




ESPON Seminar Bratislava

“Where are European cities heading? Evidence for better policy-making”

Training Session : Monitoring Tools

European Territorial Monitoring System

Oriol Biosca, MCRIT SL (obiosca@mcrit.com)



Inspire policy making by territorial evidence

Partners behind the development of the ETMS

MCRIT, Barcelona

UAB, Autonomous University of Barcelona

UNIGE, University of Geneva

Nordregio, Stockholm

GISAT, Prague



<http://etms.espon.eu/>

European Territorial Monitoring System

- Home
- MAP ANALYSIS
- TRENDS WATCH
- Publications
- Resources
- Documentation

Welcome!

- MAP ANALYSIS webtool
- TRENDS WATCH webtool
- ETMS Publications
- ESPON tools and resources
- ETMS Documentation

"The European Territorial Monitoring System (ETMS) developed by ESPON provides continuous territorial evidence on key development trends in European regions, specific type of territories, metropolitan regions, cities and towns in relation to the main policy orientations and objectives related to the TA2020, Europe 2020 Strategy and thematic objectives of the European Structural and Investment Funds 2014-2020.

The European Territorial Monitoring System (ETMS), builds mainly on indicators and tools developed within the ESPON Programme, and which can serve as basis for a continuous monitoring of European territorial trends."

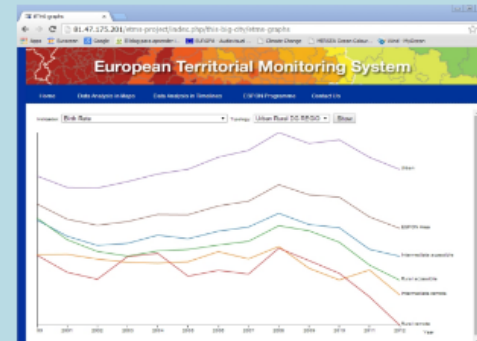
Monitoring Tools

Territorial trends in maps
EXPLORE DATA ON MAPS ...



This tool allows exploring, analysing and benchmarking territorial indicators at different graphical levels, filtered by territorial typologies and structures, namely regional typologies defined for NUTS delimitations, territories with specificities (e.g. mountains, islands), cities (based on Large

Territorial trends 2000-2012
EXPLORE DATA ON TIMELINES...



This tool is aimed at providing synthetic representation of territorial trends by different regional typologies, analytically in linear time lines. Typologies include e.g. urban-rural, Structural fund eligibility, EUROSTAT's Metropolitan Regions.

Objectives of the ETMS:

- Continuous monitoring of territorial trends and patterns,
- Detailed for different types of territories, metropolitan regions, cities and towns,
- Related to spatial policy documents: Europe 2020 Strategy, EU Cohesion Policy and the TA 2020”.

First step: indicators proposed by ESPON INTERCO

| Indicator | Spatial resolution | Years available | Disparities (1) | Trend (2) |
|---|--------------------------------|-----------------|-----------------|-----------|
| Strong local economies ensuring global competitiveness | | | | |
| GDP per capita in PPS | NUTS 3 | 1997-2008 | high | |
| Unemployment rate | NUTS 3 | 1999-2009 | high | |
| Old age dependency ratio | NUTS 3 | 2000-2010 | medium | |
| Labour productivity in industry and services | NUTS 2 | 2007 | n.a. | n.a. |
| Labour productivity per person employed | NUTS 0 | 1995-2010 | medium | |
| Innovative territories | | | | |
| Population aged 25-64 with tertiary education | NUTS 2 | 2008-2010 | medium | |
| Intramural expenditures on R&D | NUTS 2 | 2007 | high | n.a. |
| Employment rate 20-64 | NUTS 2 | 1999-2009 | small | |
| Fair access to services, market and jobs | | | | |
| Access to compulsory school | NUTS 0, degree of urbanisation | 2008 | very high | n.a. |
| Access to hospitals | NUTS 0, degree of urbanisation | 2008 | very high | n.a. |
| Accessibility of grocery services | NUTS 0, degree of urbanisation | 2007 | very high | n.a. |
| Access to university | (SILC data) | 2007 | | n.a. |
| Accessibility potential by road | NUTS 3 | 2001, 2006 | very high | |
| Accessibility potential by rail | NUTS 3 | 2001, 2006 | very high | |
| Accessibility potential by air | NUTS 3 | 2001, 2006 | high | |

1: Disparities: StDev / Avg = 0-0.2 small disparities; 0.2-0.4 medium disparities; 0.4-0.6 high disparities; >0.6 very high disparities

2 : trends towards cohesion: strong trend towards cohesion , trend towards cohesion , disparities remained stable , widening gaps

| Indicator | Spatial resolution | Years available | Disparities (1) | Trend(2) |
|--|--------------------|-----------------|-----------------|----------|
| Inclusion and quality of life | | | | |
| Disposable household income | NUTS 2 | 1996-2007 | medium | |
| Life expectancy at birth | NUTS 2 | 2000-2008 | small | |
| Proportion of early school leavers | NUTS 1 | 2000-2010 | high | |
| Gender imbalances | NUTS 3 | 2000-2009 | small | |
| Difference in female-male unemployment rates | NUTS 2 | 1999-2010 | very high | |
| Ageing index | NUTS 3 | 2000-2010 | small | |
| Attractive regions of high ecological values and strong territorial capital | | | | |
| Potential vulnerability to climate change | NUTS 3 | 2011 | high | n.a. |
| Air pollution: PM ₁₀ | NUTS 3 | 2009 | small | n.a. |
| Air pollution: Ozone concentrations | NUTS 3 | 2008 | medium | n.a. |
| Soil sealing per capita | NUTS 3 | 2006 | very high | n.a. |
| Mortality, hazards and risks | n.a. | n.a. | | |
| Biodiversity | n.a. | n.a. | | |
| Renewable energy potential | n.a. | n.a. | | |
| Integrated polycentric territorial development | | | | |
| Population potential within 50 km | NUTS 3 | 2008 | very high | n.a. |
| Net migration rate | NUTS 3 | 2007 | medium | n.a. |
| Cooperation intensity | NUTS 2 | 2008 | high | n.a. |
| Cooperation degree | NUTS 2 | 2008 | medium | n.a. |
| Polycentricity index | n.a. | n.a. | | |

Table 1. Territorial objectives and top indicators - territorial cohesion analysis

Second step: EU2020 strategy targets

Europe 2020: 5 EU targets



By 2020:

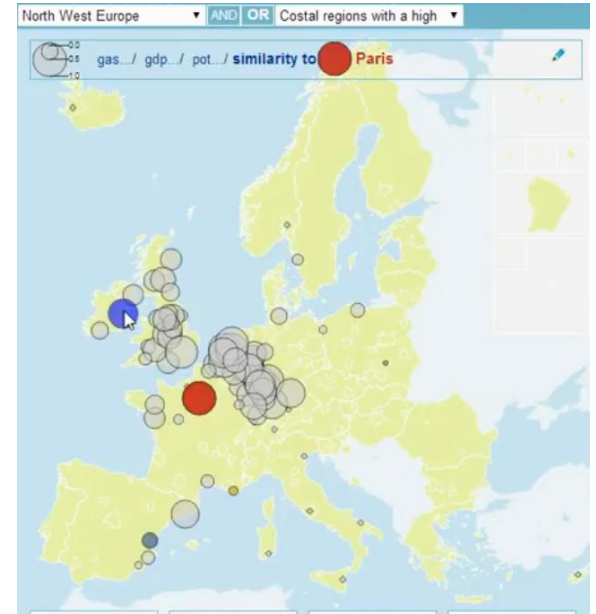
- 75 % **employment** rate (% of population aged 20-64 years)
- 3% investment in **R&D** (% of EU's GDP)
- "20/20/20" **climate/energy** targets met (incl. 30% emissions reduction if conditions are right)
- < 10% early school leavers & min. 40% hold tertiary degree
- 20 million less people should be at **risk of poverty**

Supported by 7 Flagship Initiatives

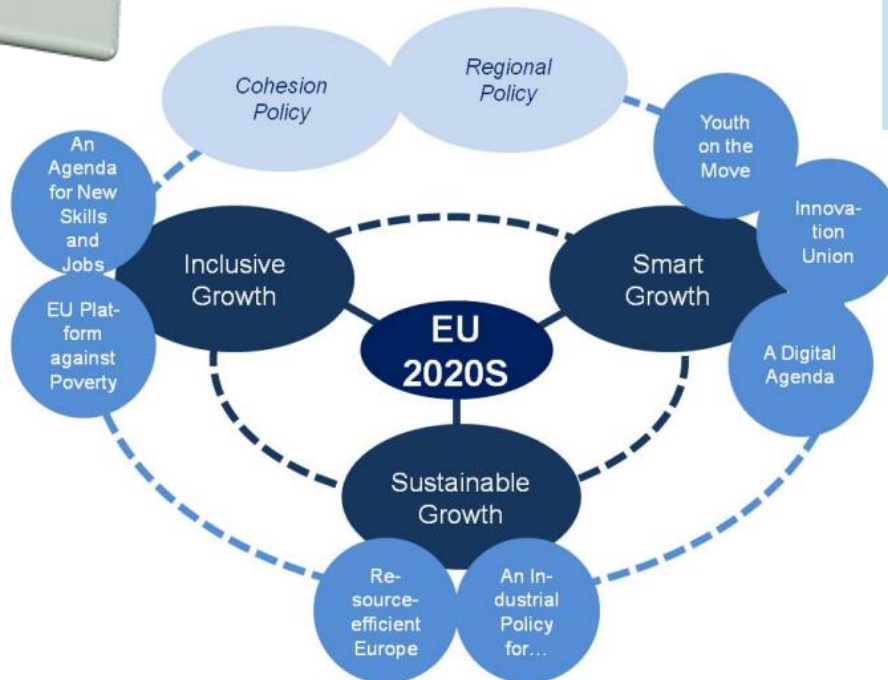
Third step: links to other ESPON monitoring initiatives



Baltic Monitoring BSR-TEMO



CityBench



ESPON SIESTA

Final proposal of indicators for the ETMS

- **35 Indicators**
- **Human Capital, Social Inclusion, Economy, Accessibility, Environment**
- **30 territorial types**
(*urban-rural, Metros, FUA, ERDF, scientific, geographic features, INTERREG, world regions...*)
- **2000-2012 time series**
- **2030 forecasts produced in**
www.et2050.eu

| EU2020 PRIORITIES | ETMS THEMES | ETMS Indicator |
|--------------------|--|--|
| Sustainable Growth | Economic Competitiveness Economy | Debt |
| | | Balance of Accounts |
| | | Total R&D expenditure as % of GDP |
| | | GDP per capita in PPS |
| | | GDP-PPS per person employed |
| | Employment per sector* | |
| | Environmental Qualities Environment | Share of RES in Final Energy Consumption |
| | | Air pollution: PM10 |
| | | Degree of soil sealing |
| | | Land use pattern* |
| | | |
| Smart Growth | Human Capital Human capital | Population potential within 45 min |
| | | Net migration rate |
| | | Total population change |
| | | Birth rate |
| | | Old age dependency ratio |
| | | Share of aged 30-34 with tertiary education attainment |
| Inclusive Growth | Social Inclusion Social Inclusion | Employment rate 20-64 years |
| | | Total employment rate |
| | | Differences between female to male employment rates |
| | | Young unemployment rate |
| | | Elderly employment rate |
| | | Disposable household income |
| | | At-risk-of-poverty rate |
| | Availability of Services & Functions Accessibility | Access to MUAs |
| | | Air connectivity (with 45 minutes drives) |
| | | Connectivity ICON |
| | | Households with broadband access |
| | | Cooperation intensity (ETC) |
| | | |

(* EU2020 target)

Welcome!

