

DISCUSSION

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Constraining and Enabling Factors of a Successful Regional Policy in Europe

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ABSTRACT

Recent papers show that the impact of Cohesion Policy is not uniform in space but larger, smaller or insignificant depending on the regions. These outcomes mostly depend on the characteristics of each territory (conditioning factors). This paper reviews them and investigates, through descriptive statistical techniques, their presence in European regions.

European regions are then classified in terms of need on two dimensions: GDP per capita and GDP growth. Results show that most policy favourable conditioning factors are also factors of growth. As a consequence of that, the potential policy impact is often larger in those regions which are less in need of support.

In terms of policy consequence, cohesion policy should remain place-based and fully consider the regional specificities, as well the specificities of the various territories inside a region. However, since the conditioning factors for policy effectiveness are less present in regions more in need, accepting trade-offs will be required, and in particular one between growth and policy effectiveness on one hand and territorial cohesion on the other. Lagging regions will also require interventions creating framework conditions, and those territorial assets which they are missing.

KEYWORDS

Regional Policy, Cohesion, EU, Conditioning Factors

JEL CODES

R58, R11, R12

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1. Introduction and aims

European Cohesion Policy (CP) as we know it goes back to the reform prior to 1989-94 programming period, following the Single European Act in 1986. Its aim is to fulfil the objective of achieving a greater social, economic and territorial cohesion (EU Treaty, article 3). EU regional policy interventions are financed by the ESIFs (European Structural and Investment Funds) and most funds are allocated to Regional Operational Programmes within National Frameworks agreed with the EU Commission, while significant funds are also allocated to the Cohesion Fund (for countries <90% GDP pp PPS) and also to interregional cooperation or Community Initiatives

In the more than three decades in which Cohesion Policy existed, it has undergone several reforms but none of them the size of that of 1989. However, each programming period has seen an update off the objectives and the modalities in which Cohesion Policy is expected to act on regional development and territorial cohesion. The main change has taken place with the 2014-2020 programming period, in which the place-based theories have been strongly implemented with the introduction of smart specialisation strategies as an ex-ante condition for the thematic objective one.

In 2021-2027, further evolutions took place, mostly outside CP itself but heavily affecting it. In particular, following the Covid-19 crisis, the EU established a Resilience and Recovery Facility (RRF) which aims at supporting reforms and investments in the EU Member States. This is a new and large investment policy which did not exist before, which is only marginally territorial, and which is expected to significantly impact growth in European countries and regions. Moreover, RRF is built on a simpler governance with respect to CP, which makes somebody question whether the CP governance should be simplified and made more similar to that of RRF.

Even in terms of assessment there has been an evolution from the first analyses, which looked at the aggregate impact of Cohesion Policy on regional growth and convergence. The results of these analyses were not homogenous and the debate between those supporting a large impact (Leonardi, 2006) and those supporting no impact (Boldrin & Canova, 2001) did not lead to a clear consensus. The reason is that Cohesion Policy is multi-faceted policy which includes a large number of objectives deployed differently in time and space, so that it would not only be difficult but also empirically wrong to assess its impact on just one aggregate indicator (Fratesi, 2016).

In the last years, the literature on the assessment of the Cohesion Policy effects has radically changed from one which tries to get aggregate results to one which investigates the so-called *conditioning factors*, which are those local or policy characteristics which can make impact larger or smaller (Crescenzi et al., 2017).

The study of those aspects is very helpful for the policymaker because in this way quantitative assessment can be used to understand which policy interventions work better in which context, and so they can help designing better policy initiatives (Fratesi, 2020, 2024).

Several papers have been published in the last few years investigating the role of many possible context variables on the impact of Cohesion Policy. A brief summary of them is provided in the rest of the paper. However, the purpose of this paper goes beyond providing an updated review of this literature because it tries and investigate where those factors are present in the European regions and in this way to understand the potential of policy effectiveness in these regions.

The objective is therefore normative: to analyse where the prerequisites for effective policy interventions are present, with the aim of providing policy suggestions for future implementation of Cohesion Policy.

The rest of the paper is organized as follows: Section 2 reviews the existing evidence on the different impacts of EU regional policy in different regions. Section 3 provides a review of the conditioning factors which have been identified in the literature as determining the differentiated impacts of Cohesion Policy. Section 4 presents the conceptual framework of the empirical analysis, which is presented in Section 5 and which, through descriptive statistical techniques, assesses the presence of conditioning factors in European regions, in terms of average endowments and also in terms of characteristics of the individual regions. Section 6 concludes with ideas to be considered for the next programming period post-2027.

