Does institutional quality promote regional resilience? Recent evidence on the corruption-growth nexus in Europe

Eleonora Cutrini, Federico Ninivaggi

Department of Economics and Law
Università degli Studi di Macerata
eleonora.cutrini@unimc.it

Extended Abstract prepared for ERSA Congress 2024

Introduction

Uneven development has characterized European integration from the outset, and, despite the convergence process until 2000, regional disparities has intensified with the economic recessions that followed the 2008 financial crisis, the 2012 sovereign debt crisis and the Covid-19 pandemic. These continual crises have raised important concerns on differences in the regional impact of the economic shocks. These differences may be due to the different levels of pre-crisis exposure and vulnerability and may arise because of dissimilarities in the economic fundamentals of regions (e.g., physical capital, human capital, economic structures, and so on), social conditions and institutional characteristics.

As for the institutional factors, over the past decade the concept of the quality of government at the subnational level has attracted a vast research interest in Europe, giving rise to a large amount of literature from both a methodological and empirical viewpoint. Not only scholars have provided evidence that the quality of institutions in Europe is heterogeneous across and within countries (Charron, Dijkstra, & Lapuente, 2014, 2015) but they have recently established the positive role of institutional quality for regional growth and resilience (Farole et al., 2011; Rodriguez-Pose 2013; Rodríguez-Pose and Garcilazo, 2015, Ezcurra and Rios, 2019; Rios and Gianmoena, 2019; Cutrini, 2023, among others) and for innovation and small business creation (Nistoskaya et al., 2014; Rodríguez-Pose and Di Cataldo, 2015). Furthermore, good institutions at the local level are positively linked to less informal economy (Williams and Horodonic, 2016) and more social capital and social trust (Cortinovis et al., 2017; Charron and Rothstein, 2018). Finally, "quality of government" can

promote a more efficient use of public resources and EU Structural Funds (Becker et al., 2013; Crescenzi and Di Cataldo, 2016; McCann, 2015; Di Cataldo et al., 2020).

Using the 2021 European Quality of Government Index (EQI) and comparing the results to previous rounds of this survey, Charron et al., 2022 suggest that has moved upward or downward over the period 2010-2021 in several EU regions. Nevertheless, studies also suggest that anticorruption efforts often fail, and some lagging-behind regions tend to be stuck in a vicious cycle of high corruption and defective quality of local public services. Meanwhile, the future of middle-income regions is by no means clear, and many of them could lose ground if threatened by adverse and deteriorating institutional quality.

Against this background, this study aims to review systematically the existing literature on the role of the quality of government for regional resilience in Europe with a focus on the control of corruption. Then, the objective of this paper is to explore the above-mentioned link between pre-crisis exposure and resilience, with a closer analysis of the most recent period encompassing the COVID-19 economic shock.

Our preliminary results confirm previous works that established the contribution of institutions to regional growth and resilience. The article discusses the implications of the results provided for EU-wide industrial and regional policies.

Methodology, data, and preliminary results

The empirical analysis will be based on a panel of EU NUTS 2 regions during the period 2000–2021 and data on

the European Quality of Government (EQI) index, also considering the most recent and comprehensive survey to date to measure perceptions of subnational quality of government with respondents in all EU 27-member state countries (Charron et al., 2022). This definition of institutional quality is based on the presence of impartiality (equal treatment irrespective to gender, age, and background) and low corruption, “informal practices of formal institutions” (Rothstein and Teorell, 2008). Therefore, the composite index on the European Quality of Government Index (EQI) is considered to capture both formal and informal institutions. We will 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 10 (See also Ezcurra and Rios, 2019). Further control variables related to economic structure, human capital, physical capital, EMU

membership are included in the analysis (Main source: Eurostat). For the covariates related to structural variables and human capital we refer to several Eurostat databases such as regional economic accounts, regional branch accounts, regional education statistics.

We will run a dynamic system GMM regressions (Blundell and Bond,1998) with the traditional specifications of the literature (basic model) and an extended model with the institutional variables. We also will control for non-linearity in the corruption-growth nexus and the role of other institutional determinants with aappropriate methodologies (Kripfganz and Schwarz, 2019).

Preliminary results are presented in Tables 1 and 2.

Table 1 System GMM: regression results with institutional variables

Dependent variable: per capita GDP(t) (in logs)

