In tandem for cohesion? Synergies and conflicts between regional and agricultural policies of the European Union

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Abstract

The paper sets out to analyze the allocations of financial resources accruing to the European regions from the Regional, Rural Development and Agricultural policies of the European Union in order to assess their territorial coordination and synergies and their degree of compatibility with the "general" objective of territorial cohesion. Regression analysis is used to evaluate the relationship between allocated funds (dependent variable) and factors of territorial disadvantage (explanatory variables) covering the 20-year period 1994-2013 and approximately 90% of total Community expenditure. The analysis reveals that both coordination and compatibility with territorial cohesion of the various areas of Community policy have not always improved in response to major policy reforms. The territorial 'vocation' of overall Community spending is weakly linked to its distribution among different policies, but it crucially depends upon how each policy area defines appropriate allocation mechanisms and interventions, based upon the characteristics of each region and its 'local' needs.

JEL classifications: C24, O18, R11, R58

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Table of Contents

In tandem for cohesion? Synergies and conflicts between regional and agricultural policies of the European Union

1.   Introduction

An equitable territorial distribution of the benefits of the integration process is a founding principle of all European Union (EU) policies (article 175 of the European Union Treaty). As such, it has been strongly emphasised in recent strategic programming documents. However, the objective of social and territorial cohesion within the Union cannot be wholly entrusted to cohesion policies in isolation (EESC 2007). In the current debate on the future composition of the EU budget and its policies, there is a consensus on the need to harmonise *all* the different Community policies and ensure their compatibility with the objective of territorial cohesion. This consensus is by now part and parcel of the Union's overall growth and development strategy "Europe 2020" (European Commission 2010a) and an essential component of its guidelines for reforming the single policies in line with this strategy: *5th Cohesion Report* (European Commission 2010) and Barca Report (Barca 2009) for regional policies; *The CAP Towards 2020*[1] for agricultural and rural development policies.

However, notwithstanding the explicit request by the EU policymakers for instruments able to perform a territorial-level assessment of the interrelations

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[1] In this document the Common Agricultural Policy (CAP) is given the objective to deliver 'a territorially and environmentally balanced EU agriculture within an open economic environment' (European Commission 2010b, p.4)

A tandem for cohesion?

between policies of different nature and their correlation with territorial cohesion, a significant gap still exists in this area of academic literature. Although some contributions (either academic or more policy oriented in character) have tried to evaluate the impact of the EU's regional and agricultural policies on cohesion processes, their attention has alternated between one or the other policy area, overlooking their interactions (synergic or conflicting) and joint impact at the territorial level. This separation can be explained by the different disciplinary approaches of the scholars concerned (mainly agricultural economists for agricultural policies and regional economists/economic geographers for regional policies, Kilkenny 2010) as well as by the division of responsibilities within Community bodies (DG AGRI and DG REGIO respectively) and the ministries of the single member states. As a result existing literature offers few analytical insights for understanding the relationships *between* policies and the possibilities of influencing territorial cohesion by modifying the *territorial allocation* and composition of overall Community spending in favour of instruments with a more markedly territorial vocation.

This work is an attempt to respond to the foregoing request and contribute towards the present debate on the future of Community policies after 2013, by undertaking a comprehensive systematic analysis of the EU's regional, agricultural and rural development policies, accounting, as they do, for almost 90% of total Community spending. The analysis is concentrated upon the result of the resource allocation process at the territorial level and looks at its spatial structure (territorial allocation). The objective is to explore the synergies between the different policy areas, in terms of the composition of expenditure and territorial coordination, and its coherence with the geography of structural disadvantage factors, upon whose elimination the capacity of any policy to promote territorial cohesion is premised.

2. 'Sectoral' and 'place-based' policies and territorial cohesion

While some policies may be considered "space neutral" in terms of both their intent and outcomes– for example competition policies – others, albeit spatially neutral in their intent – as in the case of the Common Agricultural Policy (CAP) – exhibit a considerable spatial impact (Duhr et al. 2010). However, a rigid separation between *sectoral* and *place-based* approaches has long dominated the EU policies (and their analysis). This conceptual separation has lead different strands of literature to shed light on different aspects of the evolution of agricultural, rural development and regional policies of the European Union with limited systemic perspective.

Only a few 'territorial' analyses of the EU agricultural policy have highlighted its potentially distortive impact on cohesion. The RICAP study (European Commission, 1981) examined the impact of CAP resources on the European NUTS1 regions in the preceding 20 year period and warned of a trend towards the polarisation of agricultural incomes generated by CAP spending, forewarning against its potentially perverse impact in terms of "distributive equity". It is precisely the lack of equity within the sector and across territories that was identified as one of the principal "failures" of the CAP intervention model (Barbero *et* al. 1984; European Commission, 1985). However, the impact of successive changes in the organisation and financial structure of the CAP on the real territorial distribution of resources is not altogether clear. Tarditi and Zanias (2001) highlighted a recurrent problem of equitable distribution as between the beneficiaries of the policy which remained unchanged within the EU15 until 2006 (Velazquez, 2008). The ESPON study (2004), by using much more detailed spatial data than previous studies, revealed the anti-cohesion impact of CAP spending, which was only potentially mitigated by the then fledgling rural development measures

A tandem for cohesion?

(Shucksmith et al. 2005). The analyses by Bivand and Brundstad (2003) continued in the same direction and using more sophisticated spatial econometric techniques highlighted the negative impact of CAP payments on the economic convergence processes taking place between the EU regions in the 1990s. Esposti (2007) with reference to the same time period also underlined how the enormous volume of CAP spending had no positive effect upon regional growth, although not constituting a "counter-treatment" with respect to regional policies. Furthermore, with reference to the CAP trend foreseen after 2013, existing analyses concur in emphasising the risk of a fundamental conflict between the effects of agricultural intervention and the objectives of the cohesion policy (Bureau and Mahè, 2008, p. 5; Esposti 2008).

The growing awareness of first-pillar CAP's potentially perverse redistributive effects supported the idea that this distortion originates in the 'disembedding of agriculture from the regional and local context' (Gallent et al. 2008, p. 108), which accentuates the concentration of the policy's benefits upon a few major producers situated in more economically dynamic rural areas. The vitality of rural areas cannot be determined exclusively by the modernisation of their agricultural structures while the growing diversification of economic activities calls for a response able to satisfy their needs with an increasingly territorial (Saraceno, 2002) and "place-based" approach. This awareness has also been enhanced with the recognition by the parts involved in the political debate of a need for greater integration between the various areas of Community policy (European Commission 1988). The 1996 Cork European Conference on rural development *Rural Europe – Future Perspectives* inaugurated a more systematic approach to agricultural policies by increasing the emphasis on rural development tools and trying to rationalise and reorganise all the instruments within a single 'second-pillar' CAP container. Unfortunately, the mere juxtaposition of a set of highly

heterogeneous measures under the same label was the result of a political compromise, which put a new emphasis on the territorial approach, but implicitly accepted the predominance of sectoral measures within the framework of the EU rural development policy (De Filippis and Storti 2002). Not surprisingly, the evolution of this 'hybrid' policy from a sectoral towards a 'place-based' approach has been highly non-linear. While in Agenda 2000 (European Commission 1997), at least in Objective 1 regions, structural funds and rural development measures formed part of the same regional-level programming procedure, for the 2007-2013 financial period these interrelations have been cancelled, bringing rural development policies back within the framework of the CAP: 'the most widespread concern is with the separation of the Rural Development component of the Agriculture-Rural Fund (EARDF) from the whole of cohesion policy' (Barca 2009, p.162).

