Institutional change and regional development in Europe

Andrés Rodríguez-Pose

Porto, 25 May 2017

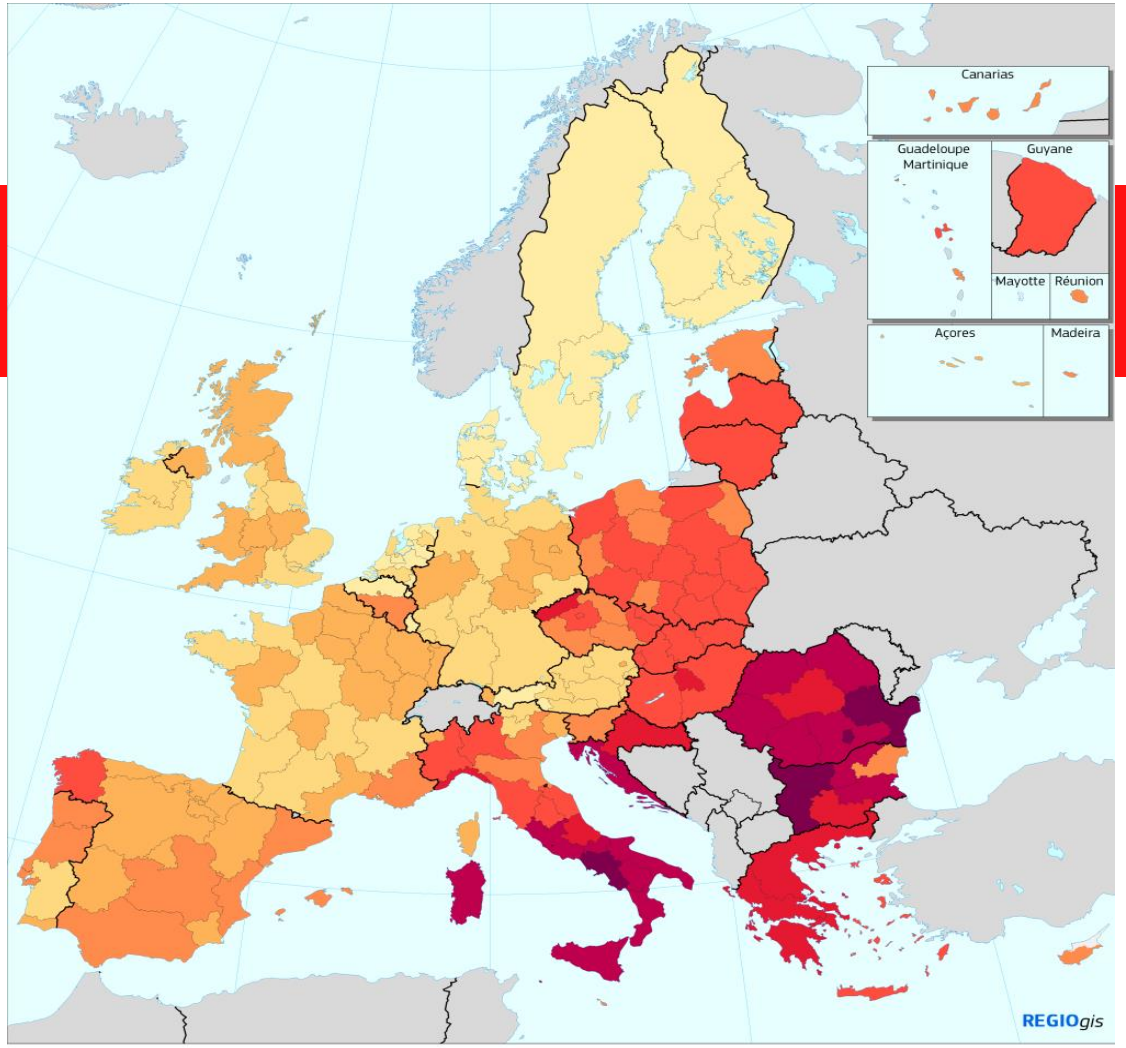
Determinants of growth

- **Growth as a consequence of three factors**
  - Physical capital (infrastructure)
  - Human capital (labour)
  - Innovation
  - Residual factor
- **Weight of each factor varies according to dominant theory**
- **Developement policies have followed theory**

What is happening?

