Regional Trends and Convergence in Europe

Peter Berkowitz
Director Policy
Directorate General for Regional and Urban Policy   Washington, 21 June 2023

Outline of the presentation

- Regional convergence in Europe is complicated
  - It has slowed since the economic and financial crisis, but overall a process of upward convergence
  - Different dynamics of disparities across member states with some regions struggling to grow
- This reflects in part the emergence of regional development traps
  - Can be measured by risk, intensity and length of trap
  - Affects all types of regions, but more in transition (75%-100% of EU average)
- We are starting to look at different types of development traps
  - Particularly important in context of Europe's demographic transition
  - Emergence of talent development traps
- There seems to be a strong link between development traps and EU discontent
  - Euroscepticism is on the rise, associated with more general polarisation of politics
  - Significant variation across Member States
  - Development trap correlates closely with a range of factors associated with regional decline
- Modelling work suggests that Cohesion Policy has had a significant impact
  - In early years main effects demand side, including effect of taxes
  - Expected rate of return of around 4% in long-term
  - Contribution depends on volume and type of expenditure and regional characteristics
- Takeaways for Cohesion Policy

European Commission

Regional convergence in the EU

Evolution of regional disparities in the EU

GDP per capita (PPS), in Member States and NUTs II regions, 2000-2021, 2000=100.
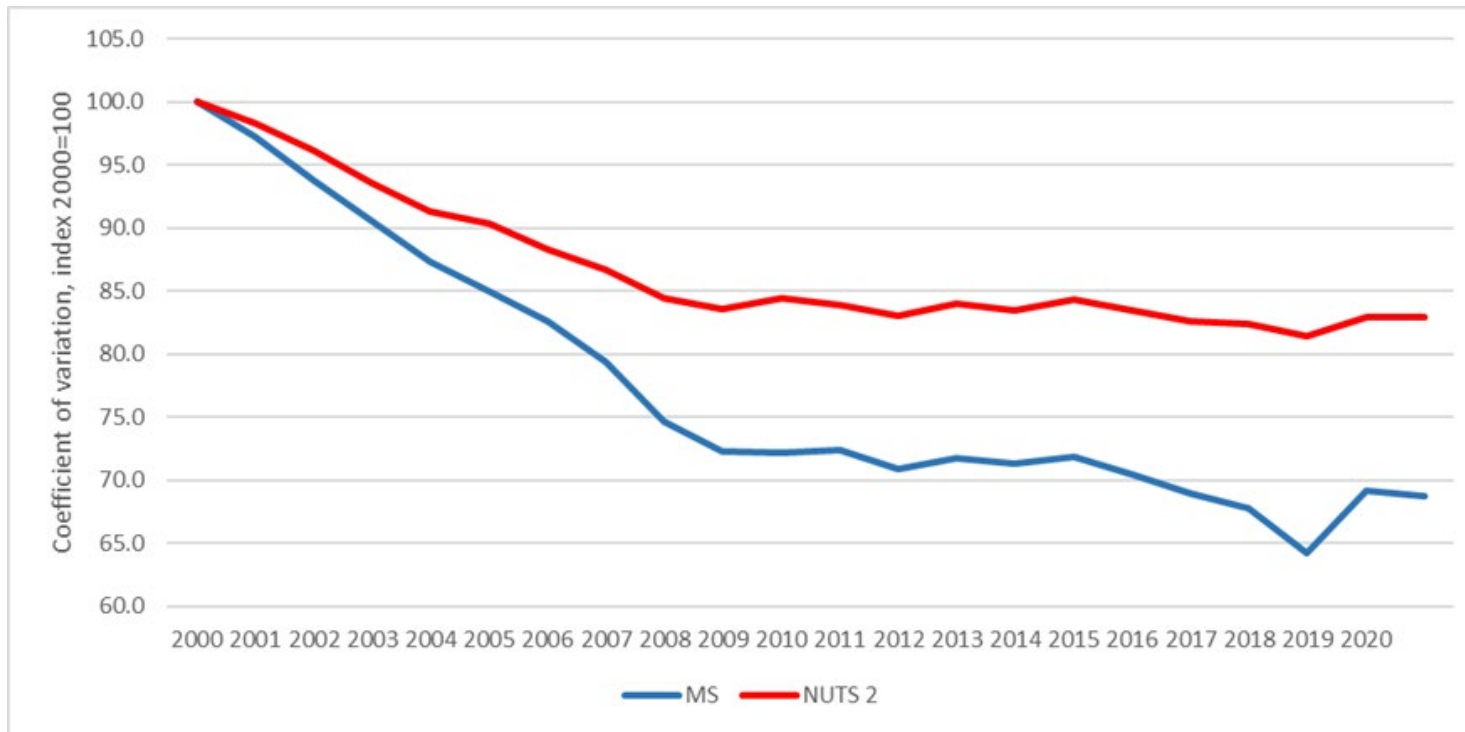
- Disparities between Member States and NUTS 2 regions rapidly decreased before 2008
- Following the economic and financial crisis they stabilised for a few years and then resumed falling at a slower rate.
- The increase in 2020 could be explained by the asymmetric impact of the COVID-19 crisis

European Commission

A European Model of Upward Convergence at regional level

- 2000-2020: Upward convergence – on average, all categories of NUTs II regions are growing and less developed regions are growing faster / catch up.

- But disparities in GDP per capita are high – GDP per capita: 5 times higher in LU than in BG; 9 times higher in IE-Southwest than in FR-OR-Mayotte.

- An increasing number of EU regions are struggling to grow, e.g. in southern Member States (e.g. IT-Calabria and IT-Sicily or EL-Ipeiros and EL-Dytiki Elláda), in north-western Europe (e.g. FR-Limousin or FR-Franche Comté).

GDP per capita (PPS), in less, transition, and more developed NUTs II regions, 2000-2021, euros.

European Commission
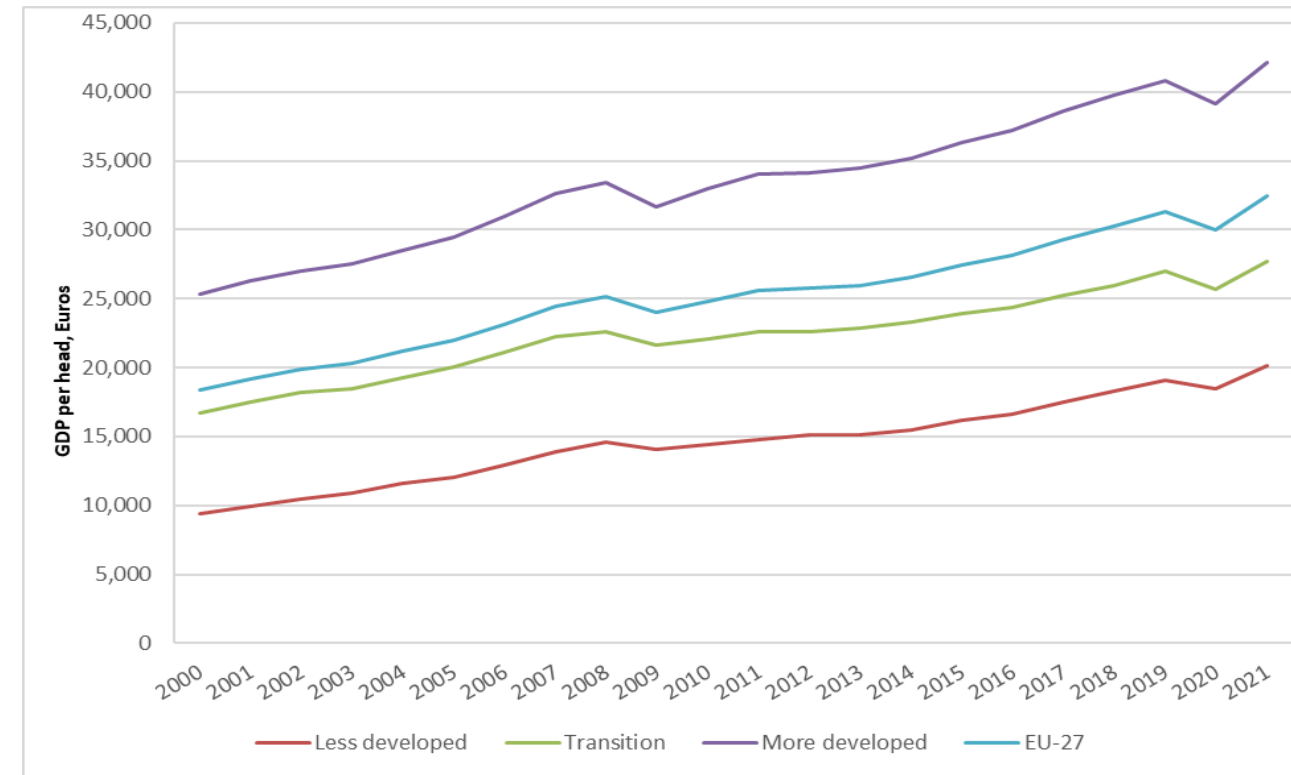
Several EU regions are struggling to grow
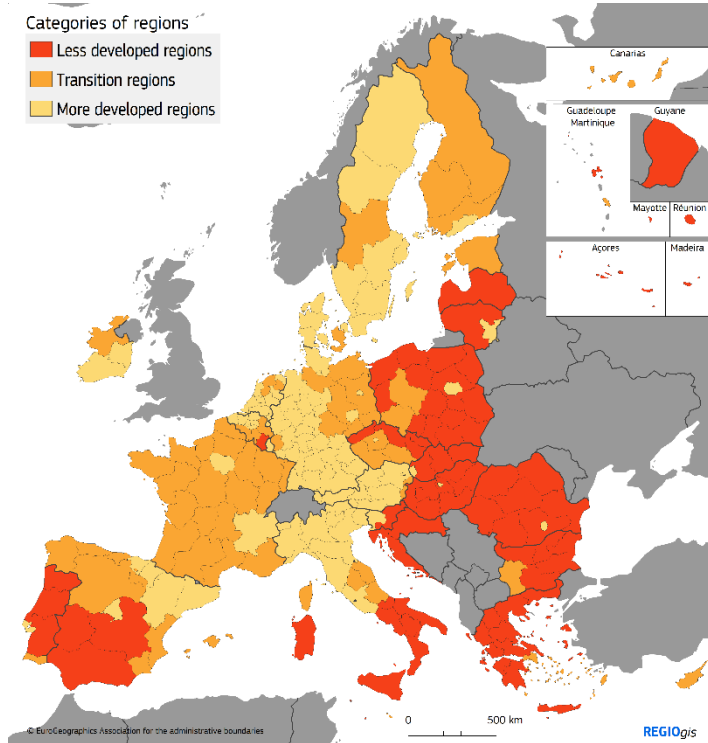
Investment for jobs and growth goal (ERDF and ESF+) eligibility, 2021-2027
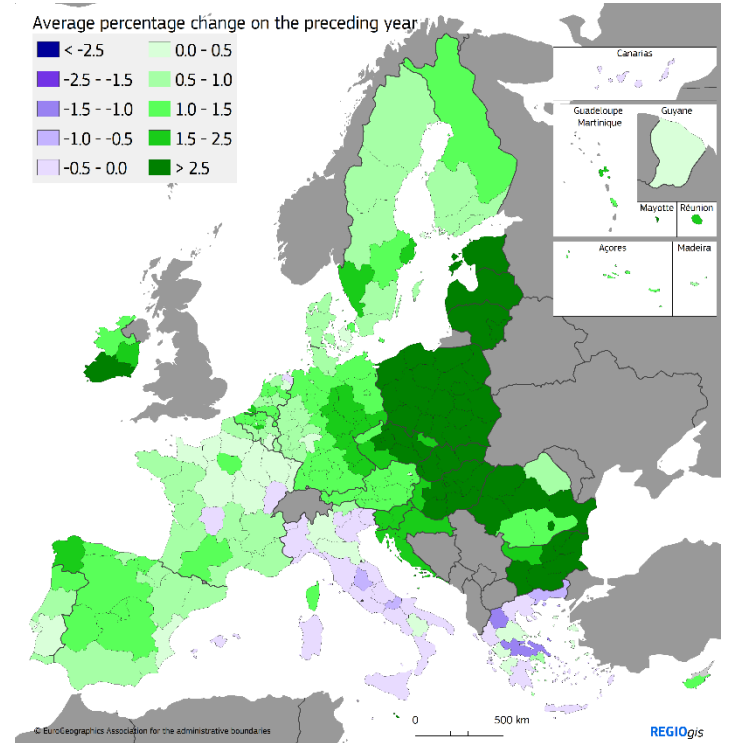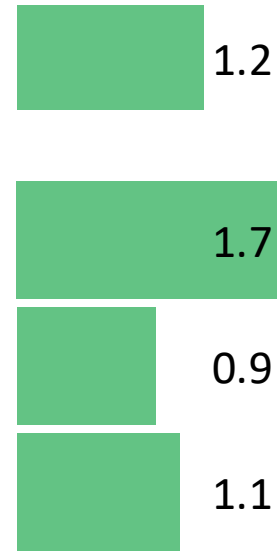
Average % change on the preceding year

|	GDP/head 2001-2019
EU-27	1.2
Less developed regions	1.7
Transition regions	0.9
More developed regions	1.1

Growth of GDP/head, 2001-2019

Changes in internal disparities show different patterns across Member States

- 2000-2021: In terms of GDP per capita, some Member States have diverged at regional level; others are converging.

