ESPON

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Inspire Policy Making with Territorial Evidence

TOOLS & MAPS ACTIVITY // DRAFT

ESPON REGICO – comparing regions in different contexts

Model Reports

Annex to Deliverable 4 // September 2021

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Abbreviations

EU	European Union
EUSDR	EU Strategy of the Danube Region
GDP	Gross domestic product
NUTS	Nomenclature of Territorial Units for Statistics s
PPS	Purchasing Power Standard
SME	Small- and medium-sized enterprises

1 Preface: Intention of the Model report

This document is made up of two different storylines, illustrating the ways the ESPON REGICO tool can be applied by different users to find answers to specific, typical questions.

Following two storylines can be found in this report:

(a) A regional authority benchmarking the region against its fellow regions

(b) A national authority in process of strategic planning targeting SMEs

Each storyline gives an example for a type of user, covering a particular geographical scale and challenge.

Within this storyline, the report will give an example of how to use the tool. We will explore the functionalities available and useful for the particular case. Examples for interpreting the maps and figures are given as well as conclusions for the respective storyline at hand.

Each storyline is produced following the same structure:

- Context and task description
- Methods and maps of the ESPON REGICO tool useful to solve this task
- Indicators useful for this task and availability of these indicators in the ESPON REGICO tool
- Interpretation of the results
- Summary and findings on findings and recommendations
- Further comments to ESPON REGICO – limitation and additional analysis useful for answering the task

By providing this hands-on examples for the use of ESPON REGICO, users shall be encouraged to use the tool, read the results and disseminate them easily to all interested in the analysed topic.

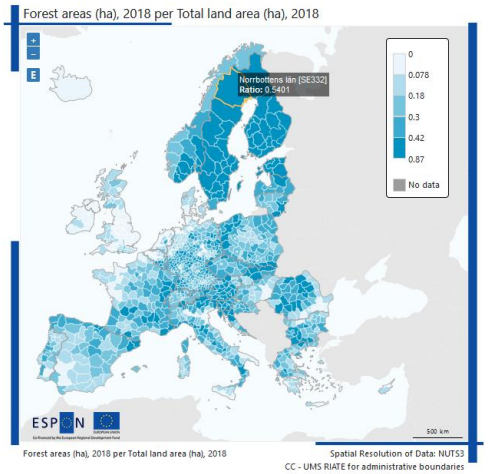
The REGICO tool can be used to give answers to important policy and research questions. In order to receive a sound scientific answer, the analysis will need to get beyond the examples given above, e.g. by applying additional statistical tools or in-depth scientific research.

2 Storyline A – Regional authority

2.1 Context

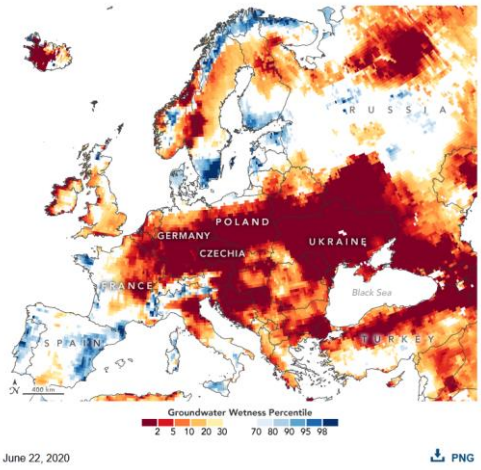
Norrbottens län is located in the North of Sweden. It is bordering Norway and Finland. Norrbottens län covers a wide area of 97,000 km2 and 54% of the area is forested land. Norrbottones län economy further is strongly influenced by the primary sector (export of raw materials as iron ore, copper and wood), but the processing industry and the manufacturing sector are important, too. Although wide stretches of land are protected by Natura 2000, productive forestry reserves still make up for 24% of its territory and thus the wood processing industry is strong.[1] Thus negative implications from climate change like groundwater draughts (see Figure 2.2) would affect the economy of the country. Further, due to demographic decline (aging population, negative birthrate, little in-migration), Norrbottens län experiences difficulties to attract and hold skilled workforce.

Figure 2.1: Location of Norrbottens län



Source: ESPON REGICO.

Figure 2.2: Groundwater wetness percentile (June 2020)



Source: Lauren Dauphin, NASA Earth Observatory, June 22, 2020

The regional management of Norrbottens län thus wants to investigate which regions in Europe are likewise densely forested and have a low share of population at working age. The aim is to arrange for cluster meetings discussing measures to strengthen the forests, discuss options to protect forest areas against negative climate change impacts and to share opinions and strategies for attracting skilled labour force to the region.

2.2 Task description

The main aim of the task is to identify regions within Europe which are likewise densely wooded and have low shares in working age population.

The ESPON REGICO tool is used to answer the following policy questions:

- Which regions in Europe are have a similar forest density? Which regions in Europe are likewise below average as regards the share of working age population?
- At the national perspective – where could regions be found which have more difficulties to attract skilled labour force as compared to other regions in the same country?
- Norrbottens län is a large region including several economic locations and the University of Lulea. How is the situation in Europe for smaller regions as compared to their neighbourhood as regards workforce?