2. Some recent evidence on differential impacts of Cohesion Policy

For many years, the literature on the impact of Cohesion Policy tried to detect its impact, without considering that this could have been different in different places (see, e.g. Boldrin and Canova, 2001). More recently, however, the idea of providing a single value for the impacts of Cohesion Policy was shown incorrect by several papers which, with different techniques, have analysed the differential impacts of Cohesion Policy on regions, leading to a consensus on the existence of this heterogeneity.

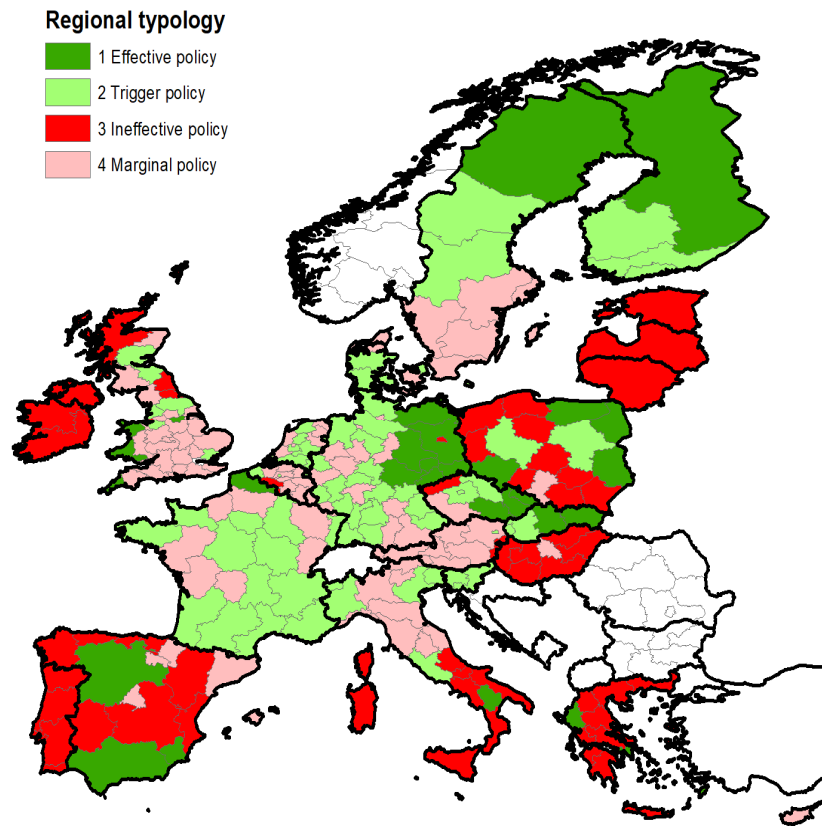
For example, Bourdin (2019) analysed the impact of Cohesion Policy on the regions of Eastern Europe to see if there are geographical effects using geographically weighted regressions (GWR) at the NUTS 3 level. The findings show the existence of multipolar convergence processes by which for instance Eastern regions closer to the Western border seem to have benefited on average more than those further away.

Another similar result has been obtained in a radically different context by Bachtrögler et al. (2020). They analysed a subset of Cohesion Policy, the part based on the interventions of support to firms in the

manufacturing sectors, so that the objective and the implementation is as similar as possible across regions and countries. The results show that the impact of Cohesion Policy support to firms is not homogeneous and regions exist in which it is high and significant while in other regions the impact is lower and even insignificant.

This idea has been further exploited by Di Caro & Fratesi (2022). In this paper, the data and the methodology are again different because exploited are the new and long-run time series of Cohesion Policy expenditure provided by the European Commission, and the Dynamic Mean Group (DMG) modelling framework to calculate the region-specific effects of the policy in terms of long-run GDP growth. In this way, it was possible to identify four categories of regions based on impact and level of expenditure, because not all regions which received high levels of funding significantly benefited from Cohesion Policy, while other regions which only received little funding got significant results thanks to a trigger effect. The result is a map of European regions where four colours are present, one for regions where policy has been effective, one for regions where policy has been effective despite the low levels of funding (trigger effects), one in which the policy has been ineffective despite high levels of funding and finally one in which the effect is not significant but this comes along little policy support, so that the policy can be considered as marginal (Figure 1).