- Case 1: Diverging because very high growth rates in the richest / most developed regions; e.g. Bulgaria or Romania.

- Case 2: Diverging because growth in poorer regions was low and lower than EU; e.g. France or Greece.

- Case 3: Converging because catching up of less developed regions but also stagnation or underperformance of some rich / more developed, previously dynamic regions; e.g. Portugal.

Coefficient of variation within MS, GDP per capita (PPS), NUTs II regions, 2000 and 2021.
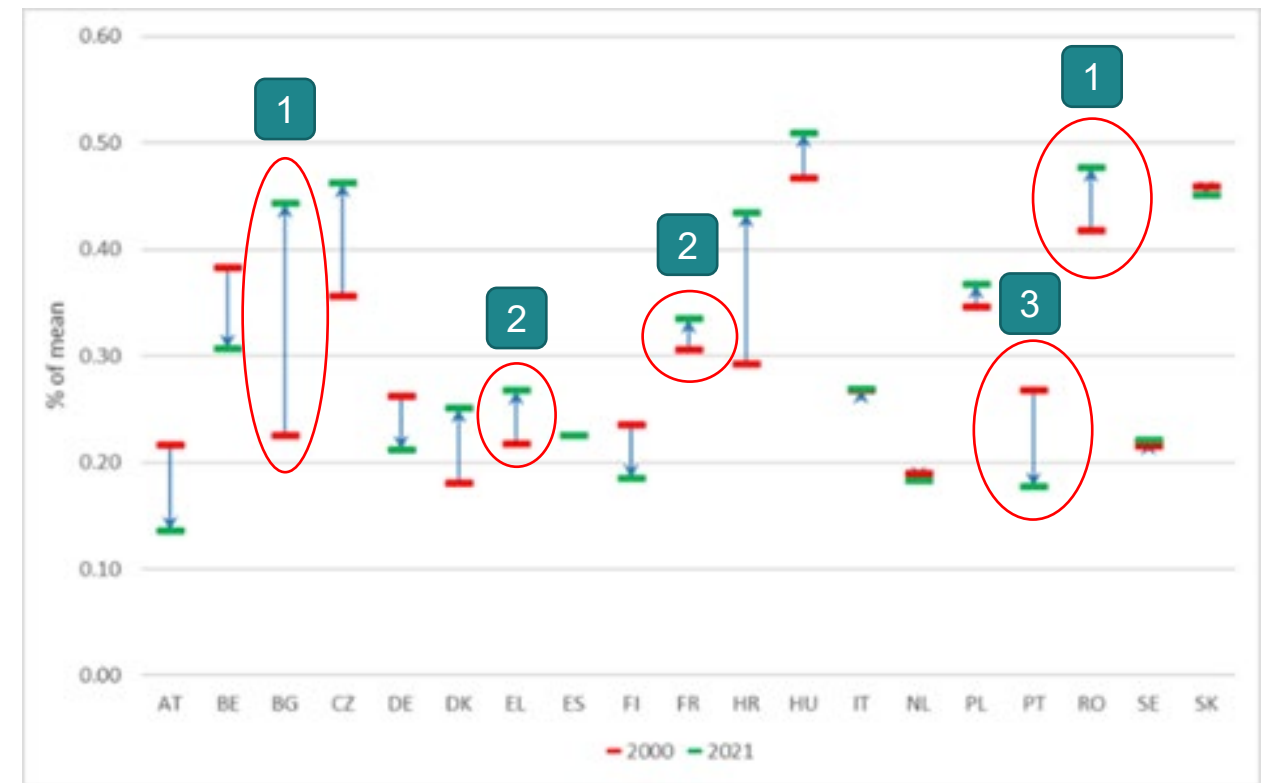
Disparities: Coefficient of variation.
↑ = Divergence. ↓ = Convergence.

Disparities in tertiary education, population growth, R&D intensity and employment rates (Red = capital cities, Green = national average)
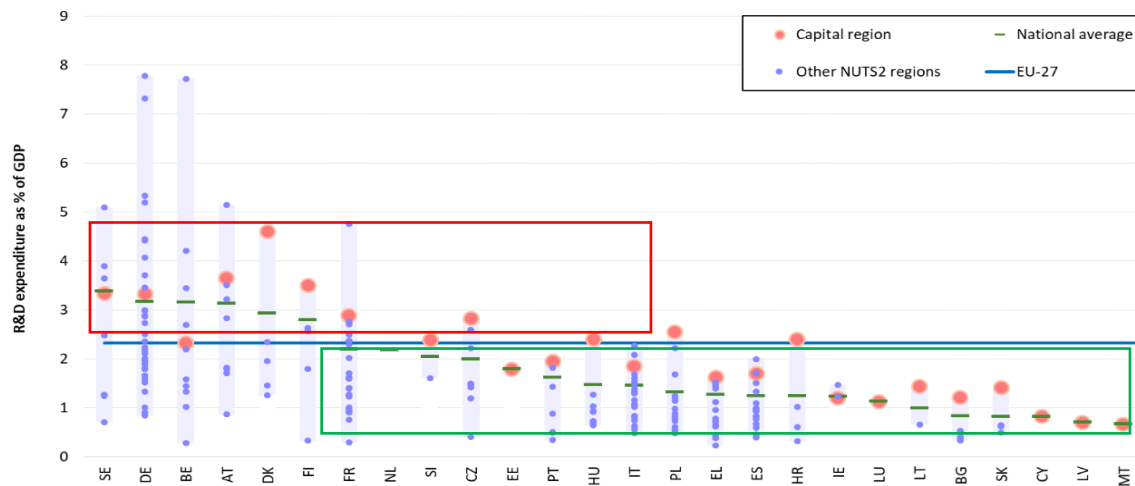
Share of population aged 30-34 with **tertiary education** in EU-27, Member States, and NUTs II regions, 2021.
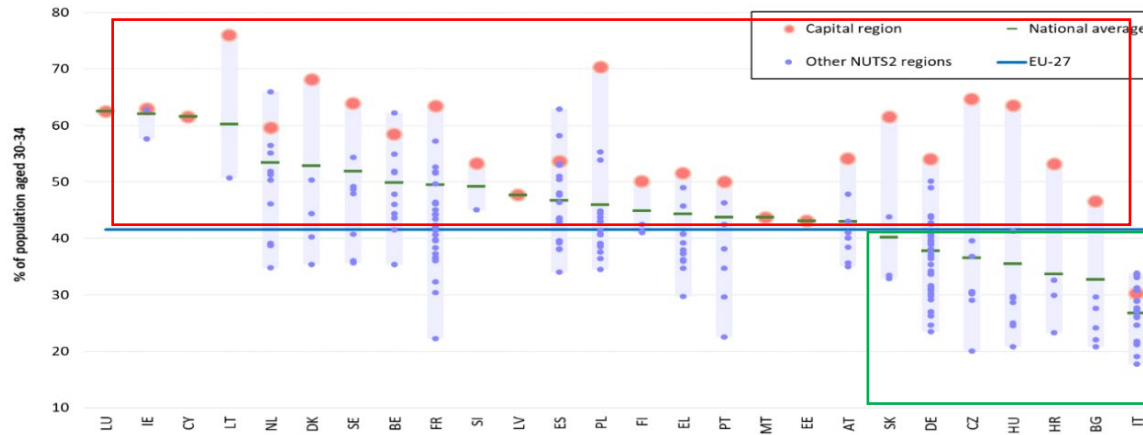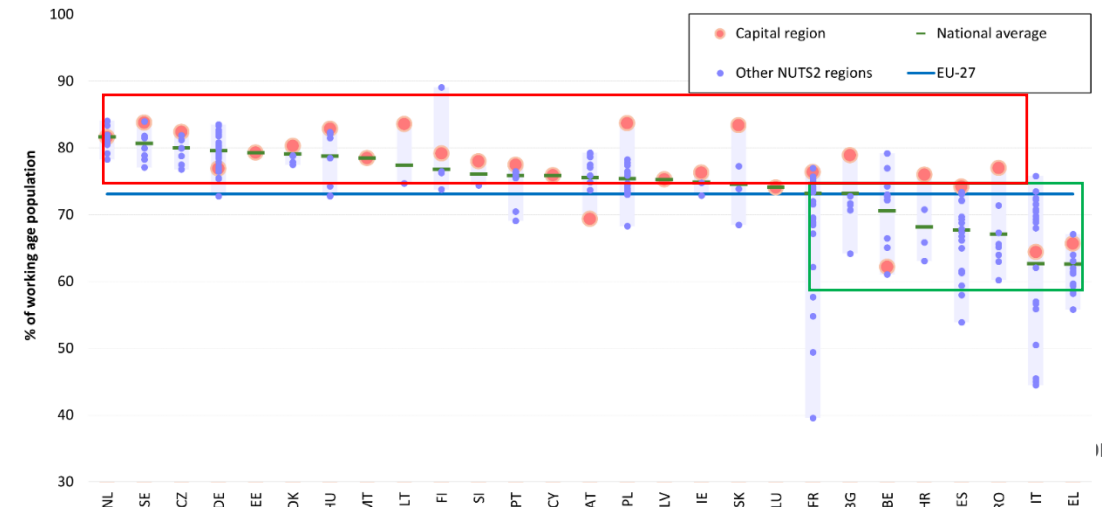
Population growth in EU-27, Member States, and NUTs II regions, 2011-2020.

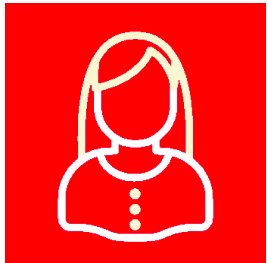**R&D intensity** in EU-27, Member States, and NUTs II regions,

Employment rates in EU-27, Member States, and NUTs II regions, 2021

Development traps

European Commission

Classic and new explanations

Classic

New: Development trap

Individual factors: Education, ageing, migration

Risk of a development trap

Geography: Location, rurality, density

Intensity of the trap
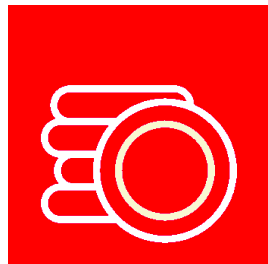
Economy: Employment, industrial decline, lack of opportunities

Length of the trap

European Commission
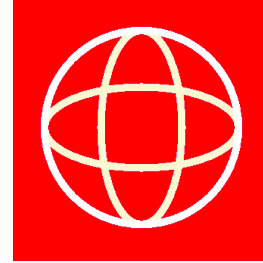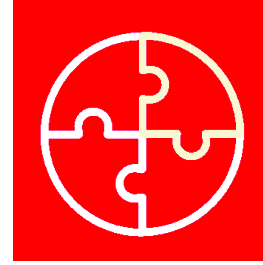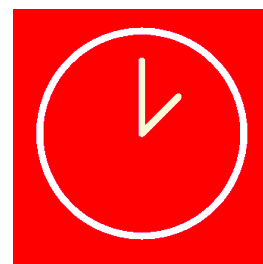
Defining a development trap

Three measures of economic dynamism
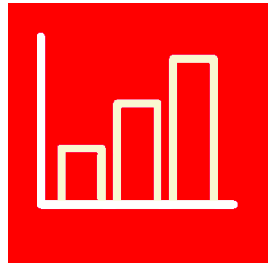
 GDP per capita