- **Infrastructure, human capital, and technology explain a waning share of the variation in regional economic growth**
- **Residual factor is growing**
- **Residual factor = Institutions**
  - Many theoretical contributions
  - First, good attempts to measure regional institutional quality (Charron et al., 2013)

Differences in government quality



European Quality of Government index, 2013

Standard deviation, range from poor quality (negative) to high quality (positive)

< -1.75	-0.25 - 0.25
-1.75 - -1.25	0.25 - 0.75
-1.25 - -0.75	0.75 - 1.25
-0.75 - -0.25	< 1.25

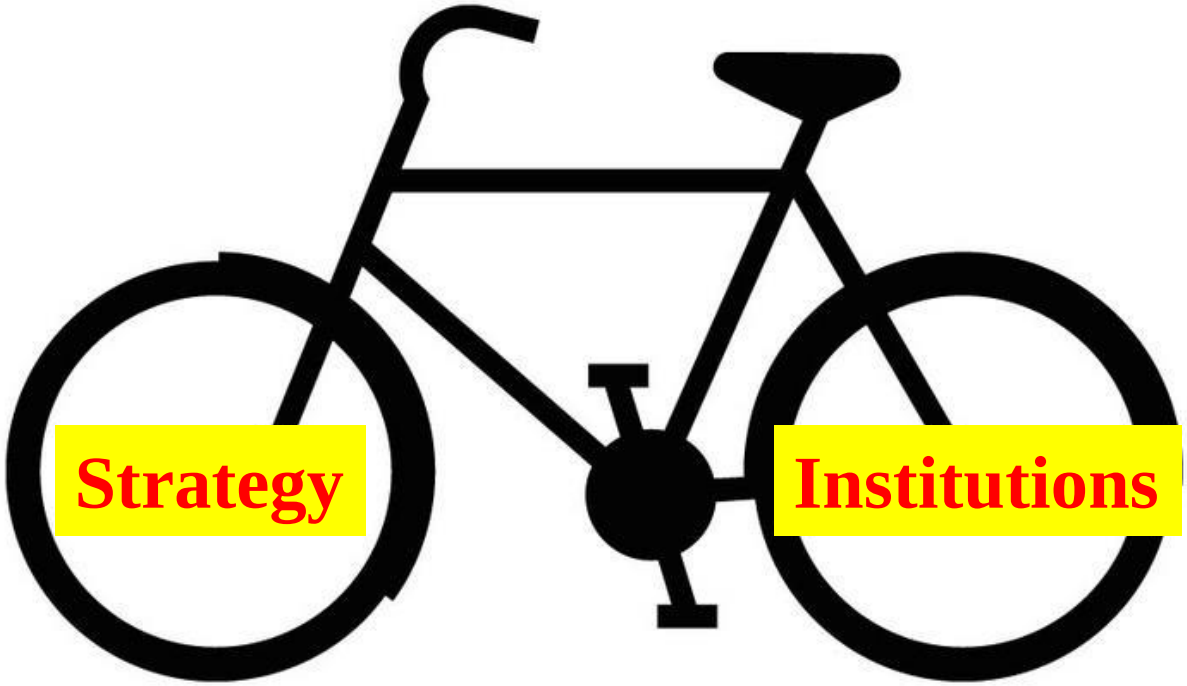
Note: EU = 0

Source: World Bank and regional quality of government survey

0 500 Km

© EuroGeographics Association for the administrative boundaries

What was the assumption?



What do we really have?





Expo Station, Seville



AVE Toledo-Albacete

‘Radial’ motorways, Madrid



Castellón Airport





FT
FINANCIAL TIMES

July 17, 2015 5:38 pm

Spanish ghost airport costing €1bn attracts offer of just €10,000

Tobias Buck in Madrid

Ciudad Real Airport



"All the News That's Fit to Print"