Figure 1. Mapping the policy impact and the level of assistance in the EU regions
(source: (Di Caro & Fratesi, 2022))



3. Conditioning factors in the literature

The literature on the conditioning factors of Cohesion Policy impact is very wide and includes papers analysing several different aspects. This section does not want to present a comprehensive review of the wide literature and all its results, but to provide a synthesis of the main aspects considered, in order to provide a reference to the next sections in which a new analysis is provided of the relationship between the presence of conditioning factors and the performance of regions.¹

One of these aspects is the settlement structure of regions because it is relevant to understand whether regions are urban or rural. The first ones can be better able to exploit agglomeration economies while the others need to rely on different development mechanisms or can use some of the urban assets present in other regions through a process of borrowing size (Camagni, 2016; Meijers et al., 2016). Within

¹ For a more extensive review, the reader can refer to Fratesi (2020).

such a context Gagliardi & Percoco (2017) found that in rural regions Cohesion Policy in Italy had different impacts depending on the location of these regions close or far from urban areas.

The single aspect which has more often been mentioned in conditioning factors studies is human capital. Indeed, human capital can be a catalyst of the most relevant development processes at the regional level because it is complementary to entrepreneurial initiatives and innovation activities. Within the context of Cohesion Policy, this was first demonstrated by Becker et al. (2013) who used a regression discontinuity design with systematically varying heterogeneous treatment effects to show that only those regions with good enough human capital and institutions (i.e., jointly, absorptive capacity) are able to transform Cohesion Policy investments into actual regional growth.

The role of institutions is one which has been further investigated in a large number of papers, starting from the contribution by Rodríguez-Pose & Garcilazo (2015) who showed that the impact of Cohesion Policy on regional growth is larger in those regions whose levels of quality of institutions measured through the EQI Gothenburg survey (Charron et al., 2014) is larger. More recently Bachtrögler et al. (2024) showed that the quality of local institutions is again a factor which can also impact the effectiveness of Cohesion Policy support to firms, based on the fact that a better level of institutions allows the region to select better projects, to better implement them, and to learn more from past experiences (Fratesi, 2024). The relevant institutional characteristics go beyond pure administrative capacity but also involve other regional and national characteristics, as evidenced in Ederveen et al. (2006) who first showed that, at the country level, EU funding enhanced growth in those countries which had better institutional quality and were more open.

Institutions and human capital are just some of the aspects which collectively make those capitals representing the territorial development of places. These are now commonly identified as territorial capital which Camagni (2009) systematised and classified along the two dimensions of rivalry² and materiality³. For example, infrastructure is material and mostly public/unrival, human capital is immaterial and private/rival, but 9 situations are possible since assets exist with intermediate levels of rivalry and materiality (think about agglomeration economies). The theory of territorial capital is important here because it shows that regional assets, which need time to be accumulated exactly as a capital, also need to work jointly and in synergy, so that balanced territorial capital is better than at configuration in which the region is especially strong but only in certain aspects.

The conceptualization of territorial capital has been exploited by looking at the complementarity between policy interventions and the territorial capital of regions, showing that those disbursements by Cohesion Policy which are complementary to the existing territorial capital assets are more effective than those investing in aspect which are already strong, most likely due to the existence of decreasing returns

² Rival goods are those for which the consumption of somebody is detrimental to the consumption of somebody else.

³ Material goods are those directly related to concrete things.

(Fratesi & Perucca, 2014, 2019). These results provide an extended understanding of those by Sotiriou & Tsiapa (2015) who showed that Cohesion Policy in Greece was more effective in places which had endowments related to the implemented expenditure, and so more advanced regions had a larger impact.

The level of impact may also depend on the intensity of policy support. First Becker et al. (2013) showed that in some regions the left levels of expenditure might be larger than those required to be effective. Then, Cerqua & Pellegrini (2018) showed that regional economic growth depends on the intensity of Cohesion Policy support but this effect is concave and presents a maximum value, so that again decreasing returns exist and by re-allocating some funding from the highest funded to other lagging regions, the overall efficiency would increase.

The alignment of the policy with the local structure and the selection of the right axis has also been investigated in another series of papers. First, Crescenzi (2009) showed that there was a low alignment of structural fund expenditure with socioeconomic structure and that the concentration of disadvantage was larger than that of funding. More recently, Di Cataldo & Monastiriotis (2019) analysed the impact of Cohesion Policy expenditure on British regions and found that, while in general there was a positive impact, this depended on the local conditions and in particular whether the investments targeted the specific areas of regional need.

The industrial structure also matters. Already Cappelen et al. (2003) showed that, although Cohesion Policy in general seemed to be effective, it was more effective in strong regions, and this also because growth in lagging regions was hampered by a specialization in traditional sectors (agriculture) and low innovative activities. More recently, Percoco (2017) concentrated his analysis on the service sector and found that in Italian NUTS3 regions a larger service sector tended to attract more funding and, in this way, be detrimental to growth, while regions with lower levels of service activities could present better growth opportunities and targets for CP investments.

