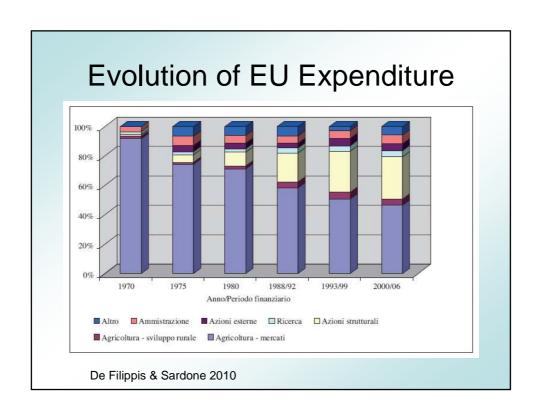






# Regional and agricultural policies in the EU budget: working for EU territorial cohesion?

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# Objectives (1)

- Empirical assessment of the impact of subsequent policy reforms AND changes in the EU budget composition on:
  - coherence with the objective of territorial cohesion;
  - coordination/synergies between policies
  - in terms of financial allocations at the territorial level for Regional, Rural Development and Agricultural Policies.
- Joint analysis of Regional, Rural Development and Agricultural Policies of the EU;
- Regional (sub-national) level analysis;

# Research hypotheses

Existing literature has <u>suggested</u> the implementation of **inappropriate policies** as an explanation of the weak impact of the EU 'development' funds on

**regional convergence** (Cappelen et al. 2003; Rodriguez-Pose and Fratesi 2004; Schucksmith, Thomson, Roberts 2003)

### RUT

- a) Counterfactual scenario hard to construct
- b) Hard to assess the impact of intrinsically different policies (in terms of objectives, mechanisms etc.)

### CONSEQUENTLY

We focus our attention upon the à priori structure of the policies rather than upon their impact

# Objectives (2)

Investigate two potential factors that — in open contradiction with the EU Commission 'explicit' objectives — may prevent different EU funds from working in favour of territorial cohesion:

- à priori bias in the geographical allocation of the funds:
  - undermines the principle of concentration;
  - prevents the intervention from targeting the real sources of competitive disadvantage of EU regions.
- inconsistent\conflicting distribution of resources under different EU policies.

# Objectives (3)

By looking of the EU expenditure for Regional, Rural and Agricultural policies (and its evolution over time) the paper will test:

- Potential inconsistencies\conflicts in the regional allocation of the funds
  - (correlation between regional expenditure under different policy headings)
- Coherence with the principle of territorial concentration
  - (spatial structure of the funding distribution)
- Capability to work pro-cohesion (Correlation with structural disadvantage)

### OUTLINE

- Stylized facts, Research questions & Objectives
- Dataset:
  - Data coverage and availability
  - Units of analysis
- Methodology
- Empirical Results
- Conclusions

# Spatial Structure: Moran's I

- The <u>spatial concentration</u> of the EU expenditure for the CAP and EU Regional Policy is analysed (together with its evolution over time) by means of the <u>Moran's I index;</u>
- The spatial concentration of the funds is contrasted with a specifically developed <u>Indicator of Structural Disadvantage</u> of the EU regions;

### The model: distribution of funds

Structural Disadvantage as driver for the observed pattern of expenditure per capita under different policy headings.

The following model is estimated by means of H-C OLS, and PANEL FE:

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

where

 $y_i$  is the level of per capita commitment in region I for policy A,

 $lpha,eta,\gamma$  are parameter vectors,

X are the explanatory variables (Index of Structural Disadvantage) and a set of national dummy variables,

P is the level of per capita commitment in region i for EU policies other than A.

 $\mu, au$  are the regional fixed effect and the time trend respectively,

 $\mathcal{E}_i$  is the error term

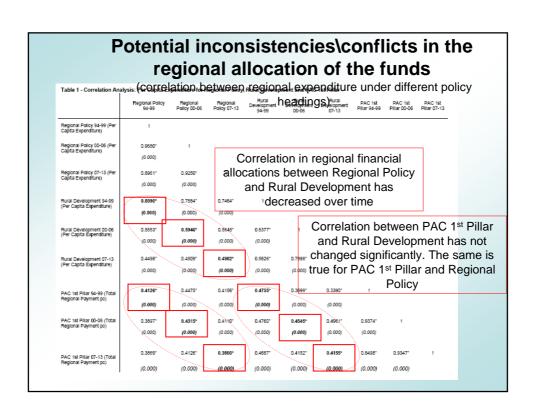
# DATASET: policy areas, spatial scale, time span