[MAP ANALYSIS webtool](#)[TRENDS WATCH webtool](#)[ETMS Publications](#)[ESPON tools and resources](#)[ETMS Documentation](#)

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**TERRITORIAL
MAPS** →

Territorial trends in maps

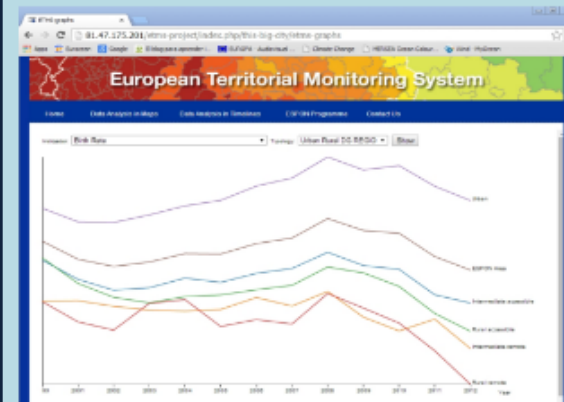
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Territorial trends 2000-2012

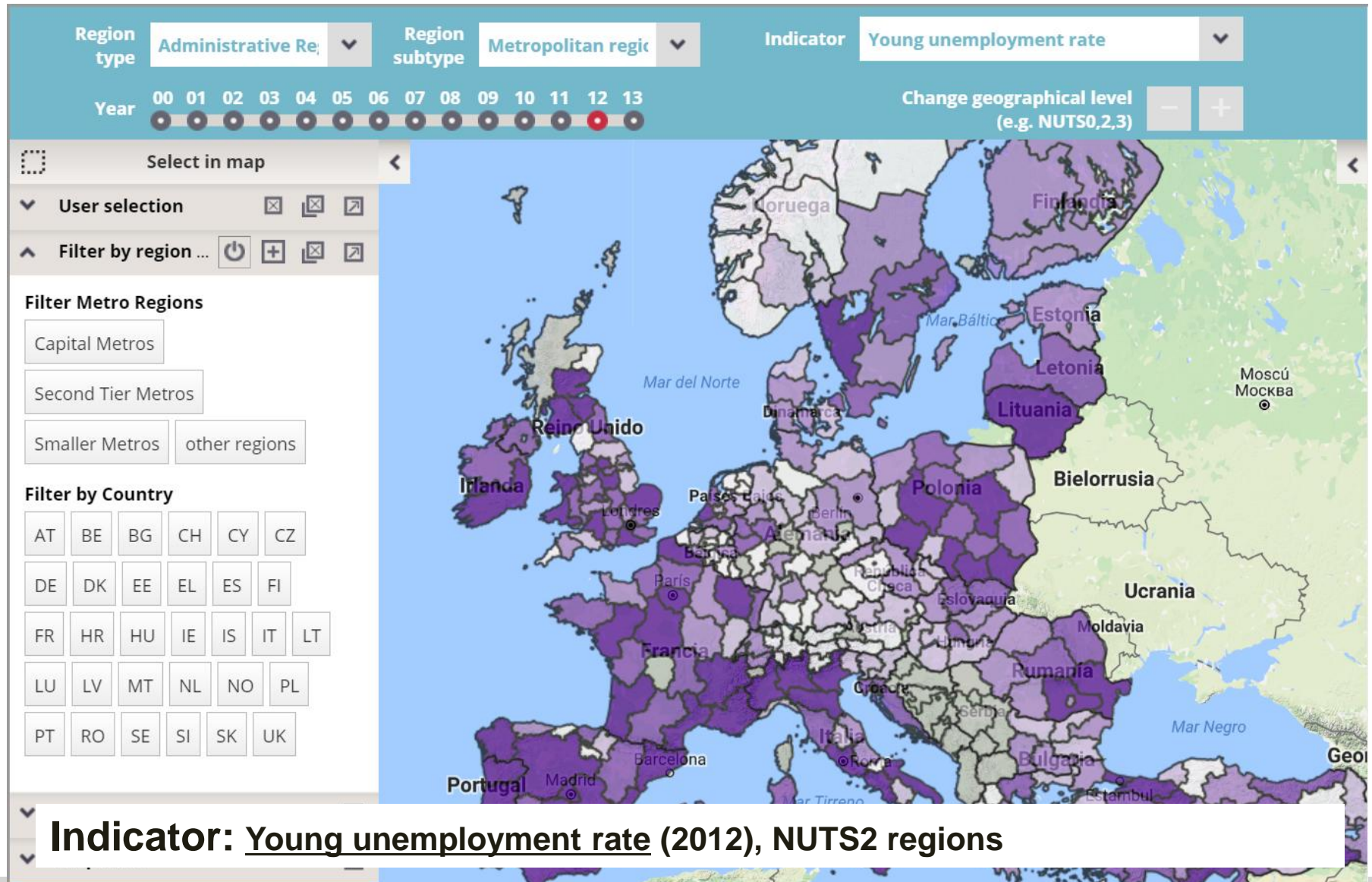
EXPLORE DATA ON TIMELINES...



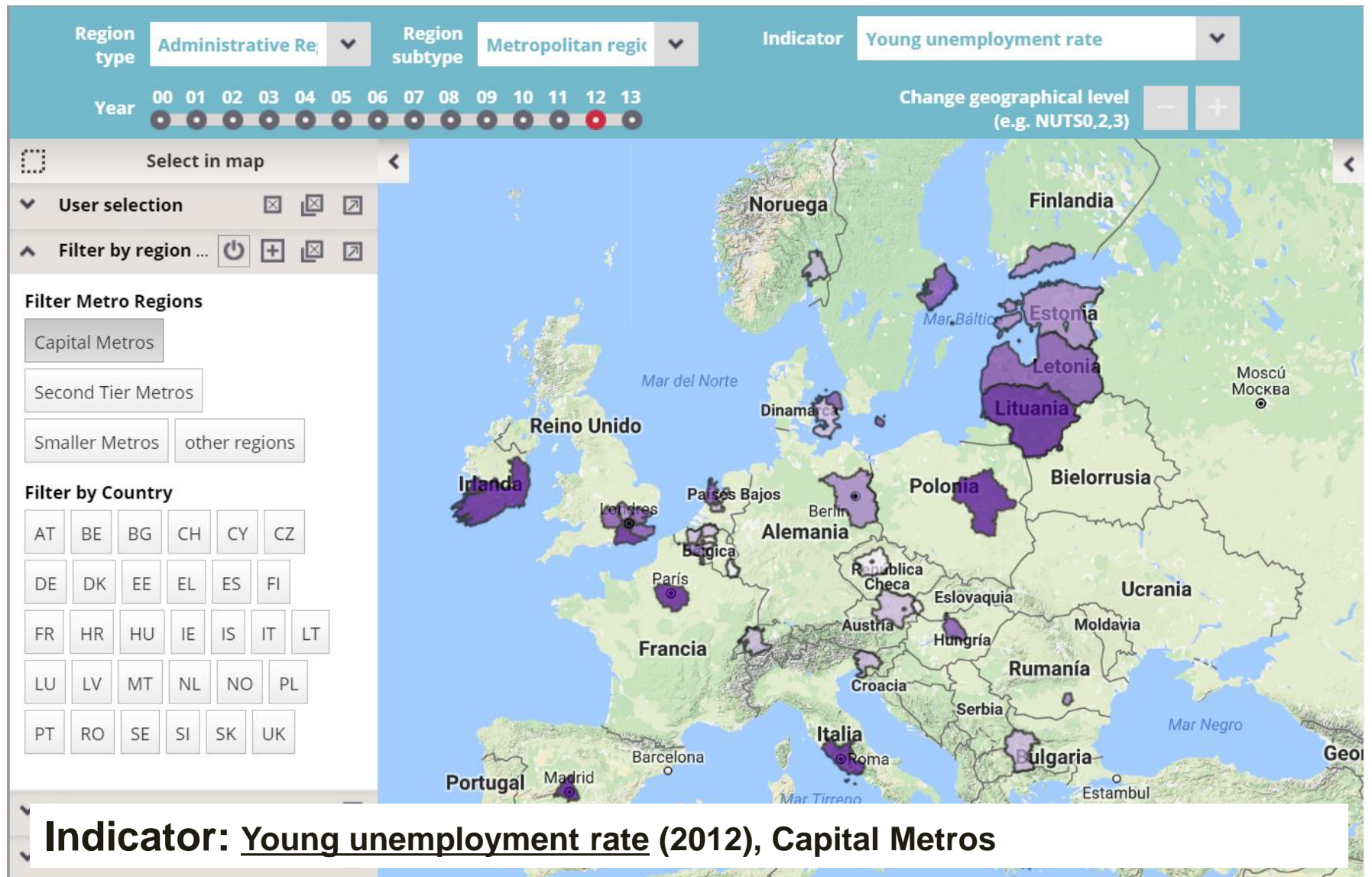
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Thematic by regional typologies

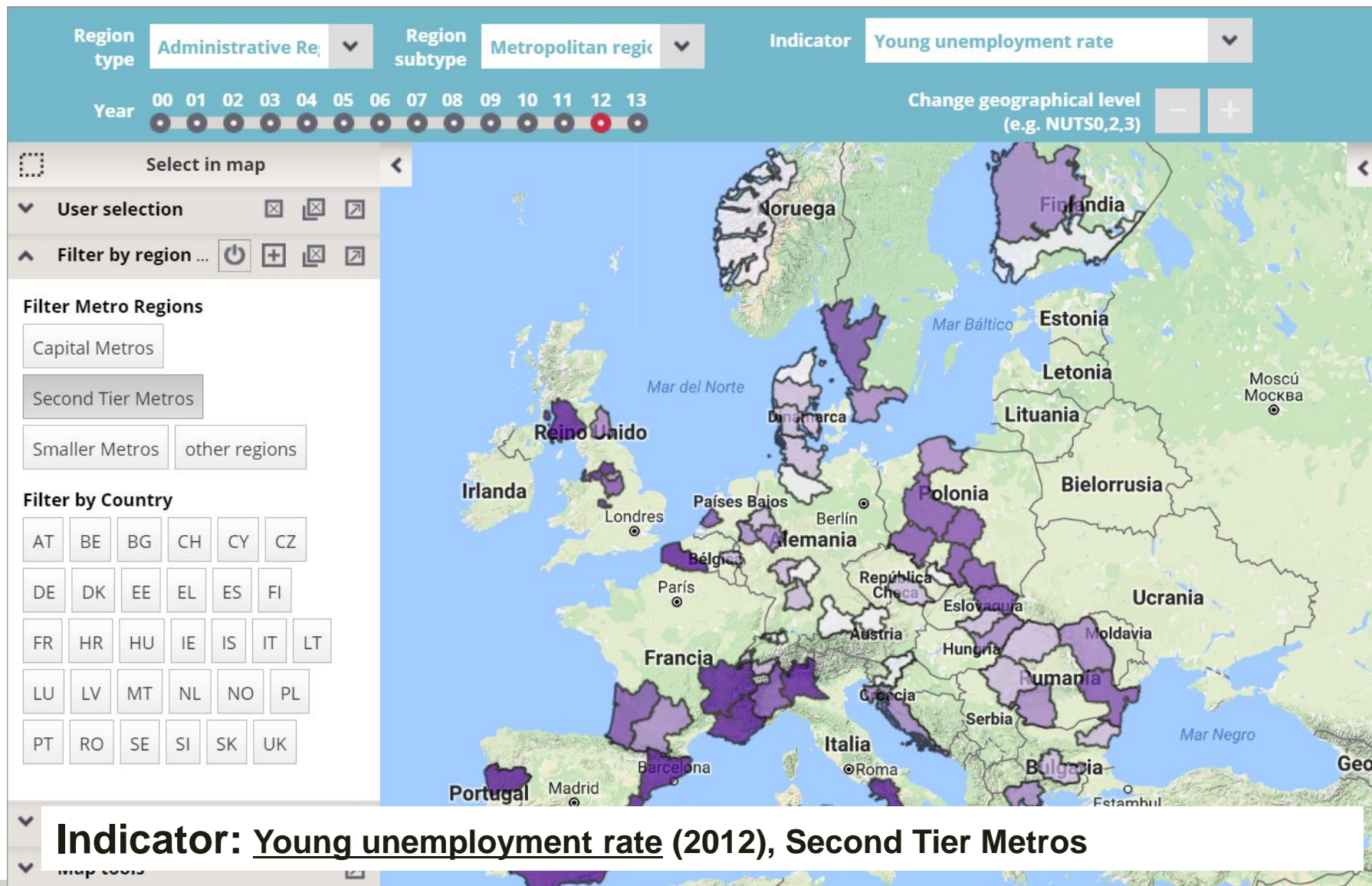
Typology: Metropolitan regions (EUROSTAT)