4. Conceptual scheme

This paper wants to reflect on the relationship between the need for Cohesion Policy assistance and the capability of regions to take advantage of its investments. The first step is hence to measure the regional needs which can be done according to two indicators. The first one is the level of GDP per capita in purchasing

power parity, the traditional indicator which the European Union used to classify regions within the various objectives in all programming periods although with thresholds which have recently evolved⁴.

The second indicator of need is one which has recently come to pre-eminence also thanks to the recent focus on regions which cannot grow and are hence stuck in a middle income trap (Diemer et al., 2022). The growth rate of regions is hence relevant because regions whose levels are relatively high can be in a negative trend with all the negative consequences in terms of declining economy and rising unemployment⁵.

Four situations are as possible as depicted in Table 1. For two situations the order is simple: the regions of quadrant 1 are those less in need because they are rich and growing; the regions of quadrant 4 are those more in need being characterised by low levels of GDP per capita and low levels of growth.

The ranking of the other two quadrants needs to be discussed. Does more need stem from low levels of income per capita coupled with positive growth or from higher levels of income per capita coupled with negative growth? In this work we assume that a situation which is not yet economically advanced but has a positive trend is more favourable because this is accompanied with the creation of jobs and optimistic perspectives for the future, while a declining situation will need heavy restructuring which may be painful from an economic and social point of view. We therefore consider that the situation of quadrant 2 is better than that of quadrant 3.

Table 1: Classification of regions in terms of need.

	High growth	Low growth
High GDP per capita	1. Regions not in need	3. Regions in decline
Low GDP per capita	2. Regions catching up	4. Regions in the highest need

The classification in terms of needs, has to be coupled with a classification in terms of the ability of those regions to respond to policy initiatives. The latter will depend on the presence in the region of conditioning factors which are the characteristics identified in the previous sections. Regions with higher

⁴ The cutting thresholds has always remained 75% for lagging regions, while for intermediate ones the threshold has been raised from 90% to 100% in the current programming period.

⁵ While the conceptualization is hopefully clear, the actual measurement can be difficult as growth can be very variable, especially at the region level. The actual measurement is left to the next section.

endowments of human capital and administrative capability will be able to better take advantage of Cohesion Policy support as well as those whose settlement structure is more favourable. For this reason, the regions of the EU can be further classified in a table which takes into account both dimensions at the same time (Table 2).

This table includes eight possible situations, labelled as high performers with potentially high policy impact, high performers with potentially low policy impact, catching up with potentially high policy impact, catching up potentially low policy impact, declining with potentially high policy impact, declining with potentially low policy impact, regions in hard need with potentially high policy impact, regions in hard need with potentially low policy impact.

Table 2: Classification of regions in terms of needs and endowment of conditioning factors.

		ENDOWMENT OF CONDITIONING FACTORS	
		High endowment of conditioning factors	Low endowment of conditioning factors
LEVEL OF REGIONAL PERFORMANCE	1 High GDP / High growth	High performers with potentially high policy impact	High performers with potentially low policy impact
	2 Low GDP / High growth	Catching up with potentially high policy impact	Catching up with potentially low policy impact
	3 High GDP / Low growth	Declining with potentially high policy impact	Declining with potentially low policy impact
	4 Low GDP / Low growth	Regions in hard need with potentially high policy impact	Regions in hard need with potentially low policy impact

What would be interesting to observe is whether the two dimensions of Table 2 are in a relationship with each other or not. Indeed, if there is a positive relationship, then those regions more in need are also those expected to be more responsive to policy initiatives, which would be optimal because, in this way, Cohesion Policy efforts would provide the highest benefit where they are most needed.

However, the opposite situation is also possible, one in which the regions less in need are also those most likely to have potentially impactful regional policies and, as such, the most responsive to Cohesion Policy investments. If this is the case, therefore, the effectiveness of Cohesion Policy will be lowest where it would be most needed and, consequently, this will present a trade-off between efficiency and equity.

Given the review of conditioning factors presented in the previous section, it seems that most conditioning factors are also those which the literature says are related to regional growth, which makes the second situation more likely.

If this is the case in practice, it is investigated in the next sections.

5. Empirical analysis

The data that are used for this analysis come from official statistical sources in particular from Eurostat, ESPON and Ardeco databases (Table 3). All indicators are used at the NUTS2 level, although in some cases this required the aggregation of indicators available at a lower spatial scale.

