the channels through which policy interventions produce their effects and improve understanding of the main factors affecting the magnitude and the nature of the policy impact. In the early stage, these analyses were essentially conducted at the national level, using various models like HERMIN (Bradley & Untiedt, 2009), EcoMod (Bayar, 2007), GIMF (Allard, Choueiri, Schadler, & van Elkan, 2008) or QUEST ((Varga and in't Veld, 2011), (Monfort et al., 2017)).

Clearly, this considerably reduced the capacity to investigate the policy's effectiveness in reducing regional disparities and in recent years, models working at the regional level have been developed to fill this gap (see for instance (Korzhenevych & Bröcker, 2020), (Mogila, Miklošovič, Lichner, Radvanský, & Zaleski, 2022), (Varga and in 't Veld, 2020), (Blouri & Ehrlich, 2020)).

Over the last decade, the Joint Research Centre and DG REGIO also developed the RHOMOLO regional model ([259]) which has been used to

([259]) RHOMOLO is a dynamic spatial computable general equilibrium (CGE) model. Its purpose is to provide scenario analyses with sector-, region-, and time-specific results related to investment policies and structural reforms in the EU. The economic foundations of the model are based on the well-established literature on general equilibrium models, and the model itself is featured in numerous articles contributing to that same literature (see, among others, Lecca et al., 2018, and Di Pietro et al., 2020).

Figure 4.3.4: Cohesion policy's impact on GDP (EU-27), 2014-2020 and 2021-2027



Source: RHOMOLO simulations (GDP impact) and DG REGIO (cohesion policy data).

assess the impact of cohesion policy on the performance of EU regions and the extent of regional disparities within the EU (e.g. (Di Comite, Lecca, Monfort, Persyn, & Piculescu, 2018), (Crucitti et al., 2024)). The model has also been used to address more specific cohesion-related issues, for instance: (i) focusing on the equity-efficiency trade-off of the policy (Barbero, et al., 2024a) ; (ii) smart specialisation (Gianelle, Guzzo, Barbero, & Salotti, 2024); (Barbero, et al., 2024a) and (Barbero, Gianelle, Guzzo, & Salotti, 2024b)); (iii) the magnitude of regional and international spillovers ((Lecca, Christensen, Conte, Mandras, & Salotti, 2020); (Crucitti et al., 2023); (iv) the influence of the quality of institutions (Barbero, et al., 2023); (v) the long-run effects of investment in transport infrastructure (Persyn, et al., 2023); or (vi) the impact of regional investment in skills and active labour market policies in the context of the ESF+ (European Commission, 2024a).

In general, model-based simulations point to cohesion policy's significant impact on key economic variables and on convergence. Looking at the 2014–2020 and 2021–2027 periods, macroeconomic simulations based on RHOMOLO ([260]) show how the effects of these programmes build up gradually over the implementation period, with EU GDP estimated to be almost 0.6% higher by 2023 than it would have been in the absence of the policy as far as the 214-2020 programming period is concerned. A similar pattern is projected for the 2021–2027 programmes, with GDP expected to be around 0.6% higher when the programmes come to an end. Taken together, the two programming periods are projected to raise EU GDP by around 1% by 2030 (Figure 4.3.6).

