Cambiamento strutturale, qualità istituzionale e disparità regionali in Europa

Eleonora Cutrini
Università degli Studi di Macerata
eleonora.cutrini@unimc.it

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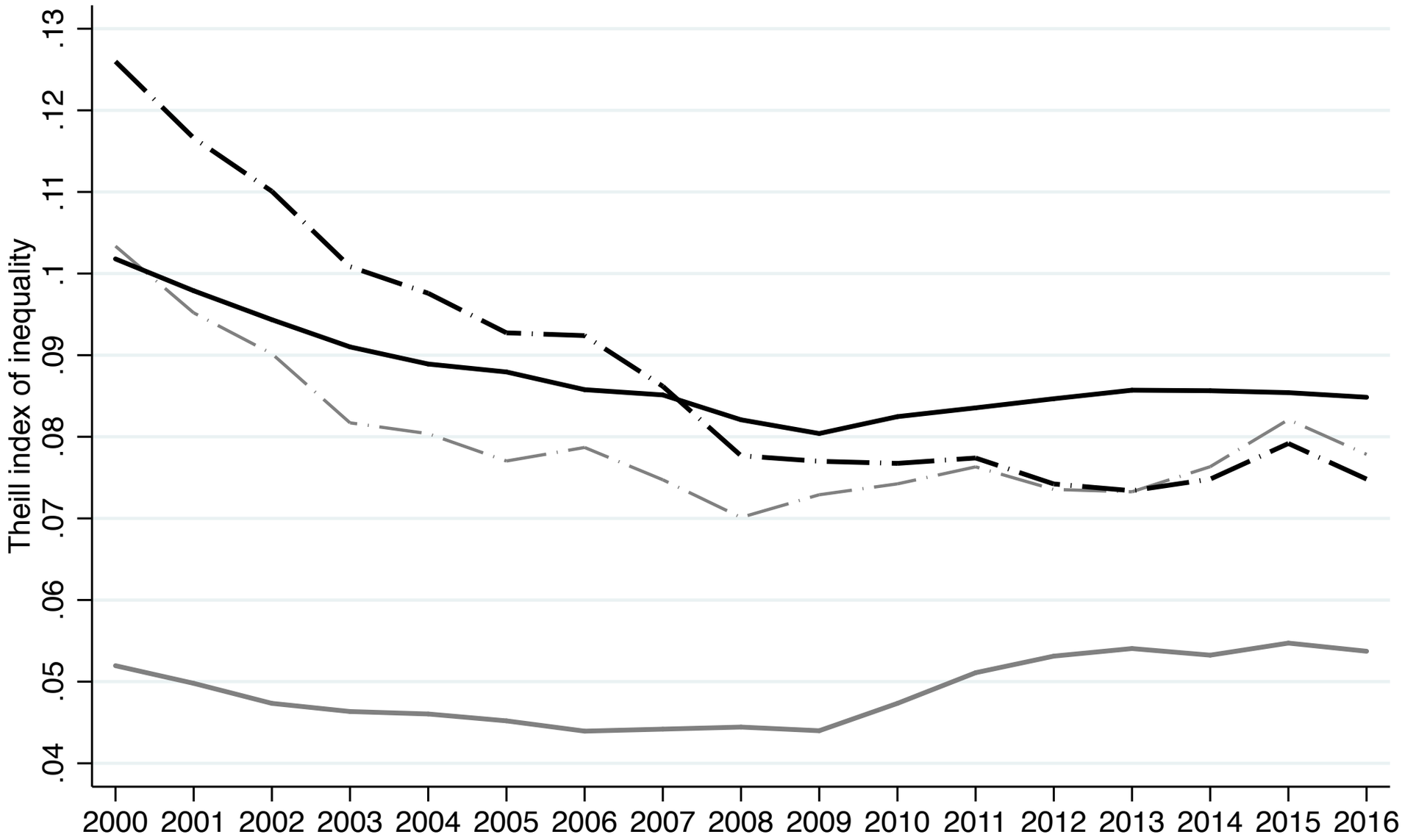
Introduction and motivation

- Evidence on **rising disparities within Europe**
- **Structural change**: industrial decline and transition to services
- International productive networks / *The Second Unbundling* (Baldwin, 2016) - in the wider Europe

Regional inequality in GDP per head



Theil index of absolute concentration
Source: EUROSTAT

Research issue addressed

- Overall picture of regional disparities in Europe
- Driving forces behind them
- Economic structure
- Institutional quality

Introduction and motivation

- The impact of the crisis has been **highly uneven** across Europe, both between countries as well as between regions within countries (e.g., Capello, Caragliu, & Fratesi, 2015; Christopherson, Clark, & Whiteman, 2015; Groot, Mohlmann, Garretsen, & de Groot, 2011).

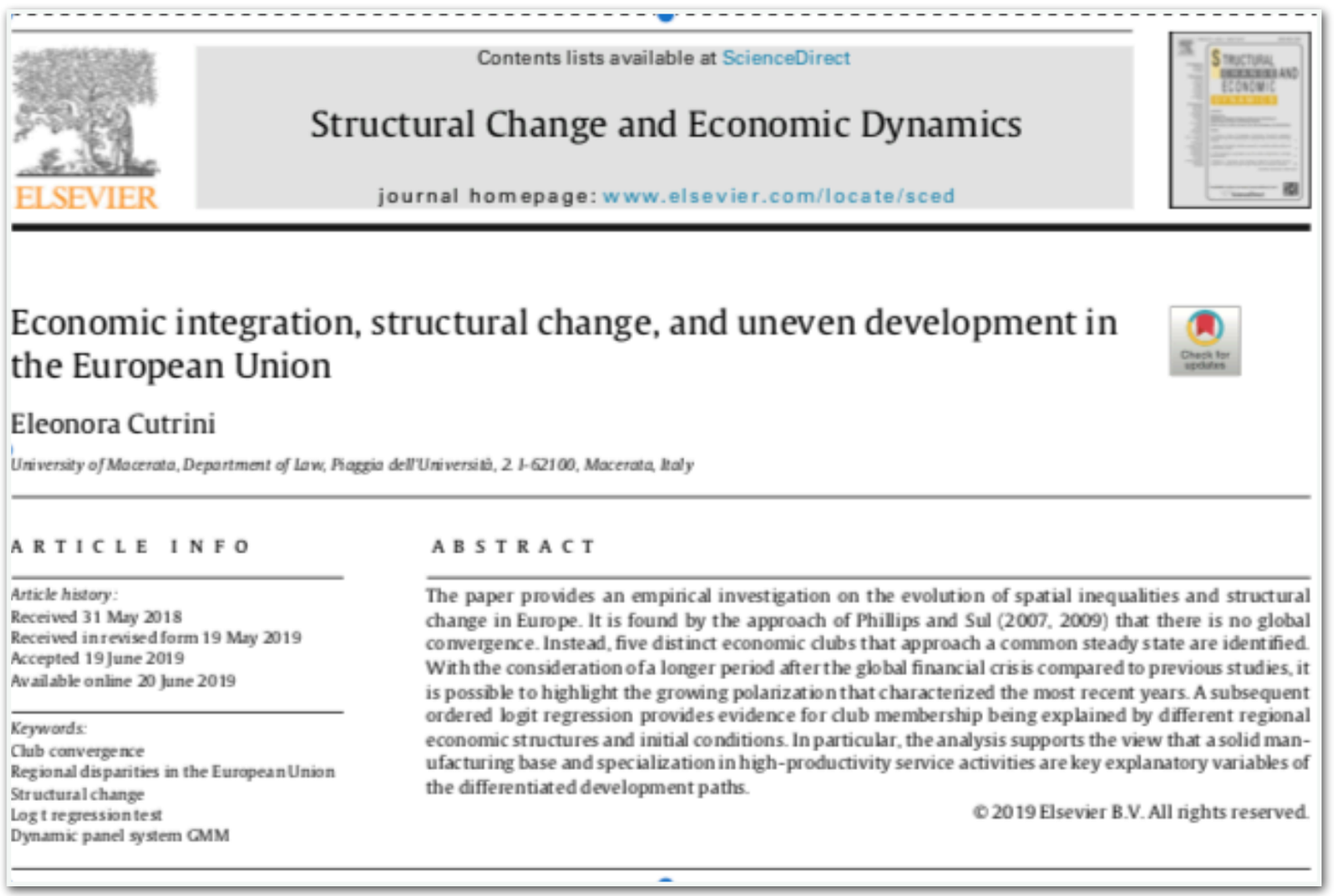
- **From convergence to divergence -> club convergence**
  - **CLUB CONVERGENCE**: groups of relatively homogenous regions converge to a similar steady state value within the group but different between the groups.