Having ascertained both the potentially anti-cohesion effects of CAP expenditure and the difficulty of transforming CAP funds from 'sectoral' interventions into more 'territorial' tools, the debate remains concentrated on the existence of real advantages - from the cohesion standpoint - of shifting resources towards measures that have an explicit place-based nature. The EU regional policy is genuinely "spatial" in both its intention and outcome insofar as characterised by a place-based approach. However, its real contribution towards the cohesion process – i.e. an effective capacity to address the factors of regional disadvantage – can certainly not be taken for granted in the light of the significant distortions that characterise its institutional development and implementation (Armstrong 2001; Armstrong and Taylor 2000). As concerns the impact of the EU's regional policy on the objective of economic and territorial cohesion, the empirical evidence is somewhat contradictory (Batchler and Wren 2006; Martin and Tyler 2006; Wren 2005). Most of these studies, whether neoclassical in their approach (Boldrin and Canova 2001) or

inspired by the perspective of the "New Growth Theory" (Magrini 1999), or adopting the standpoint of the New Economic Geography (Martin 1999; Puga 2002), highlight the limited impact of the EU regional policies on the convergence process, and stress the fundamental distortion of market equilibria. Some more recent contributions, which adopt theoretical approaches capable of evaluating policies in terms of the interaction with a potentially much wider range of factors, while agreeing upon the limited nature of the policy's impact upon the degree of convergence, have proposed a more varied set of explanations for their findings: the distortions produced by Structural Funds on the localisation choices made by companies with the highest innovative potential (Midelfart-Knarvik and Overman 2002); the importance of the receptive capacity of beneficiary regions (Cappellen et al. 2003; Ederveen et al. 2006) and countries (Beugelsdijk and Eijiffinger 2005); the role of lagged effects over time (Esposti and Bussoletti 2008) or the imbalanced distribution of funds across axes of intervention (Rodriguez-Pose and Fratesi 2004). Mohl and Hagen (2010) reviewed at least 15 other quantitative studies, which with similar approaches to those discussed above reached altogether conflicting conclusions on the impact of cohesion policies.

In light of all this, the impact on territorial cohesion of changes in the composition of overall Community spending from sectoral interventions in favour of place-based policies - not only through an increase in the overall budget quota reserved to cohesion policies in but also through the incorporation in the same framework of other types of intervention such as Rural Development interventions - cannot be taken for granted. The existing literature on all these policy areas clearly demonstrates that their compatibility with territorial cohesion should be the subject of careful empirical evaluation overcoming the existing separation between *sectoral* and

place-based approaches if we are to shed some new light on the key issues raised by the ongoing policy debate

3.   In tandem for cohesion? The empirical analysis of a complex relationship

The analytical separation between *sectoral* and *place-based* policies has made it difficult to undertake systemic comprehensive analyses of regional and agricultural policies, thus preventing not only the quantification of "non-coordination costs" (Robert et al. 2001) but also the assessment of the real progress made towards coordination and impact on territorial cohesion as a result of changes in the allocation mechanisms and in the composition of Community spending (Batchtler and Polverari 2007).

First of all, existing studies – with differing methodologies – address the problem of evaluating the territorial impact of regional and agricultural policies by trying to identify an appropriate counterfactual ("What would have happened had the policy never been implemented?"). This problem becomes extremely important whenever a simultaneous and comparative evaluation is attempted of the contribution made to the regional growth processes by policies extremely differentiated in terms of their nature and intrinsic objectives (such as the regional and agricultural policies). It is difficult to quantify the effects of very different policies that can manifest themselves in many different forms and through various mechanisms that imply not only different timescales before any effects become apparent, but also possible and differential "collateral effects". Furthermore, ex post impact analysis can only take place after a considerable lapse of time from the conclusion of the programming cycle. More recent studies refer to expenditure prior to 2000, thereby preventing policymakers from drawing

A tandem for cohesion?

any "lessons" for the future - even provisional - from the experience of the two programming periods that followed on the heels of important reforms.

In order to overcome these difficulties, our analysis concentrates upon the spatial structure of the funds for Regional, Rural Development and Agricultural Policies in order to evaluate potential synergies and conflicts before their attendant measures are implemented. In other words, we are proposing an analysis of the a priori structure of policies rather than an attempt at evaluating their ex-post impact. Therefore, the analysis is concerned with the outcome of the resource allocation process at the territorial level so as to evaluate both the spatial structure and its coherence with the geography of factors of structural disadvantage, upon whose elimination the capacity of any policy to promote territorial cohesion depends.

In order to evaluate the a priori compatibility of Community fund allocation with territorial cohesion objectives, it is necessary – as asserted by the European Commission itself on the occasion of the successive reforms of regional policies – to analyse its degree of territorial concentration, i.e. the capacity to keep the effects of the policies within the areas subject to intervention by ring-fencing spillovers, as far as possible, within the disadvantaged areas (Dall'Erba 2005) and, therefore, maximising the potential impacts of the policies themselves (Bondonio and Greenbaum 2006). In point of fact such "external" effects represent an important component of the policy. "The benefits of the Structural Funds when viewed in isolation are modest, thus suggesting that the real long-term benefits depend upon the manner in which the disadvantaged economies react to the opportunities offered by the rest of the EU" (Dall'Erba 2005 p.197).

In the second place, the degree of compatibility of the three areas of Community policy with respect to the cohesion objectives can be evaluated in terms of the association between the actual allocation of financial resources and the regions' factors of structural disadvantage (Crescenzi 2009): this association is "the measure" of a policy's capacity to allocate its resources where a concentration of disadvantage prevents regions from expressing their potential (Mairate 2006).

As a consequence, in the analysis of the regional allocation of Community funds for Regional Policies, and Rural Development and agricultural policies, we will look at:

a) the potential inconsistencies/conflicts in the allocation of funds as between the various policies (composition of expenditure and territorial coordination);

b) the coherence between the various policies and the principle of territorial concentration (the spatial structure of spending);

c) the (potential) capacity of the policies to further the cohesion process through their association with factors of structural disadvantage (coherence with territorial cohesion).

The analysis of the spatial structure will be performed through the calculation of an autocorrelation index (Moran's I) (Cliff and Ord 1981). Moran's I is calculated using the formula:

$$I = \frac{\sum_{i=1}^{n}\sum_{j=1}^{n}(y_i - \bar{y})w_{ij}(y_j - \bar{y})}{\sum_{i=1}^{n}(y_i - \bar{y})} \tag{1}$$

Where:

y is the per-capita spending at the regional level for the various policies: Regional, Rural Development and first-pillar CAP;

A tandem for cohesion?

w_{ij} is a sequence of normalised weights that relates the observation (region) i to all the other observations (regions) j in the dataset. In the empirical analysis conducted in this article, the element w_{ij} of the weight matrix is:

$$w_{ij} = \frac{\dfrac{1}{d_{ij}}}{\sum_{j} \dfrac{1}{d_{ij}}}$$

(2)

where d_{ij} is the linear distance between region i and region j.

If the I index values are greater (lower) than the expected value $E(I) = -1/(n-1)$ this will denote a positive (negative) autocorrelation.