The New York Times

Late Edition

NEW YORK, MONDAY, OCTOBER 8, 2012

$2.50

CORRUPTION SEEN AS STEADY DRAIN ON ITALY'S SOUTH

EUROPEANS CONCERNED

Road Project, Begun in the '60s, Is a Symbol of Misused Aid

By RACHEL DONADIO

ROMNEY STRIVES TO STAND APART IN GLOBAL POLICY

HITS OBAMA'S RECORD

Advisers Reflect Wide Differences Among Republicans

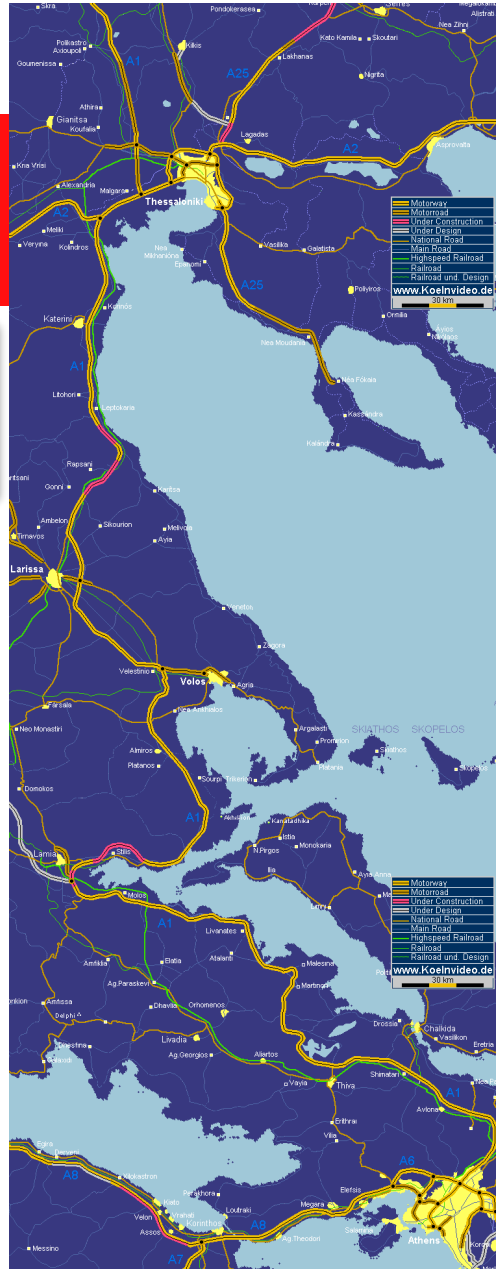
In Venezuela, a New Term for Chávez

The Patent, Used as a Sword

Tech Giants' Legal Warfare Takes Toll on Innovation

Biden Up Next, Obama's Aides Plot Comeback

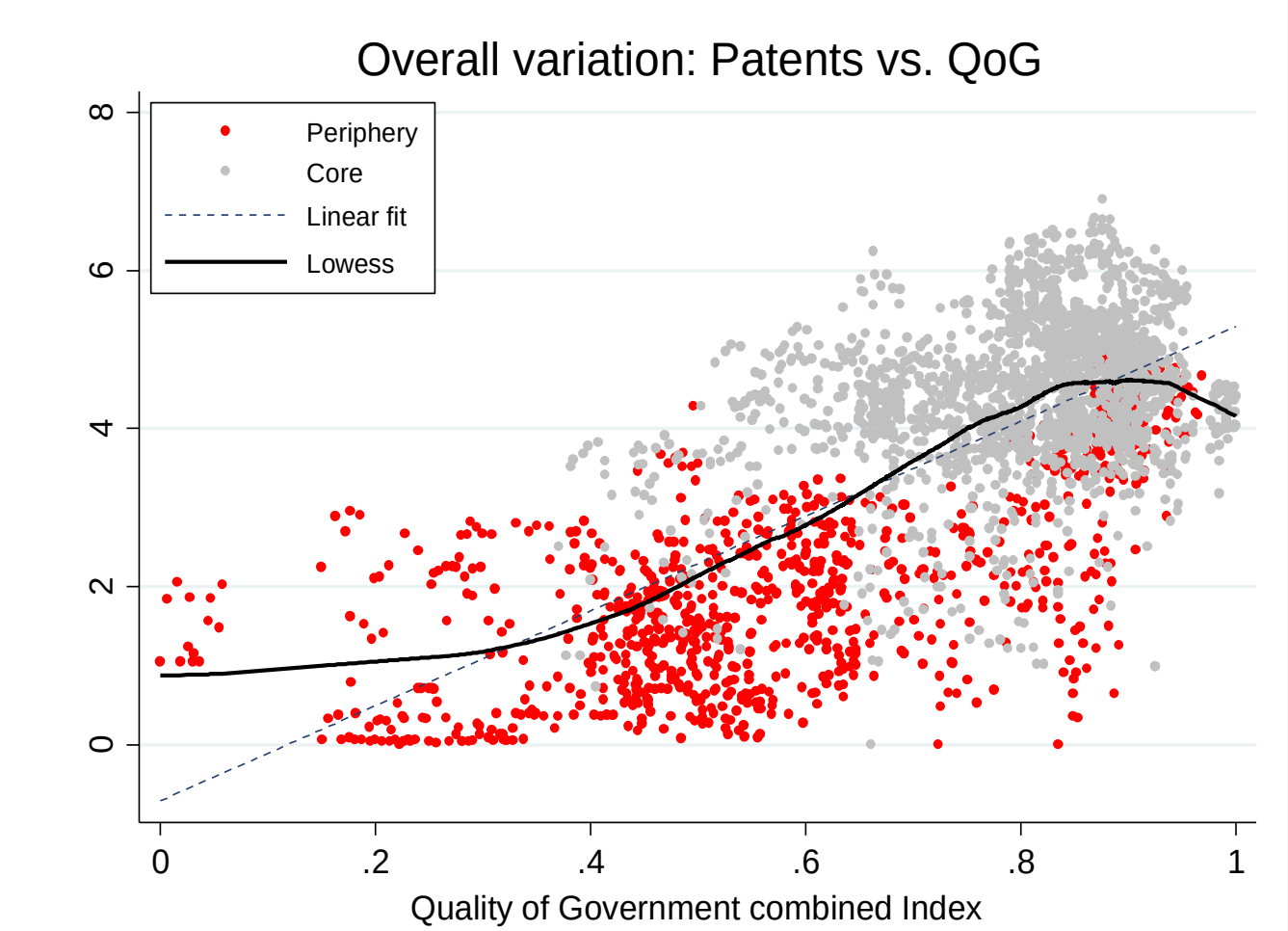
A1 Motorway Greece



From 2000 to 2011, Italy received more than $60 billion in the European Union financing to underwrite a wide array of programs, in areas including agriculture and infrastructure, most of it directed to the south, with little but a half-completed highway to show for it. Spain, which was given a little more than US$100 billion, at least built a world-class high-speed rail network. (Greece received 50 billion, an enormous amount in per capita terms, also to a clear effect.) *Rachel Donadio, NYT, Oct. 7, 2012*

Motorway Salerno-Reggio Calabria

Government quality and innovation



The role of institutions

- **Institutions matter for economic performance and poor government quality significant barrier**
  - European cohesion policies (Rodríguez-Pose and Garcilazo, 2015)
  - Regional competitiveness (Annoni and Dijkstra, 2013)