 Productivity

 Employment per capita

Measured at three geographical scales
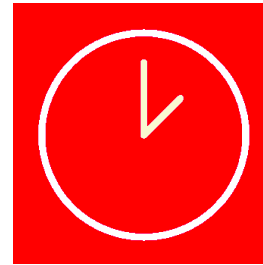
 The region itself in the past
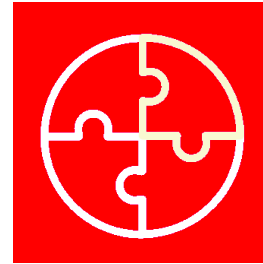
 The country it belongs to

 The EU

European Commission
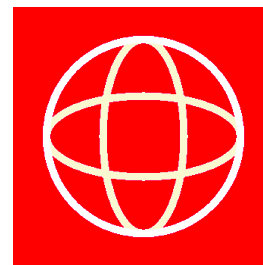
Risk of a development trap

- Counts for how many of the nine growth comparisons, the regions scores lower

- Standardised to 0-1

- Average over the number years observed
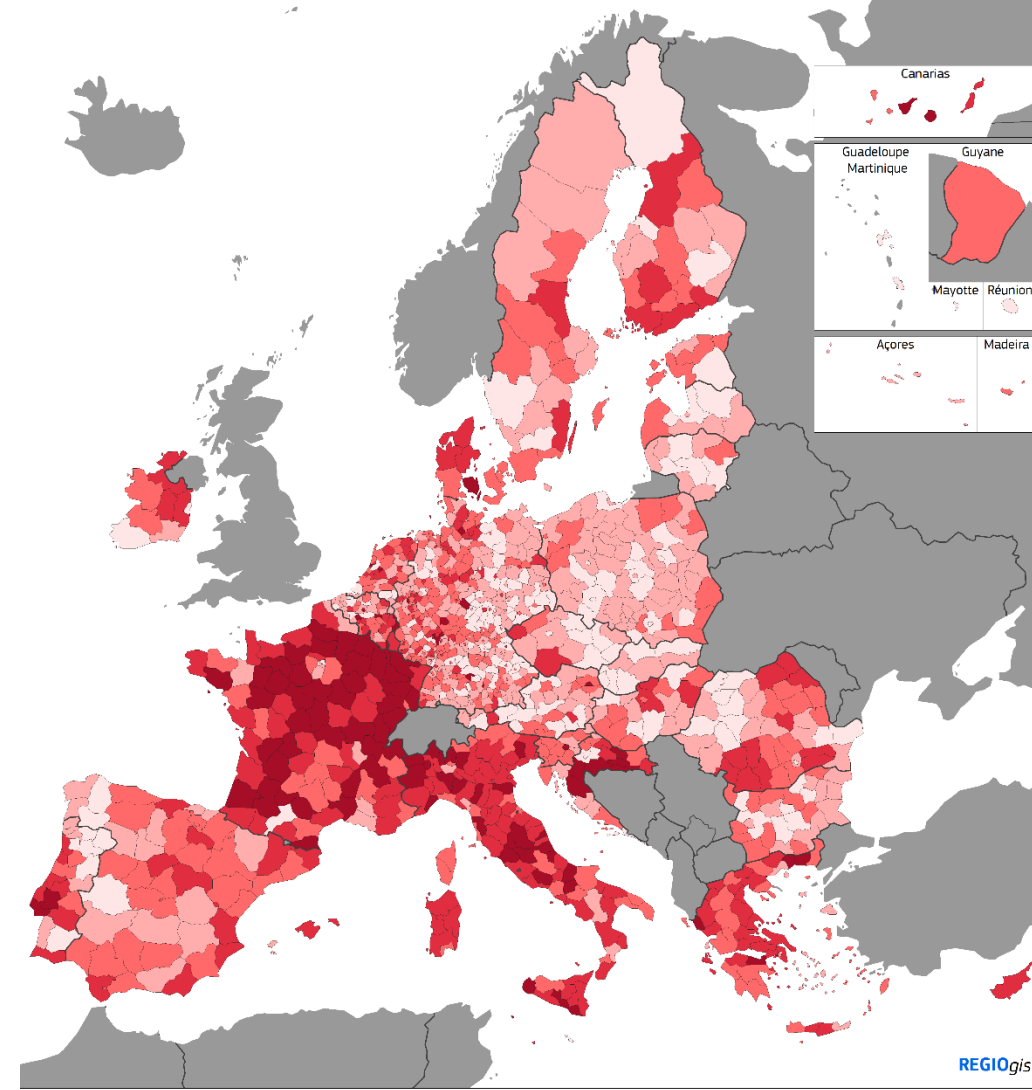
Development trap index 1 at NUTS-3 level, 2001–2018

Likelihood of being in a development trap

- <0.4
- 0.4-0.5
- 0.5-0.6
- 0.6 - 0.7
- >0.7

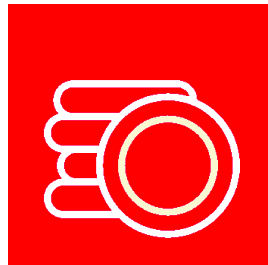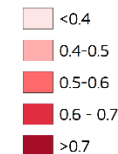This index measures if a region's growth is lower than that of the EU, of its country or of the same region during the previous 5 years. It considers growth in GDP per head, productivity and employment over a five-year period.
A region scores 1 for each time its growth is lower.
This score between 0 and 9 is then rescaled to 0-1.
Source: DG REGIO calculations based on JRC and Eurostat data

REGIO*gis*

0   500 km

© EuroGeographics Association for the administrative boundaries

Intensity of the trap

- This measures how much lower growth is in a region compared to the EU, the country and its own performance in the past for the three economic indicators (GDP per head, productivity and employment per head)

- Higher figures imply lower growth rates and thus a more intense trap
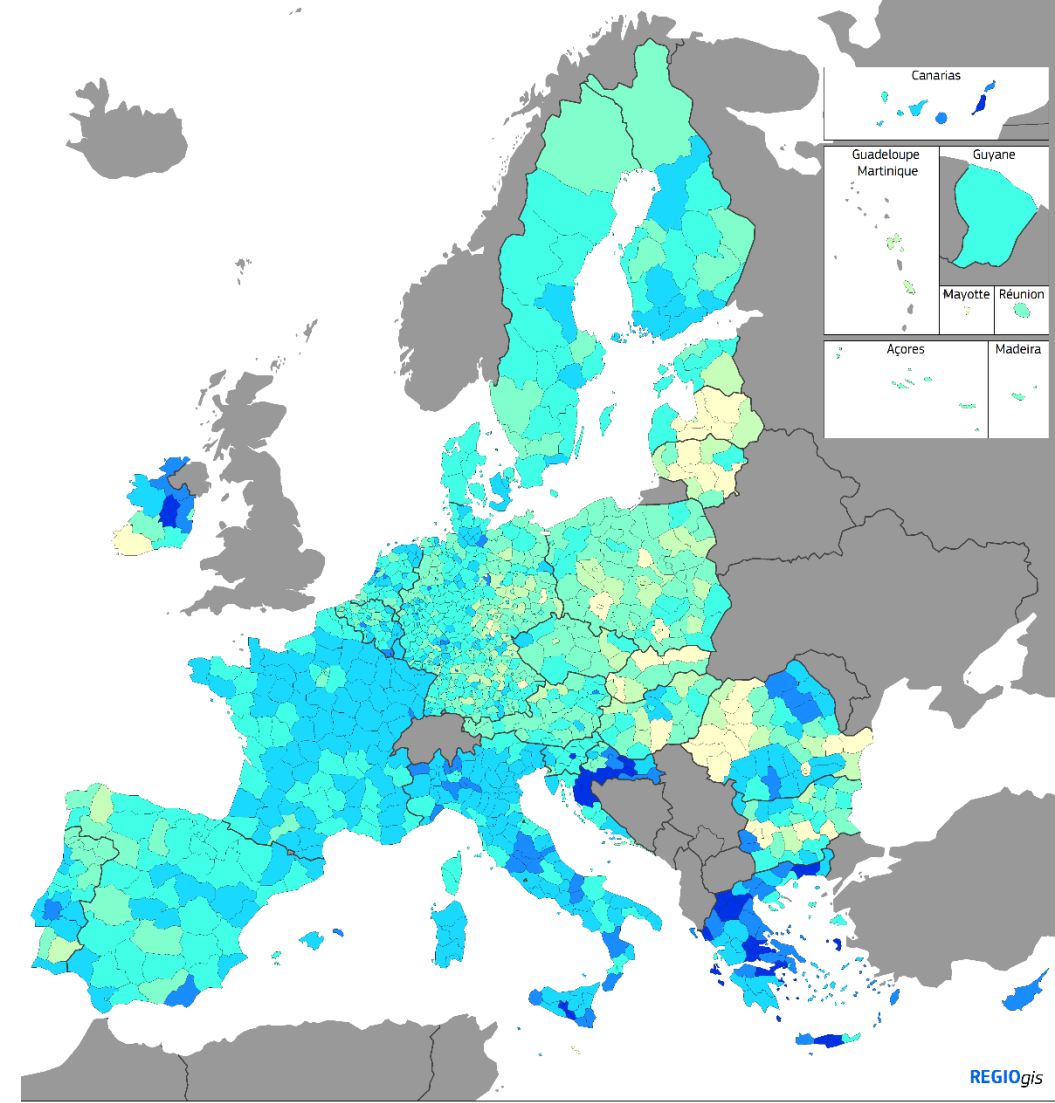
Development trap index 2 at NUTS-3 level, 2001-2018

Depth of the development trap

<0	0.9-1.2
0-0.3	1.2-1.5
0.3-0.6	>1.5
0.6-0.9	
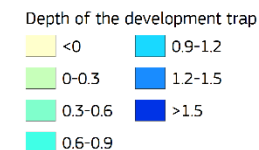
This index measures the extent to which a region's growth is lower than
that of the EU, of its country or of the same region during the previous 5 years.
It considers growth in GDP per head, productivity and employment
over a five-year period. The index is standardised using the mean
and the standard deviation of the first period.
Source: DG REGIO calculations based on JRC and Eurostat data

REGIOgis

0   500 km

© EuroGeographics Association for the administrative boundaries

Length of a trap

- Captures the number of years a region score low on the majority of growth comparisons (5 or more ouf of nine)

- Very few regions completely escape being at risk of a trap.