To answer questions a) and c) the following regression model for panel data is specified:

$$y_{i,t} = \alpha + \mu_i + \tau_t + \beta' X_{i,t-1} + \gamma' P_{i,t} + \varepsilon_{i,t}$$

(3)

where:

y is again the per-capita spending at the regional level for the various policies: Regional, Rural Development and first-pillar CAP;

X is the index of structural disadvantage of the regions calculated with the Principal Components Analysis (PCA);

P is the per-capita spending in *OTHER* areas of Community policy other than y

μ are fixed individual effects: the non-observable features of regions that impact upon the allocation of funds but which remain invariant over time;

τ is the temporal trend

$\varepsilon \circledcirc$ is idiosyncratic error

and with *i* representing the region, *t* the programming period (1994-99, 2000-06, 2007-13) and *t-1* (for the Index of Structural Disadvantage) the year preceding each programming period (i.e. 1993, 1999 and 2006 respectively).

The estimate of parameter β therefore, indicates the funds' capacity to target the most disadvantaged regions of the European Union thereby promoting economic convergence. A significant and positive value of parameter β would denote a systematic association between the structural disadvantage of the European regions and the "intensity" of the support provided by the various policies. This association offers a measure of the compatibility of policies – regardless of their different specific functions – with the more general objective of territorial cohesion. Vice-versa, the lack of significance for this coefficient would suggest a substantially "neutral" distribution of Community resources from the territorial viewpoint and hence its potential conflict with the cohesion objectives announced by Community policy makers.

The estimate of parameter γ on the other hand, is a measure of the trade-offs or synergies operating between different policy areas. A significantly negative value for this parameter would suggest that a "compensatory" mechanism is at work among the policies thus maintaining a substantial equilibrium as between the transfers received from the various regions of the Union. On the contrary, a positive value for the parameter would suggest that the funds of different policies tend to target the same areas with a "cumulative" and/or "knock-on" process among the policies. In addition, the estimation of an interaction term between structural disadvantage and the funds allocated for the various policies will make it possible to evaluate if this cumulative effect coincides with the most disadvantaged areas (suggesting the presence of "pro-cohesion" synergies) or if it is linked to the capacity of the regions to attract

funds from different policies by virtue of characteristics other than their being disadvantaged.

The structural disadvantage index of the regions (x) is defined on the basis of those structural characteristics of regional economies that the economic literature as a whole associates (either singularly or in various combinations) with a reduced or non-existent capacity to converge upon levels of growth and development that characterise the "heart" of the EU (Boschma 2004; Budd and Hirmis 2004; Cheshire and Magrini 2000; Huggins 2009a; Pike et al. 2006; Rodriguez-Pose 1998a and b). Such features refer to three principal dimensions: the accumulation of human capital (Lundvall 1992; Malecki 1997; Crescenzi 2005; Huggins 2009), the productive use of such capital in terms of the demand for and supply of specific sectoral skills (Gordon, 2001) and the overall endowment of basic infrastructures (Chancre e Thompson 2000; Crescenzi and Rodriguez-Pose 2008), which makes the circulation and productive utilisation of regional resources possible. Each of these possible sources of structural disadvantage finds justification in different strands of the literature on the economic performance of the regions. Thus while the neoclassical approach has given greatest emphasis to the role played by physical capital endowments (public and private) in improving the productivity of a local factors, the latest theories linked to "endogenous growth" draw attention to the importance of human capital and its "qualitative" composition (in terms of skill composition) in line with – and especially as regards the latter feature – the literature on the operation of global markets at local levels and upon the determinants of the spatial concentration of unemployment. However, some recent contributions - by integrating various theoretical approaches - have shown how the simultaneous presence of all these factors of "socio-economic disadvantage" constitutes a permanent obstacle to the long-term development of the

European regions (as also those of the United States) (Rodriguez-Pose and Crescenzi 2008; Crescenzi et al 2007; Kitson et al. 2004). As a consequence, the effectiveness of regional development policies can be assessed in terms of their capacity to "target" in an "equilibrated" fashion all these factors simultaneously. For this reason the capacity of all EU policies to re-distribute Community financial resources, in a manner more or less compatible with the general objective of territorial cohesion, has been empirically tested by evaluating the relationship between structural disadvantage – i.e. the simultaneous presence of factors of disadvantage in all the dimensions discussed earlier – and the funds earmarked to each region. The distributive mechanisms of a policy are, therefore, deemed "virtuous" from the point of view of territorial cohesion whenever they manage to channel a greater volume of resources towards the most deserving areas in structural terms, i.e. those where structural disadvantage is highest. This is an a priori criterion, which applies independently of the evaluation of the impact of the single policies. Different policies propose different objectives and, therefore, impact on different factors (ranging from farm income support for the first pillar CAP to the formation of human capital for some regional development programmes). However, the overall geography of the distribution of Community resources has a consistent impact on the most general processes of territorial cohesion through synergies or conflicts that arise between various policy areas. Therefore, an assessment of the capacity of Community redistributive mechanisms to channel resources towards structural disadvantage is an a priori measure of their general compatibility with the requirement of territorial cohesion.

The concept of structural disadvantage as applied to the European regions is operationalised by identifying suitable proxies for each of the foregoing three "dimensions": the "Percentage of the Population with a Tertiary Educational

A tandem for cohesion?

Attainment" and the "Percentage of the Economically Active Population with a Tertiary Educational Attainment " are chosen as proxies for the accumulation of human capital, the " Long-Term Unemployed as a Percentage of All Unemployed" and "the Percentage of the Economically Active Persons in Agriculture" (Federico 2005) are chosen as the proxy for the productive use of human capital and "Kilometres of Motorway per 1000 Inhabitants" is the proxy for basic infrastructural assets. The choice of these simple indicators is dictated by the limited availability of homogeneous statistical data for all the European regions commencing from 1993, i.e. the year prior to the first programming period considered in this analysis. The information contained in the variables chosen is synthesised as a single indicator by means of Principal Component Analysis (PCA) (Duntenam 1989; Joliffe 1986) whose results, set out in Tables A-1 and A-2 in Appendix A, generate the 'Structural Disadvantage Index' used in the following analysis. The first principal component accounts for around 50% of the total variance of the original indicators (as shown by the eigenanalysis of the correlation matrix in Table A-2) and its scores are computed from the standardised value of the original variables by using the coefficients listed under 'Component 1' in Table A-1. These coefficients assign a large positive weight to educational achievement and infrastructure endowment; these are major components of the socio-economic tissue of the regions. A negative weight is assigned, instead, to the long term component of unemployment and to the percentage of agricultural labour. The first Principal Component ('Component 1') scores constitute the 'Structural Disadvantage Index' introduced into the regression analysis as an aggregate proxy for the structural disadvantage of each region. In order to minimize the potential endogeneity between allocated financial resources and regional disadvantage and, at the same time, account for the conditions observed by the policy-makers when allocating the funds, the index is

calculated for each year t-1 preceding each programming period holding constant the PCA coefficients (computed on the longitudinal dataset[2]).

3.1 A joint territorial databank for Community spending from 1994 to 2013

The analysis carried out in this article is based upon an innovative databank containing information on the first and second pillar of the CAP and the Structural Funds of regional policy in the last three programming periods (1994-1999, 2000-2006 and 2007-2013) that referred to the member states of the EU15.

The data are aggregated at the level of the relevant administrative authorities in the framework of the policies considered. Obviously, the administrative level of interest will vary from one Member State to another according to how the responsibilities for agriculture, rural development and regional policies are distributed. Therefore, while in general terms the information gathered contributes towards the establishment of a homogenously regionalised databank, data are organised with reference to different territorial levels (NUTS levels)[3] in different member states.