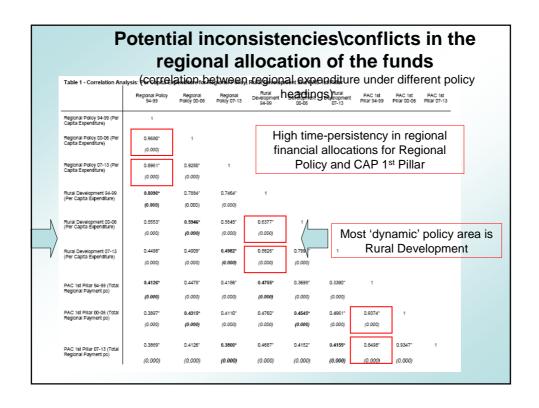
- •Policy areas:
  - CAP:
    - First pillar
    - Second pillar
  - Regional policy
- •Geographical coverage: EU-15

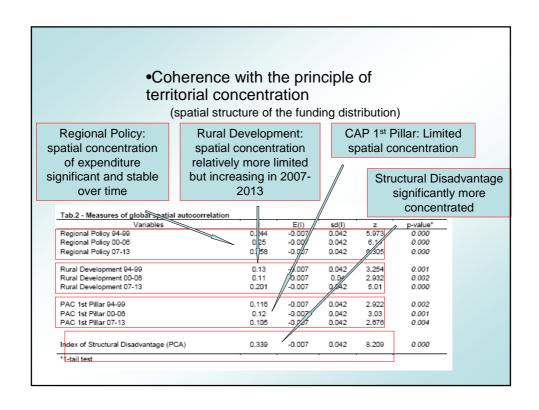
Regional level:

- NUTS1 (Be, De, UK)
- NUTS2 (At, Fi, Fr, Gr, It, NI, Pt, Es, Se)
- •Time span: 1994-1999; 2000-2006; 2007-2013

	Programmi		ipo di fon		Programmi		po di fondo		Programmi	Tipo di fond	
			1994-1999	9		20	000-2006	-		2007-2013	
Politica agricola	PAC - primo pilastro	FEO	OGA-Gara	nzia	PAC - primo pilastro	FEO	GA-Garanzia		PAC - primo pilastro	FEAGA	
	Misure accomp.	FEOGA-Garanzia			Sviluppo nirale	FEOGA-Garanzia			Sviluppo rurale	FEASR	
. (	Ob. 1										
Sv iluppo rurale	Оь. 5А			Ob. 1							
S. I.	Ob. 5B Ob. 6	FEOG	iA-Orienta	mento	Leader+	FEOGA	A-Orientamento				
	Leader II+										
	Ob. 1	FESR	FSE	SFOP	Ob. 1	FESR.	FSE	SFOP	Convergence	FESR	
all c	Ob. 6	FESR	FSE	SFOP						FSE	
Política di coesione	Ob. 2	FESR	FSE		Ob. 2	FESR	FSE		34 4 5 1 to		
ğ	Ob. 5B	FESR	FSE						Competitività & Occupazione	FESR FSE	
3	Ob. 3 Ob. 4	FSE FSE			Ob. 3	FSE			Occupazione		
110	13 Iniziative				4 Iniziative						
*	Comunitarie	á	fondi diver	si	Comunitarie	fo	ndi diversi		Cooperazione Territoriale	FESR	
<u> </u>	<del> </del>				<del> </del>						







### Capability to work pro-cohesion ('Reward' for structural disadvantage) After controlling for national factors: Regional Regional Regional Rural Rural Rural PAC 1st P **Regional Policy:** 2000-06 2007-13 1994-99 2000-06 2007-13 80.38\*\*\* (23.87) 85.08 (68.78) 219.0\*\* (106.5) 21.02\* (11.13) 173.6\*\*\* (11.21) 89.73\*\* (35.91) 189.3\*\*\* 263.7\*\*\* 224.0\*\*\* (44.94) (63.44) (67.28) -193.8 139.4 132.7 (148.8) (146.7) (150.4) -228.5 -157.5 -81.47 (153.1) (166.9) (189.6) Positive and statistically (22.32) 91.04\* (46.15) 28.97 (33.09) 242.3\*\*\* (91.83) 21.67 (88.38) 273.1\* (145.8) 59.75\* (32.60) significant 'reward' -543.4\* (298.7) 544.8\*\* (250.0) for Structural 51.63 (113.1) Disadvantage; 31.67 (24.87) -116.7 (190.3) 0 (0) -642.8\* (335.9) -78.80 (123.9) 0 (0) 1,402\*\*\* (184.6) Increasing after 2000 154.4\*\*\* (53.73) 24.00 (84.98) 430.2\*\*\* (102.1) 1,109\*\*\* Rural -249.6 (172.3) -161.0 (174.7) 617.5\*\* (305.9) 421.0 (402.7) 1,619\*\*\* -93.19 (96.87) -48.99\* (29.25) -14.93 (90.97) 677.9\*\*\* (134.7) 1,754\*\*\* (177.7) 175.4 **Development:** Positive but (19.48) 150.1\*\* (71.97) decreasing (168.6) 925.5\*\*\* (339.8) (331.9) 1,103\*\*\* 946.5\*\*\* 'reward' for (138.1) 338.7\*\*\* Structural (50.88) (97.31) 139 0.421 Disadvantage;