- Regions in France, Italy, Greece are confronted with the highest number of years
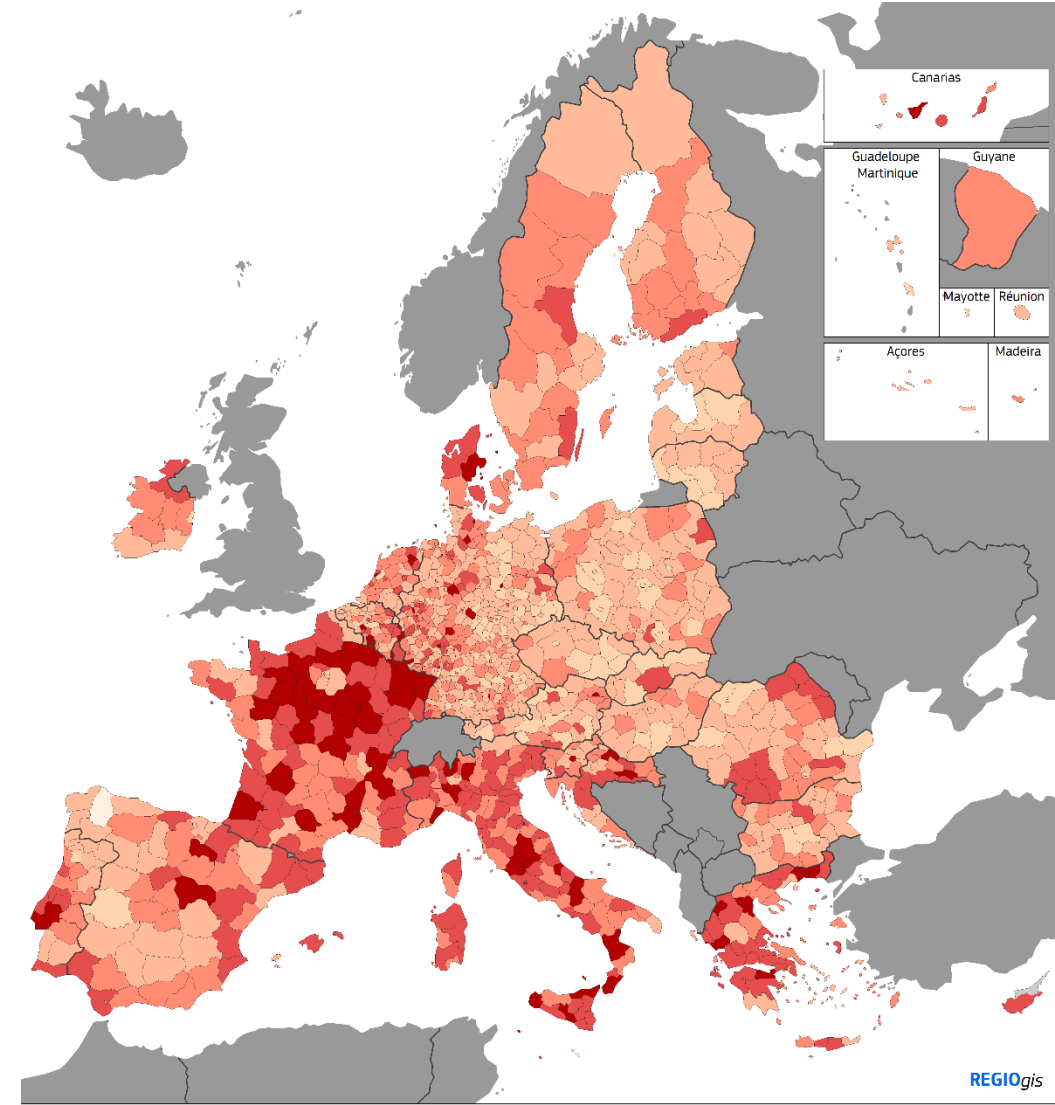
Number of years in a development trap during 2001–2018

Years
- 0
- 1 - 4
- 5 - 9
- 10 - 12
- 13 - 15
- 16 - 18
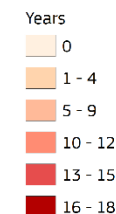
This map shows the number of years that a region scored 0.5 or more on the Development Trap Index 1.
Source: DG REGIO calculations based on JRC and Eurostat data

0   500 km

© EuroGeographics Association for the administrative boundaries

Development trap by level of development

- All regions can be at risk of a development trap

- But the risk is highest in the transition regions, followed by the more developed regions

- The risk is lowest in the less developed regions, but they are not immune to this risk

Risk, intensity and lenght of a trap, by level or regional development, 2001-2018

Talent Development Traps

European Commission
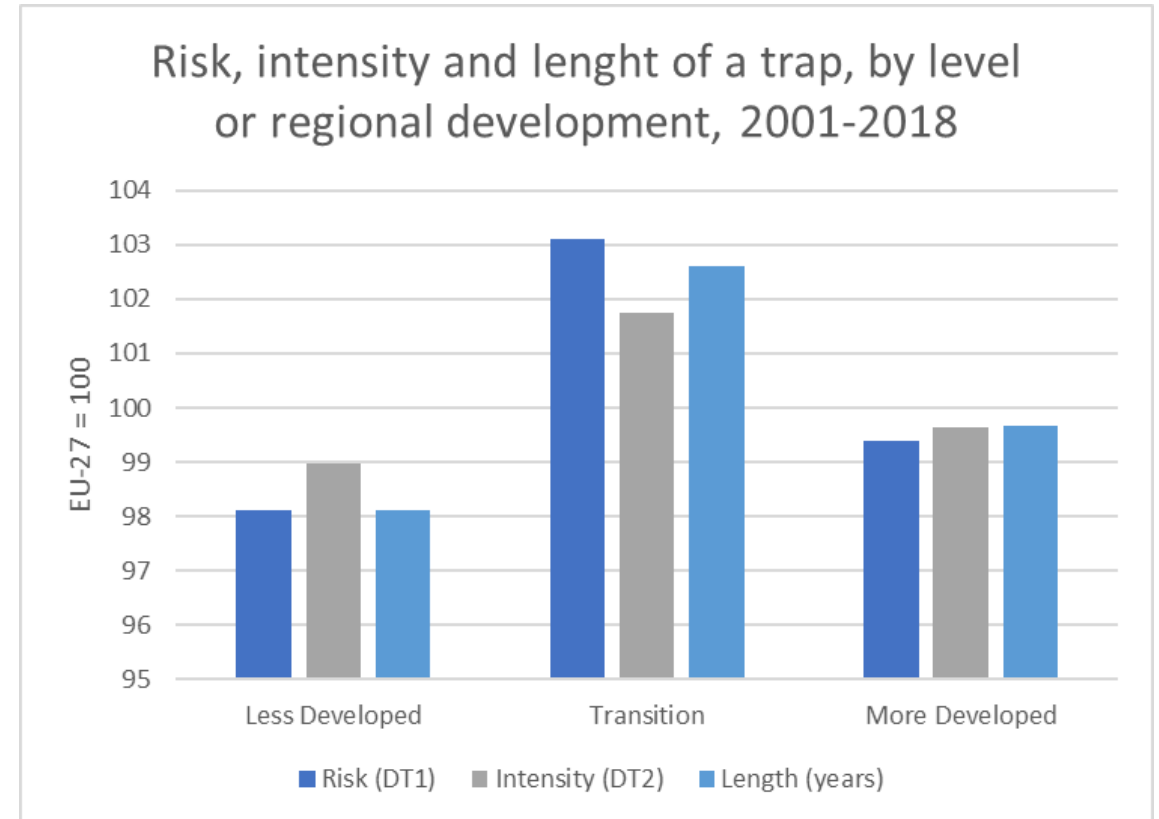
DEMOGRAPHIC TRANSITION

- Demographic transformation of Europe is taking place caused by ageing, lower birth rates and migration flows

  - 3.5 million decrease of EU working age population between 2015 and 2020

  - Further shrinking expected, with 35 million persons decrease by 2050

- Mostly driven by natural changes

- Some regions are more impacted than others, increasing regional disparities

- Talent and human capital becomes even more important for growth
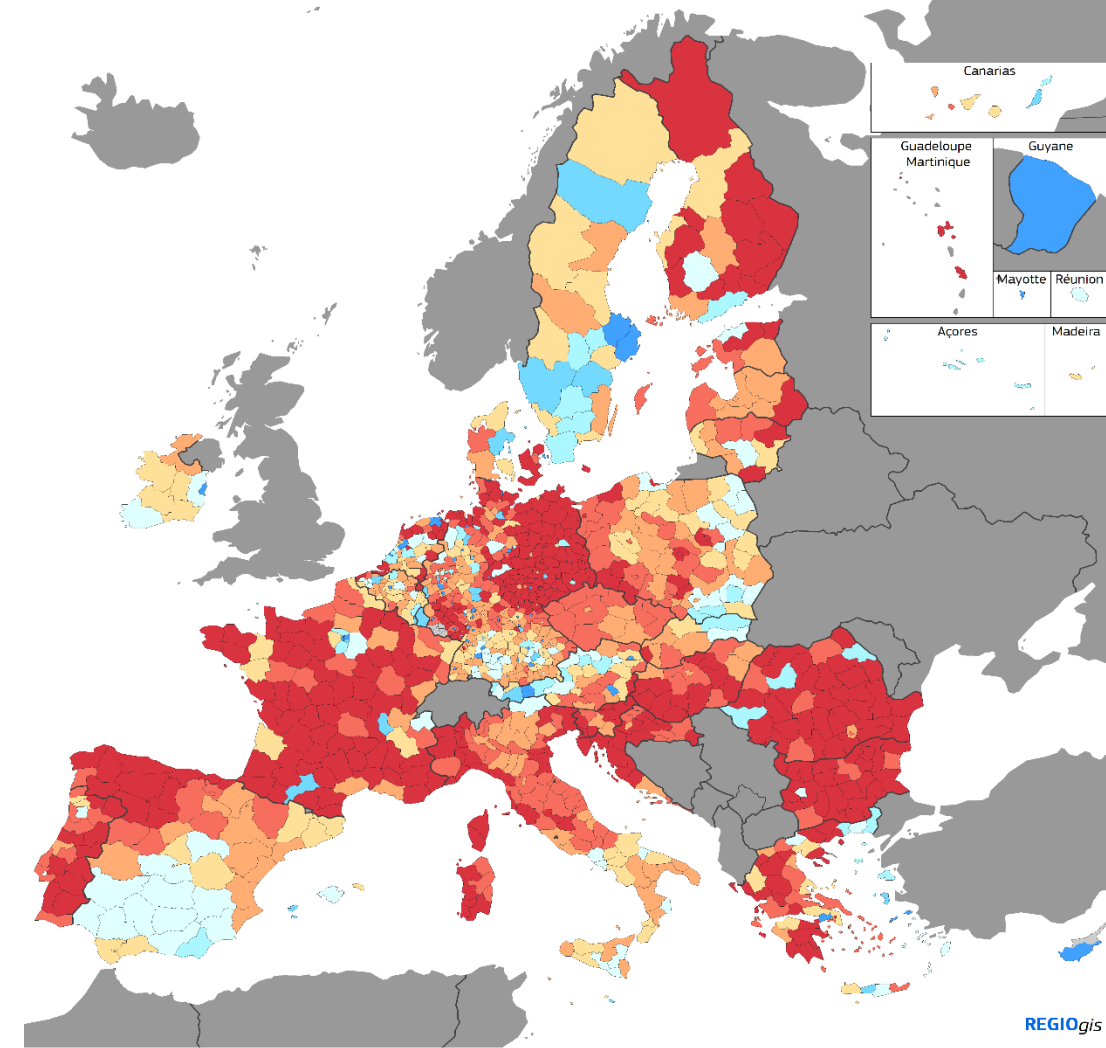
Natural change of population aged 25-64, 2015-2020

Average annual change per 1000 residents

< -7.5	0 - 2.5
-7.5 - -5	2.5 - 5
-5 - -2.5	5 - 7.5
-2.5 - 0	> 7.5
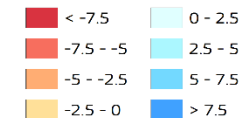
EU-27 = -3.29
arithmetic average of the yearly rates
DE: 2015-2017
Source: Eurostat (demo_r_d2jan)

European Commission

The emergence of talent development traps

- Regions affected by sharp workforce decline and low/stagnating share of tertiary educated **in a talent development trap**

- Regions with net out migration of their younger cohort **at risk of falling into a talent development trap**