The information gathered constitutes the sum of the resources directly funded by the European Union, as illustrated in the table in Appendix C. Consequently, financial resources deriving from national co-financing do not form part of the databank used for the analysis. There are two reasons for this: first, the analysis sets out to establish an a priori geographical allocation of

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[2] The stationarity of the variables was preliminarily tested: The tests confirmed the stationarity of the series, allowing us to implement the PCA analysis on the panel dataset.

[3] Regions in Belgium, Germany and the United Kingdom are classed at NUTS1 level while Denmark, Ireland and Luxembourg have no sub-national divisions: for the remaining EU15 member states expenditure has been classified at the NUTS2 level.

resources rather than their territorial impact; second, as we wish to draw attention to the structures of the negotiated policies at a Community level, co-financing would modify the relations between the first-pillar of CAP, which does not envisage a national contribution, and the second pillar of CAP and the Structural Funds.

As concerns the first pillar of the CAP, existing literature has encountered considerable difficulty in obtaining consolidated data at regional level for relatively long time intervals. Some criticism has also been made in recent years on account of the fragmentation and quality of available expenditure data, notwithstanding the "*European Transparency Initiative*" (Reg. (EC) n° 1290/2005) that requires Member States to annually publish the beneficiaries of appropriations made from the European Agricultural Guarantee Fund (EAGF) and the European Agricultural Rural Development Fund (EARDF). To overcome these limitations, first-pillar CAP data have been processed in an innovative manner based on the *Farm Accountancy Data Network* (FADN), while the financial appropriations, actually allocated to each territorial unit, have been utilised for rural development and regional policy (See annex B for a detailed discussion of the procedures followed).

In the framework of rural development, as noted earlier, interventions were financed not only by the EAGGF Guarantee section but also by the EAGGF Guidance section up until the last programming period when the resources were merged into a single fund (EAFRD). As regards both the 1994-1999 programming period and Agenda 2000, the data referring to rural development policy come from two sources: DG REGIO, for data on EAGGF Guidance; DG AGRI[4], for data on EAGGF-Guarantee. In the 2007-2013

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[4] The data derive from the PSRs of the EU15
(http://ec.europa.eu/agriculture/rur/countries/index_en.htm).

programming period, the EAFRD data derived from the single programming instruments of the EU15 member states[5].

Structural Fund data were derived from an ad hoc dataset provided by the Directorate General for Regional Policy of the European Commission (DG REGIO) in May 2009.

Altogether the databank comprises about 3000 observations that specify the estimate of actual expenditure (for the first-pillar) and the funds allocated (for the Structural Funds and rural development) in the three programming periods considered with regard to the regions of the EU 15 Member States.

EUROSTAT was the source of the data on the structural characteristics of the regions that we used for the computation of the Structural Disadvantage Index.

Countries without a relevant regional articulation (Denmark, Ireland and Luxemburg) were necessarily excluded from the analysis.

4. Empirical Results

4.1 Composition of expenditure and territorial coordination

The analysis of the correlation between regional allocations for the same policy in successive programming periods and between different policies in the same time period sheds light on the equilibrium between persistence and compensation in the relations between the various areas of Community policy. Table 1 sets out a preliminary analysis of the simple correlations (and their statistical significance) between per capita expenditure at a regional level and, respectively, the regional policies, rural development and first-pillar

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[5] http://ec.europa.eu/agriculture/rur/countries/index_en.htm

A tandem for cohesion?

CAP in the three programming periods considered (1994-1999; 2000-2006; 2007-2013).

If we observe the correlation between expenditure allocations for the same policy in successive programming periods we can evaluate the level of persistence over time of the policy itself in the distribution of its resources at a territorial level. The analysis of persistence in regional expenditure allocations enables us to make a first evaluation of the territorial impact of the reforms that succeeded one another over time in the various Community policy frameworks. Both regional policies and first-pillar CAP exhibit a high level of persistence in the regional allocation of funds between programming periods: for regional policies a 97% correlation was found between 94-99 and 2000-2006, and a 92.5% correlation between the 2000-2006 and 2007-2013 programming periods; as regards the regional distribution of first-pillar CAP expenditure the correlation was respectively 94% and 93 %, a sign of the ongoing link between the "new" CAP, based on decoupled direct payments, and the "old" one, based on market policy. As regards rural development, relationship showed a relatively higher level of dynamism over time, as indicated by the correlations between successive periods of, respectively, 64% between 94-99 and 2000-2006; and 80% between 2000-2006 and 2007-2013, due to the significant growth and modification that this policy underwent in the last twenty years, together with the ambiguity of its reform process. For these reasons, the foregoing compromise (*more money to territorial intervention in rural areas, but under the control of the agricultural lobbies and institutions*) decided with Agenda 2000 was crucial: on one hand, it had the merit of introducing a more organic rural development policy, giving it more financial resources, but on the other it was responsible for its "dilution" in a big container of different measures, the second Pillar of the CAP, which as a

component of agricultural policy is dominated by a sectoral (more than territorial) approach.

A tandem for cohesion?

Table 1 - Correlation Analysis: Per Capita Expenditure for Regional Policy, Rural Development and PAC 1st Pillar

	Regional Policy 94-99	Regional Policy 00-06	Regional Policy 07-13	Rural Development 94-99	Rural Development 00-06	Rural Development 07-13	PAC 1st Pillar 94-99	PAC 1st Pillar 00-06	PAC 1st Pillar 07-13
Regional Policy 94-99 (Per Capita Expenditure)	1								
Regional Policy 00-06 (Per Capita Expenditure)	0.9680*	1							
	(0.000)								
Regional Policy 07-13 (Per Capita Expenditure)	0.8961*	0.9250*	1						
	(0.000)	(0.000)							
Rural Development 94-99 (Per Capita Expenditure)	**0.8090***	0.7884*	0.7464*	1					
	(0.000)	(0.000)	(0.000)						
Rural Development 00-06 (Per Capita Expenditure)	0.5553*	**0.5946***	0.5645*	0.6377*	1				
	(0.000)	**(0.000)**	(0.000)	(0.000)					
Rural Development 07-13 (Per Capita Expenditure)	0.4498*	0.4909*	**0.4982***	0.5626*	0.7998*	1			
	(0.000)	(0.000)	**(0.000)**	(0.000)	(0.000)				
PAC 1st Pillar 94-99 (Total Regional Payment pc)	**0.4126***	0.4475*	0.4156*	**0.4755***	0.3699*	0.3390*	1		
	(0.000)	(0.000)	(0.000)	**(0.000)**	(0.000)	(0.000)			
PAC 1st Pillar 00-06 (Total Regional Payment pc)	0.3897*	**0.4315***	0.4110*	0.4760*	**0.4545***	0.4961*	0.9374*	1	
	(0.000)	**(0.000)**	(0.000)	(0.000)	**(0.000)**	(0.000)	(0.000)		
PAC 1st Pillar 07-13 (Total Regional Payment pc)	0.3869*	0.4126*	**0.3800***	0.4687*	0.4152*	**0.4155***	0.8498*	0.9347*	1
	(0.000)	(0.000)	**(0.000)**	(0.000)	(0.000)	**(0.000)**	(0.000)	(0.000)	

By referring once again to Table 1 we can evaluate the level of correlation between the various policy areas in the same programming period as well as its evolution over time so as to evaluate the degree of complementarity/substitutability between different EU policies. In this context a significant reduction in the correlation of regional level spending between regional policies and rural development is immediately evident: from 80% in the period 94-99, it falls to 59% in the period 2000-06 and to 50% in the period 2007-13, thus suggesting that these two policy areas have been progressively moving apart. As just mentioned, the origin of this process can be found in the political compromise decided with Agenda 2000, and, which, moreover, has been reinforced during the present programming period, with the abandonment of the integrated programming approach, decoupling rural development policy form regional policies and allocating it in the same agricultural fund also for the intervention in the objective 1 regions.