Why we prefer to study club convergence (than beta or sigma convergence)?

- The analysis of convergence clubs provides a more **realistic and detailed picture** about regional income growth than traditional convergence analysis.

Empirical strategy

- **2 steps:**



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Economic integration, structural change, and uneven development in the European Union

Eleonora Cutrini

University of Macerata, Department of Law, Piaggia dell'Università, 2 I-62100, Macerata, Italy

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ABSTRACT

The paper provides an empirical investigation on the evolution of spatial inequalities and structural change in Europe. It is found by the approach of Phillips and Sul (2007, 2009) that there is no global convergence. Instead, five distinct economic clubs that approach a common steady state are identified. With the consideration of a longer period after the global financial crisis compared to previous studies, it is possible to highlight the growing polarization that characterized the most recent years. A subsequent ordered logit regression provides evidence for club membership being explained by different regional economic structures and initial conditions. In particular, the analysis supports the view that a solid manufacturing base and specialization in high-productivity service activities are key explanatory variables of the differentiated development paths.

- **Club convergence (Phillips and Sul, 2007, 2009)**
- **Econometric analysis for explaining factors behind heterogeneous trajectories of regional development**
  - **Ordered logit**
  - **Dynamic panel generalized method of moments (GMM) (Blundell and Bond,1998)**

The novelty with respect to previous studies

Comparing our work to Bartkowska e Riedl (2012) and Lyncker and Thoennessen (2017):

1. **Identification of convergence clubs**

   - **Data on per capita GDP** used in the **clustering approach** refers to a wider database in the cross-section (EU-27) dimension and a more recent time span (2000-2016)

2. **Explaining club convergence:**

   - **Within-services specialization :** We consider the issue of different structural changes from industry to service —>we select specific explanatory variables to capture **within-services specialization (higher/lower-value added services)**

   - **Institutional quality**

   - **Endogeneity concerns adressed:** system GMM

Results in a nutshell

1. **Overall regional divergence (no global convergence)**

2. **5 economic clubs**

4. Our guiding hypothesis is verified: **different economic structure and initial conditions** are at the root of growing regional inequality in GDP per capita

5. **Institutional quality** matters but its impact on regional growth is limited

Results: overall divergence and the identification of five clubs

1) The log t test applied to the whole panel suggests that the **null hypothesis of overall convergence is rejected** at the 1% significance level (-30.81)

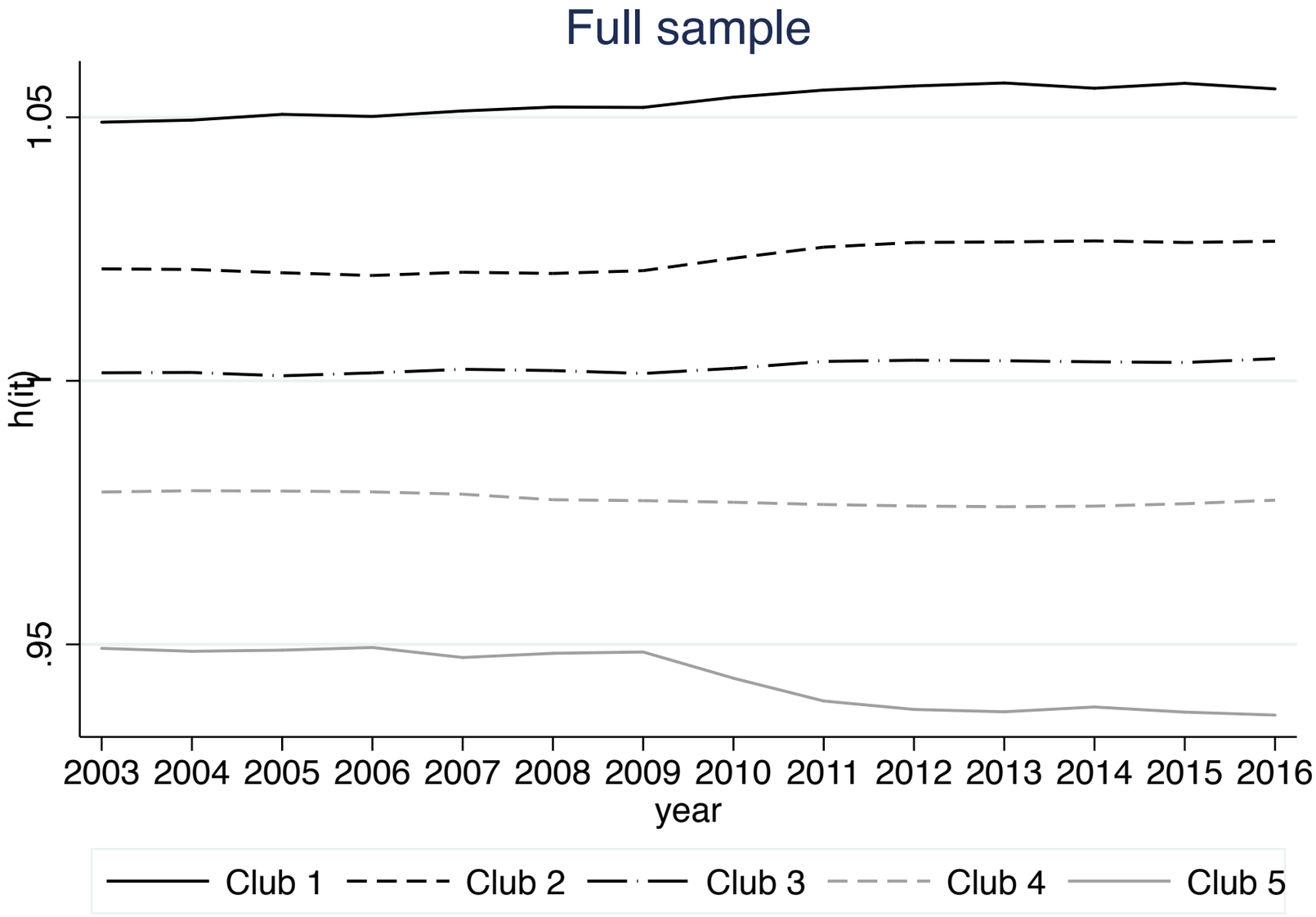
2) Cluster identification: 5 clubs (*K= - 1.65)**