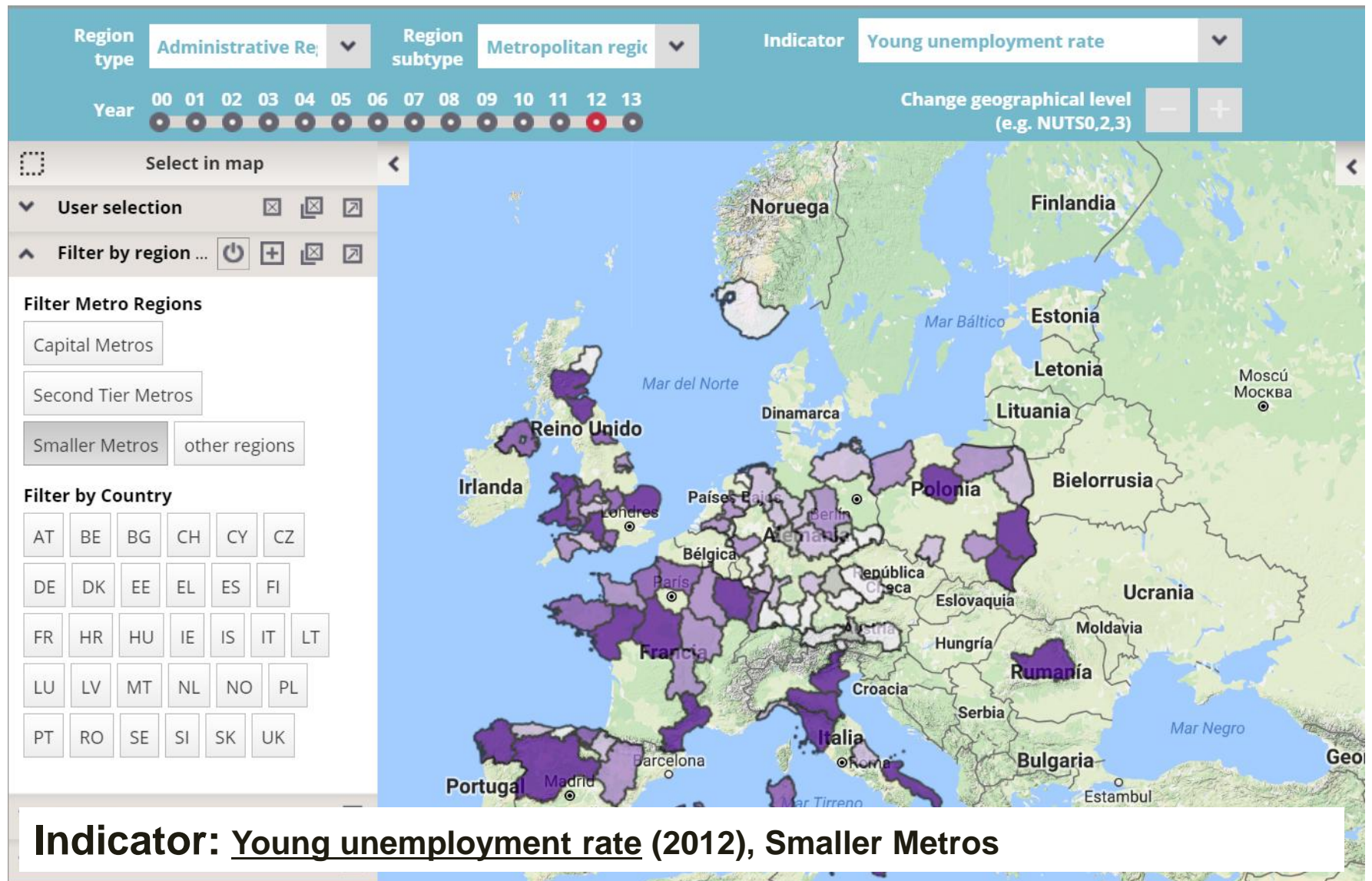
Typology: Metropolitan regions (EUROSTAT)



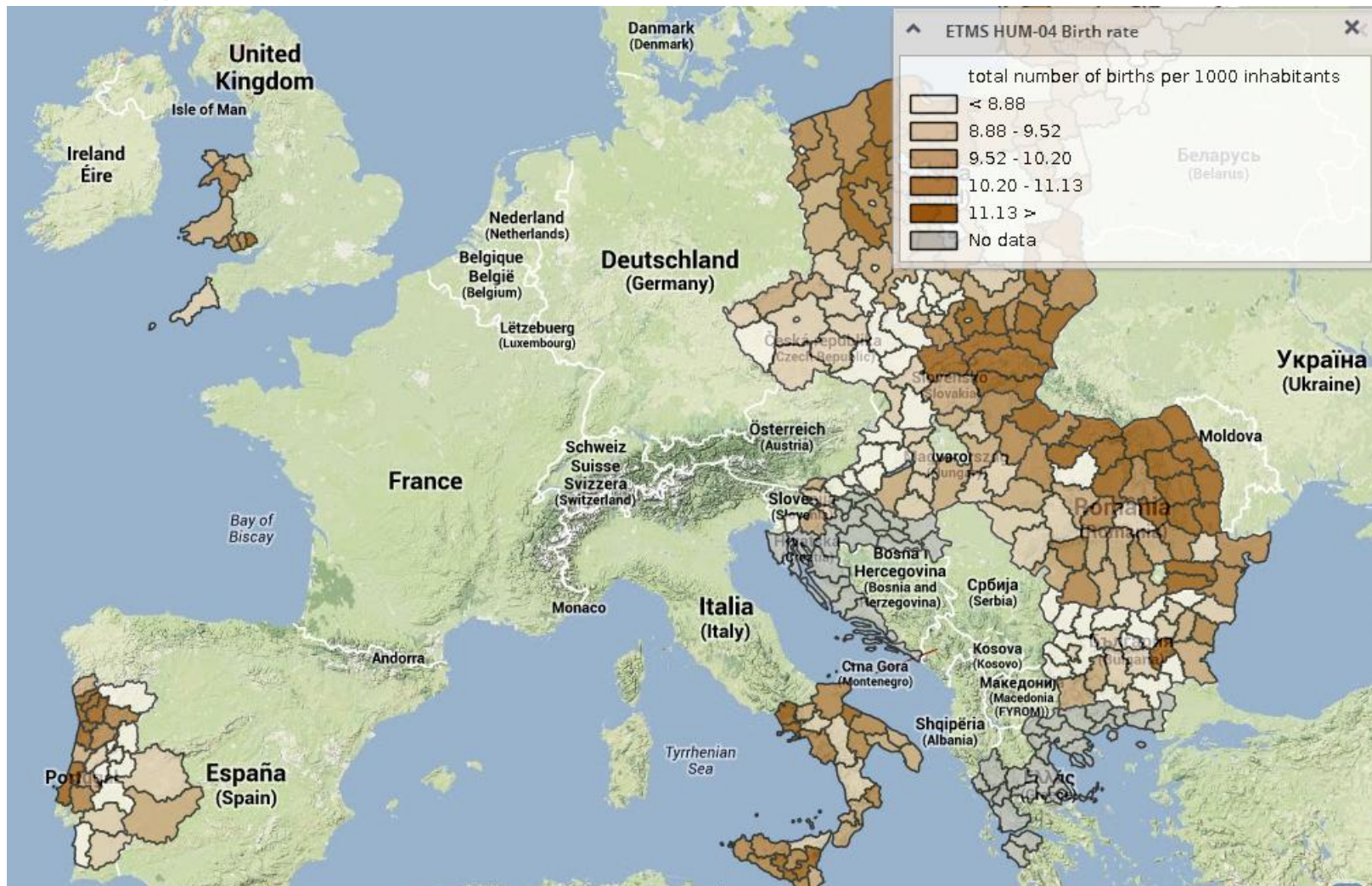
Typology: Metropolitan regions (EUROSTAT)



Typology: Metropolitan regions (EUROSTAT)

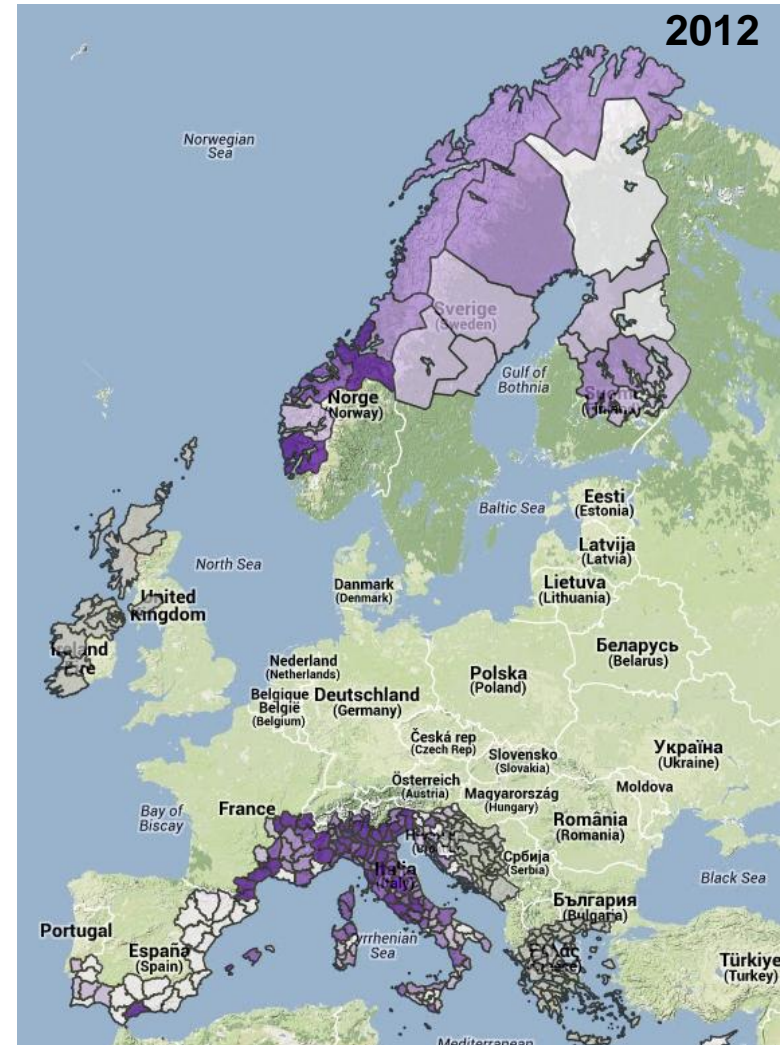
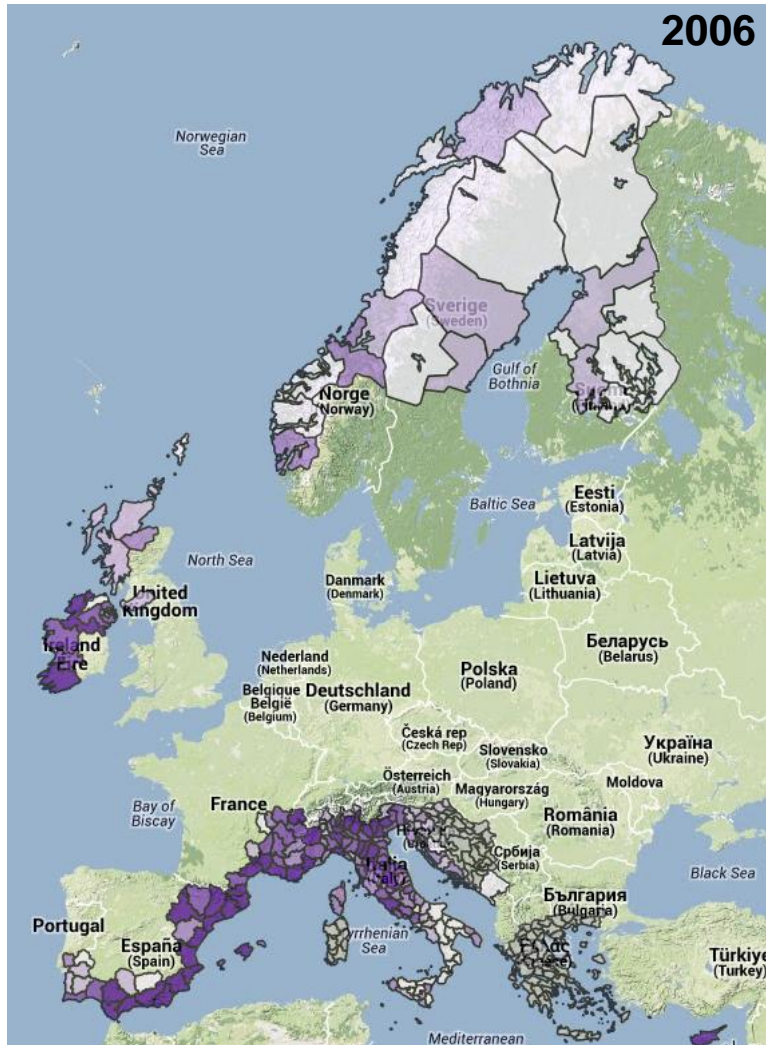