  - Innovation (Rodríguez-Pose and Di Cataldo, 2015)
  - Entrepreneurship (Nistotskaya et al., 2015)
  - Migration (Ketterer and Rodríguez-Pose, 2015)
  - Environmental performance (Halkos et al., 2015)
  - Decisions on the type of public good investment (Crescenzi et al., 2016)
  - Inclusiveness and participation in political processes (Sundström and Wängnerud, 2014).

Problems of previous analyses

- **But studies of institutions limited in two respects:**
  - Institutional conditions are considered as static
    - Institutional change is overlooked
  - Analyses stop at the beginning of the crisis
- **Objectives:**
  - *What is the role of institutional change on regional development in Europe?*
  - *What is its effect relative to more traditional regional development factors?*
  - *Does institutional change affect all regions in the same way?*

Model

- **Do improvements in quality of government make a difference for growth?**
- **Model**

$$\ln y_{i,t} - \ln y_{i,t-1} = \beta_0 + \beta_1 \ln(y_{i,t-5}) + \beta_2 \ln(\text{investment})_{i,t-5} + \beta_3 \ln(\text{accessibility index})\_\text{level and growth}_{i,t-5} + \beta_3 \ln(\text{human capital and innovation index})\_\text{level and growth}_{i,t-5} + \beta_4 \ln(\text{institutions})\_\text{level and growth}_{i,t-5} + \beta_5 \ln(n_{i,t-5} + g + \delta) + \gamma_i + \upsilon_t + \varepsilon_{i,t}$$

- **Data: 1996-2013**
- **249 regions, including less developed**
  - Low growth and low income