REGIO*gis*
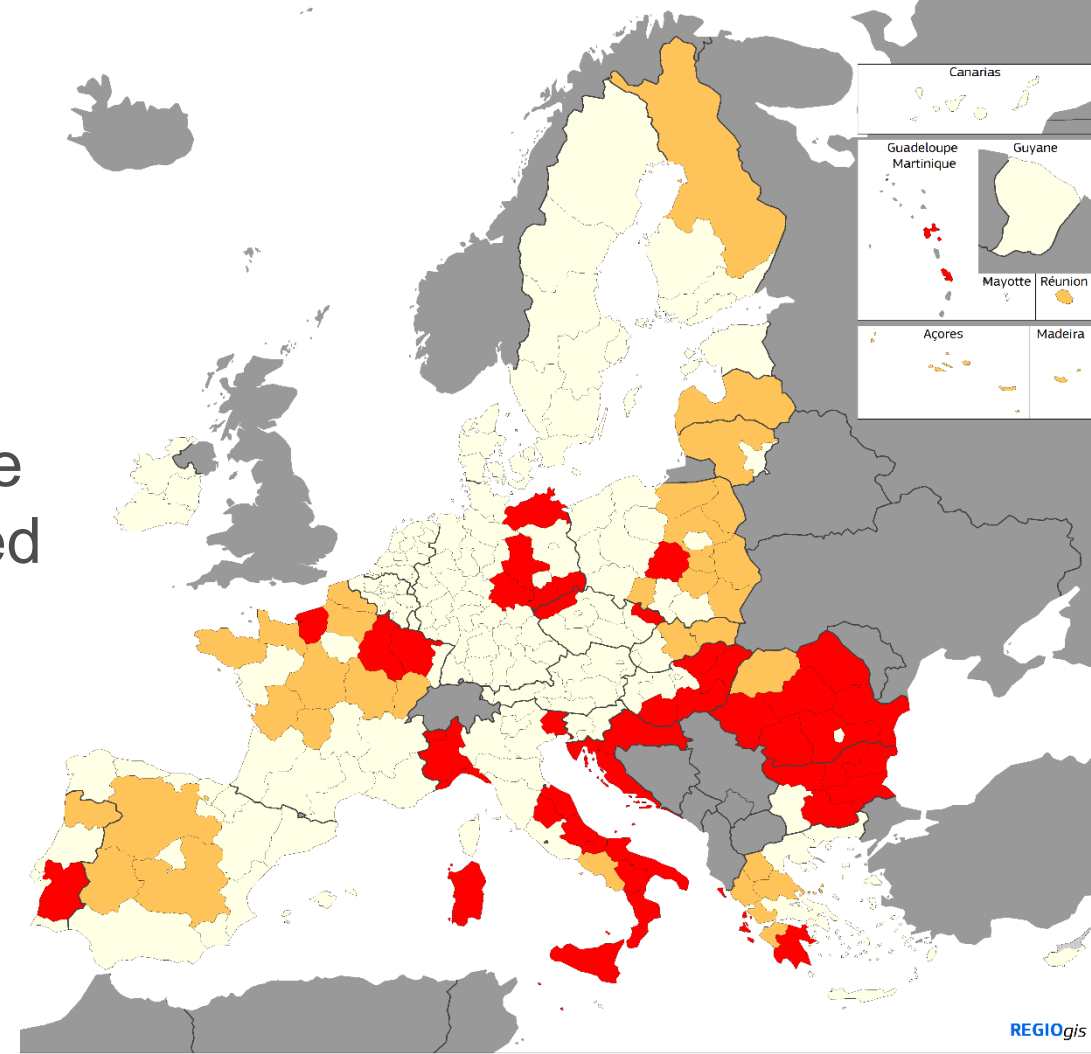
Regions in a talent development trap
and regions at risk of falling in a talent development trap

Category

- Shrinking working-age population and lagging level of tertiary education

- Net out-migration of people aged 15-39

- Other regions

European Commission
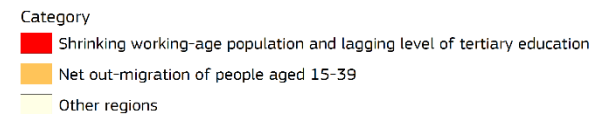
Demographic trends and their impacts

- Focuses on regions identified as most affected by Talent Development Trap:

    - 46 regions in a **talent development trap** (16% of EU population)

    - 36 regions at risk of falling into talent development trap (13% of EU population)

- Risk of labour and skills shortages, insufficient productivity growth and innovation :

- Hampering development pattern and the achievement of the twin transitions

- Risk for these regions, predominantly rural and less developed, to be left behind

Lower performances than EU average with regard to:

➤ Efficiency of labour market :

- Lower employment rates – including for persons with tertiary education
- Higher unemployment rates
- Higher employment gender gap

➤ Educational systems:

- Lower share of tertiary educated, including for younger cohorts
- Higher rate of early leavers
- Higher rates of NEET (no employment, neither in education or training)
- Lower rate of adult learning

➤ Lower accessibility to services : digital divide and access to universities

➤ Lower quality of public governance

EU discontent and development traps

European Commission

Euroscepticism on the rise

Votes for parties opposed to EU integration in the EU-27, 2000-2022
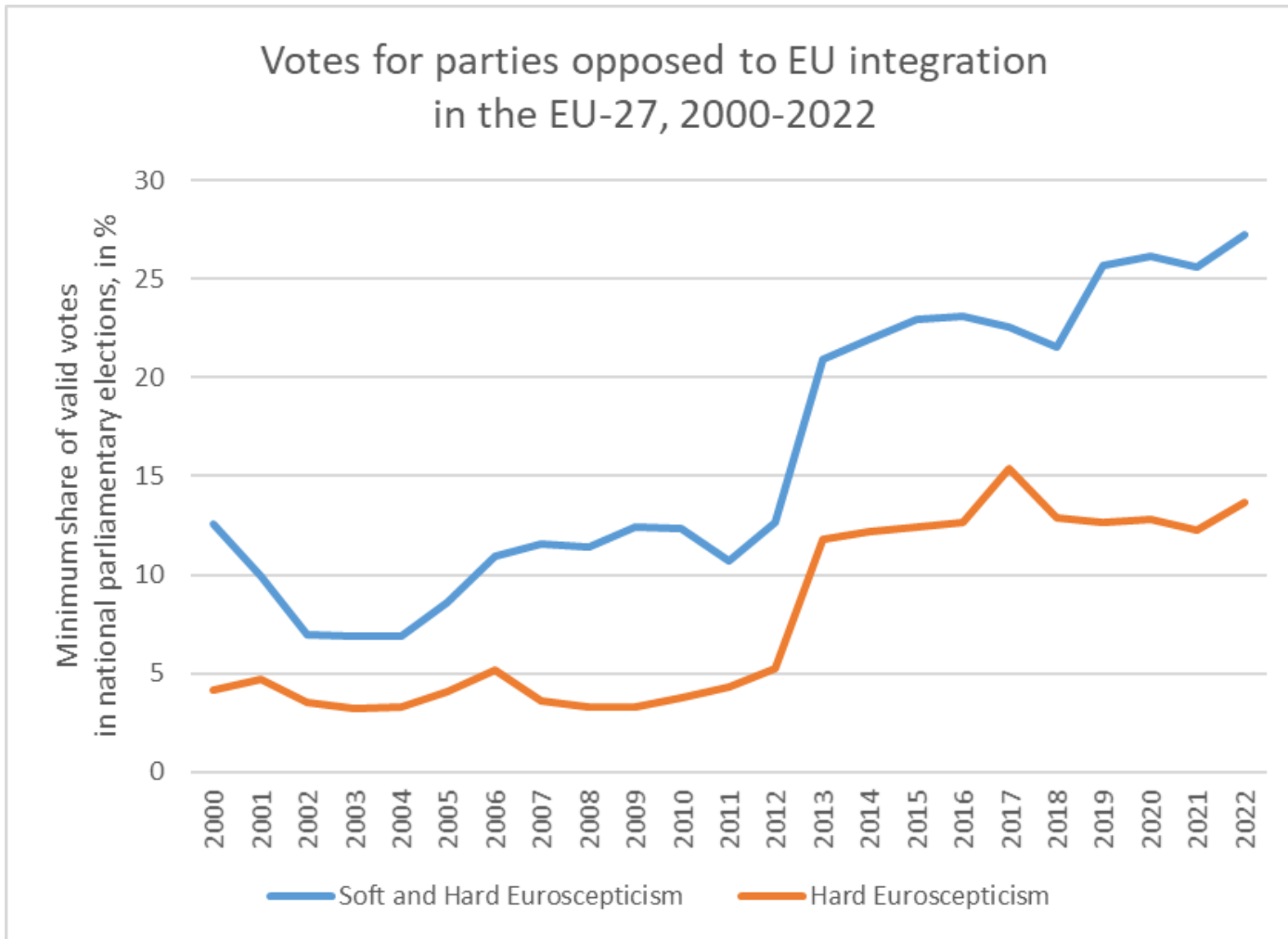
- A big increase following the economic and financial crisis of 2008

- Brexit may have reduced appeal of hard Euroscepticism

- But softer Euroscepticism continues to grow

Soft & hard Euroscepticism, 2000-2022

Votes for soft and hard Eurosceptic parties by Member State, 2000-2022

22
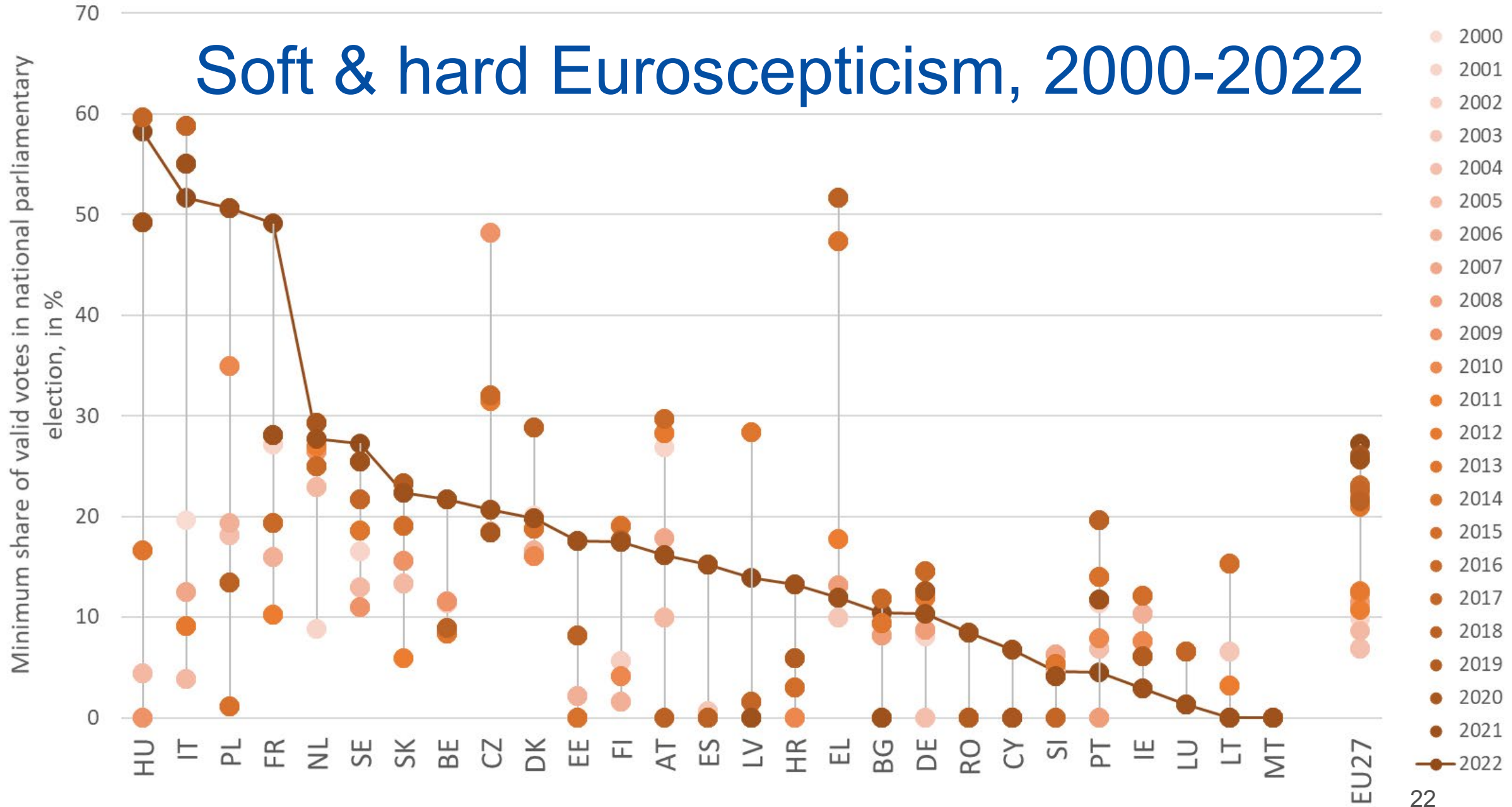
Results

Less Eurosceptic voting

- Higher population density

- Higher employment rates

- More tertiary educated

- More people born in another MS

- Higher quality of government

- Higher turnout

More Eurosceptic voting

- Higher GDP per head

- More industrial jobs (2018-2022)

- Higher net-migration (2018-2022)

- More elderly residents (hard)

- More people born outside the EU (hard)

European Commission

EU discontent and development traps

Development trap 1 average 2001-2018 and votes for hard Eurosceptic parties, 2018-2022