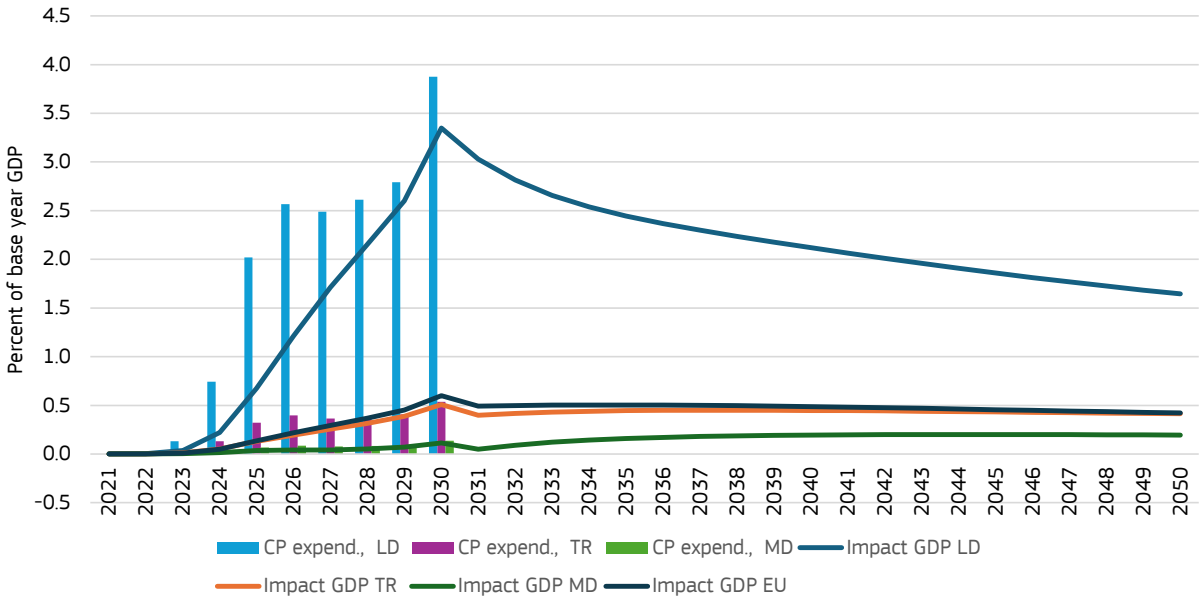
The impact of cohesion policy extends well beyond the periods of 2014-2020 and 2021-2027 in which expenditure takes place. This is shown in Figure 4.3.7, which clearly highlights the policy's lasting effects, which are driven primarily by improvements on the supply side of the economy.

Indeed, in 2045, -more than 30 years after the start of the 2014–2020 programming period and 25 years after the start of the 2021–2027 period-, the cumulative multiplier, defined as the ratio of cumulative GDP gains to total expenditure of both periods combined, is projected to be at 3.3. In other words, each euro invested through cohesion policy is projected to generate more than EUR 3 in additional EU GDP. The 25 years multiplier is 2.8 for the 2014-2020 programmes and 3.1 for the 2014-2020 programmes. This corresponds to an average annual rate of return of respectively 4.1% and 4.6%.

The impact of cohesion policy varies considerably across regions. The effects are considerably stronger in less developed regions (Figure 4.3.7). By 2030, GDP in these regions is projected to be more than 3.4% above the baseline, compared to

([260]) See (European Commission: DG Regional and Urban Policy, 2025h) for the 2014-2020 programmes and (Christou, et al., 2026) for the 2021-2027 programmes.

Figure 4.3.5: Cohesion policy's impact on GDP (EU-27) and by categories of regions, 2021-2027



Source: RHOMOLO simulations (GDP impact) and DG REGIO (cohesion policy data).

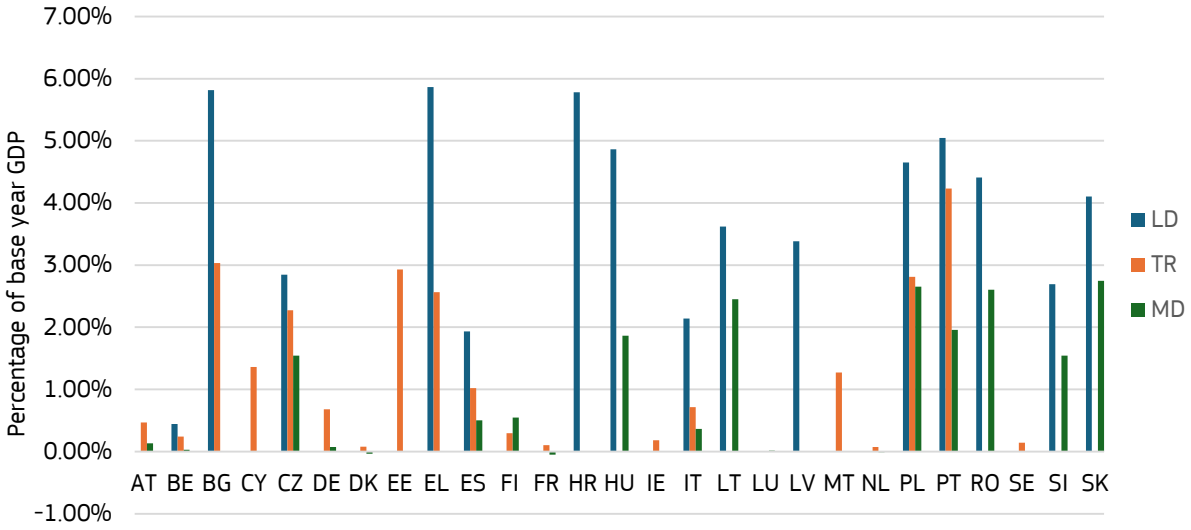
increases of 0.5% in transition regions and 0.1% in more developed regions ([261]).