Table 1 Results of the *log t* test. Sample 2003–2016

Club	N. of regions	$\hat{b}(SE)$	$t_{\hat{b}}$	$\hat{\alpha}$	Average income	
					2003	2016
1	20	0.215 (0.075)	2.879	0.108	33900	57035
2	39	-0.0298 (0.082)	-0.3627	-0.015	25790	35829
3	83	0.04 (0.088)	0.451	0.02	21388	28649
4	106	0.022 (0.0847)	0.2597	0.01	17275	22456
5	24	0.241 (0.113)	2.129	0.120	13333	14696

Applied truncation parameter: r = 0.3; applied critical value: c = 0; t-statistic at the 5% significance level: −1.645; t-statistic at the 1% significance level: −2.326, : speed of convergence.
Club 1 (n = 20): AT(2), BE(1), CZ (1), DE(5), DK(1), FR(1), IE(1), NL(2), PL(1), RO(1), SE(1), SK(1), UK(2)
Club 2 (n = 39): AT(4), BE (3), BG(1), CZ (1), DE (17), DK(1), FI(2), IT(2), LT(1), NL(3), PL(2), UK(3)
Club 3 (n = 83): AT(3), BE(3), CZ(1), DE(16), DK(2), EE(1), ES(6), FI(3), FR(6), HU(1), IT(9), LV(1), MT(1), NL(6), PL(4), PT(1), RO(3), SE(7), SI(1), SK(1), UK(7)
Club 4 (n = 106): BE(4), BG(1), CY(1), CZ(6), DK(1), EL(2), ES(12), FR(18), HU(3), IE(1), IT(7), NL(1), PL(9), PT(6), RO(4), SI(1), SK(2), UK(27)
Club 5 (n = 24): BG(4), EL(11), ES(1), FR(2), HU(3), IT(3)
Not converging regions (n = 2): Inner London – West and Luxembourg

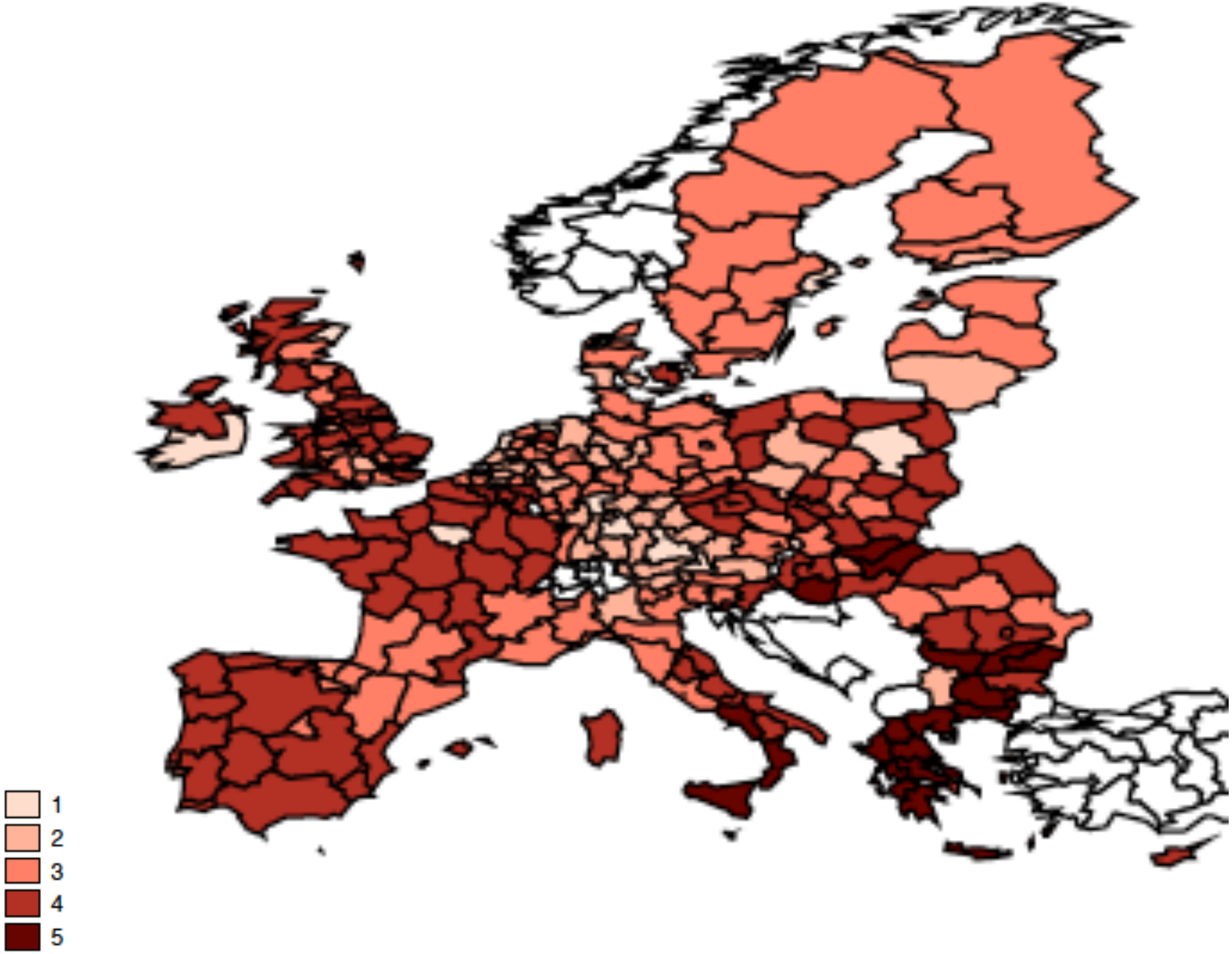
Relative transition paths of per capita GDP
Divergence across clubs