$y = 22.054x + 1.4904$
$R^2 = 0.0617$

Minimum share of valid votes in national parliamentary election, in %

Development trap index 1, 2001-2018

Bubble area size reflects population in 2021

- Regions in a development trap experience lower growth in income, productivity, and employment compared to: (i) their own historical performance; (ii) the country in which they are in; and/ or (iii) the EU.
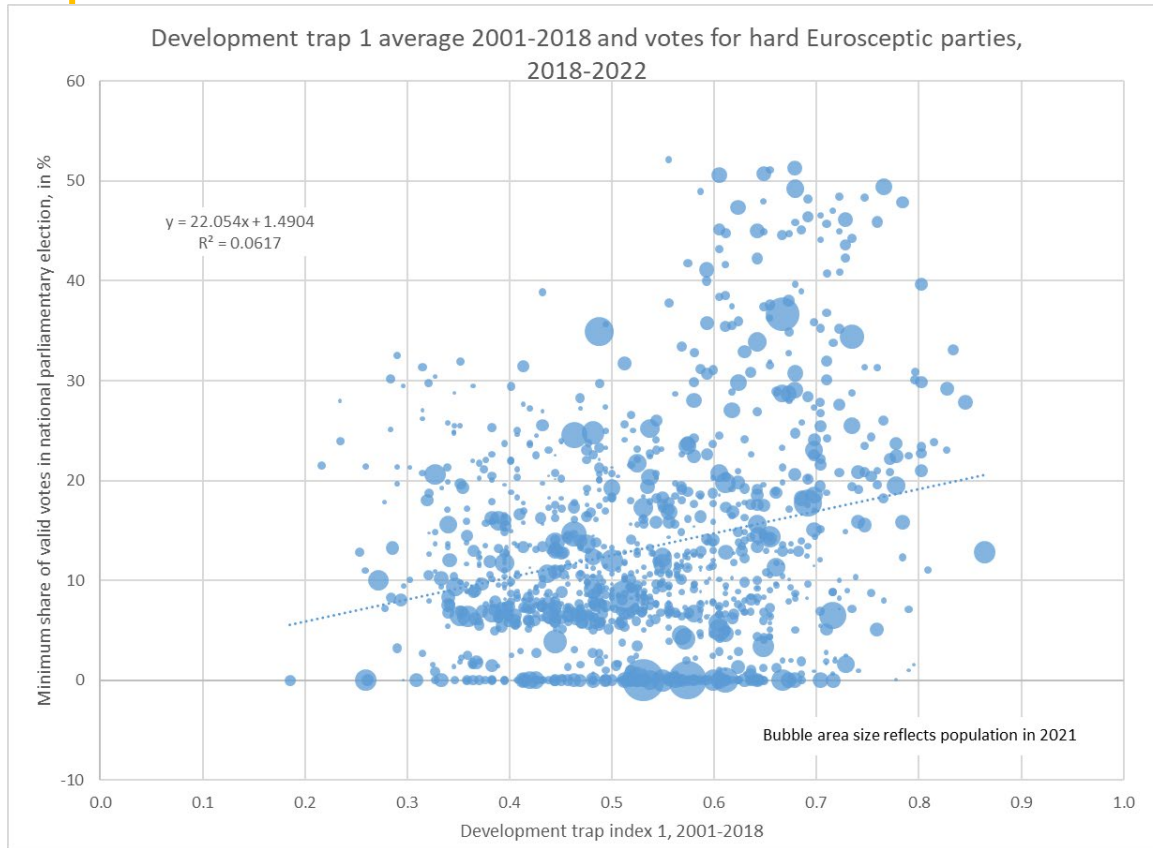- The more intense and the deeper the development trap, the greater the vote share of Eurosceptic parties. This is the case for both soft and hard
- Euroscepticism and for the elections since 2013 and since 2018.
- The longer a region is trapped, the greater the impact on Eurosceptic voting.
- This highlights the need for a strong, place-based policy that can help regions to escape from their development traps.
- Previous research has shown a strong correlation between cohesion policy investments and the reduction of Eurosceptic voting (Rodríguez-Pose & Dijkstra 2021).

The RHOMOLO impact assessment of the 2014-2020 cohesion policy in the EU regions

Brussels, 16 December 2022
Evaluation Network Meeting

European Commission

Impact of the 2014-2020 period on the EU-28 NUTS 2 regions.

- Simulations with a spatial general equilibrium model (RHOMOLO)
- Calibrated on the basis of regional social accounting matrices
- Data on policy interventions corresponds to the **expenditure** up to end 2022.
- Impact on key macroeconomic variables (GDP, employment, investment, …).
- Investment in physical capital (support to SMEs), human capital (support to education, training, adapting skills to labour market demand), technology (support to R&D and innovation), public infrastructure and in particular in transport infrastructure.
- Spatial spill-overs:
  - **Increase in activity in one region generates increase/decrease in activity in other regions (trade links);**
  - **Technological progress in one region also increases TFP in other regions (spatial diffusion of technology);**
  - **Activity and population may move to other regions in response to policy changes (agglomeration mechanisms).**

European Commission

Allocation of resources
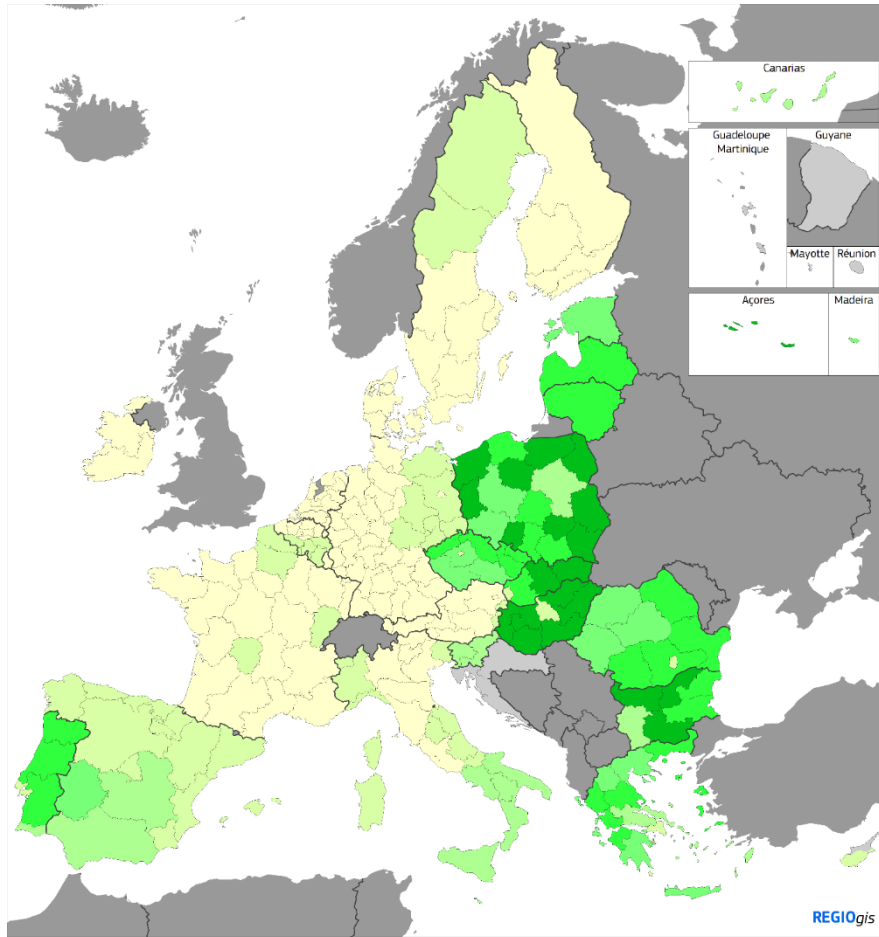
Cohesion policy allocation 2014-20
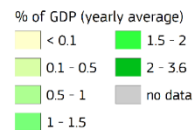
% of GDP (yearly average)
- < 0.1
- 0.1 - 0.5
- 0.5 - 1
- 1 - 1.5
- 1.5 - 2
- 2 - 3.6
- no data

Source: DG REGIO

|	TRNSP	INFR	RTD	HC	AIS	TA
Poland	35.8	26.8	14.1	15.8	4.2	3.3
Romania	29.6	32.7	4.8	20.9	8.7	3.3
Czechia	27.9	31.4	16.6	16.8	3.3	3.9
Latvia	27.8	33.1	14.7	15.5	6.5	2.4
Slovakia	27.2	32.4	9.8	18.8	7.8	4.1
Bulgaria	24.9	33.6	11.3	19.5	7.0	3.7
Hungary	17.6	33.4	10.4	22.2	15.0	1.6
Greece	16.9	30.0	7.8	26.0	15.7	3.6
Malta	16.6	45.6	9.1	18.8	7.0	2.8
Lithuania	15.4	42.9	17.1	18.5	3.0	3.1
Estonia	15.3	35.7	22.9	16.5	6.7	3.0
Croatia	15.1	37.6	9.1	18.1	16.0	4.0
Cyprus	14.8	36.1	9.1	24.0	12.8	3.2
Slovenia	12.2	32.5	23.7	23.3	4.3	4.0
Italy	10.1	24.7	12.4	34.0	15.4	3.3
Spain	9.6	30.5	16.1	31.1	10.9	1.9
Portugal	7.5	22.8	19.9	34.8	12.3	2.7
Sweden	5.7	10.2	31.6	39.8	8.4	4.3
United Kingdom	4.8	15.0	23.5	43.2	10.0	3.5
France	4.3	23.0	19.5	43.3	6.1	3.8
Luxembourg	4.2	9.0	9.8	74.6	0.1	2.3
Austria	4.2	16.0	26.3	34.0	15.2	4.4
Belgium	4.2	17.2	20.1	47.1	8.3	3.1
Germany	3.2	20.3	27.4	38.5	7.0	3.6
Finland	2.7	5.6	39.5	35.3	13.3	3.5
Denmark	2.3	6.2	41.2	45.0	0.5	4.7
Ireland	0.9	39.4	6.8	48.7	2.0	2.1
Netherlands	0.5	11.6	39.7	42.2	1.7	4.3
EU-27	19.8	28.3	14.7	25.1	8.9	3.2
EU-28	19.3	27.9	15.0	25.7	8.9	3.2