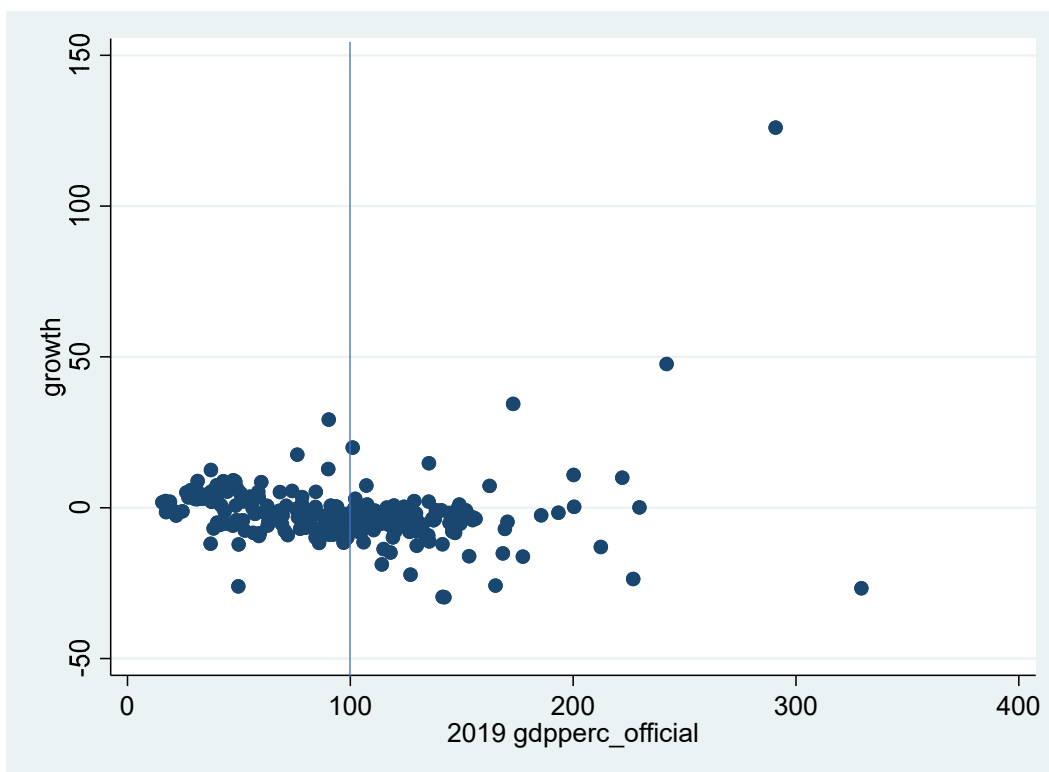
Table 3 indicators and sources

Aspect	Indicator	Year	Source
Performance	GDP per capita in PPS	2019	Ardeco
Performance	GDP growth	2010-2019	Ardeco
<i>Conditioning factors:</i>			
Human capital	ISCED	2019	Eurostat
Innovativeness	High tech employment	2019	Eurostat
Innovativeness	Share of researchers	2018	Eurostat
Institutions	European Quality of Government Index	2021	Göteborg Univ.
Settlement structure	Type of regions	2017	Espon
Settlement structure/ Agglomeration economies	Population density	2019	Ardeco/Eurostat
Accessibility/infrastructure	Infrastructure endowment of railways and of motorways	2019	Eurostat
Innovation infrastructure	Share of families with broadband connection	2019	Eurostat
Social capital	Crime rates	2019	Eurostat

For what concerns GDP per capita, used is the value of 2019, which is the last year before Covid, because that sanitary crisis also had an impact on economic activities which are mostly not structural. In terms of growth, chosen is the period between 2010 and 2019, which excludes the global financial crisis at the beginning and the covid crisis at the end. The other indicators are those most closely related to the aspects which were identified in the literature review.

Figure 1 represents with a point each NUTS2 region of the EU based on the classification of Table 1. This is not a graph of convergence but a graph of needs and the choice of using the final year for GDP per capita is consistent with that choice, so the appearance of a slight negative slope should not be confused for a convergence pattern. It is interesting to observe the presence of a few “outliers”, regions whose levels of GDP per capita are way above the mean or regions where the growth of GDP per capita is very high⁶. An hand check, however, seems to confirm that these are real cases and not statistical errors.

*Figure 1 GDP per capita and GDP growth of EU NUTS2 regions
Levels expressed in % of EU mean
Growth expressed in absolute variation of the regional level with respect to the EU mean*



⁶ This is the case of an Irish region.