Five economic clubs

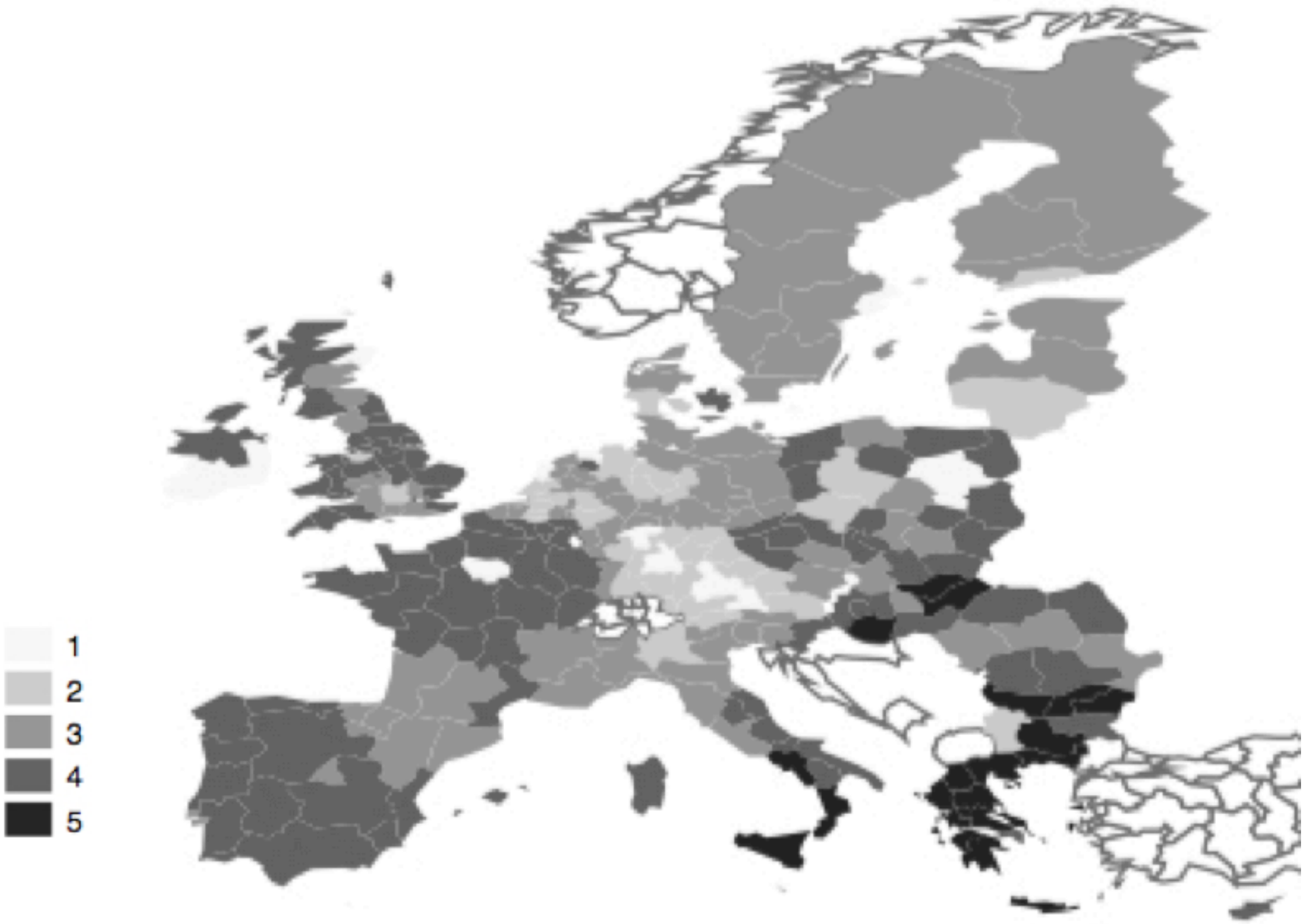
- “Metropolitan areas and capital regions” (**Club 1**)
- The “Central European Manufacturing Core” (**Club 2**)
- “Resilient regions with intermediate average per capita income levels” (**Club 3)**
    - “Deindustrializing regions with adverse structural change” (**Club 4**).
    - “South-East falling behind” (**Club 5**).
- The European Core is moving Eastward

Club clustering in the EU-28 panel 2003–2016 (5 clubs)



Source: Eurostat

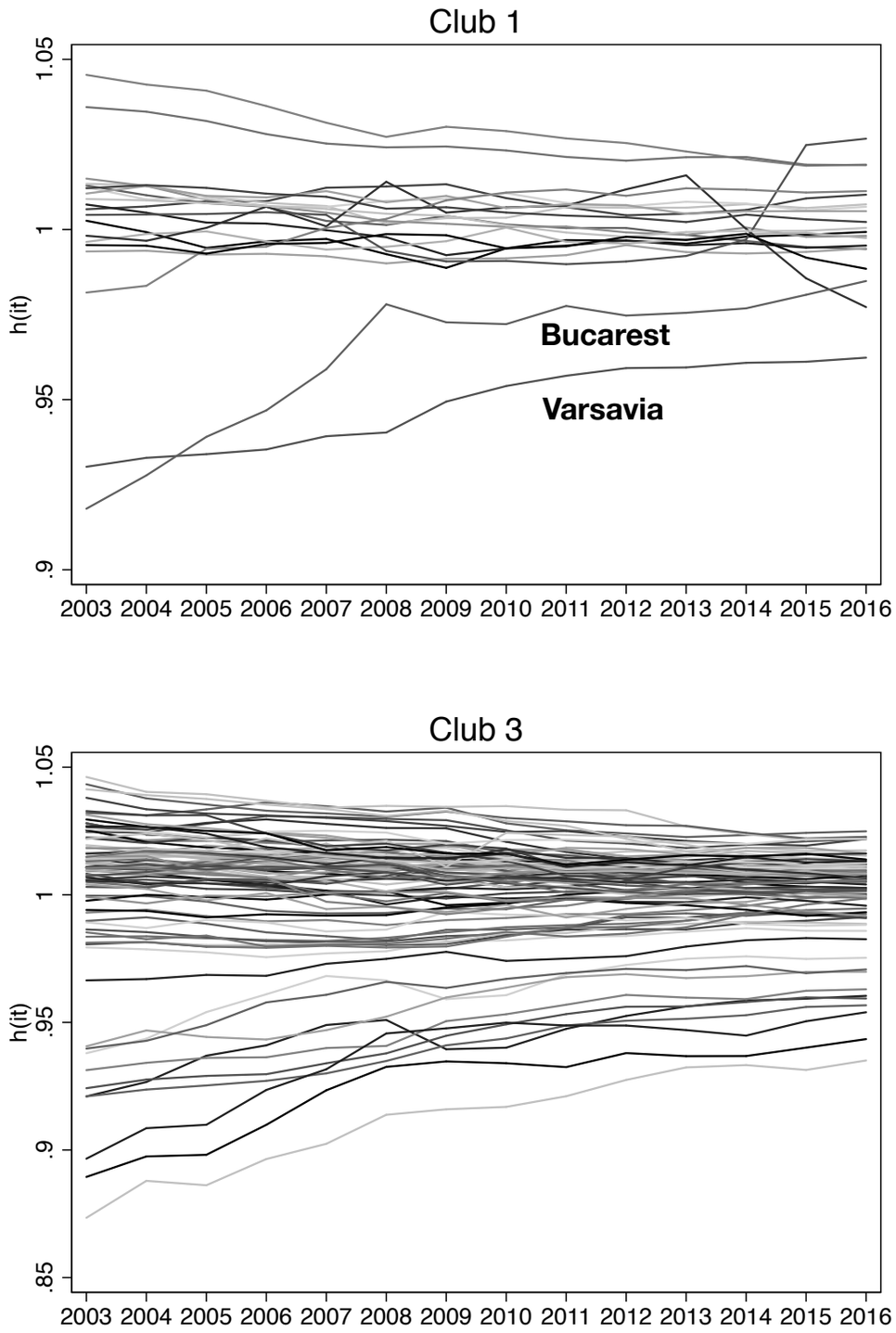
Club clustering in the EU-28 panel 2003–2016