# Capability to work pro-cohesion

('Reward' for structural disadvantage)

	(1)	(2)	(3)	(4) Rural	(5) Rural	(6) Rural	(7) Rural	(8) Rural	(9)
VARIABLES	Regional Policy	Regional Policy	Regional Policy	Developmen †	Developmen †	Developmen †	Developmen †	Developmen †	PAC 1st Pillar 1
	1994-	1994-	1994-						
	2013	2013	2013	1994-2013	1994-2013	1994-2014	1994-2013	1994-2014	1994-201
Index of Structural Disadvantage									
(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		0.0827	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)	
nteraction Term							(	(	
Disadvantage*PAC 1st Pillar			0.0153			-0.0109			
			(0.0185)			(0.00865)			
nteraction 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

# Capability to work pro-cohesion

('Reward' for structural disadvantage)

	(1)	(2)	(3)	(4) Rural	(5) Rural	(6) Rural	(7) Rural	(8) Rural	(9)
VARIABLES	Regional Policy	Regional Policy	Regional Policy	Developmen	Developmen	Developmen	Developmen	Developmen +	PAC 1s Pillar 1
	1994-	1994-	1994-	,					
	2013	2013	2013	1994-2013	1994-2013	1994-2014	1994-2013	1994-2014	1994-201
Index of Structural Disadvantage									
(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	,	0.0827	0.0830	(	0.0849***	0.0847***	0.0753**	0.0749**	,
		(0.0565)	(0.0578)		(0.0326)	(0.0318)	(0.0309)	(0.0304)	
Regional Policy		(0.0000)	(0.00.0)		(0.0020)	(0.0010)	0.152***	0.157***	
regional Folloy							(0.0241)	(0.0290)	
nteraction Term							(0.0241)	(0.0200)	
			0.0153			-0.0109			
Disadvantage*PAC 1st Pillar									
			(0.0185)			(0.00865)			
Interaction Term								0.00470	
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***	138.6***	141.7***	61.53	61.01	1.010*
Jon Little II	(20.38)	(64.10)	(66.82)	(10.04)	(34.12)	(32.82)	(40.02)	(40.33)	(38.53
	(20.30)	(04.10)	(00.02)	(10.04)	(34.12)	(32.02)	(40.02)	(40.55)	(30.53
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									

# Capability to work pro-cohesion

('Reward' for structural disadvantage)

After controlling for 'time invariant'
regional factors (structural
characteristics, sectoral
composition, institutional quality
etc.) AND time trend (general
evolution of the EU regions)

### Regional Policy:

- Very weak association between Structural Disadvantage and Per Capita Expenditure;
- •No compensatory mechanisms with PAC 1st Pillar (i.e. no counter-treatment)
- •No synergies in disadvantaged areas

Tab. 4 - Panel Data Analysis (Fix	ed Effect Tw	o-Way): Re	gional Polic
	(1)	(2)	(3)
VARIABLES	Regional Policy	Regional Policy	Regional Policy
	1994- 2013	1994- 2013	1994- 2013
Index of Structural Disadvantage (PCA) Panel	44.27 (27.45)	47.71* (28.08)	30.17 (30.00)
PAC 1st Pillar		0.0827 (0.0565)	0.0830 (0.0578)
Policy			
Interaction Term Disadvantage*PAC			0.0153 (0.0185)
Disadvantage*Regional Policy			
TD00	96.02*** (27.00)	89.25*** (25.89)	89.14*** (26.03)
TD94	169.6***	159.3***	155.6***
Constant	557.1***	493.7***	486.6***
	(20.38)	(64.10)	(66.82)
Observations	417	417	417
R-squared	0.291	0.297	0.299
Number of id	139	139	139

### Capability to work pro-cohesion ('Reward' for structural disadvantage) Tab. 4 - Panel Data Analysis (Fixed Effect Two-Way): Regional Policy, Rural Devel VARIABLES 1994-2013 1994-2013 1994-2014 1994-2013 1994-2014 1994-2013 2013 Interaction Term Disadvantage\*PAC 1st Pillar -0.0109 -0.00472 96.02\*\*\*

(25.89)

(26.03)

155.6\*\*\* (36.57) 486.6\*\*\* (66.82)

(13.89)