Lastly, ESPON REGICO is used to produce expressive maps which support the demonstration of results.

[1] Jakubowski, A., Syndex (): Industrial regions and climate change policies. Reference document for the Province of Norrbotten.

2.3 Use of ESPON REGICO

2.3.1 Indicators useful for this task and availability of these indicators in the ESPON REGICO

The following indicators are seen as useful to answer the policy questions. Their availability in the tool and possible limitations are listed in the table below. Information on the indicators included and their limitations can be derived from the table in the User Guide.

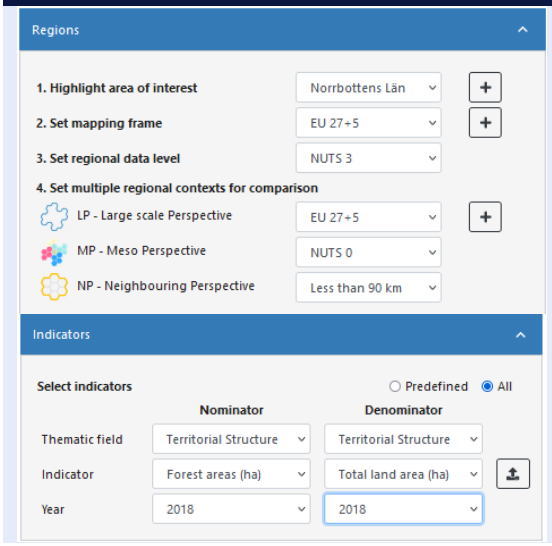
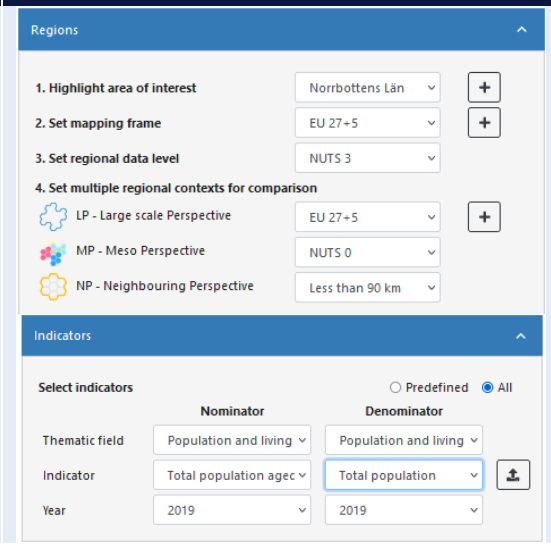
Data on the forest area and total area are available for all NUTS-3 regions in Europe and this data are included in ESPON REGICO

Useful indicator	Availability in ESPON REGICO	Limitations of data ESPON REGICO
▪ Forest area (km) ▪ Total area (km) ▪ Population aged 15-64 years ▪ Total population	▪ Forest area (ha) ▪ Total area (km) ▪ Population aged 15-64 years ▪ Total population	Data available at NUTS-3 level for all regions in ES-PON space

2.3.2 Final settings

In order to answer the above policy questions, the following settings were done in ESPON REGICO.

Figure 2.3: Regional scope and selected indicators

Setting for Indicator: Forest area/total area	Setting for Indicator: Population aged 15-64 years / total population
	

2.3.3 Methods and maps useful to solve this task

The ESPON REGICO Tool offers a wide range of tools which inform parts of the policy interest.

- RATIO map: a map on the geographical distribution of the ratio selected across ESPON Space
- RELATIVE CONTEXT – REL. DEVIATION TO LP (Large-scale perspective): a map on the deviation of the chosen ratio compared to ESPON Space average
- RELATIVE CONTEXT – REL. DEVIATION TO MP (Meso perspective): Map on the deviation of the chosen ratio within Sweden respectively all other countries of ESPON space
- RELATIVE CONTEXT – REL. DEVIATION TO NP (Neighbouring perspective): Map on the deviation of the chosen ratio as compared to the neighbouring regions reachable within 90 minutes by car (from center of the regions to the center of the other region).
- SYNTHESIS: Map overlaying the results of the above mentioned three deviation maps.

- The tool can produce maps on the topic for different points in time (when selecting different years of the indicator) which allow the user to interpret the results as development over time.

2.4 Interpretation of the results

2.4.1 Share of forest area and population of working age in Europe

Focusing on the forested area, Norrbottens län is embedded into the forested areas in the North of Europe. The largest forest areas can be found in Sweden and Finland. Further, Estonia as well as the mountainous regions in Europe are visible. The blue regions with high shares of area covered by forest can be found in the Alps in the center of Europe and in the Carpathian Mountains stretching from Slovakia to Romania (with a missing link of the Ukraine with no data available). Further, high shares of forested area can be found at the border between Germany and in the East of France.