Typology: ESF/ERDF 2014-2020: less developed – transition - more developed



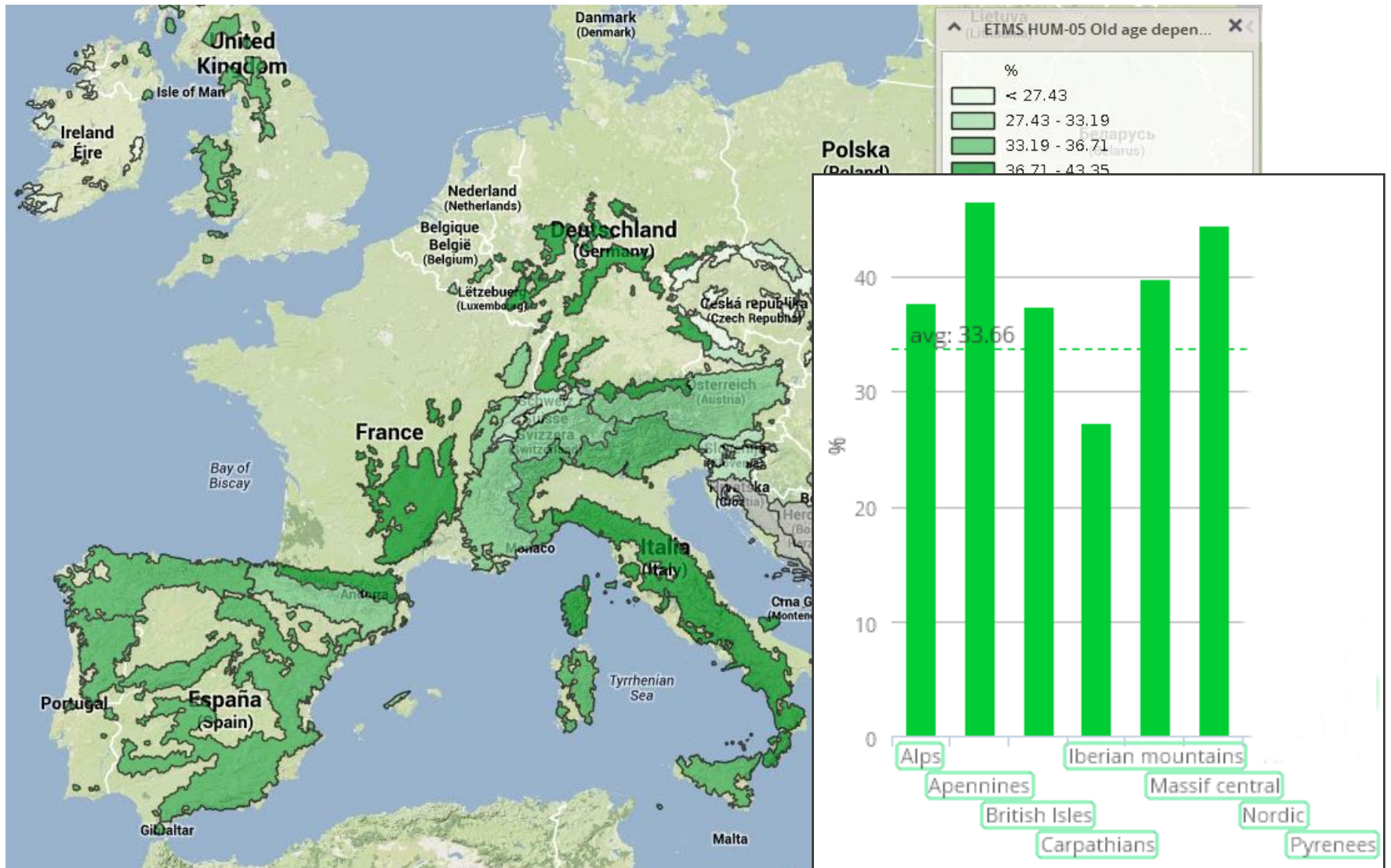
Indicator: Birth rate (children per 1000 inhab.) for “Less Developed Regions”

Typology: INTERREG Cooperation Areas



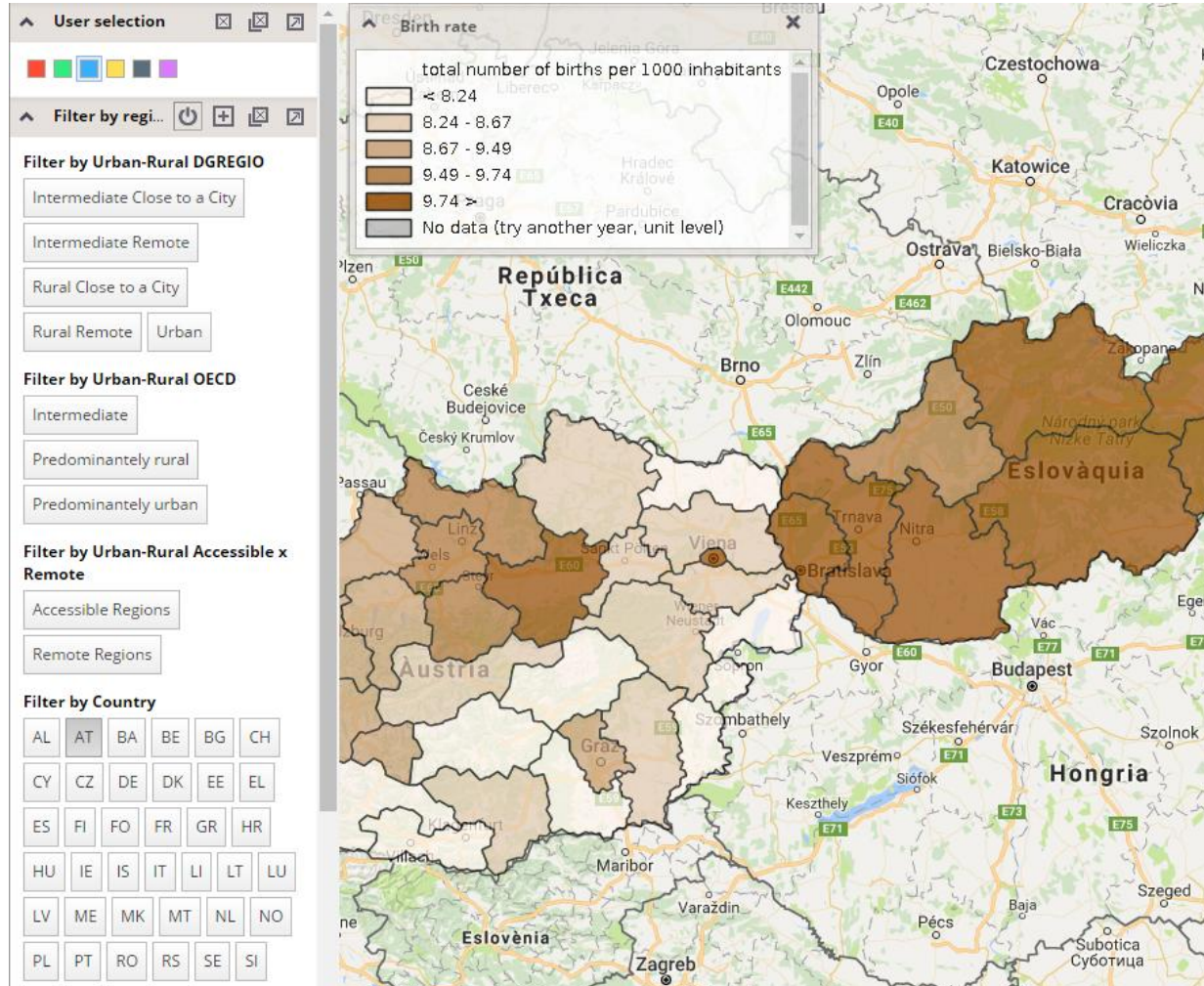
Indicator: Migrations (persons per year). Mediterranean and Northern Peripheries

Typology: Mountain Massifs in Europe



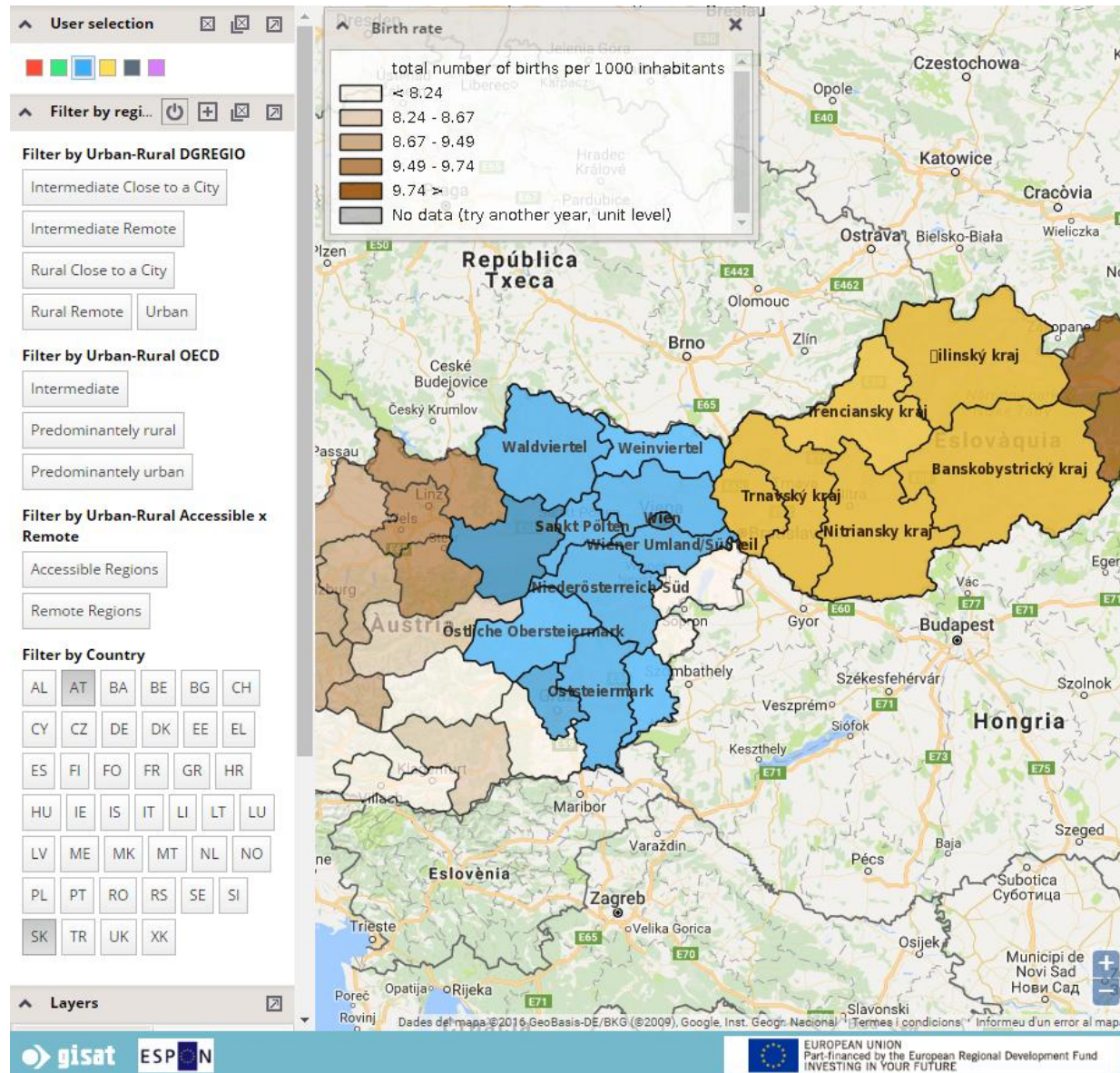
Compare selected regions for a given indicator

1. Filter NUTS3 regions for Slovakia and Austria

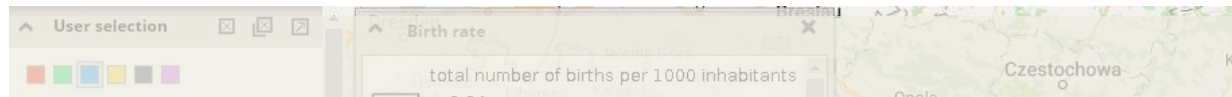


Indicator: **Birth rate (children per 1000 inhab.) for “Less Developed Regions”**

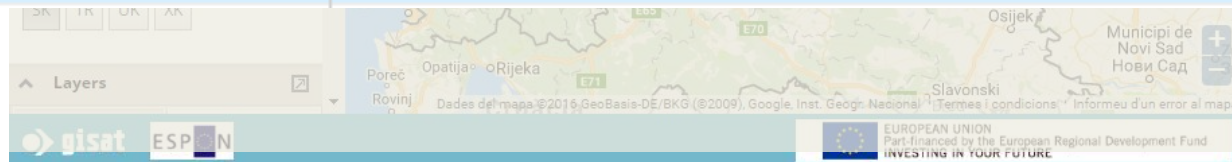
2. Select a number of regions in the Slovak-Austrian border