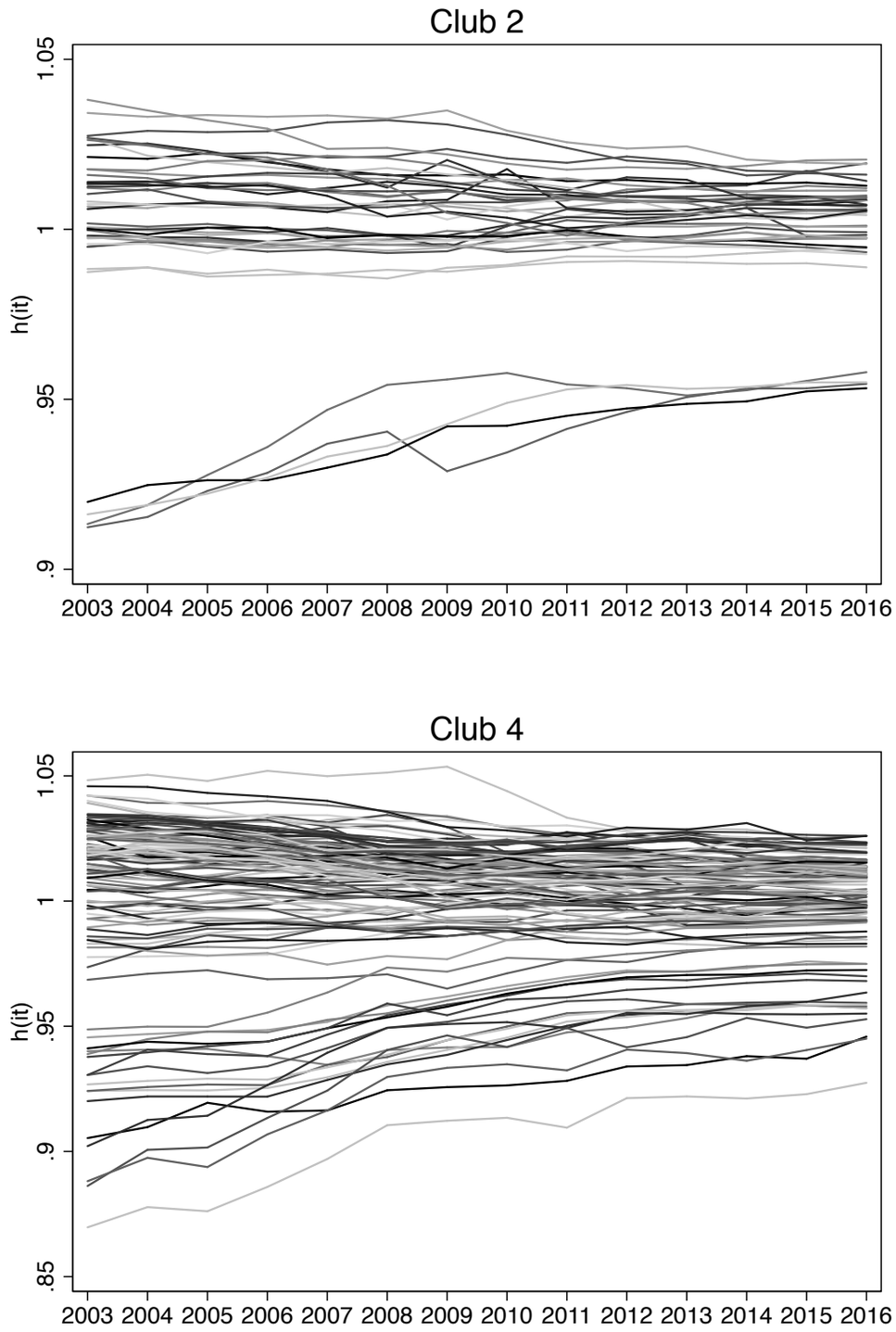


Source: Eurostat

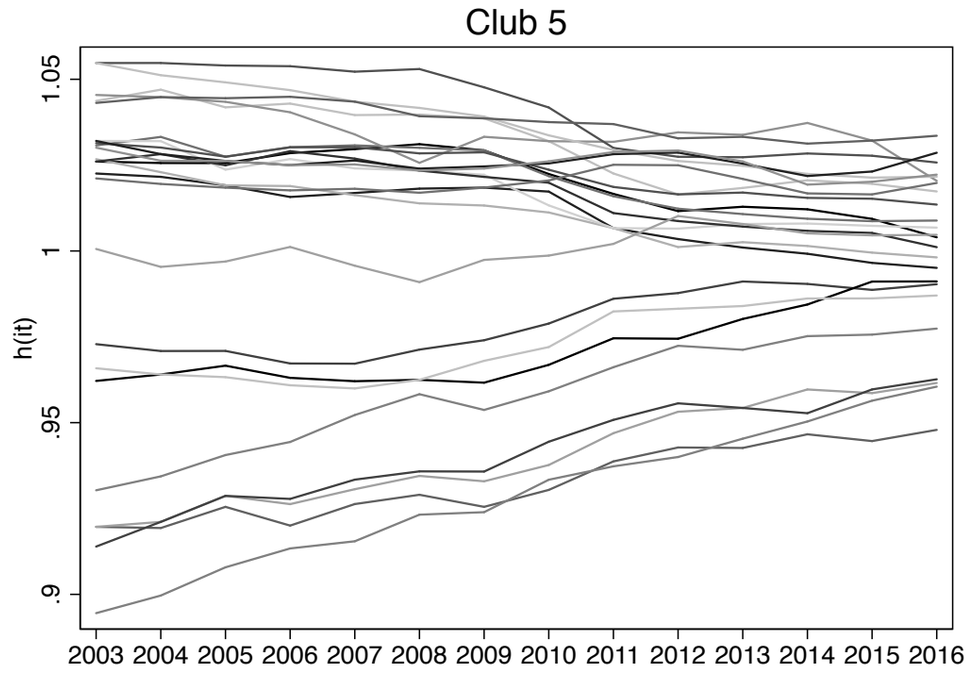
Relative transition paths of per capita GDP

sigma-convergence within clubs





Relative transition paths of per capita GDP



Structural and geographical characteristics of clubs (1)

1. Metropolitan areas and capital regions

- highest steady state
- it is mainly made up of **metropolitan and capital cities of Northern and Central Europe,** such as Vienna, Brussels, Prague, Paris, Dublin, Bratislava, Stockholm, London, Amsterdam, Hamburg, Stuttgart, Bucarest, Warsaw (Analogous results are obtained in Bartkowska and Riedl, 2012 and, more recently, in von Lyncker and Thoennessen, 2017).
- It is characterized by:
  - a **substantial specialization in knowledge-intensive business services (KIBS)**
  - and a **small proportion of employment in manufacturing**

2. The Central European Manufacturing Core

- Club 2 spans different EU countries, but regions belonging to the so-called Central European manufacturing core are highly represented in this cluster.
- It also includes other capital regions, such are Berlin, part of London (Outer London-West and North West), Helsinki, and wealthier areas of North European countries.

Structural and geographical characteristics of clubs (2)

- Clubs 3 and 4 are the largest groups, each with almost one third of the sample's regions.