Economic impact

Cohesion policy expenditure (% of EU GDP) and impact on EU GDP (% deviation from baseline)
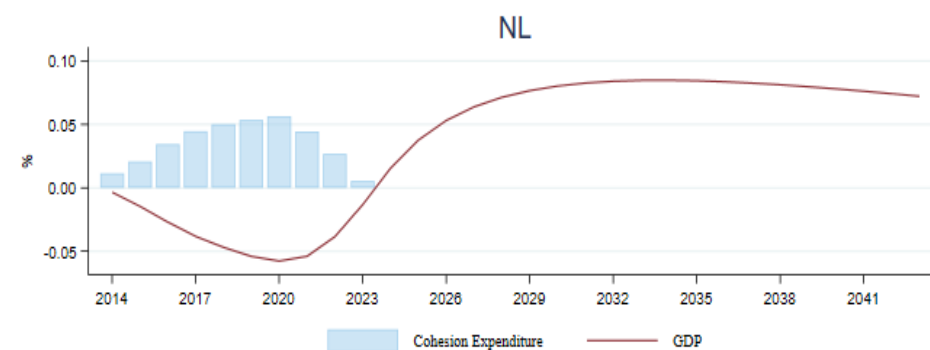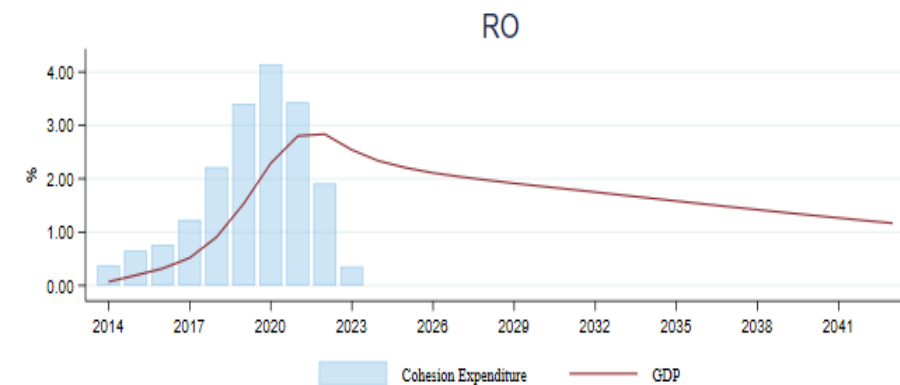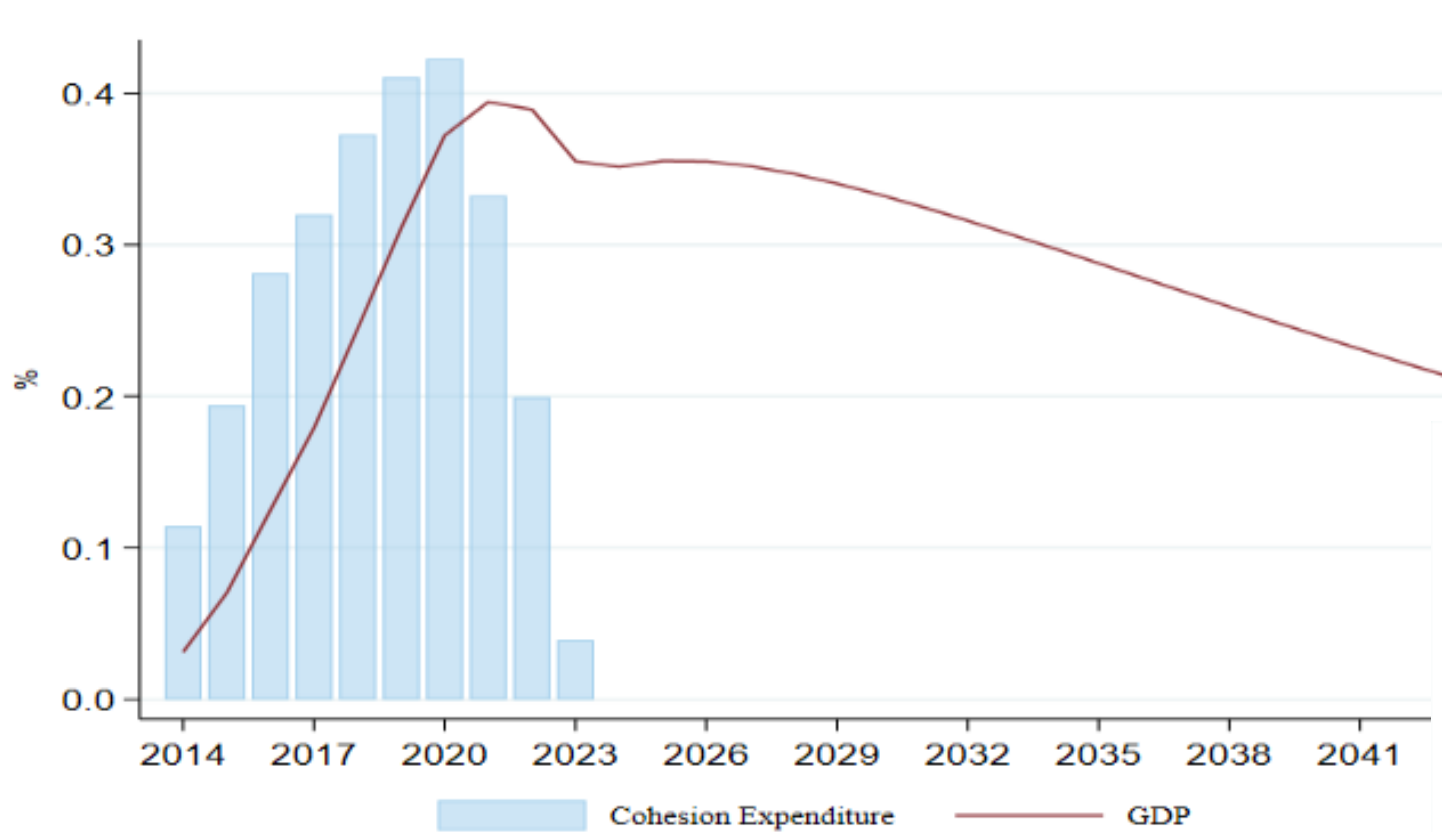
Impact on different types of region

Impact on GDP in less developed, transition and more develop regions
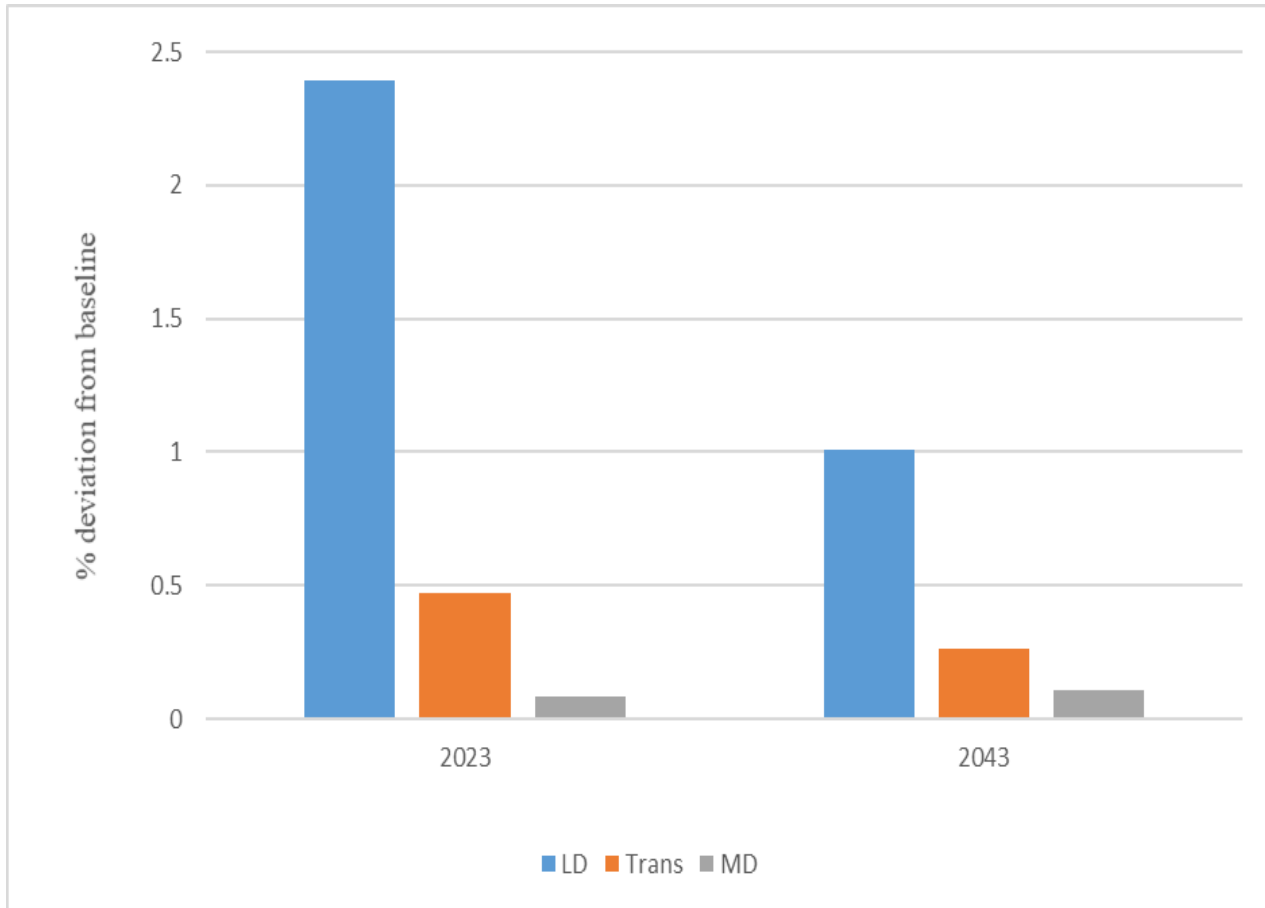
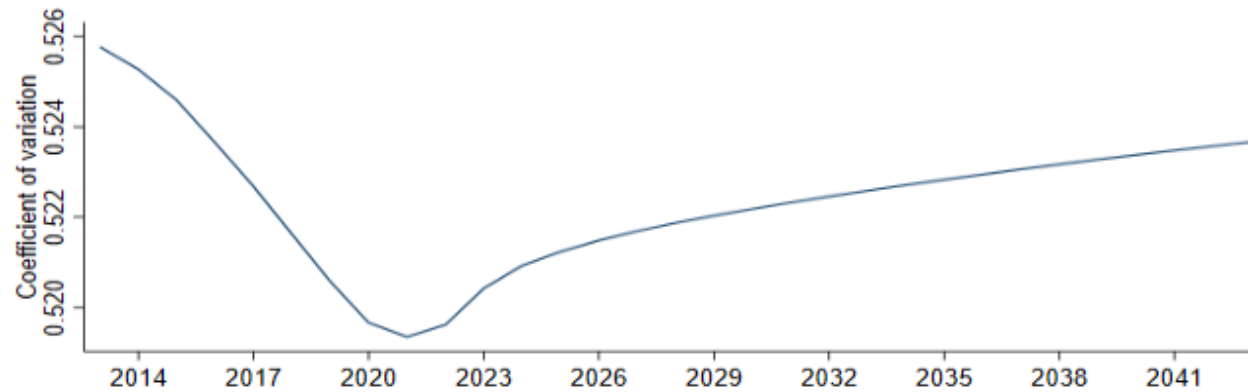**Multipliers – Impact per euro and average yearly rate of return**

Multiplier	2023	2033	2043
LD	1.0	2.0	2.7
Trans	1.2	2.6	3.7
MD	0.5	2.5	4.2
EU 28	0.9	2.2	3.1
RR	-0.8%	4.0%	3.9%

Impact on disparities

Impact on coefficient of variation, Theil Index

|	**Theil index in 2013**	**Change in 2021**	**Change in 2028**	**Change in 2033**
Within	0.039	-1.99%	-1.25%	-0.99%
Between	0.114	-3.98%	-2.44%	-2.04%
Overall	0.153	-3.46%	-2.13%	-1.77%

Source: RHOMOLO simulations. Only countries with more than four NUTS 2 regions are reported to enable the calculations of the Theil index.

Conclusions

Policy takeways - Europe

- Adjustment mechanisms are not providing optimal outcomes: weak price signals, costly and selective migration, sticky firm location decisions, low level spatial equilibriums, coordination and first mover problems, too much winner takes all agglomeration in some MS?

- Significant costs in human, economic and political terms: impact on left-behind, stranded assets and loss of talent – made more acute by demographic change

- Digital and green transitions are likely to exacerbate problems: distributional effects of green policies and unanticipated effects of green industrial policies – need for appropriate flanking measures – just transition, social safety nets for least well-off communities

- Significant diversity of drivers of growth and convergence, need to tailor policies to different regional needs: industrial transformation, catching up, development traps as well as different national policy contexts

- Need for better place based policies: more transformative, more anticipation, better integration of reforms, capacity and investment at subnational level, better targeting. Need to reflect on composition of expenditure.

- Reflection on combination with national policies => <u>not one size fits all place-based policies</u>

- Improve focus on performance, evaluation and instrument design

European Commission

Publications
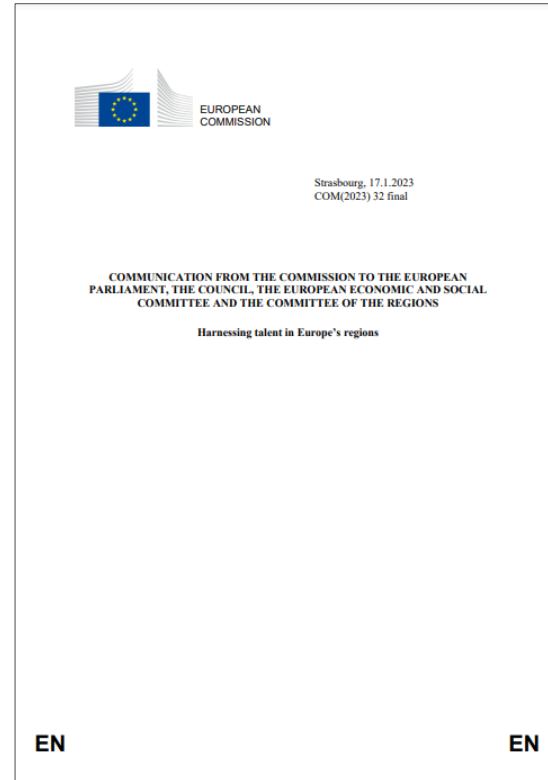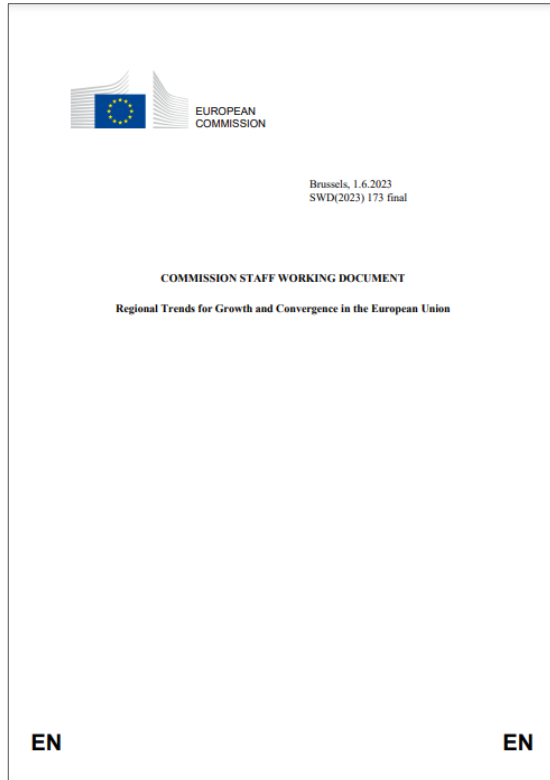
Thank you!