The association between other policy areas is inferior in relative terms but substantially stable over time.

4.2 Territorial concentration and the spatial structure of expenditure

In order to throw light on the relationship between policies and their potential compatibility with the objective of territorial cohesion, it is necessary to study the spatial distribution of their financial resources and their capacity for geographical concentration in line with the structural disadvantage of regions.

Table 2 illustrates the Moran's I Indices calculated on the basis of Equation 1 discussed earlier for each policy and programming period and for the Structural Disadvantage Index of the regions. The lack of spatial

autocorrelation in the allocation of funds – with an I index close to the expected value, E(I), indicated in the table – would seem to point to an indiscriminate distribution of funds. On the contrary, a positive Moran I index that is significantly different from E(I) denotes the presence of a positive spatial autocorrelation: high spending areas are associated with a "neighbourhood" of areas with relatively high spending levels, in line with the principle of the "geographical concentration" of spending for the purpose of maximising its effectiveness in territorial terms.

Table 2 – Territorial concentration of expenditure for Regional, Rural Development and PAC 'first pillar' (Measures of global spatial autocorrelation)

Variables	I	E(I)	sd(I)	z	p-value*
Regional Policy 94-99	0.244	-0.007	0.042	5.973	*0.000*
Regional Policy 00-06	0.25	-0.007	0.042	6.14	*0.000*
Regional Policy 07-13	0.258	-0.007	0.042	6.305	*0.000*
Rural Development 94-99	0.13	-0.007	0.042	3.254	*0.001*
Rural Development 00-06	0.11	-0.007	0.04	2.932	*0.002*
Rural Development 07-13	0.201	-0.007	0.042	5.01	*0.000*
PAC 1st Pillar 94-99	0.116	-0.007	0.042	2.922	*0.002*
PAC 1st Pillar 00-06	0.12	-0.007	0.042	3.03	*0.001*
PAC 1st Pillar 07-13	0.105	-0.007	0.042	2.676	*0.004*
Structural Disadvantage Index (PCA)	0.339	-0.007	0.042	8.209	*0.000*

*1-tail test

A tandem for cohesion?

The Moran I index for Regional Policy points to there being a clear concentration of Community spending that tends to increase, albeit marginally, in response to successive reforms and to a progressive reinforcement of the criterion of the territorial concentration of spending. Rural Development Policies, although exhibiting a level of territorial concentration considerably lower than that of the regional policies, reveal a significant increase in their capacity to "focus" financial resources upon specific areas of intervention in the last programming period (Greenbaum and Bondonio 2004). In other words, despite the progressive "decoupling" from regional policies discussed earlier, the mechanisms to select the beneficiaries of the rural development policy for the 2007-2013 programming period seem able to guarantee a higher level of territorial focus. On the other hand, the geography of first-pillar CAP spending – in line with the sectoral and non-territorial nature of this policy – exhibits a much lower degree of territorial concentration (and statistically less significant) with respect to rural development. Furthermore, this differential tends to widen in the period 2007-2013.

In order to evaluate whether or not the degree of territorial concentration reached by the policies is suitable for tackling the persistent structural disadvantage of the economic "periphery" of the EU, it is necessary to compare the degree of spatial autocorrelation with that of the Structural Disadvantage Index. Structural disadvantage (Table 2) exhibits much more spatial concentration than Community funds, which should, instead, be contributing towards attenuating this disadvantage, thereby suggesting the need to move towards a further increase in the territorial concentration of interventions (Crescenzi 2009).

Altogether these results suggest that shifting resources from first-pillar CAP to Rural Development interventions can increase the coherence of overall

Community spending in terms of the territorial concentration criterion, and potentially that the degree of coherence can move closer towards the degree of structural disadvantage of the regions. However, if the CAP is to contribute towards the achievement of the EU's long-term objectives, it does appear necessary to make an improvement in the distributive criteria also for the first-pillar, taking greater account of the economic and territorial disadvantages that characterise the context in which agricultural activity is performed.

4.3 The association between funds received and structural disadvantage

The estimate of the regression model specified in Equation 3 offers a systematic analysis of the territorial structure of the Community funds and of their capacity to develop reciprocal synergies and target the more disadvantaged areas.

Table 3 sets out the results of the cross-section estimate of the empirical analysis model that was estimated separately for each Community policy and each programming period. The per capita spending at regional level for each Community policy is, therefore, regressed onto the Structural Disadvantage Index discussed above and onto a set of "national" dummies whose purpose is to isolate any national "fixed effect": the systematic capacity of regions belonging to the same country to receive more (or less) funds regardless of their degree of disadvantage with respect to other areas of the Union.

A tandem for cohesion?

Table 3 – Structural Disadvantage and the Regional Distribution of EU funds: Cross Section Analysis with country dummies

VARIABLES	(1) Regional Policy	(2) Regional Policy	(3) Regional Policy	(4) Rural Development	(5) Rural Development	(6) Rural Development	(7) PAC 1st Pillar 1	(8) PAC 1st Pillar 1	(9) PAC 1st Pillar 1
	1994-99	2000-06	2007-13	1994-99	2000-06	2007-13	1994-99	2000-06	2007-13
Structural Disadvantage Index (PCA)	54.05**	85.97***	80.38***	17.27***	35.89*	21.02*	189.3***	263.7***	224.0***
	(20.82)	(28.58)	(23.87)	(6.038)	(18.34)	(11.13)	(44.94)	(63.44)	(67.28)
SE	28.97	21.67	85.08	7.375	114.0***	173.6***	-193.8	139.4	132.7
	(33.09)	(88.38)	(68.78)	(10.66)	(22.32)	(11.21)	(148.8)	(145.7)	(150.4)
DE	242.3***	273.1*	219.0**	59.75*	91.04*	89.73**	-228.5	-157.5	-61.47
	(91.83)	(145.8)	(106.5)	(32.60)	(46.15)	(35.91)	(153.1)	(166.9)	(189.6)
IT	131.6	71.79	51.63	34.07	25.39	89.90	-650.0***	-708.8**	-543.4*
	(88.24)	(147.1)	(113.1)	(30.67)	(77.78)	(54.96)	(220.7)	(276.7)	(298.7)
FR	40.13	-72.09	-107.4*	-0.0428	-3.962	31.67	304.2	450.9*	544.8**
	(50.94)	(97.10)	(61.45)	(15.31)	(40.70)	(24.87)	(208.7)	(236.7)	(250.0)
AT	-27.67	-78.80	-139.9*	-9.364	323.4***	420.3***	-466.7***	-116.7	-302.3
	(70.94)	(123.9)	(83.59)	(17.34)	(45.77)	(26.96)	(168.0)	(190.3)	(205.8)
BE	0	0	0	0	0	0	0	0	0
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
PT	1,095***	1,402***	1,310***	125.6***	206.5**	227.0***	-587.4**	-642.8*	-521.2
	(99.77)	(184.6)	(195.3)	(29.75)	(85.07)	(49.44)	(259.3)	(335.9)	(343.2)
NL	20.15	-93.19	-154.4***	-10.51	-48.99*	-30.30*	-129.2	-317.6*	-249.6
	(50.57)	(96.87)	(53.73)	(12.98)	(29.25)	(18.24)	(154.1)	(162.7)	(172.3)
UK	83.71	-14.93	24.00	-10.92	-39.82	24.46	-325.6**	-294.1*	-161.0
	(59.20)	(90.97)	(84.98)	(12.94)	(27.58)	(21.95)	(152.7)	(159.4)	(174.7)
ES	615.0***	677.9***	430.2***	84.62***	187.1**	156.3***	-32.19	367.6	617.5**
	(86.93)	(134.7)	(102.1)	(19.48)	(71.97)	(45.40)	(211.0)	(278.0)	(305.9)
GR	1,193***	1,754***	1,109***	150.1***	241.2***	237.4***	419.9	393.3	421.0
	(112.3)	(177.7)	(115.0)	(28.72)	(80.30)	(49.07)	(270.0)	(331.8)	(402.7)
FI	29.19	175.4	142.1	33.78*	197.1	511.2***	735.7***	1,914***	1,619***
	(54.28)	(138.1)	(100.2)	(20.01)	(191.5)	(169.5)	(168.6)	(339.8)	(331.9)
Constant	129.9**	338.7***	326.9***	40.06***	111.9***	78.88***	925.5***	1,103***	946.5***
	(50.88)	(97.31)	(61.41)	(15.06)	(40.76)	(25.15)	(157.9)	(172.3)	(191.7)
Observations	139	139	139	139	139	139	139	139	139
R-squared	0.811	0.827	0.787	0.502	0.421	0.604	0.537	0.539	0.465