Regions of Europe

	Fixed effects analysis				
Variables	(1)	(2)	(3)	(4)	(5)
Level of accessibility index	-0.105***	-0.105***	-0.109***	-0.108***	-0.100***
	(0.027)	(0.026)	(0.027)	(0.028)	(0.027)
Change of accessibility index	-0.151	-0.120	-0.099	-0.149	-0.151
	(0.093)	(0.091)	(0.091)	(0.091)	(0.094)
Level of human capital & innovation index	0.008	0.007	0.012	0.010	0.011
	(0.011)	(0.011)	(0.011)	(0.010)	(0.011)
Change of human capital & innovation index	-0.024*	-0.023*	-0.023*	-0.027**	-0.022*
	(0.012)	(0.012)	(0.013)	(0.013)	(0.012)
Level of institutional quality (QoG)	0.007				
	(0.062)				
Change of institutional quality (QoG)	0.227**				
	(0.088)				
Institutional index components					
Level of corruption index		-0.021			
		(0.053)			
Change of corruption index		0.195***			
		(0.053)			
Level of rule of law index			0.030		
			(0.046)		
Change of rule of law index			-0.310***		
			(0.081)		
Level of government effectiveness				0.002	
				(0.038)	
Change of government effectiveness				0.158***	
				(0.038)	
Level of government accountability					0.056
					(0.035)
Change of government accountability					0.059*
					(0.032)
Observations	2,802	2,802	2,802	2,801	2,802
Number of regions	249	249	249	249	249

Improvements in accessibility not linked to growth

Poor government quality not a barrier

Improvements in government quality a key factor for growth

249 regions, period 1996-2013

Regions of Europe (GMM)

	System-GMM analysis				
Variables	(1)	(2)	(3)	(4)	(5)
Level of accessibility index	-0.005	-0.002	-0.0012	-0.005	-0.005
	(0.004)	(0.004)	(0.0041)	(0.004)	(0.004)
Change of accessibility index	-0.219**	-0.165	-0.214*	-0.238**	-0.218*
	(0.110)	(0.112)	(0.118)	(0.111)	(0.112)
Level of human capital & innovation index	0.010	0.008	0.011*	0.016***	0.0150***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.005)
Change of human capital & innovation index	-0.070***	-0.050**	-0.060***	-0.072***	-0.049**
	(0.026)	(0.024)	(0.020)	(0.022)	(0.022)
Level of institutional quality (QoG)	0.043				
	(0.035)				
Change of institutional quality (QoG)	0.384***				
	(0.133)				
Institutional index components					
Level of corruption index		0.062*			
		(0.036)			
Change of corruption index		0.135*			
		(0.072)			
Level of rule of law index			0.063**		
			(0.030)		
Change of rule of law index			-0.331***		
			(0.0997)		
Level of government effectiveness				0.007	
				(0.026)	
Change of government effectiveness				0.279***	
				(0.053)	
Level of government accountability					0.018
					(0.026)
Change of government accountability					0.317***
					(0.068)
Observations	2,802	2,802	2,802	2,801	2,802
Number of NUTS-2 regions	249	249	249	249	249