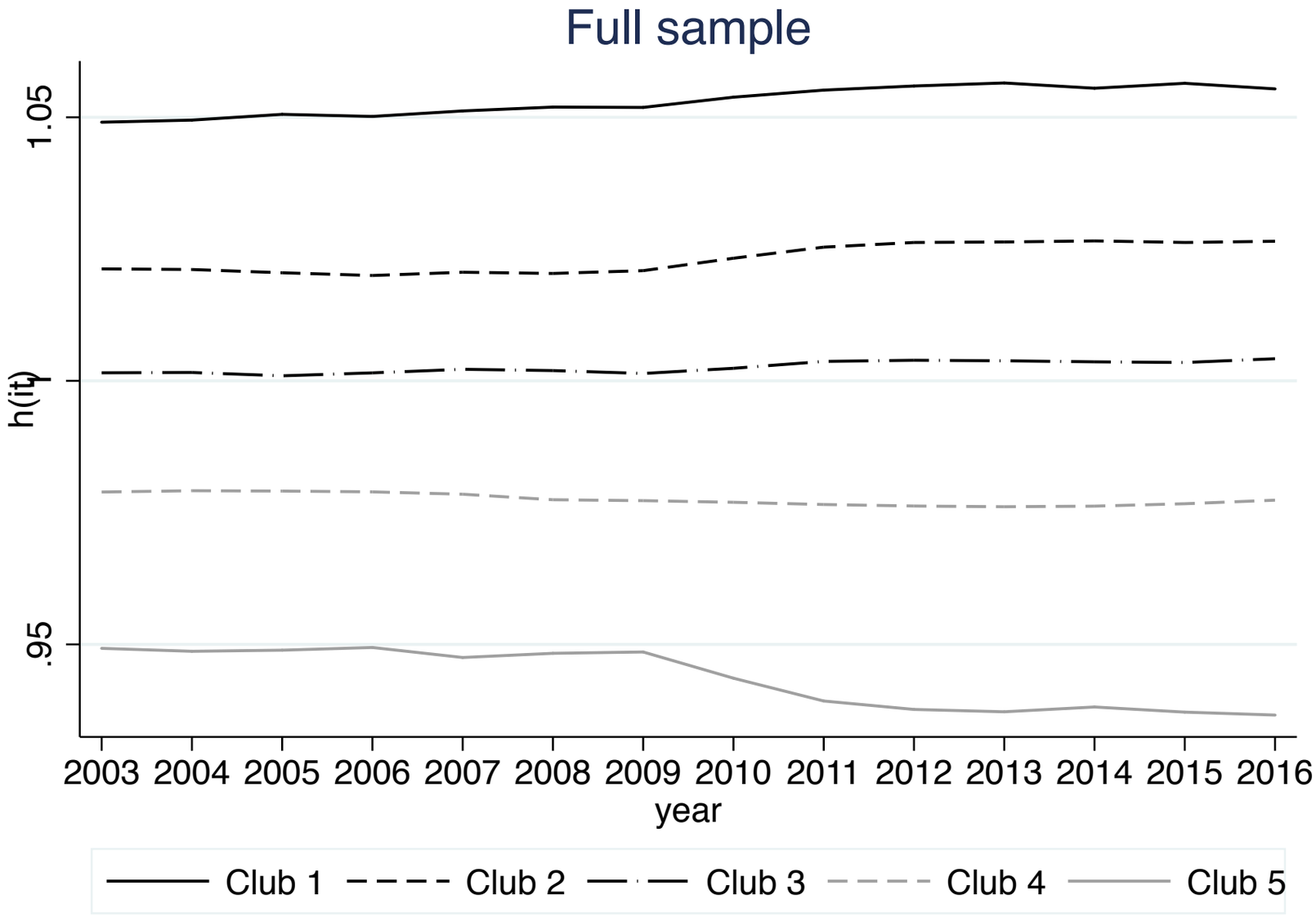
3. Resilient regions with intermediate average per capita income levels

- Club 3 encompasses affluent regions too
- Larger cities and capital regions in Mediterranean countries (e.g. Madrid, Rome, Portugal, Bilbao) belong to this cluster.
- As for their economic structure, Club 3 has almost the same initial share of manufacturing employment compared to preceding Club 2 (18%) but it experienced **a higher decrease of manufacturing employment** (-4.8%) in the post-crisis period (2010-2016) compared to Club 2 where manufacturing employment shrank by only 0.6%.

4. Deindustrializing regions with adverse structural change

- What distinguishes the two clubs is both the initial sectoral composition and the structural change experienced over time. At the beginning of our convergence analysis, **Club 3 was more specialized both in manufacturing (17.6%) and in KIBS services (11.4%), than was the case in Club 4 (15.9% and 9.4%, respectively).** On the contrary, the employment share in routine services was higher in Club 4 (24.2%) compared to Club 3 (23.6%).

Relative transition paths of per capita GDP
Divergence across clubs



Structural and geographical characteristics of clubs (3)

- **During the period 2010-2016, the distance between the two intermediate clubs widened, possibly due to a divergent structural change.**

- In Club 3, the decline in manufacturing employment (-4.8%) was less dramatic than in Club 4 (-7.8%) and it was offset by slightly higher growth of knowledge-intensive services (+11.4% and +10.2%, respectively).

5. South-East falling behind

- is the other small subgroup, with regions mainly belonging to Mediterranean and South Eastern countries and characterized by sluggish economic growth.

- 85% of all Greek regions end up in this cluster. It also includes southern Italy, and the remaining regions of Spain, Hungary and Bulgaria not included in the previous clubs.

- **Club 5 experienced a significant deindustrialization (-18.6%) accompanied by a feeble structural change toward high-skilled/highly-paid services (4.2%) during the post-crisis period** (See next table). Hence, not only this cluster has the lowest end-of-period average income (last column of Table 1), but it is also diminishing its possibility of catching up with the rest of the European Union (Cfr. Figure 2).

Summary statistics, by clubs

	Whole sample (270)	CLUB 1 (20)	CLUB 2 (39)	CLUB 3 (83)	CLUB 4 (106)	CLUB 5 (24)
Initial conditions (in 2003)						
Per capita GDP, pps	20626	33900	25790	21388	17275	13333
Manufacturing, share	0.162	0.121	0.183	0.176	0.159	0.121
Knowledge-intensive services, share	0.109	0.181	0.132	0.114	0.095	0.058
Routine services (Trade, transport, accommodation & food services), share	0.244	0.256	0.251	0.236	0.242	0.253
Finance and insurance, share	0.023	0.046	0.028	0.023	0.020	0.013
Real estate activities, share	0.009	0.015	0.009	0.010	0.008	0.003
Other services, share	0.052	0.055	0.055	0.055	0.050	0.049
GFCF (Millions euro)	7876	17569	10722	8202	5238	3606
Population aged 25-64 with level 3-8 (%)	66.89	78.55	76.49	69.93	61.89	53.20
Employment rate of 20-34, level 3-8 (%)	80.83	84.49	85.48	83.48	79.42	67.36
Population with tertiary education and/or employed in S&T (%)	22.71	32.17	27.43	24.83	19.55	14.21
Geographic controls						
Metropolitan region	0.40	0.84	0.50	0.38	0.36	0.13
Per capita GDP, pps (annual average growth rate 2003-2016)	0.022	0.026	0.025	0.023	0.020	0.012
Per capita GDP, pps (annual average growth rate 2010-2016)	0.022	0.027	0.029	0.025	0.021	0.002
Structural change variables (average rate of change 2010-2016)						
Manufacturing	-0.011	-0.012	-0.001	-0.008	-0.013	-0.031
Knowledge-intensive services	0.018	0.020	0.025	0.019	0.017	0.007
Routine services	0.003	0.009	0.006	0.004	0.002	-0.008
Finance and insurance	-0.015	-0.008	-0.004	-0.012	-0.019	-0.031
Real estate activities	-0.003	0.012	0.007	-0.005	-0.007	0.000
Other services	0.006	0.008	0.004	0.007	0.007	0.004
GFCF	0.011	0.044	0.031	0.020	0.010	-0.074

Table C2 Average values, by clusters

Summary statistics, by clubs

	Whole sample (270)	CLUB 1 (20)	CLUB 2 (39)	CLUB 3 (83)	CLUB 4 (106)	CLUB 5 (24)
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Routine services (Trade, transport, accommodation & food services), share	0.244	0.256	0.251	0.236	0.242	0.253
Finance and insurance, share	0.023	0.046	0.028	0.023	0.020	0.013
Real estate activities, share	0.009	0.015	0.009	0.010	0.008	0.003
Other services, share	0.052	0.055	0.055	0.055	0.050	0.049
GFCF (Millions euro)	7876	17569	10722	8202	5238	3606
Population aged 25-64 with level 3-8 (%)	66.89	78.55	76.49	69.93	61.89	53.20
Employment rate of 20-34, level 3-8 (%)	80.83	84.49	85.48	83.48	79.42	67.36
Population with tertiary education and/or employed in S&T (%)	22.71	32.17	27.43	24.83	19.55	14.21
Geographic controls						
Metropolitan region	0.40	0.84	0.50	0.38	0.36	0.13
Per capita GDP, pps (annual average growth rate 2003-2016)	0.022	0.026	0.025	0.023	0.020	0.012
Per capita GDP, pps (annual average growth rate 2010-2016)	0.022	0.027	0.029	0.025	0.021	0.002