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The results concerning Regional Policies (Table 3, columns 1-3) highlight a positive and statistically significant link between structural disadvantage and funds received by the regions. A higher degree of structural disadvantage is associated with a higher level of spending on regional policies regardless of the country to which the region belongs. The association between disadvantage and Community spending increased from 2000 as shown by an increase in the significance of the coefficient.

The analysis of the coefficients associated with national dummy variables (lower part of the table, indicated by the corresponding country codes) provides confirmation of the model's explanatory power. The regions of post-unification Germany (DE) received (in the period 94-99, column 1) systematically higher levels of financing with respect to the other regions, in addition to what would have been "justified" by their degree of structural disadvantage. However, this effect (shown by the magnitude and significance of the 'DE' dummy variable coefficient) tends to disappear in the successive programming periods (columns 2 and 3). On the contrary, the "premium" for the regions of the cohesion countries, Portugal (PT), Spain (ES) and Greece (GR), is systematic and persistent – positive and statistically significant in all programming periods (columns 1, 2 and 3). This premium is provided in addition to the Cohesion Fund reserved for cohesion countries and Ireland, and from which the latter withdrew in January 2004[6]. The data provide no confirmation, instead, of the hypothesis that a redistribution mechanism operates between various policy contexts so as to systematically favour the

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[6] The Cohesion Fund has not been included in the databank as its resources are allocated at the national level.

A tandem for cohesion?

United Kingdom as "compensation" for the limited benefits obtained from the first pillar of the CAP[7].

As regards Rural Development Policies (Table 3, columns 4-6) the association between funds and structural disadvantage appears to be considerably weaker than that of the regional policies, and above all is found to wane over time commencing from the 2000-2006 programming period. This weakness also seems to underline the predominance of the sectoral function in the criteria used for distributing resources within the framework of rural development. Therefore, the progressive "decoupling" between the regional policies and rural development interventions, as observed in the preceding paragraph, is accompanied by a reduction in the association between the two policies and the structural disadvantage of the regions probably due to the abandonment of the integrated programming among the various funds. If we consider the distribution of the "national premiums" implicit in the regional allocation of funds for Rural Development (again by looking at the National Dummy variables in the lower part of the table) we find, in this case too, a mechanism for the assignment of premiums to cohesion countries (significant and positive national dummies in all programming periods) that, furthermore, was later extended – commencing from the period 2000-2006 – to some economically strong countries such as Sweden, Finland and Austria; which may, in part, be explained by their possessing a high proportion of agricultural land classified as Less Favoured Areas (IEEP, 2006)[8].

As concerns the first-pillar of the CAP (Table 3, columns 7-9) the association with disadvantage remains positive and significant, in line with the findings of Tarditi and Zanias (2001). However, the total variability in the regional

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[7] The imbalance in the UK's contribution position led to the Fontainbleau Agreement (1984) and the determination of a permanent rebate of its contribution towards the Community budget (De Filippis, Sardone, 2010).

[8] This is especially true for Austria and Finland, which in 2005 accounted for 72% and 100% respectively of SAU (IEEP, 2006).

allocation of funds as explained by the model (as indicated by the R-square) is relatively limited and decreases over time. And, as the following table clearly illustrates, this relationship disappears altogether when additional controls for the characteristics of the regions are introduced into the model. Nevertheless, it is possible to ascertain that as regards the first-pillar – in line with our expectations – no "premium" mechanism is detectable in favour of countries on the EU's periphery, even if the initial penalisation of Portugal (found for the period 94-99, negative coefficient for the Dummy Variable PT in column 7) seems to have been corrected in successive periods (in columns 8 and 9 the coefficient loses its significance). In addition, even the penalisation to which the Italian (IT) and British (UK) regions were subject (again negative sign of the corresponding dummy variable) also seems to have disappeared in the more recent programming periods (columns 8 and 9) although in these same periods the "premium" for the French (FR) regions was reinforced (the 'France' national dummy variable becomes positive and significant in successive programming periods, columns 8 and 9).

Table 4 sets out the results of the estimation of the model of empirical analysis as specified in Equation 3, estimated with two-way fixed-effects panel methodology[9].

The availability of regionalised expenditure data for the three consecutive programming periods enables us to make simultaneous use of both the cross-

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[9] The choice of a Fixed Effects approach is justified on both conceptual and empirical grounds. From the conceptual point of view, the regions included in the dataset cannot be considered as a 'Random Sample' of the EU regions. In addition the individual components cannot be considered as uncorrelated with the explanatory variables as assumed in a Random Effects approach. From the empirical standpoint, the Hausman test confirms that Fixed Effects estimation has to be preferred over Random Effects. The F-test for the joint significance of individual effects also confirms the high significance of the regional fixed effects.

In our dataset the cross-sectional dimension is significantly larger than the time dimension (the explanatory variables cover the 1993-2006 period). In this context, the low time-series variability of the dataset a priori prevents non-stationarity from affecting our estimates through spurious correlation. The hypothesis of stationarity is confirmed by three different unit root tests for panel data (the Im-Pesaran-Shin, the augmented Dickey-Fuller and the Phillips-Perron tests) which, as expected, reject the hypothesis of non-stationarity at conventional significance levels.

section and time-series variability of the data through the methodologies of panel data analysis. The estimation of the empirical analysis model in its fixed effects panel data specifications makes it possible to evaluate the relationship between structural disadvantage and Community funds after controlling for all the region-specific characteristics that are non-observable/non-measurable and invariant over time (fixed effects) and for all factors common to all regions and subject to development over time (temporal dummies). This specification, therefore, allows us to evaluate the capacity of the various policies to target their funds upon structural disadvantage by removing from this relationship not only the effects of belonging to a certain country (as in the cross-section analysis discussed earlier) but also – for example – those of geographical position, historical factors, institutional quality (i.e. the general capacity of local institutions to "attract" EU resources over and above their structural disadvantage), sectoral macro-structure, firm-size structure etc..