Improvements in accessibility not linked to growth

Poor government quality not a barrier

Improvements in government quality a key factor for growth

Less developed regions

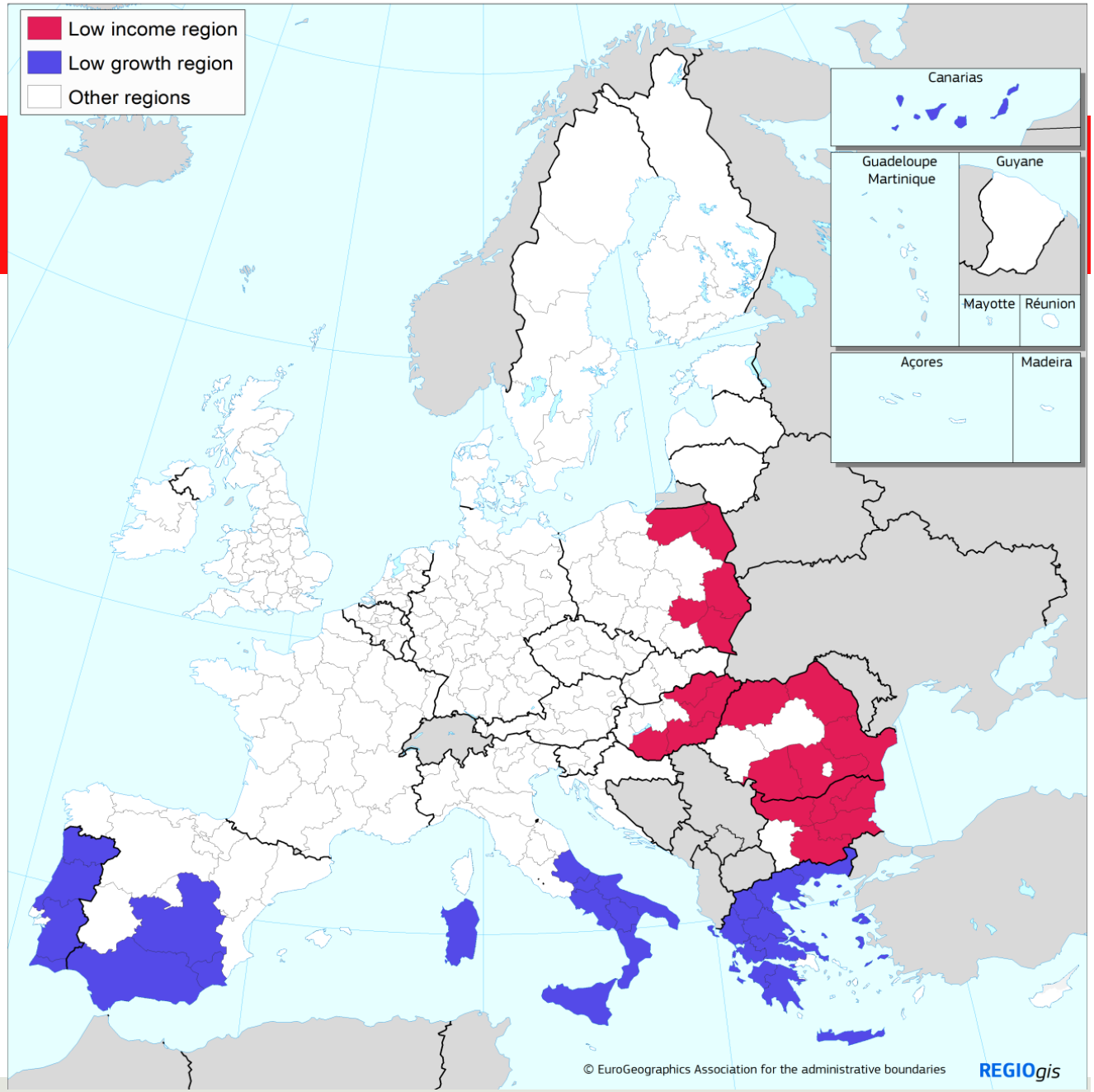
	Fixed effects analysis				
Variables	(1)	(2)	(3)	(4)	(5)
Level of accessibility index	-0.149***	-0.161***	-0.145***	-0.147***	-0.140***
	(0.042)	(0.039)	(0.043)	(0.042)	(0.040)
Change of accessibility index	-0.414***	-0.350**	-0.360***	-0.411***	-0.514***
	(0.152)	(0.150)	(0.131)	(0.148)	(0.142)
Level of human capital & innovation index	0.037	0.042	0.037	0.043*	0.040
	(0.027)	(0.027)	(0.026)	(0.025)	(0.026)
Change of human capital & innovation index	-0.0014	-0.007	-0.000	-0.002	0.010
	(0.031)	(0.031)	(0.032)	(0.031)	(0.031)
Level of institutional quality (QoG)	-0.205				
	(0.151)				
Change of institutional quality (QoG)	0.118				
	(0.204)				
Institutional index components					
Level of corruption index		0.040			
		(0.101)			
Change of corruption index		0.198**			
		(0.098)			
Level of rule of law index			-0.150		
			(0.094)		
Change of rule of law index			-0.315***		
			(0.098)		
Level of government effectiveness				-0.139	
				(0.105)	
Change of government effectiveness				-0.008	
				(0.124)	
Level of government accountability					-0.378***
					(0.068)
Change of government accountability					0.407***
					(0.126)
Constant	1.773**	1.379**	1.668**	1.665**	2.440***
	(0.717)	(0.669)	(0.698)	(0.795)	(0.710)
Observations	591	591	591	591	591
Number of regions	47	47	47	47	47