The next step of the analysis is to investigate whether there is a positive or negative relationship between needs and policy effectiveness. There is not just one indicator of policy effectiveness, so the analysis is done one indicator at a time. For each indicator the mean of the value in the four categories of need is presented in Table 4 and then an Anova F-test is presented to show whether these differences are statistically significant or not. The Anova analysis proposes a simple F-test to check whether the means of a variable over several categories are different in a statistically significant way, i.e. they consider both the difference of means and the variance of these means. To make the table easier to read, instead of presenting the means in absolute numbers, the means of the groups are reported as a percentage of the general mean (which is 100 by definition, with the exception of the EQI index for which, being standardised, this rescaling would make no sense).

The general message arising from Table 4 is that, on average, regions more in need are also less endowed with conditioning factors. In fact, the latter tend to be higher in high GDP per capita regions with respect to low GDP per capita ones and, at the same time, higher in high-growth regions with respect to low-growth regions.

Starting with the settlement structure of regions, we see that in terms of urbanisation the regions more in need are also on average those less endowed, because they are predominantly rural and much less urban than the average. Another indicator of settlement structure, population density, gives quite similar results as the regions less in need are those denser which means that they are more able to benefit of agglomeration economies.

Looking at the crime rate, which is a proxy for social capital, we can see that the results are more blurred. The homicide rate is higher in regions in need, but the assault and robbery rates are lower in declining regions. Burglary and theft are higher in regions less in need of regional policy except the theft of vehicles which is also very high in the regions of highest need.

In terms of human capital, the differences are striking. When we look at the share of people with ISCED (International Standard Classification of Education) higher than 3, the differences are in favour of regions less in need but not that strong. When concentrating on the people with highest educational attainments, those with ISCED equal or larger than 5, then the difference between the regions less in need and those more in need become significantly larger, so this complementary aspect to regional policy is really deficient, on average, in in lagging regions.

Looking at innovativeness, two indicators are presented. The first is the share of employees in high tech sectors, which is on average significantly higher in regions less in need and then decreases with the increase of needs. Looking at the second indicators, the share of employees in research, the results are similar and there is a very steep gradient of the variable with the increase of need. Regional policies based on innovation will hence find more fertile soil in those places where they are less needed.

Finally, a look is needed at infrastructure, starting with communication infrastructure. The endowment of ICT connections is on average significantly larger in regions with lower needs and this crisis has this despite the differences are not as large in terms of magnitude as in other indicators.

In terms of railways, the differences between the average endowments of regions less in need and the endowments of regions more in need are also striking. Weak regions definitely need investments in this field to catch up with the advanced ones, and if economic activity is complementary to this territorial asset, it's important to provide good infrastructure to those regions. The data for motorways are in the same direction but in this case there is an exception because the lowest value is in poor growing regions.

Finally, we look at the quality of government index which has an interesting result: again, it is on average larger where needs are lower and lower where needs are larger so that we can expect policy interventions to be less effective when where they are more needed. However, the highest levels are in high GDP low growth regions and not in the regions of less need.

Table 4. Anova analysis on conditioning factors by typology of regions.

Indicator	1 High GDP / High growth regions	2 Low GDP / High growth regions	3 High GDP / Low growth regions	4 Low GDP / Low growth regions	Mean	F	Sig (of F-test)	Sig (stars)
Share of urban population	118	94	106	93	100	7.88	0	***
Share of rural population	67	110	88	113	100	7.88	0	***
Population density	207	53	123	87	100	2.36	0.0719	*
Intentional homicide per thousand inhab.	95	121	84	100	100	2.15	0.0955	*
Assault per thousand inhab.	121	51	126	122	100	12.96	0	***
Robbery per thousand inhab.	139	49	114	131	100	4.5	0.0044	***
Burglary per thousand inhab.	163	63	127	75	100	16.97	0	***
Burglary of private residential premises per thousand inhab.	162	54	116	93	100	8.29	0	***
Theft per thousand inhab.	171	48	148	65	100	37.18	0	***
Theft of a motorized land vehicle per thousand inhab.	147	39	103	146	100	9.84	0	***
Share of employees in high tech	170	92	110	67	100	24.37	0	***
Share of employees in research	279	86	156	71	100	11.95	0	***
Share of population with ISCED >3	108	107	103	87	100	31.1	0	***
Share of population with ISCED >5	138	88	109	90	100	23.46	0	***
Percentage of households with broadband internet access	107	96	105	96	100	28.81	0	***
Railways per square km	258	108	114	52	100	11.28	0	***
Motorways per square km	211	56	141	72	100	18.33	0	***
Quality of government index	0.59	-0.71	0.74	-0.38	0.01	54.11	0	***

To what extent are these effects due to a divide between Eastern and Western Europe? It is a well-known fact that the convergence which took place in Europe, especially before the global financial crisis, has been driven by New member countries (all in the East) growing more than Old members (Monfort, 2020). This means that, referring to the level of performance of Table 2, many Eastern regions are expected to be in quadrant 2 (Low GDP / High growth). However, also within the East, several differences exist with some regions, especially those with the capital, achieving far better economic outcomes than the others.