Table 4 - Structural Disadvantage and the Regional Distribution of EU funds: Panel Data Analysis (Fixed Effect Two-Way), Regional Policy, Rural Development Policy, PAC 1st Pillar 1994-2013

VARIABLES	(1) Regional Policy	(2) Regional Policy	(3) Regional Policy	(4) Rural Development	(5) Rural Development	(6) Rural Development	(7) Rural Development	(8) Rural Development	(9) PAC 1st Pillar 1
	1994-2013	1994-2013	1994-2013	1994-2013	1994-2013	1994-2014	1994-2013	1994-2014	1994-2013
Structural Disadvantage Index (PCA) Panel	44.27	47.71*	30.17	27.40*	32.06**	44.55***	24.81*	26.92*	-54.84
	(27.45)	(26.06)	(30.00)	(14.33)	(13.79)	(14.25)	(13.51)	(14.26)	(50.63)
PAC 1st Pillar		0.0627	0.0630		0.0849***	0.0847***	0.0753**	0.0749**	
		(0.0565)	(0.0578)		(0.0326)	(0.0318)	(0.0309)	(0.0304)	
Regional Policy							0.152***	0.157***	
							(0.0241)	(0.0290)	
Interaction Term Disadvantage*PAC 1st Pillar			0.0153			-0.0109			
			(0.0185)			(0.00865)			
Interaction Term Disadvantage*Regional Policy								-0.00472	
								(0.0101)	
TD00	96.02***	89.25***	89.14***	-19.89	-29.06**	-28.98**	-42.62***	-42.39***	108.0**
	(27.00)	(25.89)	(26.03)	(13.89)	(13.72)	(13.81)	(12.82)	(12.80)	(43.17)
TD94	-169.6***	-159.3***	-155.6***	-159.7***	-145.7***	-148.4***	-121.5***	-121.1***	-164.2***
	(34.05)	(36.18)	(36.57)	(20.26)	(20.09)	(20.09)	(21.26)	(21.39)	(60.91)
Constant	557.1***	493.7***	486.6***	222.3***	136.6***	141.7***	61.53	61.01	1,010***
	(20.38)	(64.10)	(66.82)	(10.04)	(34.12)	(32.82)	(40.02)	(40.33)	(38.53)
Observations	417	417	417	417	417	417	417	417	417
R-squared	0.291	0.297	0.299	0.325	0.354	0.358	0.403	0.404	0.277
Number of id	139	139	139	139	139	139	139	139	139

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

A tandem for cohesion?

Columns 1 and 2 of Table 4 reveal a weak relationship between structural disadvantage and funds for Regional Policies after controlling for the time-invariant characteristics of the regions. A low correlation between funds and structural disadvantage that varies over time denotes a limited capacity on the part of regional policies to target the more structurally backward areas by tackling the factors of disadvantage that can develop over time. If we observe the relationship between various policy areas (column 2) it does not appear that any "compensatory" mechanism exists at a regional level between regional policies and the first pillar of the CAP: receiving an amount of funds that is higher (lower) with respect to the average in terms of first-pillar CAP funds is not compensated by a larger (smaller) appropriation in terms of Structural Funds, as indicated by the non-significant coefficient. The relationship between the two policy areas is found to be non-systematic even when it is attempted to relate potential compensation synergies/mechanisms to structural disadvantage by introducing an interaction term between the two variables (column 3).

The analysis of the structure of rural development policies – which as suggested by the foregoing analysis have undergone very significant developments in recent years, in terms of their financing and territorial structure – reveals a good capacity to target financial resources upon the most disadvantaged areas (column 4). The somewhat "hybrid" nature of the Rural Development Policies, which is the result of a place-based transformation of the "old" sectoral policies, clearly emerges when we consider the "knock-on effect" of the rural development funds with regard to both first-pillar CAP funds (column 5) and regional policy funds (column 7). After controlling for conditions of structural disadvantage, the areas that obtain more funds for rural development policies are those that have received a relatively higher amount of funds for the other two areas of Community policy, which denotes

a carry-over effect not found in the regional policies. Is this a virtuous process for concentrating the resources of different policies in disadvantaged areas? Unfortunately, the interaction term between spending on "other" policies and the index of structural disadvantage indicates that synergies of this type are absent: as concerns both first pillar CAP spending (column 6) and regional policies (column 8), the concentration of funds in the same areas does not coincide with the most disadvantaged areas.

The rural development policies, therefore, seem to be significantly influenced by the other policy areas with respect to which they absorb resources and 'borrow' intervention models, but this influence does not translate itself into synergetic financial allocations in favour of the more disadvantaged areas. Conversely, the reduction in the relative weight (in terms of the Community budget) of first pillar CAP spending would seem to favour an increase in the overall relationship between spending and structural disadvantage (thus making the EU budget altogether more "pro cohesion"): first pillar CAP spending is quite unrelated to the disadvantage of beneficiary areas (column 9). However, a regional allocation of funds that is the most compatible with the territorial cohesion objectives is not an "automatic" consequence of the shifting of resources from one policy area to another.

A systematic reading of the results suggests that the reinforcement of rural development policies can potentially promote compatibility between the allocation of total EU resources and cohesion. Yet the development of synergies in disadvantaged areas is still very limited as this is crucially conditioned by the need for a more pronounced "territorial vocation" of these policies, as also for a stronger integration and coordination with other policies "on the ground". In the same way, the capacity of regional policies to target resources upon the weaker areas has still to be improved and such a capacity

A tandem for cohesion?

is certainly very much influenced by changes in the mechanisms of policy regulation.

5. Conclusions

The relations between the various EU policy areas and their degree of compatibility with the objective of EU territorial cohesion is constantly evolving and is still far from being "consolidated". The ongoing policy debate on the future of the EU policies exhibits a growing emphasis upon coordination between policies and their compatibility with the cohesive territorial development of the European Union. However, the analysis of the impact that successive "adjustments" to the Community budget and the macro processes of reform have had upon the spatial structure of expenditure demonstrate that if, on the one hand, various policy areas show significant interrelations, on the other, the synergies between policies remain relatively limited and also reveal a trend that is not always in line with the "declared" objectives of the reforms undertaken.

Nevertheless, the results produced in this paper do provide material for timely 'policy-learning', thus making it possible to clearly identify the weaknesses of the various policies with respect to coordination and territorial cohesion, and offering useful suggestions for the current debate on the composition of the Community budget in the post-2013 period.

Changes in the composition of the EU budget in terms of the relative 'weight' of different policies will certainly open new 'windows of opportunity' for territorial cohesion. At a first glance, decreasing financial emphasis on CAP expenditure should make it possible to reinforce both Rural Development policies and Regional Policies, and allow coordination and territorial cohesion

to benefit from their 'place-based' approach. However our results have also made potential threats apparent.

First of all, our results highlight the need to increase coordination between the various contexts of Community policy by – for example – bringing (back) Rural Development Policies and Regional Policies within a Common Strategic Framework. Yet it is also clear that neither coordination with regional policies nor the shifting of resources from one policy area to another are "virtuous" in themselves as regards territorial cohesion. All areas of Community policy – including regional policies – have their light and dark sides in terms of how they target resources on structural disadvantage: the capacity to make a positive contribution to territorial cohesion crucially depends upon the policies actually implemented "on the ground" within the single policy areas and upon the respective allocation mechanisms.