Analysis at regional level – R&D and innovation

- Variations of spending on R&D are wide between Member States.

- Member States such as Sweden, Belgium, Germany, and Austria spend more than 3% of their GDP on R&D while the share is less than 1% in Romania, Latvia, Cyprus, Slovakia, and Bulgaria.

- Variations of investment at regional level are significant. E.g. R&D intensity is close to 8% DE-Braunschweig and BE-Brabant Wallon vs. less than 0.1% in RO-Sud-Est.

R&D intensity in EU-27, Member States, and NUTs II regions, 2021.

European Commission
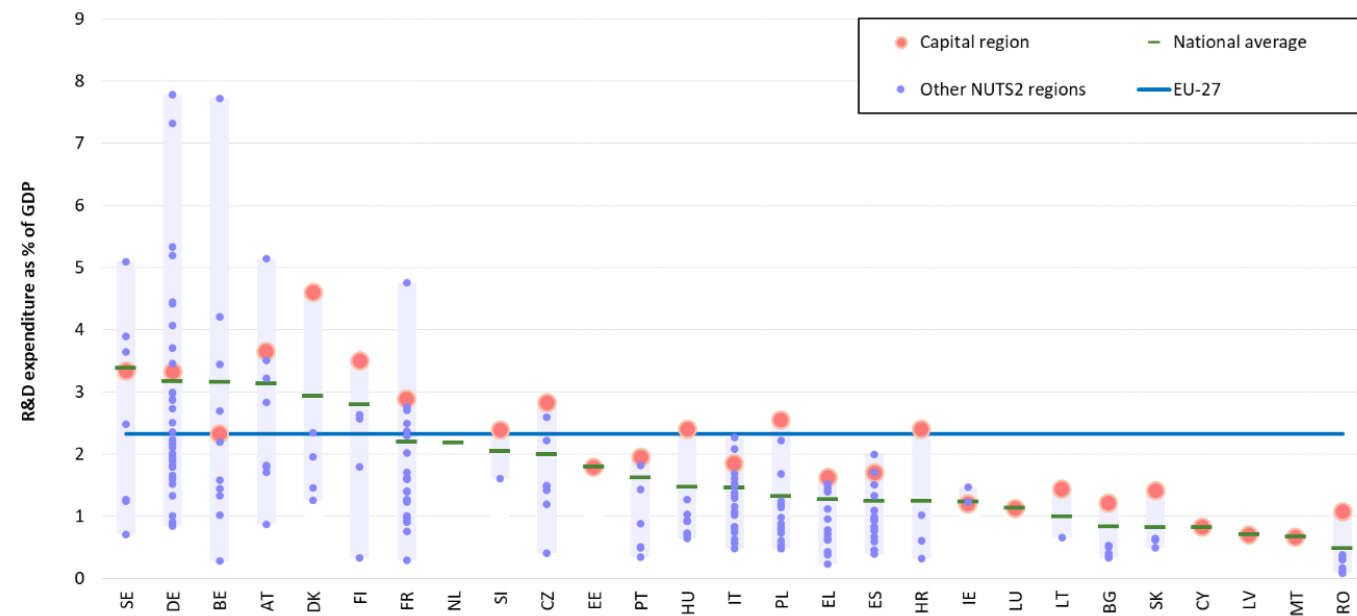
Analysis at regional level – Education

- Levels of education increased but still lowest in less developed regions.

- Share of population with tertiary education varies across Member States. E.g. LU (62%) vs. RO (25%).

- Large variations also between NUTs II regions. E.g. LT-Vilnius (76%) vs. RO-Sud-Est (16%).

- Capital regions tend to stand out with highest education levels. E.g. In France, Île-de-France (63%) vs. Guyane (30%) and Corse (32%); in Czechia, Praha (65%) vs. Severozápad (20%).

Share of population aged 30-34 with tertiary education in EU-27, Member States, and NUTs II regions, 2021.
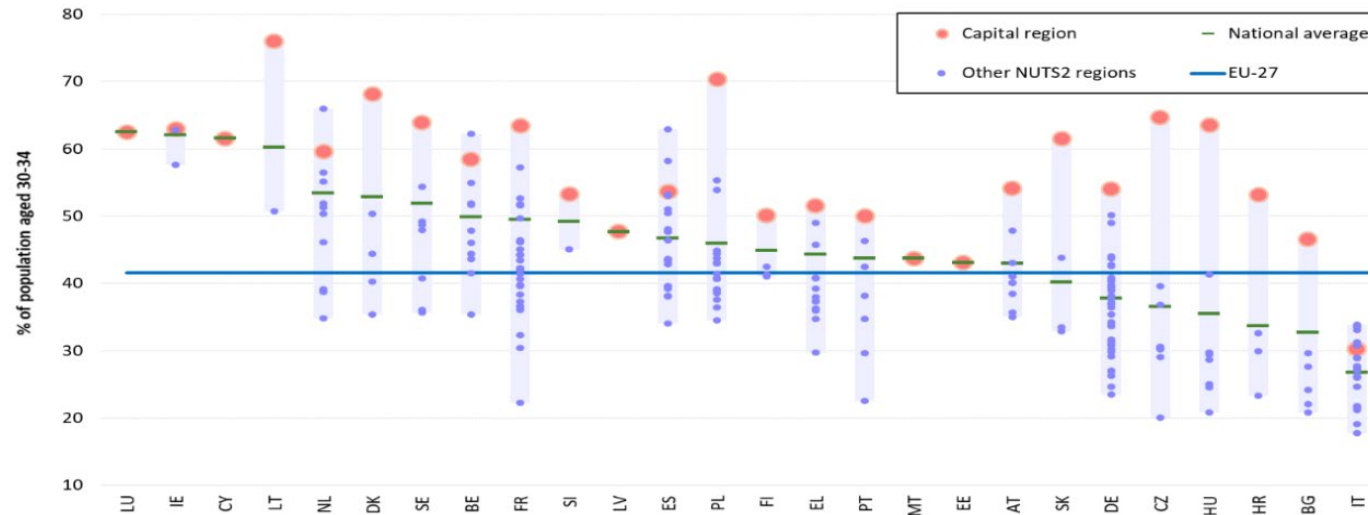
Analysis at regional level – Employment

- Regional disparities fell prior to 2008. Economic and financial crisis with varying effects across regions. Now disparities still higher than pre-2008 crisis.

- Employment rates lower in less developed regions but slowly converges to the EU average.

- Disparities high at regional level. FI-Åland (almost 90%) vs. IT-Sicilia (44%) and FR-OR-Mayotte (40%).

Employment rates in EU-27, Member States, and NUTs II regions, 2021.

- Disparities *within* some Member States (FR, IT, ES) larger than the *gap between the best and lowest* performing Member States (NL and EL).
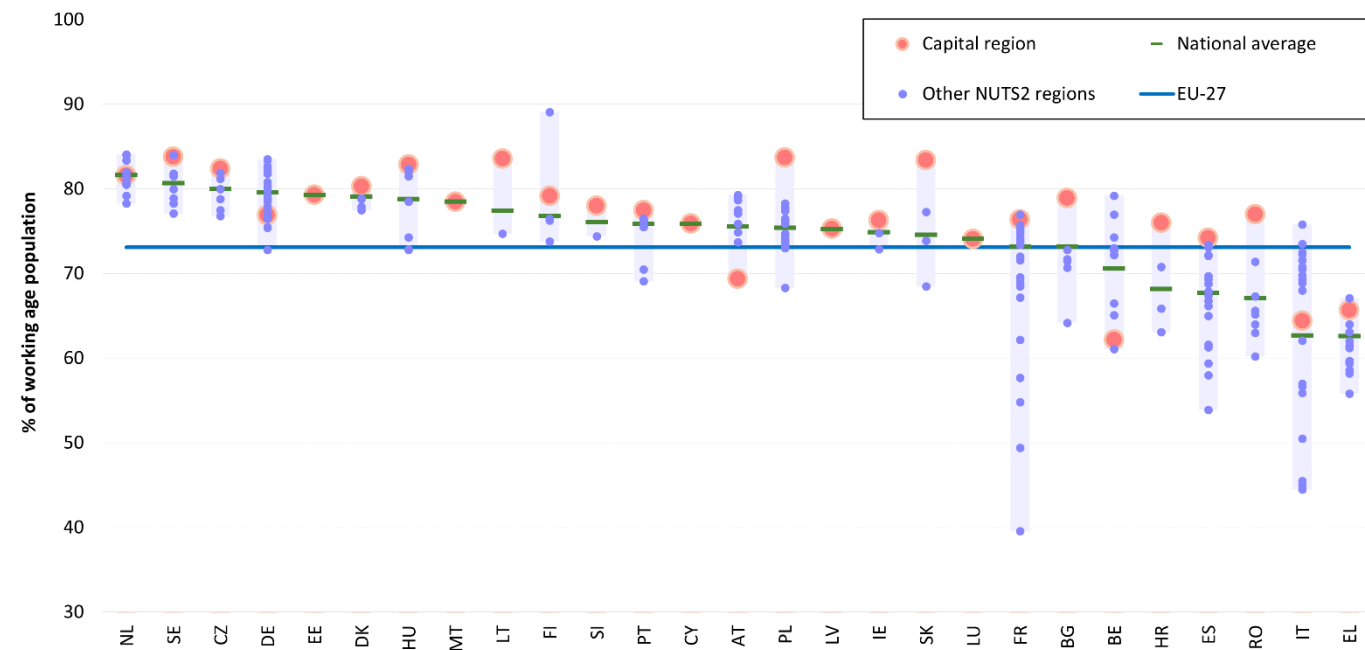
Analysis at regional level – Demography

- EU population grew until 2019; but since then, 'aging' exceeds net-migration.

- High population trend disparities across Member States. MT, LU, in some FR-OR (>20% growth); other regions with decline >10%, e.g. BG-Severozapaden + Severen tsentralen, HR-Panonska Hrvatska, LT-Vidurio ir vakarų Lietuvos regionas).

- Disparities within Members States often lower; but FR (45 percentage points).

- Less developed rural regions tend to be over-represented in the group of regions with declining population

- Important also when seen in the context Communication on "Harnessing talent in Europe's regions"

Population growth in EU-27, Member States, and NUTs II regions, 2011-2020.

Analysis at regional level – Access to basic services

- Access to basic services progressing well but disparities at regional level persist. This is an area where data at regional level is lacking.

- <u>One</u> example for basic services: urban waste water treatment (UWWT). Waste water collection and treatment increased.

- High disparities remain concerning access to basic services, incl. UWWT. Most Member States with (very) high share of urban waste water *collection*, and high share of UWWT. But, lower shares of more stringent UWWT, e.g. PT (62%), RO (50%), and HR (6%).

- Some regions with very low stringent UWWT, e.g. HR-Jadranska Hrvatska, HR-Sjeverna Hrvatska, FR-OR-Guiana, FR-OR-Mayotte, and PT-OR-Região Autónoma da Madeira. However, variations in region- / context-specific guidelines, e.g. for costal regions.

Share of urban waste water receiving more stringent treatment, EU-27, Member States, and NUTs II regions, 2020.