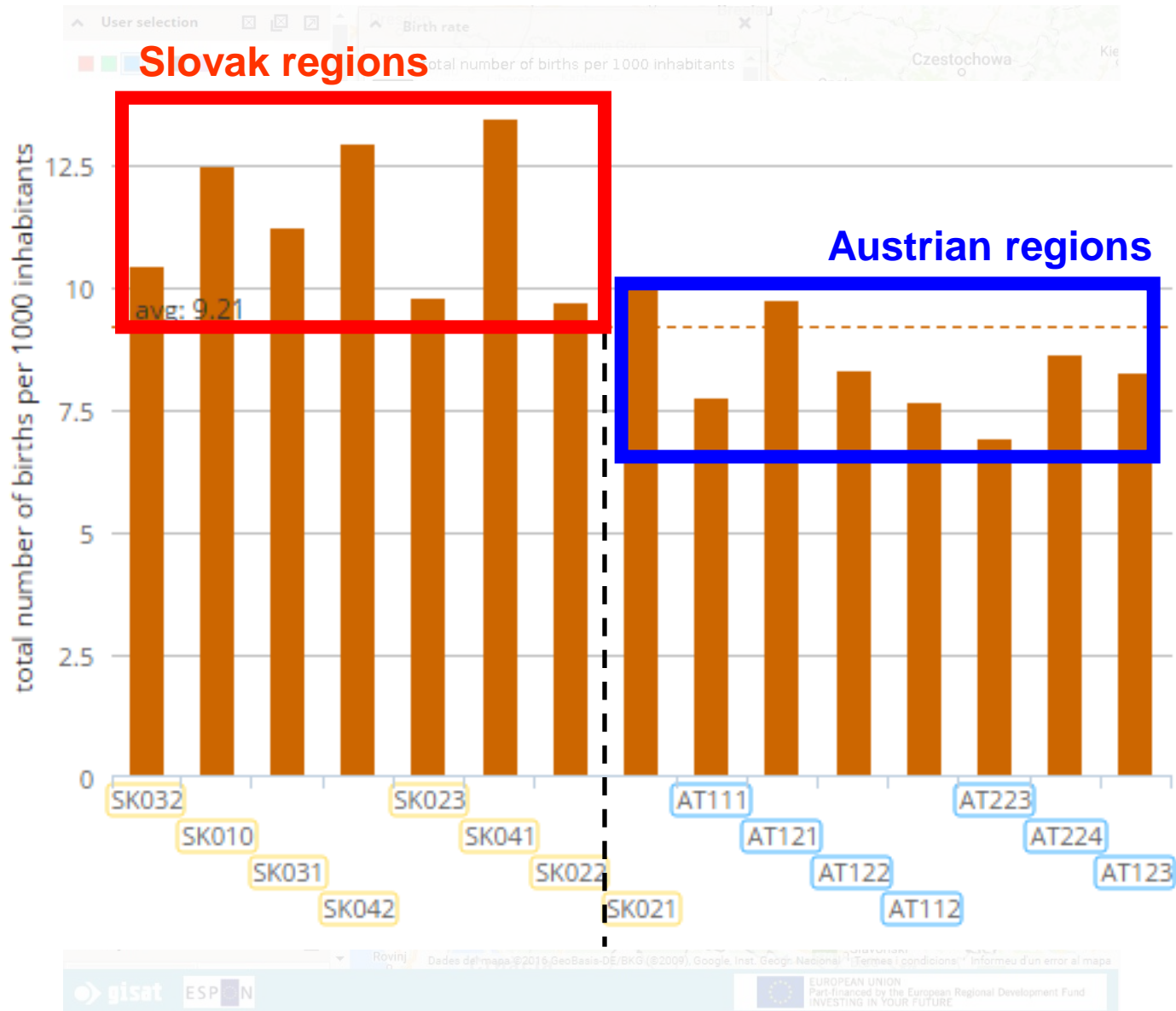
3. Quantitative tables over time for selected regions



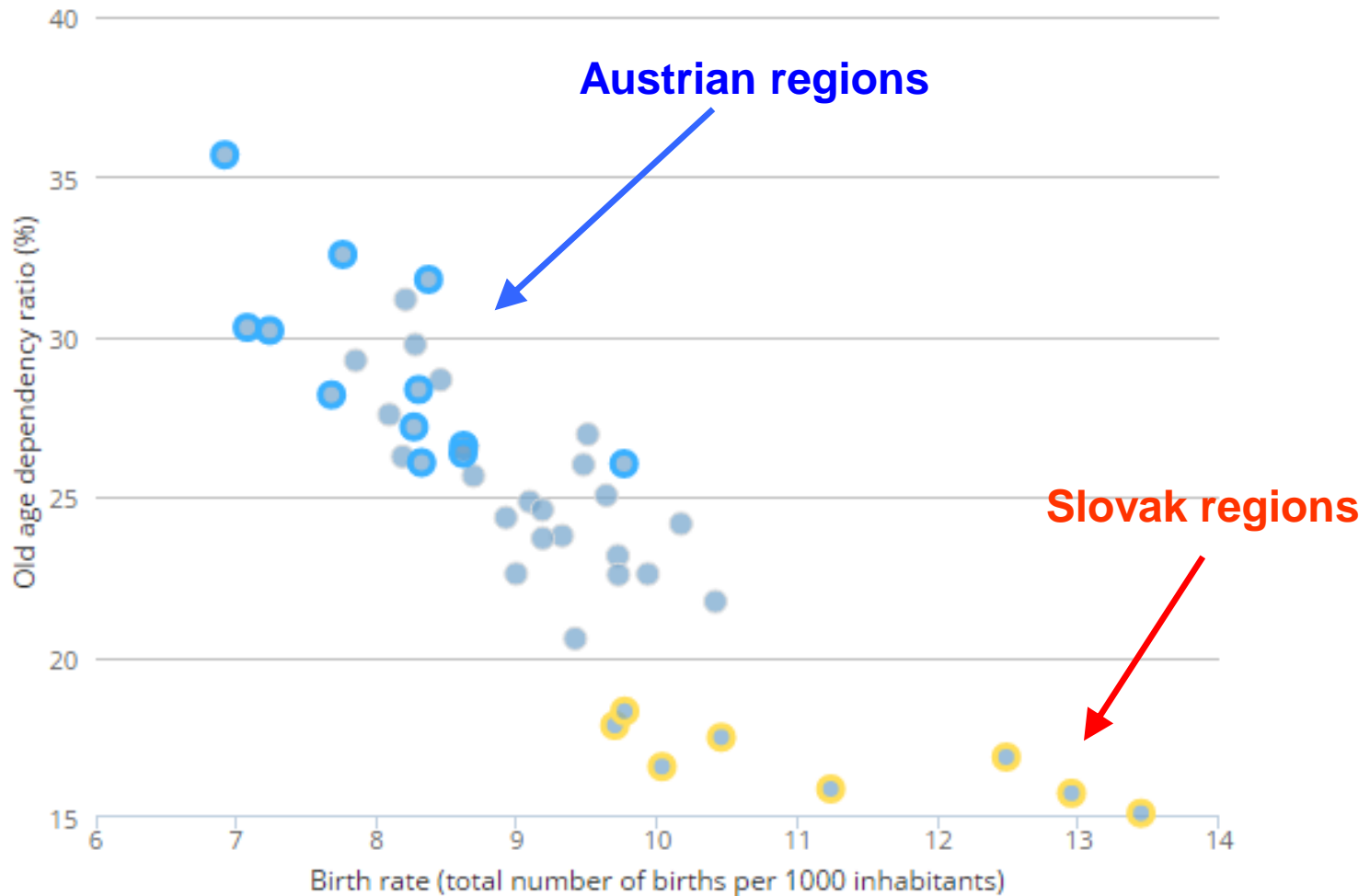
| Name | 2000 | 2001 | 2002 | 2003 |
|-------------------------|-------|-------|-------|-------|
| Banskobystrický kraj | 9.58 | 9.06 | 9.07 | 9.23 |
| Bratislavský kraj | 7.93 | 7.68 | 7.68 | 8.55 |
| ilinský kraj | 11.22 | 10.25 | 10.25 | 10.12 |
| Koický kraj | 11.93 | 11.11 | 11.35 | 11.57 |
| Nitriansky kraj | 8.81 | 8.13 | 8.14 | 8.32 |
| Preovský kraj | 13.05 | 12.29 | 12.01 | 11.85 |
| Trenciansky kraj | 8.97 | 8.08 | 7.93 | 7.79 |
| Trnavský kraj | 9.04 | 8.34 | 8.17 | 8.55 |
| Mittelburgenland | 7.68 | 7.95 | 7.94 | 7.96 |
| Mostviertel-Eisenwurzen | 10.02 | 10.11 | 10.10 | 10.11 |
| Niederösterreich-Süd | 9.38 | 9.38 | 9.75 | 9.32 |
| Nordburgenland | 8.73 | 8.55 | 7.80 | 8.49 |
| Östliche Obersteiermark | 7.43 | 6.80 | 6.86 | 7.49 |
| Oststeiermark | 9.29 | 8.96 | 8.96 | 8.96 |
| Sankt Pölten | 9.66 | 9.17 | 9.13 | 9.10 |



3. Bars graph



4. Scatter chart with another indicator e.g. Birth Rate vs Old age Dependency Ratio



[MAP ANALYSIS webtool](#)[TRENDS WATCH webtool](#)[ETMS Publications](#)[ESPON tools and resources](#)[ETMS Documentation](#)

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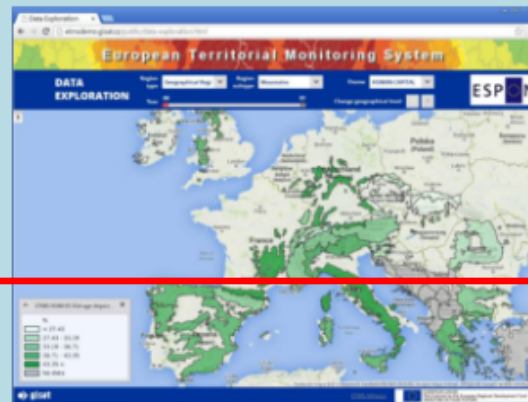
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**1960-2030
TIMELINES**

Territorial trends in maps

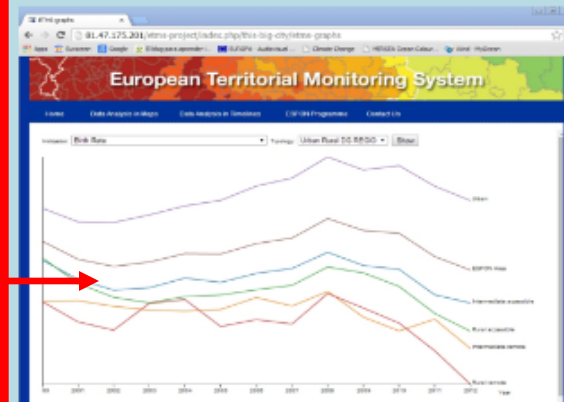
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European regional trends by typologies (2000-2012)