Second, the impact of a reinforcement of Rural Development Policies and Regional Policies on territorial cohesion, is largely dependent upon the capacity of these policies not to "lose territorial focus" over time (Greenbaum and Bondonio 2004), thereby frustrating the benefits of a place-based approach and resurrecting the equitable distribution problem associated with the "old sectoral paradigm". Rural development policies should learn from the experience of regional policies but without replicating their defects. In this regard,our results suggest that incorporating rural development policies within the complex framework of cohesion policies – along the lines of the Barca Report proposal – would not by itself constitute a guarantee that these interventions would be more "cohesion orientated" . Even for regional policies, there is still significant room for improvement in the funds' allocation mechanisms from the point of view of increasing their spatial concentration and focus on disadvantage. The progressive increase in the resources earmarked to this area of Community policy has produced only limited

benefits in terms of spending structure and seems to have led to a partial "dilution" in the interventions over time.

Third, the results of the analysis on the territorial structure of fund allocation suggest to balance the opposing views emerging in current debate on the future of the EU Regional Policy. Some economists suggest that 'some reallocation of the funds across target regions would lead to higher aggregate growth in the EU and could generate faster convergence than current scheme does' (Becker et al. 2010, p.1). Conversely, the Barca Report (2009) adopts a more 'conservative view on territorial allocation' (p.p.113 and 158) on the basis of the lack of valid alternatives and the high political 'costs' of negotiations on these issues. Our analysis has highlighted the possibility of improving the geographic concentration of financial resources in all spheres of Community policy but it also suggested that this objective should be pursued by means of a careful evaluation of the specific needs of each area (also in terms of thematic priorities). For this purpose a set of robust indicators of economic and social disadvantage can certainly support a more transparent redistribution of financial resources. However, more effective targeting of financial resources towards structural disadvantage also requires the mobilization of national and local actors that the 'strategic development contracts' between each Member State/Region and the Commission proposed by the Barca Report can certainly facilitate.

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Appendix

APPENDIX A –Structural Disadvantage Index for the EU Regions: Principal Components Analysis (PCA)

Table A-1 – Index of Structural Disadvantage: Principal Components Analysis, Scoring coefficients

sum of squares(column-loading) = 1

Variable	Component 1	Component 2	Component 3	Component 4	Component 5
Agricultural Labour Force	-0.4357	-0.1607	0.5541	0.6907	-0.0137
Long Term Component of Unemployment	-0.1988	0.6518	0.5816	-0.439	0.0674
Education Population	0.5864	-0.1657	0.3517	0.0632	0.7078
Education Employed People	0.582	-0.0958	0.3971	0.0123	-0.703
Kms of motorways per thousand inhabitants	0.2967	0.716	-0.2706	0.571	0.0052

Table A-2 – Index of Structural Disadvantage: Principal Components Analysis, Principal components/correlation

Component	Eigenvalue	Difference	Proportion	Cumulative
Component 1	2.424	1.29763	0.4848	0.4848
Component 2	1.12637	0.102927	0.2253	0.7101
Component 3	1.02344	0.611799	0.2047	0.9148
Component 4	0.411645	0.397104	0.0823	0.9971
Component 5	0.0145409	.	0.0029	1

APPENDIX B – Methodology for the computation of Common Agricultural Policy- First Pillar expenditure at the Regional Level

The following Farm Accountancy Data Network (FADN) PUBLIC DATABASE indicators were used for the computation of CAP-First Pillar Payments: Total Subsidies on Crops[10] (SE610), Total Subsidies on Livestock[11] (SE615) and Decoupled Payments[12] (SE630). Conversely, "Environmental Subsidies" (SE621) as per art. 69 Reg. (CE) n. 1782/2003 were not included in the computation of total regional expenditure.

The following steps were followed for the computation of 'Total Regional Expenditure for first-pillar CAP:

1) The above-mentioned annual subsidies (Euro/Farm) were added up for each region and multiplied by the number of farms located in each region (total regional subsidies) and each member state (total national subsidies);

2) Total national subsidies calculated on the basis of FADN data were compared with actual payments as reported in the Yearly Financial Reports of EAGGF – Guarantee / EAGF (European Commission, 1994-2009);

3) In order to account for non-commercial farms not covered by the FADN database, the difference between actual and estimated national payments was subdivided across regions in proportion to their share of non-FADN farms (i.e. Number of Non-FADN Farms in Region i / Total Number of Non-FADN Farms in Country j) calculated from EUROSTAT data for each region;

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[10] Including:-Amounts paid to producers of cereals, oilseeds and protein crops (COP crops) and energy crops payments. -Amount of premiums received by COP producers obliged to set aside part of their land. Such land may, however, be used for certain non-food crops -All other farm subsidies on field, horticultural and permanent crops.

[11] Including: Any subsidies on dairy products, All farm subsidies received for cattle other than dairy cows in production, Any subsidies on sheep/goat milk products, All other farm subsidies on other livestock or livestock products.

[12] Including: Single Farm payment, Single Area payment, Amount resulting from the application of modulation to the first EUR 5000 or less of direct payments

4) Total regional subsidies were calculated as the sum of 'Total regional subsidies for FADN-Farms' (Step 1) and 'Total regional subsidies for Non-FADN-Farms' (Step 3).

5) Total payments in each Programming Period (to match Structural Funds and Rural Development expenditure) computed reiteration of Steps from 1 to 4 for each individual year.

In order to conduct a robustness check, Total Regional Payments estimated with this procedure were compared with a sample of actual payments at the regional level available from the Italian National Paying Agency. The Pearson Correlation between regional level payments is very high (0.98)[13].

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[13] The detailed table available upon request

Appendix C – Databank structure by programming period, policy area and source of funding

	Programmes	1994-1999	Programmes	2000-2006	Programmes	2007-2013
Agricultural policies	CAP - first pillar	EAGGF - Guarantee	CAP - first pillar	EAGGF - Guarantee	CAP - first pillar	EAGF
Rural development		EAGGF - Guarantee (Accomp. measures)*		EAGGF - Guarantee		EAFRD
	Ob. 1	EAGGF - Guidance		EAGGF - Guidance		
	Ob. 5A		Ob. 1			
	Ob. 5B		Leader +			
	Ob. 6					
	Leader II					
Cohesion Policies	Ob. 1	ERDF ESF FIFG	Ob. 1	ERDF ESF FIFG	Convergence	ERDF
	Ob. 6	ERDF ESF FIFG				ESF
	Ob. 2	ERDF ESF	Ob. 2	ERDF ESF	Regional Competitiveness and Employment	ERDF
	Ob. 5B	ERDF ESF				
	Ob. 3	ESF	Ob. 3	ESF		ESF
	Ob. 4	ESF				
	13 Comm. Initiatives	several funds	4 Comm. Initiatives	several funds	Territorial Cooperation	ERDF

*Information on accompanying measures for the period 1994-1999 (EAGGF-guarantee) are not currently available.

EAGF: European Agricultural Guarantee Fund

EAFRD: European Agricultural Fund for Rural Development

ERDF: European Regional Development Fund

ESF: European Social Fund

FIFG: Financial Instrument for Fisheries Guidance -   The databank has no information on the Cohesion Fund

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