Summary statistics, by clubs

	Whole sample (270)	CLUB 1 (20)	CLUB 2 (39)	CLUB 3 (83)	CLUB 4 (106)	CLUB 5 (24)
Institutional variables						
EQI	88.81	110.88	73.73	140.24	61.85	34.07
Quality in public services	60.38	74.92	74.41	59.07	57.95	39.64
Impartiality in public services	57.55	62.24	61.89	60.72	56.59	39.11
Corruption in public services	56.80	62.78	66.82	61.17	53.21	36.46
Structural change variables (average rate of change 2010-2016)						
Manufacturing	-0.011	-0.012	-0.001	-0.008	-0.013	-0.031
Knowledge-intensive services	0.018	0.020	0.025	0.019	0.017	0.007
Routine services	0.003	0.009	0.006	0.004	0.002	-0.008
Finance and insurance	-0.015	-0.008	-0.004	-0.012	-0.019	-0.031
Real estate activities	-0.003	0.012	0.007	-0.005	-0.007	0.000
Other services	0.006	0.008	0.004	0.007	0.007	0.004
GFCF	0.011	0.044	0.031	0.020	0.010	-0.074

Explain regional disparities

Data

- Eurostat
  - Structural Business Statistics
  - Regional Economic Accounts (Gdp)
  - Regional Branch Accounts (structural variables, GFCF)
  - Regional education Statistics (human capital)
- JRC and European Commission data (metropolitan areas)
- European Quality of Government Index (Charron et al., 2014, 2015)

Definition of explanatory variables

Variable	Definition	Source
Per capita GDP	Per capita GDP pps	Regional economic accounts (ESA 2010), Eurostat
Structural variables		Regional branch accounts (ESA 2010), Eurostat
Manufacturing, share	Employed persons in manufacturing (Section C) divided by *total employment**	
Knowledge intensive services, share	Employed persons in Information and communication (Section J), Professional, scientific, technical activites; Administrative and support service activities (Sections M-N) divided by *total employment**divided by *total employment**	
Routine services (Trade, transport, accommodation & food services), share	Employed persons in Wholesale and retail trade; Transportation and storage; Accommodation and food service activities (Sections G-H-I) divided by *total employment**	
Finance and insurance	Employed persons in Financial and insurance activities (Section K) divided by *total employment**	
Real estate activities	Employed persons in Real estate activites (Section L) divided by *total employment**	
Other services, share	Employed persons in Arts, entertainment and recreation; other service activities; activities of household and extra-territorial organizations and bodies (Sections R-U) divided by *total employment**	

Definition of explanatory variables

GFCF	Gross fixed capital formation, Million euro Total - all NACE activities	Regional branch accounts (ESA 2010), Eurostat
Human capital controls		
Population aged 25-64 with level 3-8 (%)	Population aged 25-64 with upper secondary, post-secondary non-tertiary and tertiary education (levels 3-8) (%)	Regional education statistics (ISCED 2011), Eurostat
Employment rate of 20-34, level 3-8 (%)	Employment rate for population from 20 to 34 years with upper secondary, post-secondary non-tertiary and tertiary education (levels 3-8) (%)	Employment rates of young people not in education and training by sex, educational attainment level, years since completion of highest level of education - Regional education statistics (ISCED 2011), Eurostat
Population with tertiary education and/or employed in S&T (%)	Persons with tertiary education (ISCED) and/or employed in science and technology (Percentage of total population)	Human resources in science and technology (HRST) - Regional Science and Technology statistics, Eurostat
Geographic controls		
Metropolitan region	Dummy variable based on the presence of one or more NUTS-3 metroregion. Own elaborations on Eurostat data on typologies and local information corresponding to NUTS3 - Urban-rural typology	Eurostat, JRC and European Commission Directorate-General for Regional Policy

Table 3 Definition of variables and sources

**Total employment: employed persons in all NACE activities (NACE rev. 2)*

Definition of explanatory variables

- **To measure institutional quality we use data on European Quality of Government Index (EQI)**, which has recently been constructed on the basis of the perceptions and experiences of European citizens on the quality, impartiality and level of corruption in education, public health care and law enforcement (Charron et al., 2014, 2015).

- the EQI is available for three years: 2010, 2013 and 2017.

- We employ the EQI variable of year 2010 (ordered logit) and 2010-2013 for the system GMM estimations.

- The EQI is available for all EU 27 countries at NUTS 2 regional level, with the exception of Belgium, Germany, Greece, Hungary, Sweden and the United Kingdom, for which the data are provided at NUTS 1 level. For these six countries we follow previous studies (e.g. Rodríguez-Pose and Di Cataldo, 2015; Ketterer and Rodríguez-Pose, 2018 and Ezcurra and Rios, 2019) and assign the same EQI score to all NUTS 2 regions nested within the bigger NUTS 1 regions.

- The EQI values were standardized to make them range from 0 to 100 (See also Ezcurra and Rios, 2019).

Ordered Logit: Marginal effects on probabilities - baseline model

A one-unit increase in the initial manufacturing or Information and KIS share is associated with a higher probability of belonging to Club 1, 2 ore 3, and a lower probability of belonging to the lower-income clubs.

	Club 1	Club 2	Club 3	Club 4	Club 5
Initial conditions (in 2003)					
Per capita GDP, in logs	0.0807***	0.389***	0.660***	-1.033***	-0.0954**
	(0.0249)	(0.0882)	(0.179)	(0.207)	(0.0287)
Manufacturing, share	0.145**	0.696***	1.182**	-1.852***	-0.171**
	(0.0617)	(0.266)	(0.479)	(0.660)	(0.0822)
Knowledge-intensive services, share	0.153*	0.738*	1.253*	-1.963*	-0.181
	(0.0886)	(0.387)	(0.712)	(1.027)	(0.114)
Routine services (Trade, transport, accomodation & food services), share	-0.237**	-1.140***	-1.935***	3.031***	0.280**
	(0.0966)	(0.371)	(0.700)	(0.939)	(0.113)
GFCF, in logs	-0.00680	-0.0327	-0.0556*	0.0871*	0.00804
	(0.00452)	(0.0207)	(0.0327)	(0.0507)	(0.00544)
Population aged 25-64 with with level 3-8 (%), in logs	0.0437***	0.210***	0.357**	-0.560***	-0.0517**
	(0.0169)	(0.0710)	(0.143)	(0.191)	(0.0208)
Geographic and institution controls					
Degree of urbanization	0.0189*	0.0908**	0.154**	-0.242**	-0.0223*
	(0.0105)	(0.0445)	(0.0649)	(0.101)	(0.0120)
EQI index, min-max (0-100) standardized, in logs	-0.00453	-0.0218	-0.0370	0.0580	0.00535
	(0.00412)	(0.0198)	(0.0319)	(0.0503)	(0.00469)
Observations	20	39	83	106	24

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
NOTE: All predictors at their mean value