Levels and improvements in accessibility not linked to growth

Poor government quality not a barrier

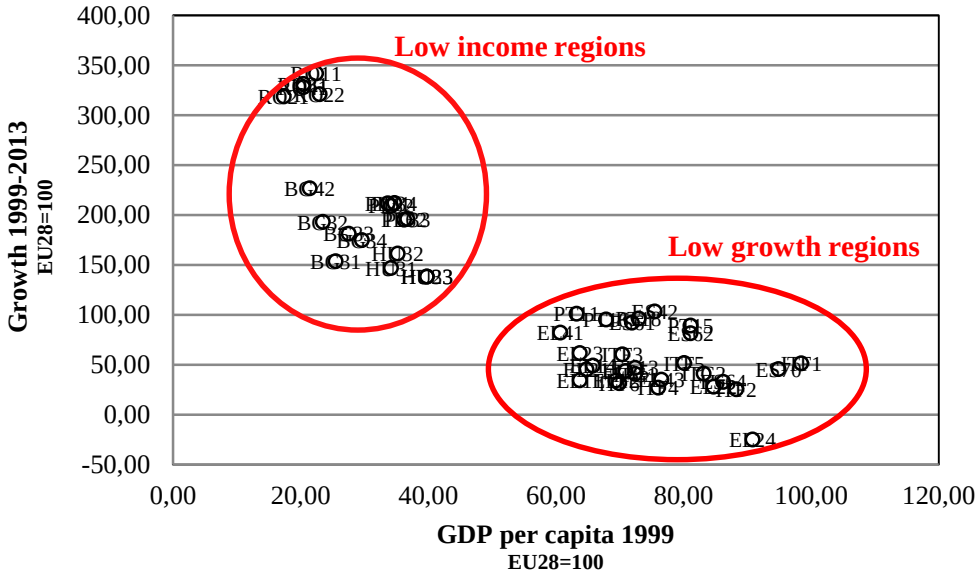
Lagging Regions

Not all lagging regions are the same



Types of less developed regions

	Employment rate 20-64 2013	Unemployment rate 2013	Low education attainment in % of people aged 25-64 2013	R&D as a % of GDP 2011	Quality of Government index 2013	Road accessibility 2013
EU-28	68.3	10.8	24.8	2	0	272
Low Income regions	62.5	10.1	21.3	0.5	-1.1	95
Low Growth regions	51.2	24.9	51.4	0.9	-0.8	82



Low growth regions

	Fixed effects analysis				
Variables	(1)	(2)	(3)	(4)	(5)
Level of accessibility index	-0.065**	-0.125***	-0.024	-0.067*	-0.100***
	(0.030)	(0.034)	(0.042)	(0.035)	(0.031)
Change of accessibility index	-0.438***	-0.229*	-0.150	-0.437***	-0.296***
	(0.100)	(0.128)	(0.126)	(0.107)	(0.087)
Level of human capital & innovation index	0.095***	0.069*	0.087**	0.095**	0.074**
	(0.032)	(0.037)	(0.034)	(0.034)	(0.033)
Change of human capital & innovation index	-0.020	-0.009	-0.017	-0.014	-0.011
	(0.037)	(0.042)	(0.039)	(0.041)	(0.041)
Level of institutional quality (QoG)	-1.117***				
	(0.193)				
Change of institutional quality (QoG)	0.792***				
	(0.171)				
Institutional index components					
Level of corruption index		0.013			
		(0.116)			
Change of corruption index		0.281***			
		(0.090)			
Level of rule of law index			-0.792***		
			(0.184)		
Change of rule of law index			-0.103		
			(0.073)		
Level of government effectiveness				-0.621***	
				(0.16)	
Change of government effectiveness				0.231**	
				(0.096)	
Level of government accountability					-0.233
					(0.147)
Change of government accountability					0.795***
					(0.117)
Constant	3.124***	1.222**	2.603***	2.778***	1.401***
	(0.686)	(0.556)	(0.680)	(0.791)	(0.466)
Observations	347	347	347	347	347
Number of regions	27	27	27	27	27

Levels and improvements in accessibility have been detrimental for growth in low growth regions

Human capital and innovation endowments essential

QoG big barrier, but improvements fuel growth

Low income regions

	Fixed effects analysis				
Variables	(1)	(2)	(3)	(4)	(5)
Level of accessibility index	-0.602***	-0.600***	-0.613***	-0.560***	-0.581***
	(0.124)	(0.133)	(0.127)	(0.115)	(0.115)
Change of accessibility index	0.746***	0.808***	0.673**	0.765***	0.706***
	(0.238)	(0.246)	(0.268)	(0.223)	(0.224)
Level of human capital & innovation index	0.088**	0.097**	0.073**	0.099***	0.0740**
	(0.034)	(0.036)	(0.032)	(0.034)	(0.031)
Change of human capital & innovation index	-0.038	-0.045	-0.040	-0.043	-0.010
	(0.041)	(0.042)	(0.047)	(0.040)	(0.043)
Level of institutional quality (QoG)	-0.387*				
	(0.211)				
Change of institutional quality (QoG)	-0.129				
	(0.311)				
Institutional index components					
Level of corruption index		-0.109			
		(0.175)			
Change of corruption index		0.038			
		(0.185)			
Level of rule of law index			-0.571***		
			(0.169)		
Change of rule of law index			0.065		
			(0.291)		
Level of government effectiveness				-0.185	
				(0.223)	
Change of government effectiveness				-0.135	
				(0.165)	
Level of government accountability					-0.426***
					(0.142)
Change of government accountability					0.0587
					(0.182)
Constant	8.585***	6.951***	9.806***	6.449***	9.145***
	(2.054)	(1.919)	(1.879)	(2.055)	(2.314)
Observations	244	244	244	244	244
Number of regions	19	19	19	19	19