The data confirm the existence of a different status and performance of Eastern regions: in the Ardeco database used, 55 out of 62 Eastern regions fall in quadrant 2. On the contrary, the situation is more balanced for the West (whose weight is also larger on the EU mean due to larger number of regions and larger population, so Old country mean is closer to the EU mean).

Because of the overrepresentation of Eastern Europe in a quadrant, a robustness test is needed to check whether the Anova results of Table 4 are driven by the East-West divide. For this reason, the analysis is performed again separately for Old and New member states, and is presented in Tables 5 and 6.

Being the averages of the whole EU quite similar to those of the Western countries, results in Table 5 are very similar to those of Table 4. Only a few differences of significance can be detected for what concerns population density, assault per thousand inhabitant and the percentage of households with broadband access. In particular for the latter, the levels in the EU are probably homogeneous enough so that a statistically significant difference between types of regions does not emerge.

For Eastern countries, the expectation was to see larger differences arising. However, this only happens to a lower than assumed extent. Some differences, in fact, exist for the homicide and burglary rates, which are not significantly different, and for population density which is significantly different but higher in quadrant 3 than in quadrant 2. Interestingly, the differences in broadband access between the four groups of Eastern European regions is more marked than in the West, not just significant but with values which are more different.

Table 5. Anova analysis on conditioning factors by typology of regions in Old member countries.
(all calculations with respect to the mean of Old member countries)

Indicator	1 High GDP / High growth regions	2 Low GDP / High growth regions	3 High GDP / Low growth regions	4 Low GDP / Low growth regions	Mean	F	Sig (of F-test)	Sig (stars)
Share of urban population	110	98	105	94	100	2.95	0.0342	**
Share of rural population	82	104	91	112	100	2.95	0.0342	**
Population density	92	106	100	99	100	0.2	0.8983	
Intentional homicide per thousand inhab.	108	82	126	83	100	3.56	0.0161	**
Assault per thousand inhab.	96	129	97	80	100	1.08	0.3583	
Robbery per thousand inhab.	122	89	115	73	100	3.93	0.0101	**
Burglary per thousand inhab.	135	80	90	102	100	3.07	0.0297	**
Burglary of private residential premises per thousand inhab.	135	56	138	82	100	15.37	0	***
Theft per thousand inhab.	91	64	88	147	100	5.47	0.0014	***
Theft of a motorized land vehicle per thousand inhab.	123	98	169	47	100	2.13	0.0981	*
Share of employees in high tech	110	92	109	95	100	16	0	***
Share of employees in research	122	97	106	87	100	14.54	0	***
Share of population with ISCED >3	106	97	105	96	100	17.95	0	***
Share of population with ISCED >5	141	79	115	79	100	18.69	0	***
Percentage of households with broadband internet access	116	88	138	94	100	2.02	0.1234	
Railways per square km	217	64	157	74	100	6.43	0.0005	***
Motorways per square km	158	65	117	85	100	6.8	0.0003	***
Quality of government index	0.86	0.25	0.84	-0.20	0.86	20.19	0	***

Table 6. Anova analysis on conditioning factors by typology of regions in New member states.
(all calculations with respect to the mean of New member countries).