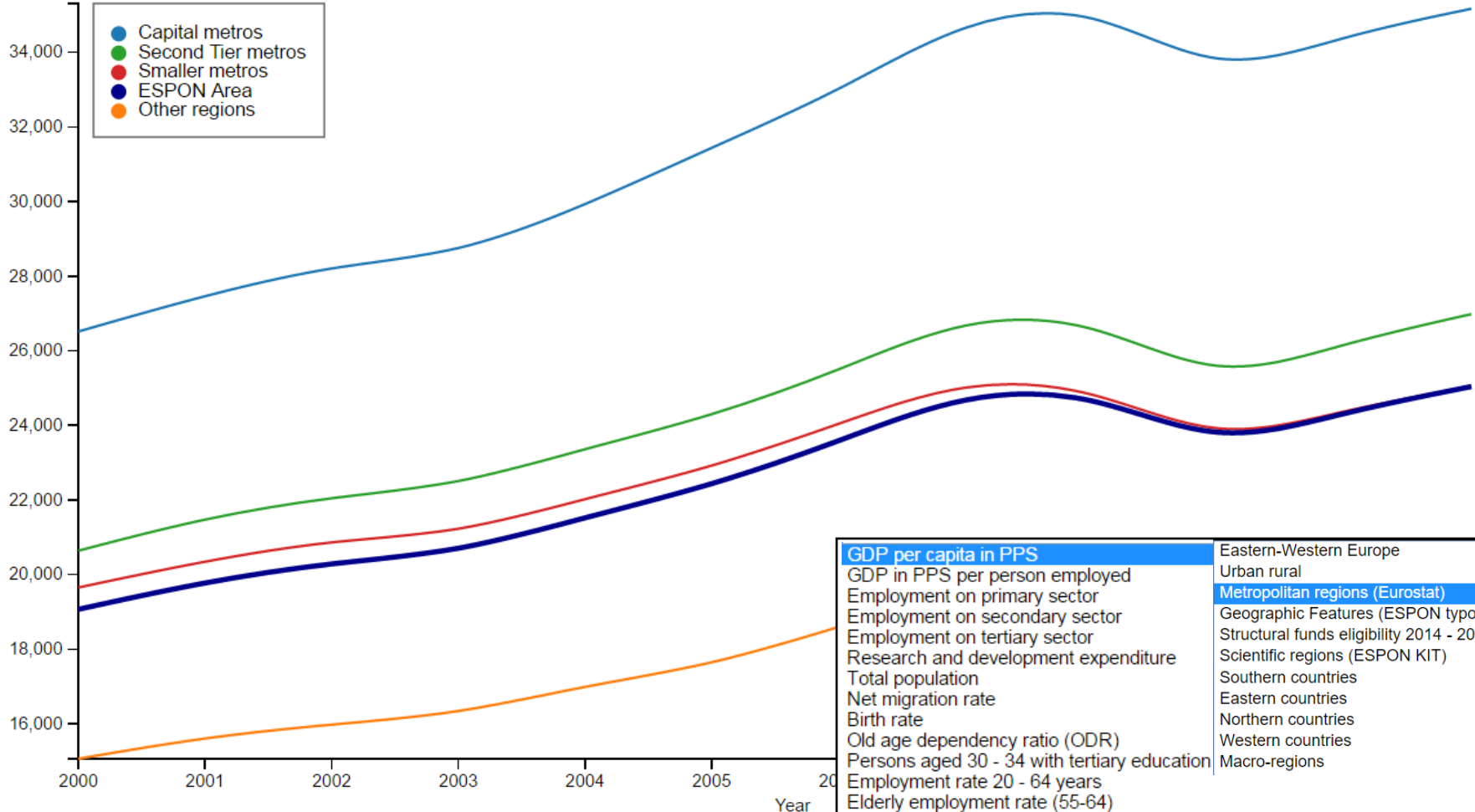
Typology: Metropolitan Regions

Indicator: GDP per capita in PPS Tipology: Metropolitan regions (Eurostat) Type: Trends

€ per capita

GDP per capita in PPS - Metropolitan regions (Eurostat)

- Capital metros
- Second Tier metros
- Smaller metros
- ESPON Area
- Other regions

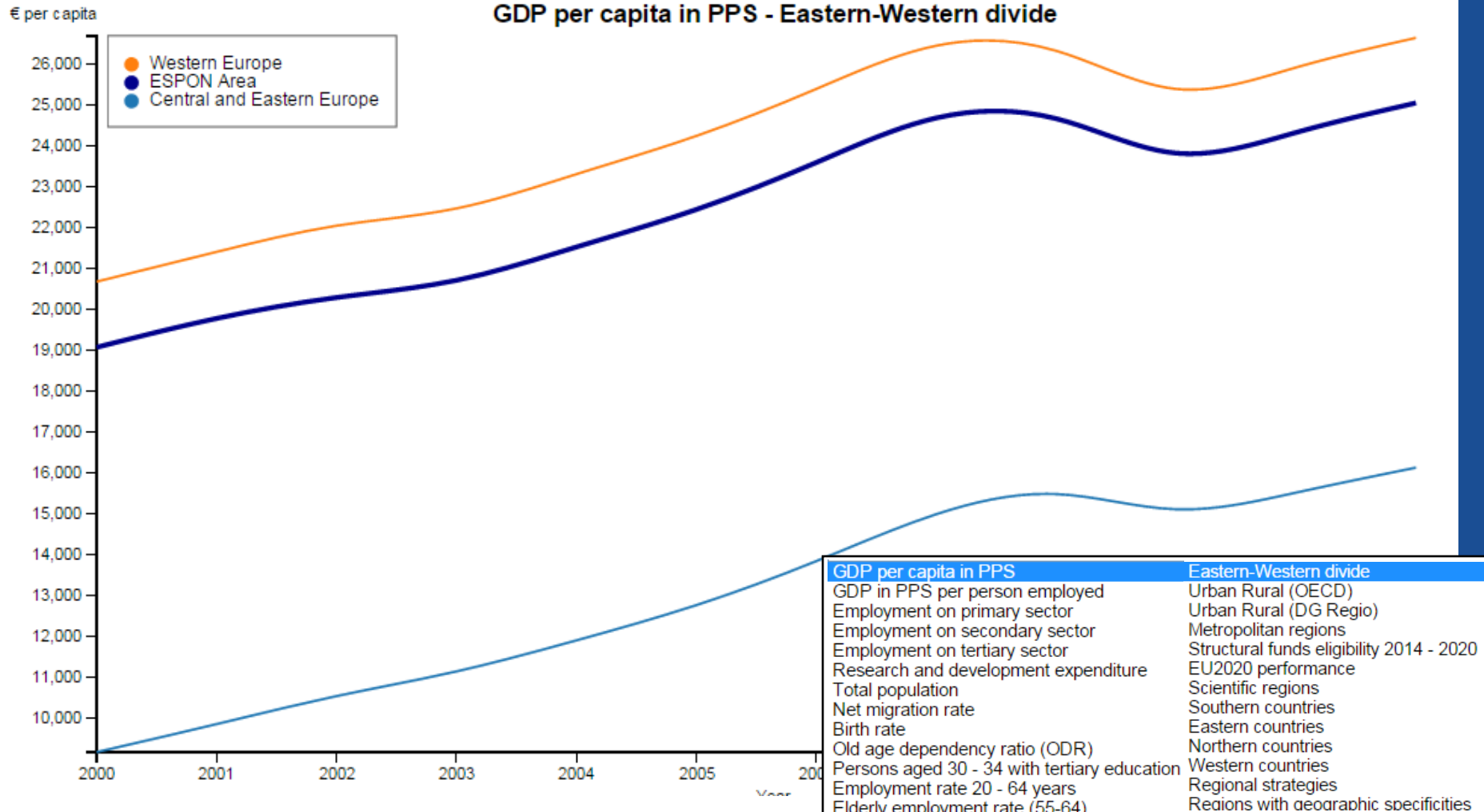


| | |
|--|--|
| GDP per capita in PPS | Eastern-Western Europe |
| GDP in PPS per person employed | Urban rural |
| Employment on primary sector | Metropolitan regions (Eurostat) |
| Employment on secondary sector | Geographic Features (ESPON typology) |
| Employment on tertiary sector | Structural funds eligibility 2014 - 2020 |
| Research and development expenditure | Scientific regions (ESPON KIT) |
| Total population | Southern countries |
| Net migration rate | Eastern countries |
| Birth rate | Northern countries |
| Old age dependency ratio (ODR) | Western countries |
| Persons aged 30 - 34 with tertiary education | Macro-regions |
| Employment rate 20 - 64 years | |
| Elderly employment rate (55-64) | |
| Female employment rate | |
| Male employment rate | |
| Youth unemployment rate (15-24) | |
| Income as PPS based on final consumption | |
| Population at risk of poverty rate | |
| Households with broadband access | |

European regional trends by typologies (2000-2012)

Typology: EU15 – EU12 Member States

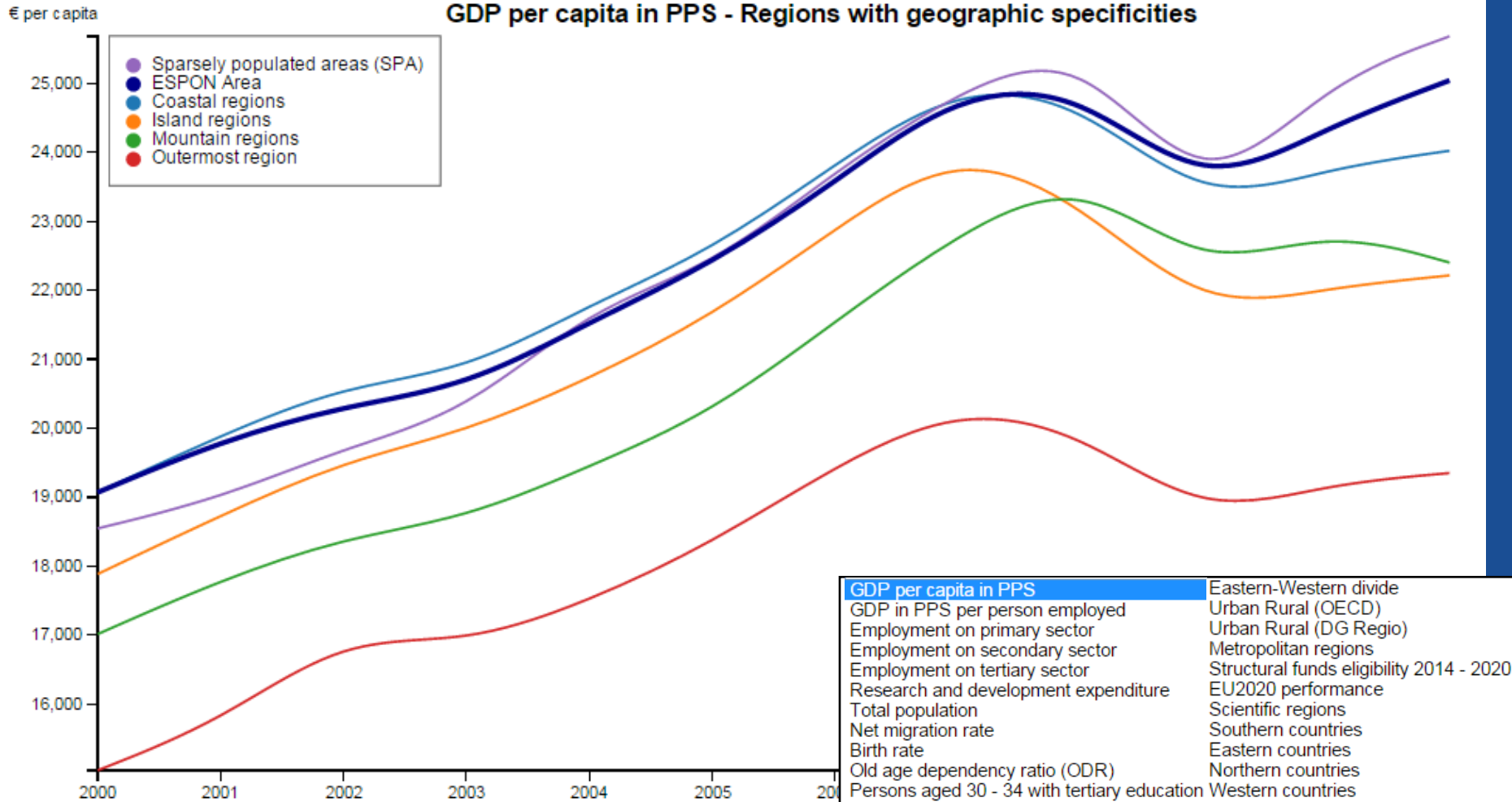
Indicator: GDP per capita in PPS Tipology: Eastern-Western divide Type: Trends



European regional trends by typologies (2000-2012)

Typology: Regions with Geographical Specificities

Indicator: GDP per capita in PPS Typology: Regions with geographic specificities Type: Trends