Poor accessibility a barrier, improvements foster growth

Human capital and innovation endowments essential

QoG negative, but improvements still not relevant

Conclusions

- **Institutions matter**
  - QoG is fundamental in determining the economic performance of regions in Europe (even considering changes in cycle)
- **Improvements in QoG, powerful driver of growth**
  - Changes in QoG matter even more than overall QoG
  - Poor initial QoG not an insurmontable barrier for economic growth
- **One-size-fits-all policies for lagging regions are not the solution**
  - Determinants of growth vary considerably across different types of lagging regions
  - Different approaches are thus needed

Conclusions (II)

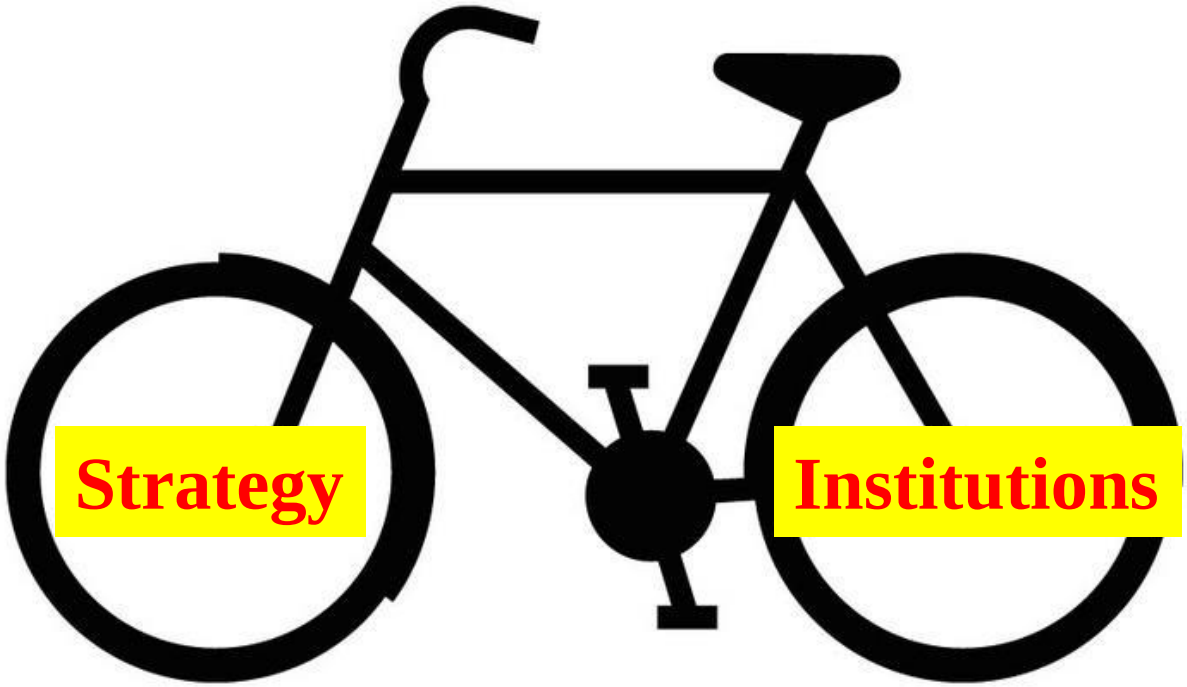
- **Government quality improvements are essential for low growth regions**
  - Less developed regions in southern Europe stand to benefit most from improvements in government quality
  - Benefits from improving basic growth endowments have become exhausted
  - Hence reducing corruption or enhancing government effectiveness are key for future growth
- **In low income regions basic endowment shortages are still the main barrier to development**
  - Low income regions are still far away from the economic frontier in which investment in basic endowments stops yielding benefits
  - But government quality cannot be overlooked
  - The institutional problems dominating low growth regions may still emerge
    - Low income regions are still characterised by subpar government quality

From here





To here



Institutional change and regional development in Europe

Andrés Rodríguez-Pose

More information in http://personal.lse.ac.uk/rodrigu1/
https://twitter.com/rodriguez_pose

Porto, 25 May 2017