Ordered Logit: Marginal effects on probabilities - extended model

	Club 1	Club 2	Club 3	Club 4	Club 5
Initial conditions (in 2003)					
Per capita GDP, in logs	0.0643***	0.409***	0.661***	-1.062***	-0.0715***
	(0.0244)	(0.111)	(0.191)	(0.245)	(0.0247)
Manufacturing, share	0.142***	0.900***	1.454**	-2.338***	-0.157**
	(0.0549)	(0.309)	(0.570)	(0.776)	(0.0665)
Knowledge-intensive services, share	0.0683	0.434	0.701	-1.128	-0.0759
	(0.0719)	(0.458)	(0.784)	(1.217)	(0.0831)
Routine services (Trade, transport, accomodation & food services), share	-0.204**	-1.299***	-2.098***	3.374***	0.227**
	(0.0928)	(0.445)	(0.757)	(1.059)	(0.0974)
Financial and insurance, share	0.777**	4.939**	7.977**	-12.83***	-0.863**
	(0.377)	(2.091)	(3.261)	(4.862)	(0.419)
Real estate activities, share	1.808**	11.49***	18.56***	-29.86***	-2.009**
	(0.795)	(3.943)	(5.954)	(8.477)	(0.872)
Other services, share	-0.172	-1.090	-1.761	2.832	0.191
	(0.148)	(0.851)	(1.207)	(2.006)	(0.151)
GFCF, in logs	-0.00677*	-0.0430*	-0.0695*	0.112**	0.00752*
	(0.00381)	(0.0223)	(0.0358)	(0.0547)	(0.00414)
Population aged 25-64 with with level 3-8 (%), in logs	0.0220*	0.140**	0.226**	-0.363**	-0.0245**
	(0.0115)	(0.0630)	(0.110)	(0.162)	(0.0122)
Geographic and institution controls					
Degree of urbanization	0.00685	0.0435	0.0703	-0.113	-0.00761
	(0.00736)	(0.0453)	(0.0690)	(0.112)	(0.00784)
EQI index, min-max (0-100) standardized, in logs	-0.00539	-0.0343	-0.0553	0.0890	0.00599
	(0.00436)	(0.0258)	(0.0367)	(0.0607)	(0.00454)
Observations	20	39	83	106	24

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
NOTE: All predictors at their mean value

Robustness checks: how to deal with endogeneity

Method: Dynamic panel generalized method of moments (GMM) estimator devised by Blundell and Bond (1998)

System GMM: regression results, full sample.

	(1)	(2)	(3)	(4)	(5)	(6)
Per capita GDP (t-1), in logs	0.884***	0.923***	0.871***	0.888***	0.873***	0.908***
	(0.0274)	(0.0227)	(0.0227)	(0.0189)	(0.0279)	(0.0241)
Manufacturing, share	0.959***	0.746***	0.969***	0.845***	0.970***	0.819***
	(0.292)	(0.278)	(0.289)	(0.276)	(0.291)	(0.278)
Knowledge-intensive services, share	1.683***	1.130***	1.659***	1.180***	1.484***	1.050***
	(0.398)	(0.286)	(0.375)	(0.280)	(0.421)	(0.297)
Routine services (Trade, transport, accomodation & food services), share	0.369	0.195	0.296	0.0627	0.399	0.229
	(0.296)	(0.267)	(0.293)	(0.284)	(0.303)	(0.271)
Financial and insurance, share		-0.00397		0.575		0.245
		(0.701)		(0.719)		(0.751)
Real estate activities, share		2.235*		2.572**		2.143*
		(1.215)		(1.198)		(1.248)
Other services, share		-1.210**		-0.859		-1.301**
		(0.516)		(0.544)		(0.530)
EQI index, min-max (0-100) standardized, in logs	0.0248***	0.0283***	0.0272***	0.0298***	0.0248***	0.0280***
	(0.00435)	(0.00498)	(0.00446)	(0.00489)	(0.00438)	(0.00497)
GFCF, in logs	0.0497***	0.0320***	0.0455***	0.0240***	0.0518***	0.0350***
	(0.0107)	(0.00942)	(0.00947)	(0.00880)	(0.0108)	(0.00978)
Population aged 25-64 with with level 3-8 (%), in logs	0.0132	0.0195*				
	(0.0141)	(0.0105)				
Employment rate of 20-34, level 3-8, in logs			0.0575***	0.108***		
			(0.0207)	(0.0271)		
Population with tertiary education and/or employed in S&T (%), in logs					0.0334*	0.0372**
					(0.0176)	(0.0150)
yr2008	-0.0311***	-0.0323***	-0.0313***	-0.0321***	-0.0304***	-0.0314***
	(0.00228)	(0.00243)	(0.00222)	(0.00237)	(0.00232)	(0.00246)
yr2009	-0.0779***	-0.0830***	-0.0782***	-0.0825***	-0.0757***	-0.0800***
	(0.00419)	(0.00355)	(0.00398)	(0.00347)	(0.00424)	(0.00365)
year	-0.000744	-0.00128***	-0.000113	2.25e-05	-0.000967	-0.00149***
	(0.000616)	(0.000409)	(0.000464)	(0.000447)	(0.000676)	(0.000511)
Constant	2.231**	3.030***	0.913	0.399	2.737**	3.567***
	(1.092)	(0.732)	(0.859)	(0.871)	(1.249)	(0.942)
Chi-squared	33531.141	65551.521	32409.355	59689.632	30513.445	61668.377
Significance	0	0	0	0	0	0
df	18	27	18	27	18	27
Observations	2,734	2,734	2,725	2,725	2,733	2,733
Number of regions	251	251	251	251	251	251
Arellano-Bond test for autocorrelation						
order 1	-7.3022	-7.5507	-7.5015	-7.305	-7.3927	-7.3949
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
order 2	-0.35736	-1.6719	-0.86041	-0.27657	0.7872	-0.65409
	(0.7208)	(0.0946)	(0.3896)	(0.7821)	(0.4312)	(0.5131)

Standard errors in parentheses
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	(0.00419)	(0.00355)	(0.00398)	(0.00347)	(0.00424)	(0.00365)
year	-0.000744	-0.00128***	-0.000113	2.25e-05	-0.000967	-0.00149***

A summary of main results: Rise in regional disparities

- Disparities are evident at different spatial scales:
  - North-South divide (supranational level)
  - The Central European Manufacturing Core (successful skill-biased structural change) and the rest of Europe that is lagging behind
  - Metropolitan areas/larger urban areas vs the rest of the countries (within-country) - agglomeration economies

Uneven development and cumulative causation

- The mix **“industrialization and high-tech services’ specialization” is more apt to absorb well-educated and younger workforce**

- Agglomeration processes are cumulative and lead to drainage of skilled personal and purchasing power from stagnant regions or those regions that are losing ground to more attractive places (e.g. major urban areas)

- These processes can explain the widening of regional disparities (**CUMULATIVE CAUSATION**)

A summary of main results: economic structure and institutions matter

- **Different economic structure** can in fact explain different development paths

- Manufacturing and knowledge-intensive services -both their initial specialization and dynamics- matter for regional wealth/ income growth

- **Institutions do matter but human capital is more relevant**

Policy implications for regional and industrial policies

- Should we be worried about the return of regional inequality?
    - Yes, if we want to avoid populist backlash
- So, what kind of policies?
    - Not “the same size fits all” approach
    - Policy interventions more sensitive to different paths of recovery and structural transformations
    - To reduce inequality: Improve institutional quality and human capital accumulation in lagging behind regions