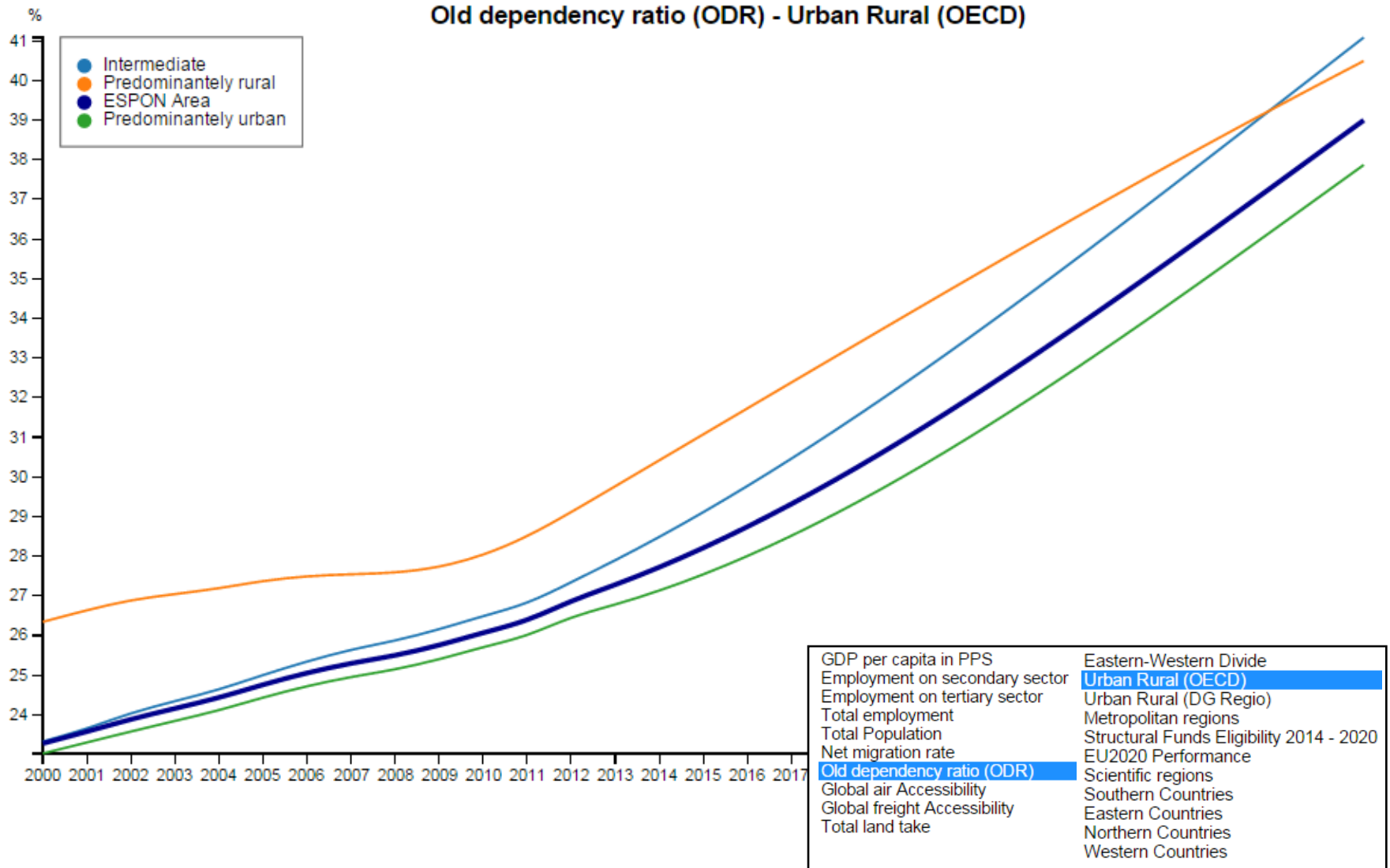


| | |
|--|--|
| GDP per capita in PPS | Eastern-Western divide |
| GDP in PPS per person employed | Urban Rural (OECD) |
| Employment on primary sector | Urban Rural (DG Regio) |
| Employment on secondary sector | Metropolitan regions |
| Employment on tertiary sector | Structural funds eligibility 2014 - 2020 |
| Research and development expenditure | EU2020 performance |
| Total population | Scientific regions |
| Net migration rate | Southern countries |
| Birth rate | Eastern countries |
| Old age dependency ratio (ODR) | Northern countries |
| Persons aged 30 - 34 with tertiary education | Western countries |
| Employment rate 20 - 64 years | Regional strategies |
| Elderly employment rate (55-64) | Regions with geographic specificities |
| Female employment rate | |
| Male employment rate | |
| Youth unemployment rate (15-24) | |
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European 2030 forecasts by regional typologies

Typology: Urban rural typology (OECD & ESPON available)

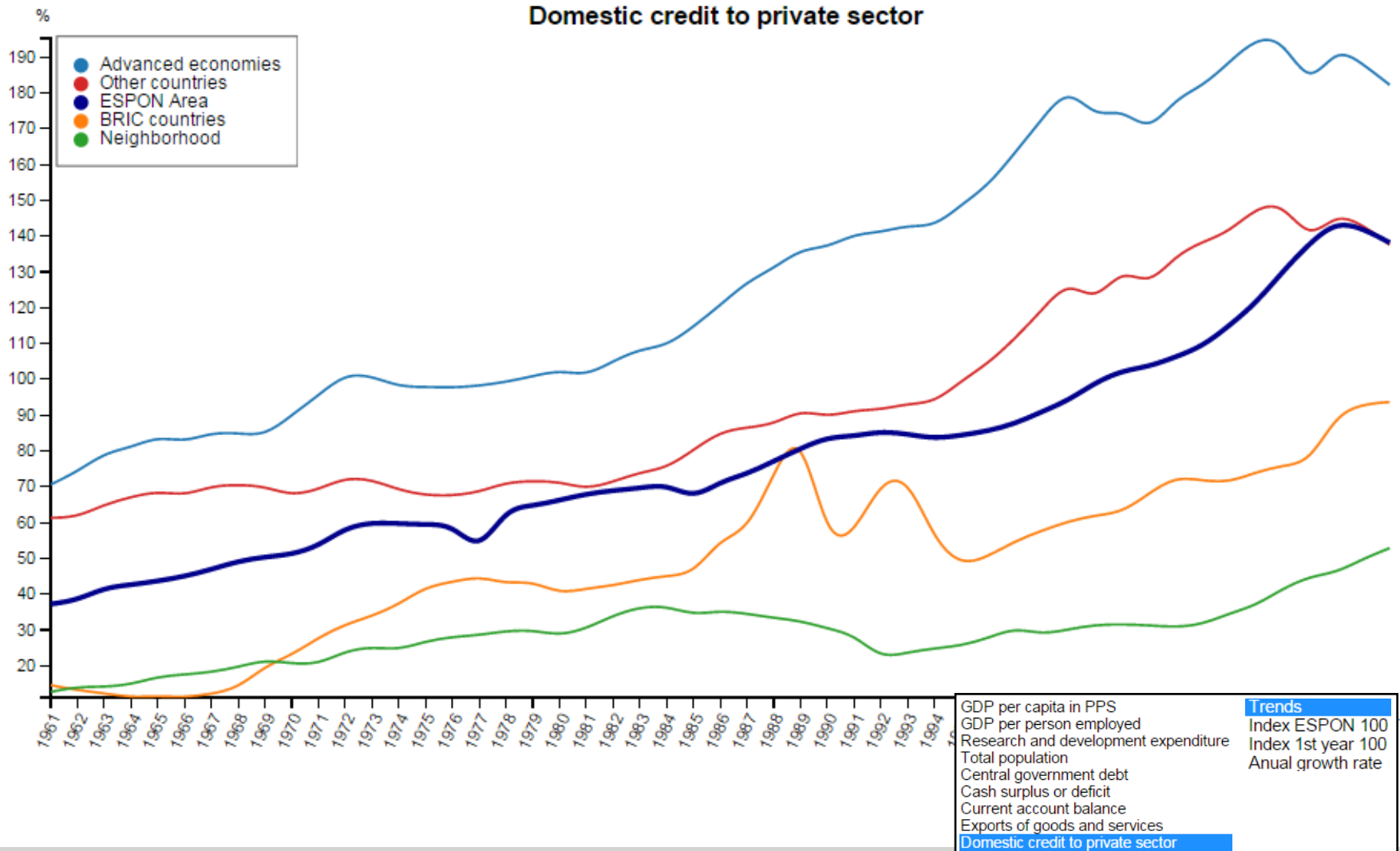
Indicator: Old dependency ratio (ODR) Tipology: Urban Rural (OECD) Type: Trends



Europe in the World context (1960-2012)

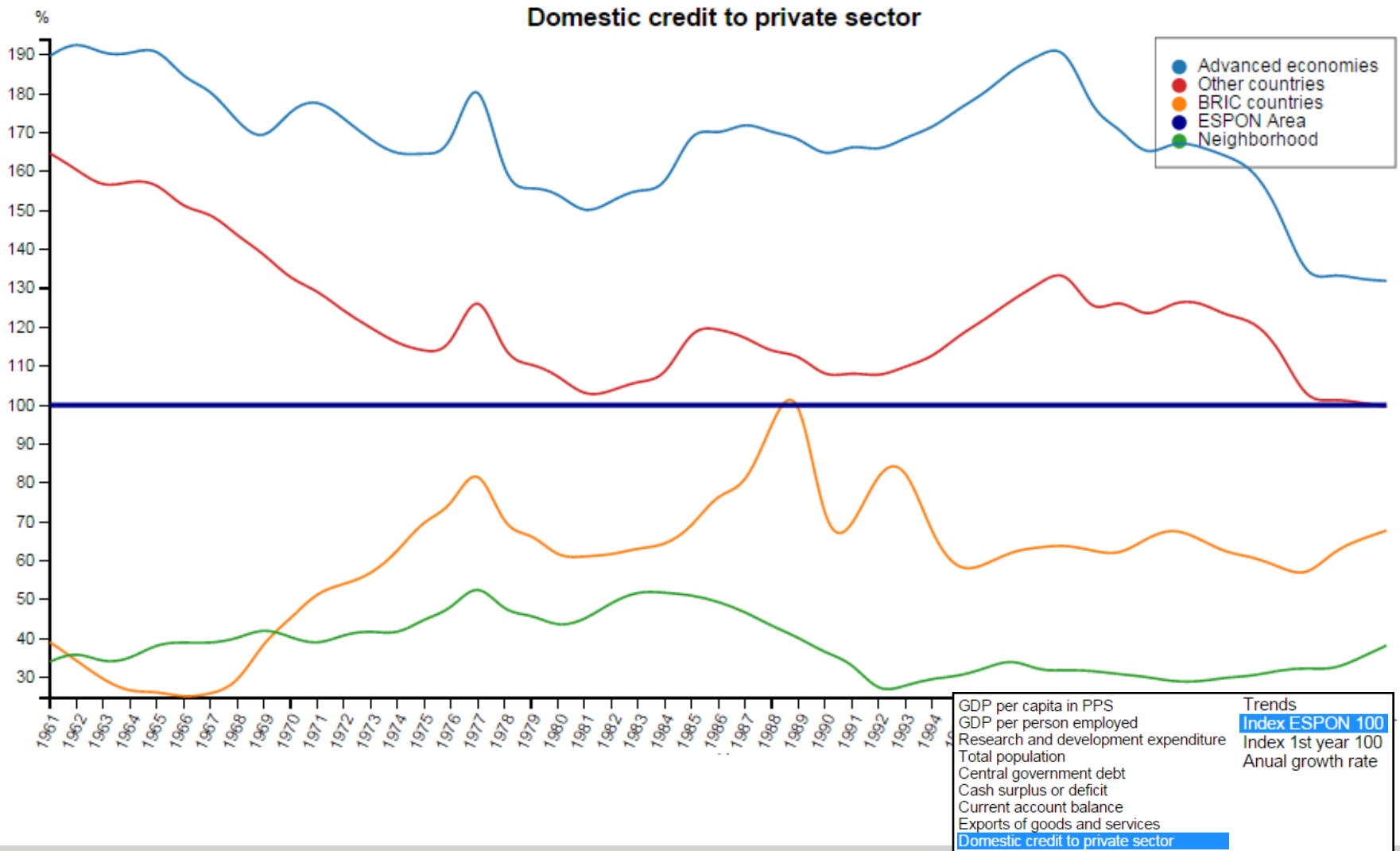
Typology: ESPON, Neighbourhood, Advanced, BRIC