	(1)	(2)	(3)	(4)	(5)	(6)
Per capita GDP(t-1), in logs	0.853***	0.855***	0.850***	0.863***	0.865***	0.861***
	(0.0239)	(0.0248)	(0.0238)	(0.0205)	(0.0210)	(0.0207)
Manufacturing, share	0.996***	1.004***	1.054***	0.859***	0.903***	0.928***
	(0.300)	(0.307)	(0.303)	(0.270)	(0.283)	(0.272)
Knowledge-intensive services, share	1.394***	1.266***	1.441***	1.069***	1.008***	1.036***
	(0.382)	(0.389)	(0.395)	(0.295)	(0.298)	(0.309)
Routine services (Trade, transport, accomodation & food services), share	0.510*	0.542*	0.586**	0.169	0.188	0.245
	(0.294)	(0.292)	(0.288)	(0.281)	(0.280)	(0.275)
Financial and insurance, share				0.807	0.704	0.297
				(0.809)	(0.813)	(0.809)
Real estate activities, share				1.623	2.144*	1.645
				(1.196)	(1.207)	(1.197)
Other services, share				-1.199**	-1.063**	-1.342***
				(0.508)	(0.527)	(0.518)
Quality pillar (0,1)	0.0306***			0.0320***		
	(0.00839)			(0.00806)		
Impartiality pillar (0,1)		0.0182**			0.0145*	
		(0.00891)			(0.00784)	
Courruption pillar (0,1)			0.0270**			0.0123
			(0.0130)			(0.0110)
GFCF, in logs	0.0465***	0.0465***	0.0465***	0.0256***	0.0258***	0.0264***
	(0.0102)	(0.0102)	(0.0100)	(0.00952)	(0.00952)	(0.00934)
Employment rate of 20-34, level 3-8, in logs	0.0564***	0.0508**	0.0584***	0.112***	0.112***	0.114***
	(0.0206)	(0.0201)	(0.0201)	(0.0278)	(0.0282)	(0.0280)
Observations	2,656	2,649	2,629	2,656	2,649	2,629
Number of regions	251	251	251	251	251	251

The dependent variable is per capita GDP(t) (in logs). The period of the analysis spans from 2000 to 2016.
All structural variables and the quality of government index include 2 lags (t-1; t-2) as instruments. Regressions include dummy variables for the two years of the acute phase of the crisis (yr2008 and yr2009).
Robust standard errors in parentheses; *, ** and *** indicate significance at the 10%, 5% and 1%, respectively

Model (1), (2) and (3) include employment shares in Manufacturing, KIBS, Routine services, and control for GFCF and alternative human capital indicators. Models (4), (5) and (6) also include Finance and insurance, Real estate activities and Other services. All structural variables include 2

lags (t-1; t-2) as instruments. Regressions include dummy variables for the two years of the acute phase of the crisis (yr2008 and yr2009).

The main determinants have the expected signs. Economic structure: Specialization in high-skilled services and industrial production are strong predictors of regional growth. Human capital matters. Institutional quality is significant.

We provide some robustness checks with different sub-sample (Table 2). The hypothesis is that the positive role varies according to characteristics of the regions, particularly this sensitivity analysis has been performed considering the urban/rural divide and looking at the different level of development (higher income/lower income).

Table 2 System GMM: regression results by groups of regions

	All EU NUTS 2	All EU NUTS 2 covered by the QoG surveys	Predominantly urban regions (Metro>=0.5)	Prediminantly rural regins (Metro<0.5)
	(1)	(2)	(3)	(4)
Per capita GDP (t-1), in logs	0.887***	0.886***	0.947***	0.867***
	(0.0198)	(0.0201)	(0.0167)	(0.0188)
Manufacturing, share	0.506**	0.472**	0.351	0.540**
	(0.222)	(0.207)	(0.264)	(0.227)
Knowledge-intensive services, share	0.975***	0.953***	0.803***	0.613**
	(0.192)	(0.185)	(0.215)	(0.263)
Routine services (Trade, transport, accommodation & food services), share	-0.159	-0.250	-0.155	0.111
	(0.240)	(0.238)	(0.369)	(0.216)
Finance and insurance, share	-0.627	-0.562	-0.353	-2.216**
	(0.465)	(0.464)	(0.399)	(0.926)
Real estate activities, share	-0.312	-0.319	-0.254	0.347
	(0.629)	(0.624)	(0.560)	(1.091)
Other services, share	-1.356***	-1.251***	-1.095***	-0.591
	(0.394)	(0.381)	(0.405)	(0.402)
EQI index, min-max (0-100) standardized, in logs	0.0320***	0.0317***	0.0330***	0.0321***
	(0.00544)	(0.00537)	(0.00962)	(0.00642)
GFCF, in logs	0.0289***	0.0270***	0.0111**	0.0320***
	(0.00707)	(0.00698)	(0.00530)	(0.00726)
Employment rate of 20-34, level 3-8, in logs	0.108***	0.106***	0.0919***	0.153***
	(0.0201)	(0.0189)	(0.0350)	(0.0299)
Observations	3,386	3,286	1,411	1,975
Number of regions	251	244	103	148

Table 2 System GMM: regression results by groups of regions (continue)