This differentiated impact contributes to a reduction in regional disparities. In particular, the ratio between GDP per capita of the 10% most developed and 10% least developed regions is projected to decline by more than 4% by 2030, indicating a narrowing of development gaps. In this respect, cohesion policy effectively achieves its objective of promoting economic, social and territorial cohesion.

The same holds for how the policy affects regional disparities within Member States. Its impact on GDP is systematically higher in less developed regions, followed by transition and then by more developed regions (Figure 4.3.8).

([261]) The lower macroeconomic impact of cohesion policy in transition regions and more developed regions is primarily driven by two factors: smaller funding allocations and their substantial net contributions to the EU budget. Moreover, a significant share of the total economic impact in these regions is generated by spatial spillovers stemming from policy interventions in less developed regions. (see figure 4.3.9)

Figure 4.3.6: Cohesion policy's projected impact on GDP in 2030, by Member States and categories of regions, 2021-2027



(1) Member States with only one category of regions were not included.

Source: RHOMOLO simulations.

The nature of the policy impact also evolves over time. In the short term, a significant share of the effect is driven by demand-side factors, which accounted for almost 80% of the total GDP impact in 2023. This share has gradually declined over time, is expected to reach 20% in 2030, and projected to disappear shortly after the programmes' implementation ends. **By contrast, supply-side effects materialise early but persist, reflecting the improvements in the structure of the regions' economies.**

Programmes implemented in one region produce effects that extend beyond its borders, via the spatial spillovers generated by the policy interventions. Such spillovers mainly operate through three channels: trade and general equilibrium interactions, the diffusion of knowledge generated through R&D, and the propagation of digital productivity gains.

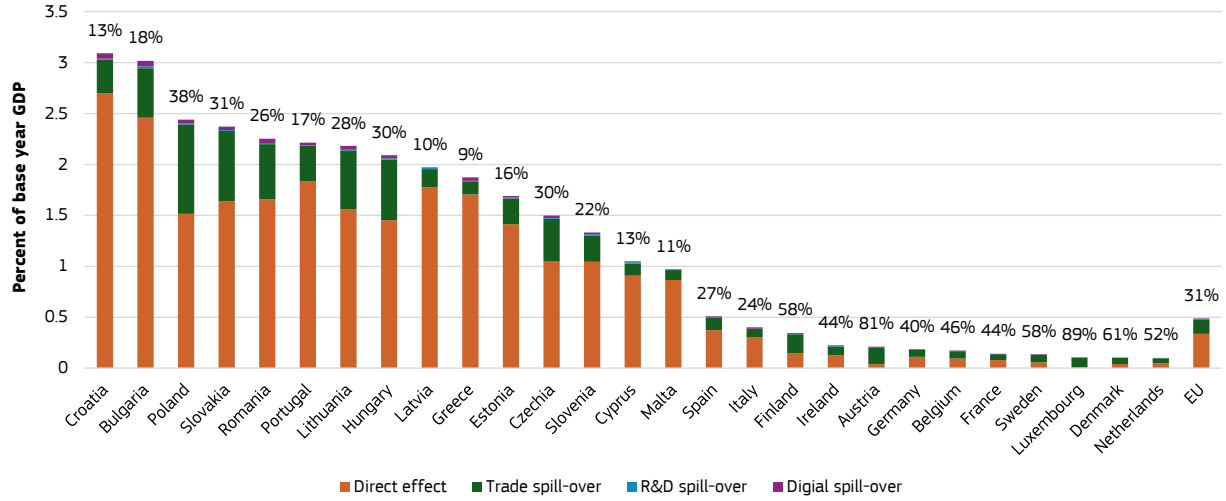
The results of the simulations indicate that spillovers are quantitatively significant. In the long run, if 69% of the impact of the 2021–2027 programmes on EU GDP is attributable to the direct effects of the policy, 31% is due to these three spillover channels (Figure 4.3.9). Trade and general equilibrium spillovers account for 92% of the total spillover, digital TFP spillovers for 6%, and R&D knowledge spillovers for 2%([262]).

The magnitude and composition of spillover effects differ markedly across categories of regions. In the less developed and transition regions, R&D and digital spillovers only play a marginal role. In the more developed regions, they account for a much larger share of the total spillovers, reflecting the capacity of these regions to absorb and exploit the productivity gains generated by the policy elsewhere.