-159.7\*

(20.26) 222.3\*\*\* (10.04)

(13.72)

(13.81)

(20.09) 141.7\*\*\* (32.82)

(12.82)

-121.5\*

(21.26) 61.53 (40.02)

(12.80)

(21.39) 61.01 (40.33)

(43.17)

-164.2\*\*\* (60.91) 1,010\*\*\* (38.53)

rentheses ' p<0.01, \*\* p<0.05, \* p<0.1

TDOO

#### Capability to work pro-cohesion ('Reward' for structural disadvantage) Tab. 4 - Panel Data Analysis (Fixed (8) Rural evelopr (5) Rural evelopme (7) Rural evelopme t (4) VARIABLES **Rural Development:** 1994-2013 1994-2013 1994-2014 1994-2013 1994-2014 Index of Structural Disadvantage Some (still limited) 27.40\* (14.33) 44.55\* 32.06\* 24.81 26.92 'reward' for Structural (14.25) (13.51) 0.0753\*\* (14.26) PAC 1st Pillar 0.0849\*\*\* (0.0326) (0.0318) 0.0749\*\* (0.0304) Disadvantage; 0.152\*\*\* (0.0241) 0.157\*\*\* •'Cumulative effect' (0.0290) IntCascon rerm Disadvantage\*PAC 1st Pillar with Regional Policy -0.0109 (0.00865) and PAC: 'hybrid Interaction Term Disadvantage\*Regional Polic policy' (0.0101) -20 DB\*\* -28 QB\*\* 42 82\*\*\* •No synergies in (13.72)(13.81) (12.82) (12.80)(13.89)disadvantaged areas -159 7\*\*\* -121 1\*\* -145 7\*\* -148 4\*\* -121 5\*\* (20.26) 222.3\*\*\* (20.09) 136.6\*\*\* (20.09) 141.7\*\*\* (21.26) 61.53 (21.39) 61.01 (10.04)(34.12) (32.82) (40.02) (40.33)Observations 417 R-squared 0.325 0.354 0.358 0.403 139

Capa	$\lambda D \Pi \Pi$			*****	<b>n</b>	)   ( )—(			
		_							<i>)</i>
('Rewa	ard' for	struct	ural d	isadvaı	ntage)				
Tab. 4 - Panel Data Analysis (F	ixed Effect Tw (1)	<b>'</b> 0	CAP ·	1st Pilla	ır.	icy, PAC 1st Pilli (6)	ar 1994-2013 (7)	(8)	(9)
	Regional		CAI			Rural	Rural	Rural	PAC 1:
VARIABLES	Policy	• N	O ass	ociation	n with	) Developmen t	Developmen t	Developmen t	Pillar 1
	1994- 2013			uctural		197	2013	1994-2014	1994-20
Index of Structural Disadvantage			• • • • • • • • • • • • • • • • • • • •						
(PCA) Panel	44.27 (27.45)		Disad	lvantag	e.	44.55*** (14.25)	24.81* (13.51)	(14.26)	-54.84 (50.63
PAC 1st Pillar	(	0.0627	0.0630		0.0849***	0.0847***	0.0753**	0.0749**	,
Regional Policy		(0.0565)	(0.0578)		(0.0326)	(0.0318)	(0.0309) 0.152***	(0.0304) 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*** (27.00)	89.25*** (25.89)	89.14*** (26.03)	-19.89 (13.89)	-29.06** (13.72)	-28.98** (13.81)	-42.62*** (12.82)	-42.39*** (12.80)	108.0° (43.17
		-	155 6***	. ,	. ,				
TD94	169.6*** (34.05)	159.3*** (36.18)	(36.57)	-159.7*** (20.26)	-145.7*** (20.09)	-148.4*** (20.09)	-121.5*** (21.26)	-121.1*** (21.39)	-164.2* (60.91
Constant	557.1***	493.7***	486.6***	222.3***	138.6***	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 Number of id	0.291	0.297	0.299	0.325 139	0.354 139	0.358 139	0.403 139	0.404 139	0.277 139
Robust standard errors in	100	100	100	156	100	100	100	100	150

# Conclusions (1)

- Notwithstanding the emphasis placed on coordination, synergies and concentration the improvement produced by subsequent reforms is still limited;
- Changes in the 'composition' of the EU budget are likely to impact upon its regional convergence / divergence impact but the direction of this impact remains unclear;
- Territorial concentration remains limited;

# Conclusions (2)

- Some 'reward' for structural disadvantage
   HOWEVER
  - After controlling for time invariant factors this correlation is significantly weakened.
- Changing the composition of the EU Budget is not per se able to improve the compatibility between EU spending and Territorial cohesion;
- This crucially depends on the design of appropriate allocation mechanisms and policies 'tailored' to local conditions