	Higher income FS clubs (1,2,3)	Lower income FS clubs (3,4,5)	Lower income regions (below average pcgdp 2010)	Higher income regions (above average pcgdp 2010)	Regions of IT, ES, PT, EL, FR, UK, IE
	(5)	(6)	(7)	(8)	(9)
Per capita GDP (t-1), in logs	0.890***	0.881***	0.821***	0.964***	0.926***
	(0.0168)	(0.0157)	(0.0167)	-0.0191	(0.0216)
Manufacturing, share	-0.406*	0.713***	0.743***	0.0367	0.601**
	(0.237)	(0.222)	(0.204)	-0.333	(0.279)
Knowledge-intensive services, share	0.851***	0.754***	0.578**	0.797***	0.465**
	(0.237)	(0.242)	(0.230)	-0.267	(0.227)
Routine services (Trade, transport, accommodation & food services), share	-0.191	0.0836	0.166	-0.454	0.0445
	(0.247)	(0.229)	(0.215)	-0.308	(0.248)
Finance and insurance, share	-0.233	-0.290	-1.225*	0.484	-1.054*
	(0.502)	(0.742)	(0.635)	-0.451	(0.559)
Real estate activities, share	0.000291	1.840*	-0.396	2.589**	0.611
	(0.766)	(0.967)	(0.721)	-1.028	(0.851)
Other services, share	-0.793*	-0.557	-0.800**	-1.448***	-0.219
	(0.468)	(0.371)	(0.361)	-0.527	(0.338)
EQI index, min-max (0-100) standardized, in logs	0.0306***	0.0307***	0.0622***	0.0264***	0.0601***
	(0.00484)	(0.00520)	(0.0140)	-0.00416	(0.0139)
GFCF, in logs	0.0153**	0.0322***	0.0484***	-0.00246	0.0280***
	(0.00633)	(0.00588)	(0.00561)	-0.00487	(0.00587)
Employment rate of 20-34, level 3-8, in logs	0.174***	0.110***	0.0952***	0.0960***	0.0578**
	(0.0316)	(0.0233)	(0.0242)	-0.0257	(0.0247)
Observations	1,774	2,615	1,851	1264	1,496
Number of regions	133	193	180	127	109

Summary of results, concluding remarks and policy implications

Sharing the view that good institutions make a difference for regional development, we provided evidence on the role of the "quality of government" – that is "how the public sector operates in a territory", together with other fundamental drivers such as economic structure and human capital.

Our previous analysis (Cutrini, 2023) and further preliminary results confirm the positive contribution of institutional quality for regional growth and resilience. Overall, results suggest that the quality of government is slightly more important to assure convergence of lagging-behind regions relative to high-income regions. If further confirmed with recent data, this evidence could have obvious policy implications for a more efficient management of structural funds. First, we remind the importance of adopting a place-based approach to regional development whereas policy interventions are more sensitive to different paths of recovery and structural transformations. To reduce inequality and promote territorial cohesion, according to our results, it could be important to focus interventions on institutional quality and human capital accumulation, especially in lagging behind regions.

References

Blundell, R., Bond. S. (1998) Initial Conditions and Moment Restrictions in Dynamic Panel Data Models. Journal of Econometrics 87 (1): 115–143.

Charron, N., Dijkstra, L. and Lapuente, V. (2014): Regional governance matters: quality of government within European Union member states, Regional Studies 48 (1), 68-90.

Charron, N., Dijkstra, L. and Lapuente, V. (2015): Mapping the regional divide in Europe: A measure for assessing quality of government in 206 European regions, Social Indicators Research 122 (2), 315-346.

Charron, Nicholas, Victor Lapuente, Monika Bauhr & Paola Annoni (2022) Change and Continuity in Quality of Government: Trends in subnational quality of government in EU member states. Investigaciones Regionales-Journal of Regional Research, 2022(53): 5-23.

Cutrini, E. (2019), Economic integration, structural change, and uneven development in the European Union, Structural Change and Economic Dynamics, September 2019, 102-113.

Cutrini, E. (2023), Postcrisis recovery in the regions of Europe: Does institutional quality matter?, Journal of Regional Science, 63 (1): 5-29.

Ezcurra R., Rios V. (2019), Quality of government and regional resilience in the European Union. Evidence from the Great Recession, Papers in Regional Science, https://doi.org/10.1111/pirs.12417

Farole, T., Rodríguez‐Pose, A. and Storper, M. 2011. Cohesion Policy in the European Union: Growth, Geography, Institutions. Journal of Common Market Studies 49(5), 1089–1111.

Fingleton, B., Garretsen, H., & Martin, R. (2015). Shocking aspects of monetary union: the vulnerability of regions in Euroland. Journal of Economic Geography, 15(5), 907-934.

Kripfganz, S., and C. Schwarz (2019). Estimation of linear dynamic panel data models with time-invariant regressors. Journal of Applied Econometrics 34 (4): 526–546.

Martin R. (2012). Regional economic resilience, hysteresis and recessionary shocks, Journal of Economic Geography 12, 1–32.

Martin, R., Sunley, P., Gardiner, B., & Tyler, P. (2016). How regions react to recessions: resilience and the role of economic structure. Regional Studies, 50(4), 561-585.

Mohl P. – Hagen T. (2010). Do EU Structural Funds promote regional growth? New evidence from various panel data approaches. Regional Science and Urban Economics, 40(5), 353–365.

Rios V. and L. Gianmoena (2018), Does Quality of Government matter for Resilience? A Bayesian Model Averaging Approach, availabe on www.researchgate.net

Rodríguez-Pose A. (2013), Do Institutions Matter for Regional Development?, Regional Studies, 47(7), 1034–1047

Rodríguez-Pose A. and Garcilazo E. (2015). Quality of government and the returns of investment: examining the impact of cohesion expenditure in European regions. Regional Stud-ies, 49(8), 1274–1290.