The size and the direction of spillovers also vary from one region or Member State to another. In general, the share of the GDP impact attributable to spillovers is larger for more developed Member States. For some of them, it is even the main source of benefits that ensue from the policy, given the relatively small size of their programmes (e.g. 89% of the impact in Luxemburg comes from spillovers) or their intense trade relationships with main beneficiaries (e.g. Austria where 81% of the impact is due to spillovers given its close economic integration with Eastern European economies). Spillovers generated by the programmes implemented in the main beneficiaries of cohesion policy largely explain

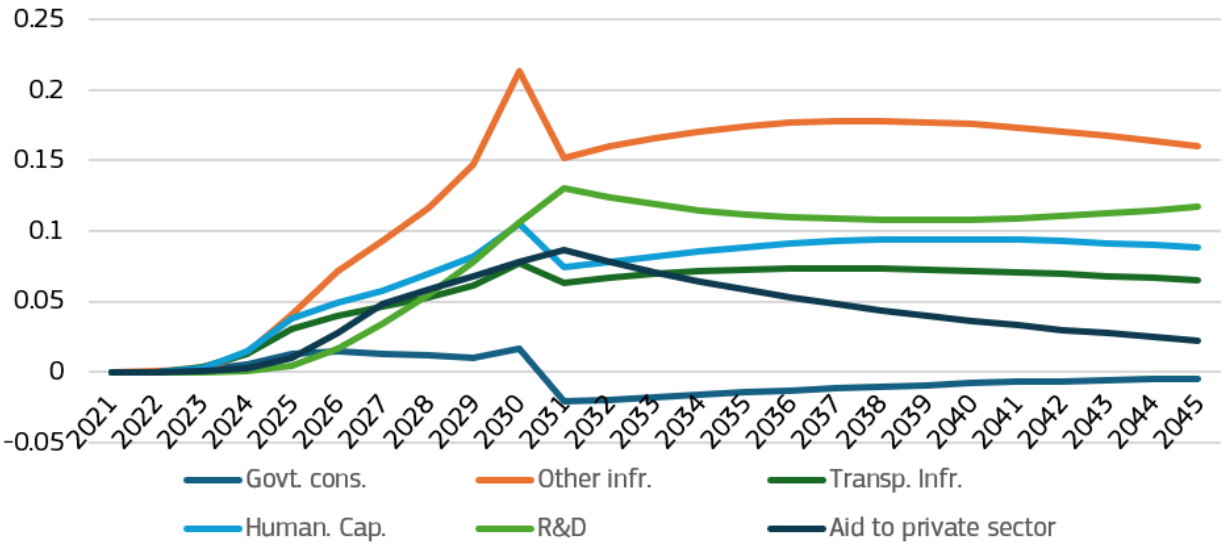
([262]) Note that the digital and R&D spillovers are generated by only a subset of the cohesion expenditure while trade spillovers are generated by the whole policy package.

Figure 4.3.7: Cohesion policy's impact on GDP, direct effect and spillovers, 2021-2027



Source: RHOMOLO simulations. Figures above the bar indicate the share of the total impact stemming from spillovers.

Figure 4.3.10: Cohesion policy's impact on EU GDP, by fields of intervention, 2021-2027



Source: RHOMOLO simulations.

why the net contributors to the policy also end up benefiting from it.

As stated before, the impact of cohesion policy is very heterogeneous across EU regions. This heterogeneity first reflects the distribution of the net policy injection, which widely varies from one region to another. However, the impact per euro invested (the so-called multiplier) is also heterogenous, depending on the composition of interventions, the financing mechanisms, the spillovers, and the fundamental structure of the regional economies.

Model simulations suggest that the composition of a region's policy mix strongly affects its multiplier.

Indeed, the impact of interventions that create only demand-side effects tend to vanish soon after their termination, while the impact of interventions that also affect the structure of an economy continues to increase long after the termination of the programmes([263]). As a result, the multiplier is much larger in the latter case.