Indicator	1 High GDP / High growth regions	2 Low GDP / High growth regions	3 High GDP / Low growth regions	4 Low GDP / Low growth regions	Mean	F	Sig (of F-test)	Sig (stars)
Share of urban population	130	97	101	91	100	9.41	0	***
Share of rural population	54	104	99	114	100	9.41	0	***
Population density	176	104	87	83	100	3.38	0.028	**
Intentional homicide per thousand inhab.	132	148	42	98	100	1.51	0.2227	
Assault per thousand inhab.	154	88	83	92	100	3.87	0.0139	**
Robbery per thousand inhab.	139	94	113	82	100	2.3	0.0895	*
Burglary per thousand inhab.	117	106	83	107	100	0.81	0.4993	
Burglary of private residential premises per thousand inhab.	158	79	110	82	100	3.38	0.0246	**
Theft per thousand inhab.	190	90	134	53	100	7.44	0.0004	***
Theft of a motorized land vehicle per thousand inhab.	376	45	60	37	100	6.7	0.0006	***
Share of employees in high tech	106	100	105	96	100	10.67	0	***
Share of employees in research	150	96	105	83	100	13.21	0	***
Share of population with ISCED >3	107	101	103	95	100	10.36	0	***
Share of population with ISCED >5	165	92	132	66	100	10.11	0	***
Percentage of households with broadband internet access	196	93	129	52	100	6.72	0.0007	***
Railways per square km	207	80	120	68	100	6.61	0.0007	***
Motorways per square km	223	57	151	57	100	5.69	0.0018	***
Quality of government index	-0.78	-1.00	-0.46	-1.22	-0.96	8.18	0.0001	***

6. Conclusions and discussion

This work investigated the relationship between the presence of conditioning factors for the impact of regional policy and the economic performance of European regions.

The starting conceptual point comes from the evidence, which spread in the regional economics and economic geography literatures in the last ten years, that the impact of Cohesion Policy on regional growth is heterogeneous. In particular, these literatures concentrate on a series of characteristics which can be jointly identified as conditioning factors. For this reason, the first part of the paper illustrated with a literature review the main aspects which have been identified as relevant and significant.

The second part of the paper put these conditioning factors in relationship with regional performance in terms of growth and GDP per capita. In fact, if regional policy is more effective where it is more needed, this is a good thing because this means that there is no trade-off between growth and cohesion. If, on the contrary, the impact of Cohesion Policy is larger in more developed regions, then the concentration of expenditure in less developed regions can have detrimental effects on aggregate growth and also on aggregate policy efficiency.

The results of the empirical analysis, based on a set of indicators at NUTS2 level, showed that, on average, the endowment of various conditioning factors is larger in richest regions and in regions which are experiencing a more positive trend. This means that there will be several cases Cohesion Policy will be more effective where it is less needed.

It's important to observe that this analysis is still speculative and descriptive, as no causal relationship is identified. The expectation is that, since conditioning factors identified in the literature are on average more present in regions less in need, these latter will also be on average more able to exploit regional policy efforts, but this result would need to be demonstrated with causal analysis and, furthermore, is only an average result, so that individual regions will deviate from the average trend.

All this brings to a series of policy consequences which can be relevant for the next programming period post-2027.

The first aspect is that policy interventions need to continue to be place-based, because their impact clearly depends on the place in which they land. The effectiveness depends on the type of territory in which interventions are implemented, on the type of interventions which are implemented and finally on the relationship between the type of territory and the type of intervention. Acting on finding the right combination of expenditure axes based on the territorial capital of regions will be a first way to improve effectiveness (Fratesi and Perucca, 2019).

The second aspect is that, most likely, policymaking needs to face trade-offs in the implementation of Cohesion Policy. Interventions in the weakest regions are expected to be on average less effective than those in rich ones because it is in the latter that there are the preconditions and the synergies which make policy more impactful. This means that, if the political decision is to continue supporting lagging regions in order to achieve the territorial cohesion objective, there is likely the need of relinquishing some policy efficiency and aggregate regional growth.

On the other hand, it is also possible that the scarce results obtained by CP in some lagging regions are related to problems of absorption and decreasing returns and that, increasing expenditure in some currently virtuous cases, might engender the same problems.

The third aspect concerns the type of interventions which need to be implemented in different places. This analysis hinted on the fact that the presence of basic assets is a pre-requisite to effectiveness. For this reason, there is likely the need to focus investment in territorial basic assets in those regions which lack them and only on top of them to invest in more advanced policy interventions which require closer interaction with the local productive fabric and innovation system. This might also be implemented in new ways, such as with additional funding and/or initiatives which are more top-down than in the recent past, especially for those places where administrative capacity is considerably lacking.

If territorial cohesion has to remain a politically important objective (which is expected because it is included in the EU treaties) and if the economic development of lagging or non-growing regions remains an important part of it, in many cases there will be the need of complementing new and advanced regional policy initiatives (e.g. smart specialisation strategies) with other interventions apt to ameliorate the pre-requisites for development, including administrative capacity, basic and advanced infrastructure, etc. This means that lagging regions will also require interventions creating framework conditions, and in particular investing first in territorial assets where they are missing. Furthermore, acknowledging the differential impacts of the global challenges and of the transition objectives will be necessary to avoid unrest and, in the worst cases, turmoil.

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