Indicator: Domestic credit to private sector Type: Trends



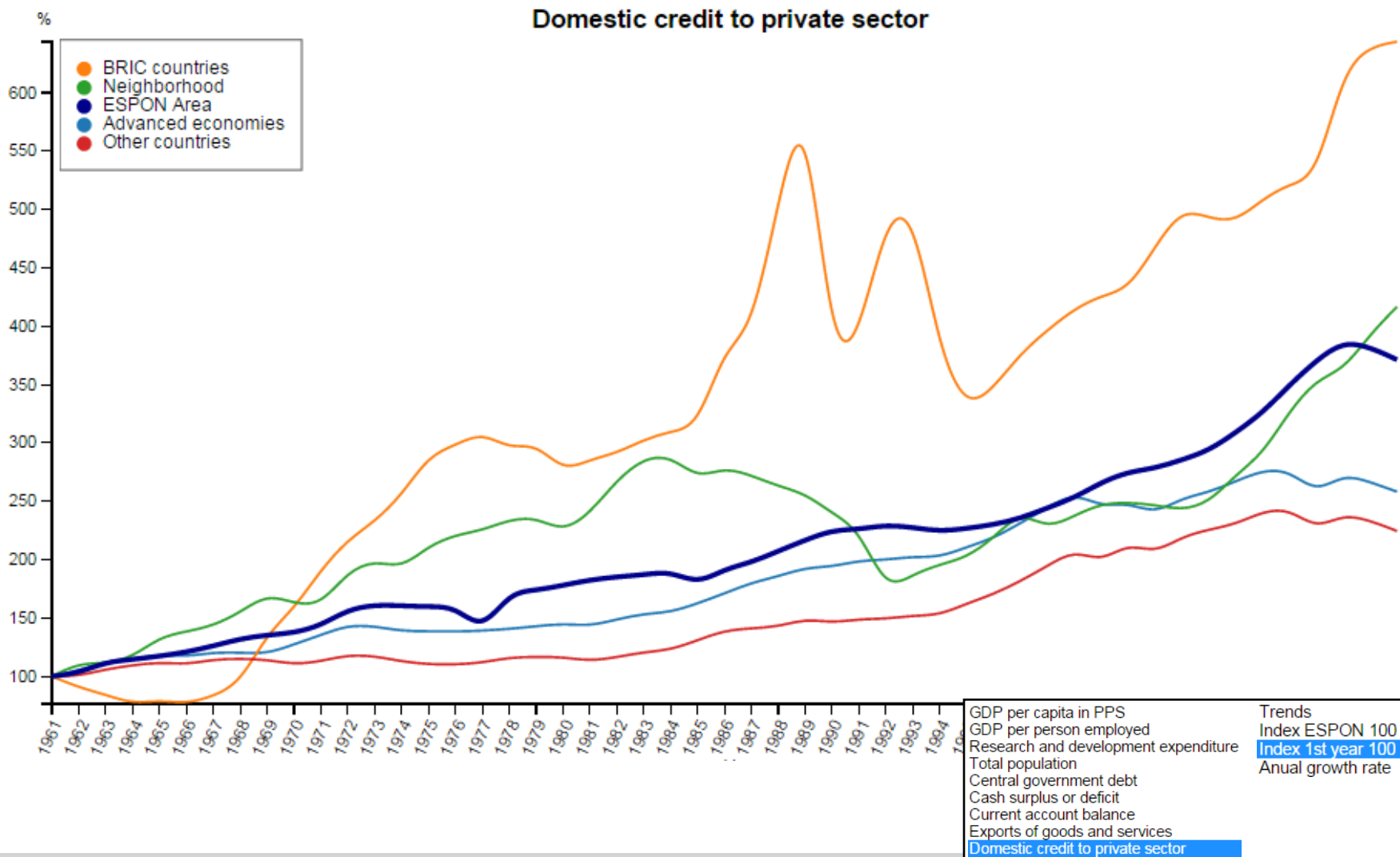
Visualisation: INDEX ESPON = 100

Indicator: Domestic credit to private sector ▼ Type: Index ESPON 100 ▼



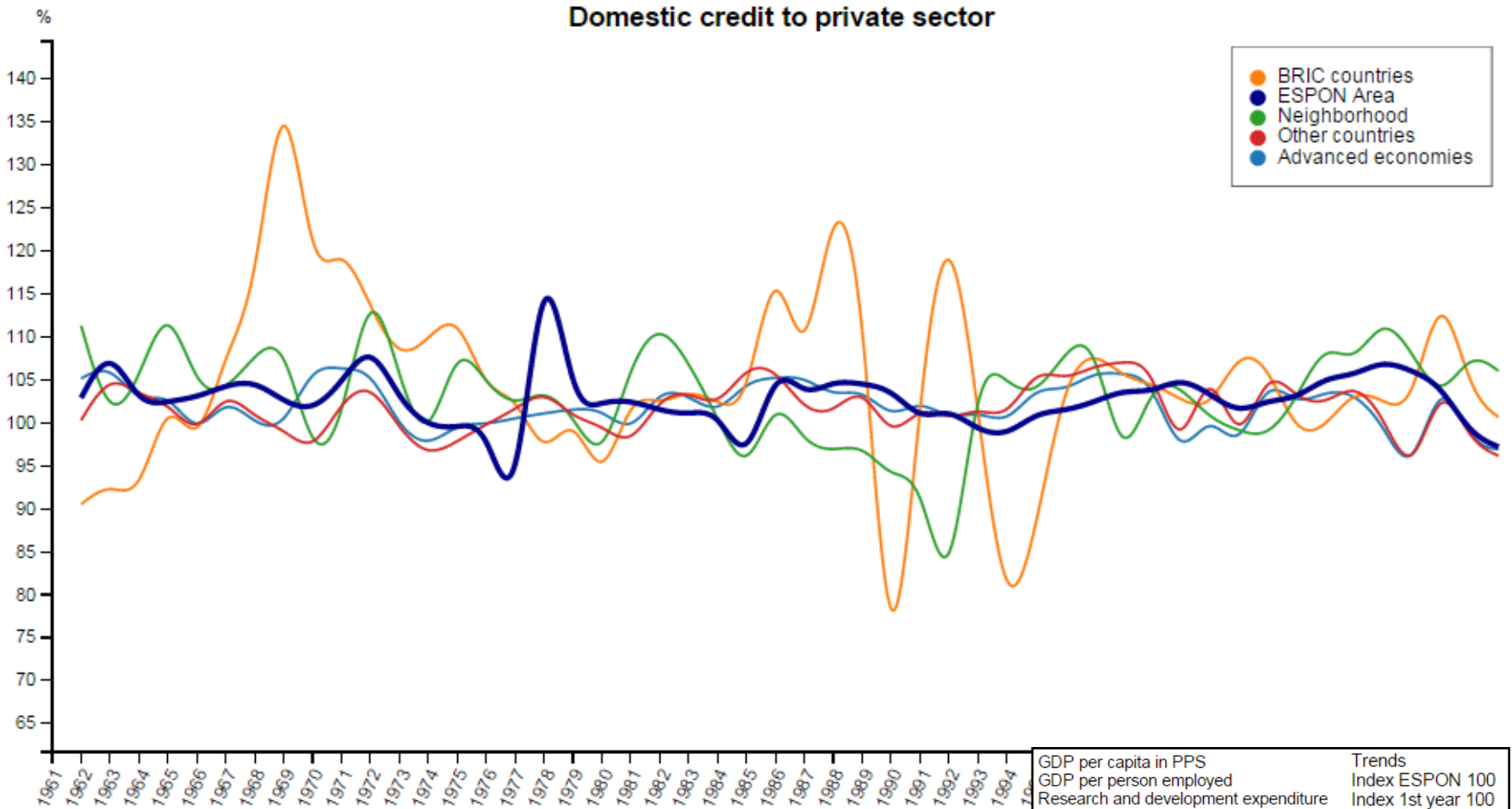
Visualisation: **INDEX First Year = 100**

Indicator: Domestic credit to private sector ▼ Type: Index 1st year 100 ▼



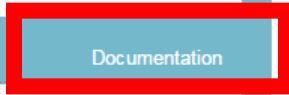
Visualisation: % annual growth

Indicator: Domestic credit to private sector ▼ Type: Annual growth rate ▼



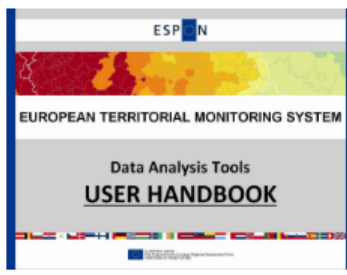
| | |
|--------------------------------------|--------------------|
| GDP per capita in PPS | Trends |
| GDP per person employed | Index ESPON 100 |
| Research and development expenditure | Index 1st year 100 |
| Total population | Annual growth rate |
| Central government debt | |
| Cash surplus or deficit | |
| Current account balance | |
| Exports of goods and services | |
| Domestic credit to private sector | |

European Territorial Monitoring System



SYSTEM DOCUMENTATION

HOW TO USE THE ETMS



USER HANDBOOK

Get acquainted with the ETMS. The [Data Analysis Tool](#) presents the spatial distribution of ETMS indicators in a simple user friendly way, including pre-defined regional typologies and their development in time. The [Territorial Trends Tool](#) displays ETMS indicators analytically over time differentiated by different regions typologies. It includes regionalised forecasts by ESPON ET2050 project.

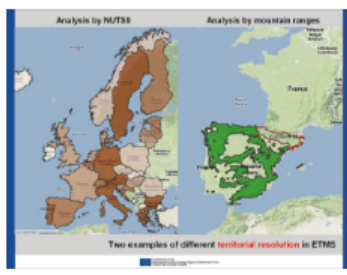
[Download now](#)



SYSTEM OF INDICATORS

ETMS indicators comprises 36 indicators covering 5 basic dimensions: Economic competitiveness; Environmental qualities; Human capital; Social inclusion; Access to territory and services. Also it is exposed the Policy Context under which each of the ETMS Compass Indicators is working on. They are organised under 6 priorities of the Territorial Agenda 2020.

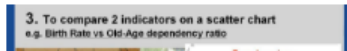
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SYNTHESIS OF TYPOLOGIES

Indicators are classify in data analysis on maps module and territorial trends module. They are analysed in NUTS and LAU2 level.

[Download now](#)



SAMPLE APPLICATIONS

European Territorial Monitoring System

Additional Monitoring Resources By ESPON

MONITORING SYSTEMS

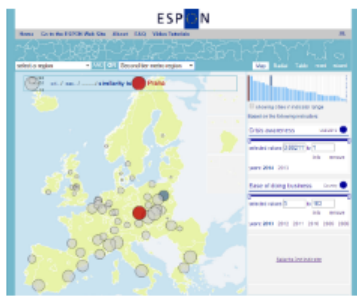


ESPON Baltic Sea Region Territorial Monitoring

The Baltic Sea Region Territorial Monitoring System (BSR-TEMO) is an interactive system allowing access to a set of spatial monitoring indicators, subdivided into six themes. BSR-TEMO indicators highlight the performance of regions within the Baltic Sea Region compared to the ESPON space as a whole.

Inspect individual indicators via the Domains menu, visit the map gallery from the Gallery menu, download reports, hand books and user manuals from the Documents section, or access a number of Applications representing test beds for Baltic Sea Regions in Europe.

[Go to the tool](#)



ESPON Citybench for Benchmarking European Urban Zones

This webtool allows policymakers, practitioners and public and private investors to benchmark their cities against other similar cities, around issues such as demographic challenges, economic challenges, social disparities/polarisation, urban sprawl and greenhouse gas emissions. This webtool helps them to put economic, social and environmental sustainability of cities at the core of decisions. This benchmarking webtool creates opportunities for the forming of innovative learning networks among cities. It will also provides a first indication of the suitability of financial engineering instruments in place-based policymaking for addressing risks and opportunities.

[Go to the tool](#)

ESPON IN MAPS



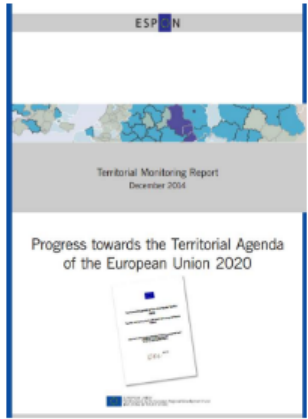
ESPON Online Mapping Tool: key ESPON indicators at regional level

The ESPON Online Mapping Tool is an interactive mapping tool where users can select.

European Territorial Monitoring System

PUBLICATIONS

TERRITORIAL MONITORING REPORT: Progress Towards the Territorial Agenda of the EU 2020

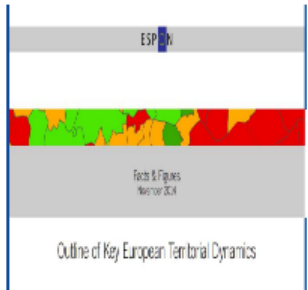


Aim of the report: to provide in-depth analysis of the evolution of main territorial trends in relation to the thematic objectives of the Territorial Agenda and the EU2020 Strategy.

Contents of the report: The State of territory report presents the key territorial developments in Europe in relation to the thematic objectives of the Territorial Agenda: Polycentric and balanced territorial development, integrated development in cities, rural and specific regions, integration of cross-border regions, global competitiveness based on strong local economies, improved territorial connectivity; managing ecological, landscape and cultural values. Thematic objectives are then put into perspective with the goals of the EU2020 Strategy.

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FACT & FIGURES. Outline of key European Territorial Dynamics



Aim of the report: to synthesize the Territorial Issues in Europe today and to provide major trends in the last 10 year.

Contents of the report: Fact & Figures Leaflet synthesizes territorial developments in Europe using key maps and figures for 5 themes, namely economic competitiveness, human capital, social inclusion, accessibility and environmental sustainability. The Facts & Figures illustrates key development trends found across Europe's wealth of regions, cities and territories to provide territorial evidence supporting the current spatial development debates.

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ESPON Seminar Bratislava

“Where are European cities heading? Evidence for better policy-making”

Training Session : Monitoring Tools

European Territorial Monitoring System

Oriol Biosca, MCRIT SL (obiosca@mcrit.com)

Inspire policy making by territorial evidence