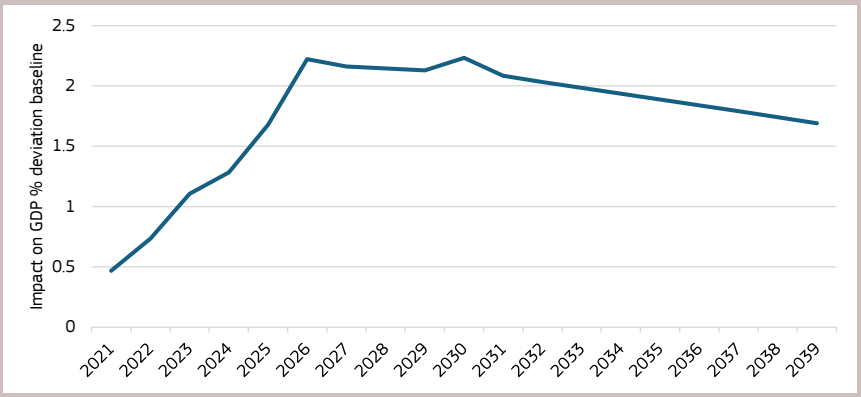
([263]) Interventions in the fields of transport and other infrastructure as well as in human capital have both

Box 4.3.2: Combined Macroeconomic Impact of the Recovery and Resilience Facility and Cohesion Policy

RHOMOLO has been used to assess the combined macroeconomic impact of the RRF and Cohesion Policy. For the RRF, the financial envelope of €653 billion is shared in grants (€363 billion) and loans (€290 billion). Cohesion policy expenditures amount to €400 billion in the 2014-2020 period and €378 billion in the 2021-2027 period.

Simulation results indicate a substantial and persistent positive impact on EU GDP, with a combined effect which increases steadily during the implementation phase of the RRF, reaching a peak of +2.1% above the baseline in 2026 (Figure below). As RRF disbursements phase out and cohesion policy spending continues both over the 2014-2020 and 2021–2030 programming period, the impact remains broadly stable, reaching a second peak of +2.2% in 2030. Thereafter, the effect gradually declines but remains significant, at +1.7% above the baseline by 2039.

Combined EU GDP impact of the RRF and cohesion policy (2014-2020 and 2021-2027)



Source: RHOMULO simulations.

For instance, after 25 years, every euro invested by the 2021–2027 programmes in R&D and support to enterprises is expected to have generated approximately EUR 5 in additional GDP, while investments in infrastructure and transport, and in human capital are expected to have generated around EUR 4 and EUR 3 in additional GDP, respectively.

The multiplier is also affected by how a Member State contributes to the EU budget to finance the policy (e.g. by taxes or debt), which can lead to different outcomes in different countries in terms of when the policy produces its impact.

demand-side and supply side effects. Demand side effects are produced by the temporary increases in demand accounting for the purchase of goods and services required to build or renovate infrastructures or to invest in training people. On the supply side, these investments help to reduce transport costs, therefore stimulating trade flows (investment in transport infrastructure), and raising total factor productivity (investment in other infrastructure) or labour productivity (investment in human capital).

Box 4.3.3: The geography of EU policies' impact

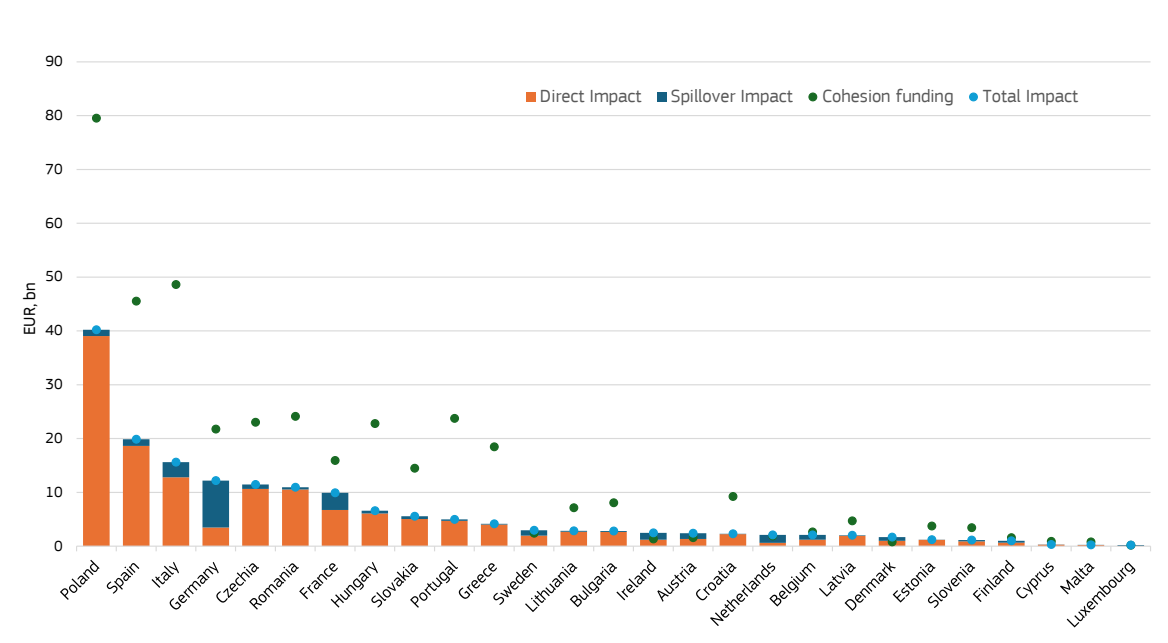
Recent analysis of the RRF has stressed the important spillovers it generates, notably due to the numerous trade links between Member States. In particular, the results suggest that in 2030 the cumulative impact of the RRF on the EU GDP would amount to EUR 685.1 bn from a EUR 650 bn policy injection, with EUR 138.8 bn in intra-EU spillovers. This implies that around 20% of the impact of the RRF on the EU economy stems from the spillovers between Member States generated by the RRPs.

The weight of the spillovers differs from one Member State to another. For instance, in Italy and Spain the gains are primarily driven by the direct impacts of their national plans and spillover impacts from other RRPs contribute only to a limited extent to the GDP increase. In contrast, for Member States highly integrated in the Single Market like Germany, the Netherlands, Austria or Denmark, spillovers more than double the direct impact of the national RRPs.

Cohesion policy is also known for generating important international spillovers. According to the results of the same type of analysis, during the 2014-2020 period the policy is estimated to have led to an EU GDP increase of EUR 172.2 bn with around EUR 30 bn or 17% of this impact stemming from the cross-national spillovers.

As for the RRF, the importance of the spillovers in the total impact of the programs significantly varies across Member States (Figure below). It is particularly low in the main beneficiaries where the funding corresponds to a sizeable policy injection, like in Poland where only 3% of the total impact is explained by the spillovers coming from the programs implemented in the rest of the EU. In Member States where cohesion funding is less relative to their GDP, most of the impact of the policy is due to spillovers, like for instance in Germany, The Netherlands or Luxemburg where spillovers account for more than 70% of the total impact.

Direct and spillover impacts on GDP relative to cohesion policy envelopes (2014-2020), by country



Source: European Commission services.

Finally, the structure of a region's economy, such as the extent to which production relies on capital relative to labour, the type of labour (low- vs high-skill) used, the weight of exports and imports in GDP or labour market conditions, crucially affects the impact of the policy and the multipliers. For example, using RHOMOLO, it was found that multipliers associated with public consumption are significantly constrained by openness to trade and the region's saving rate, while they are bigger in regions with higher unemployment (Casas et al., 2025a). Similarly, (Barbero, et al., 2024a) suggest that public investment interventions have a bigger impact in

regions with an initially lower public capital stock, confirming the idea that this type of investment is more effective in regions lacking public infrastructure.

4.3.6. Conclusions

The evidence reviewed in this section answers the questions raised at the outset. The resources for cohesion policy are indeed modest relative to the EU's GDP indeed, but they are concentrated where needs are greatest. Less developed regions are home to 27% of the EU population and receive more than 69% of the 2021-2027 allocation.

Econometric and model-based evidence point in the same direction. Most of the 92 empirical studies reviewed report positive or conditionally positive effects, particularly on regional GDP, income and convergence. Recent work suggests that the policy has become more effective over time and finds no sign that returns decline with increased funding. RHOMOLO simulations suggest that the 2014-2020 and 2021-2027 programmes together could raise EU GDP by around 1% in 2030, and GDP in less developed regions by more than 3.3%. The gap in GDP per capita between the 10% most and least developed regions would narrow by more than 4%. By 2045, each euro invested could yield more than EUR 3 of additional EU GDP. The benefits of the policy are not restricted to the regions where it is implemented but are spread across the EU, mostly via the strong trade links resulting from the single market. Around a third of the long-term impact of the policy comes from such positive spillovers, which explains why net contributors also benefit from it.

Returns depend on what is financed and where. Supply-side investment in R&D, business support, infrastructure and human capital yields far more than measures that only stimulate demand. Institutional quality and administrative capacity also determine the return on each euro. To make the most of the policy's contribution to EU competitiveness, programmes therefore need a place-based investment mix, combined with reforms that build the capacity to deliver high-quality projects.