In Norrbottens län 61% of the population is of working age (Figure 2.5). The situation is similar with other regions in Sweden, except of the capital region of Stockholm and the regions of Malmö and Göteborg. Further, Finland faces similar challenges, i.e. a relative lower share of population at working age as well as the East of Germany. Within Estonia, the situation is a less pronounced. In general, there is a territorial disbalance between the countries in transition and rather higher shares of working populations, e.g. Poland as well as Slovakia and the South of Spain.

Figure 2.4: Share of forest area on total area

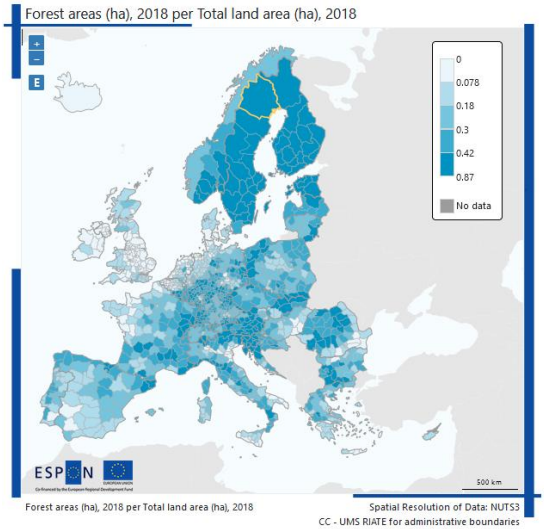
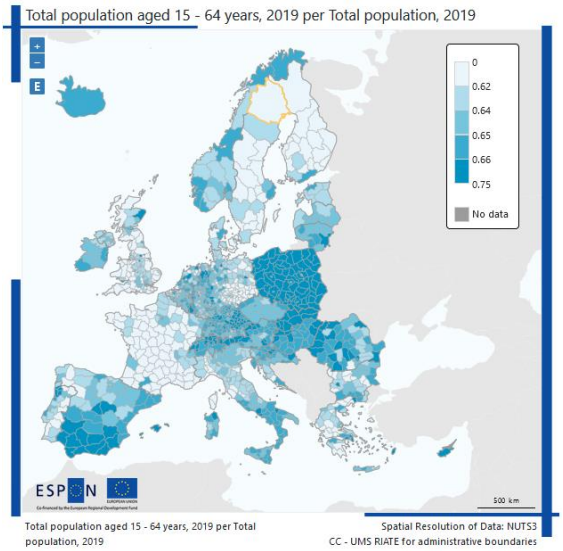


Figure 2.5: Share of working population



The inner-European differences as regards the share of forest area become pronounced when comparing the regions with the average of EU 27+5 (Figure 2.6). Norrbottens län is clearly among the richest forested regions as compared to Europe, falling into the category of regions more than 50% above the average (red). This holds true for almost all other regions in Sweden and Finland. All in all the map points clearly to Sweden's large reserves of forested area.

Further, Slovakia and the Alpine Regions are highlighted and more than 50% above the European average, as well as a number of regions in Romania, France and the West of Germany.

The picture on the relative differences of working age population is less pronounced. Norrbottens län with a deviation index of 94 lies 6% below the European average as do many other regions in Sweden and Finland. Further shares of working age population below average can be seen in large shares of French regions and in the border-regions of the UK.

Looking more closely at the relative deviation values (by hoovering over the map) it can be noted that the other Swedish regions also show values around -1 to -5% below the European average. The only exception being Stockholm which is 5,03% above the European average and thus has significantly more working age population then the other Swedish region. Also Göteborg is with +1% above the European average. This

could be interpreted as an attractiveness of Swedens the strong city centers for people at working age as compared to the more peripheric regions in Sweden.

After studying the patterns of the maps, the following regions can be considered both, significantly above EU-27+5 average terms of forest area and well below average as regards working age population: a number of Swedish and Finish regions as well as for example Oder-Spree (DE) or Vosges (FR) which are marked in Figure 2.7. Given the small range of values within Europa (see ratio map Figure 2.5), most of the European regions fall into the pre-set category of +/-5% of the average. Thus, another indicator with a wider range of values, namely the old age dependency ratio is added as an indicator to the analysis.

Figure 2.6: Deviation to EU 27+5, Share of forest area on total area

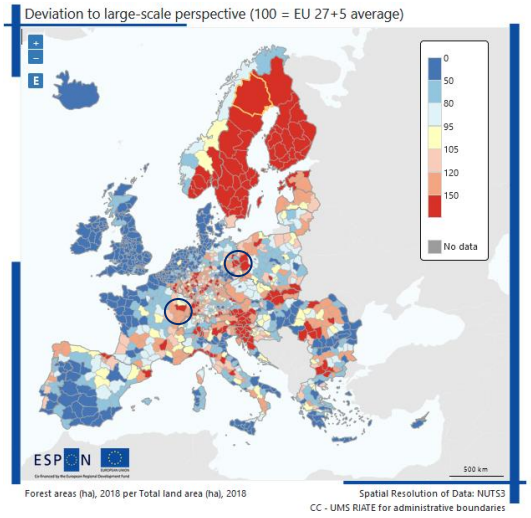


Figure 2.7: Relative deviation to EU27+5, Share of working age population

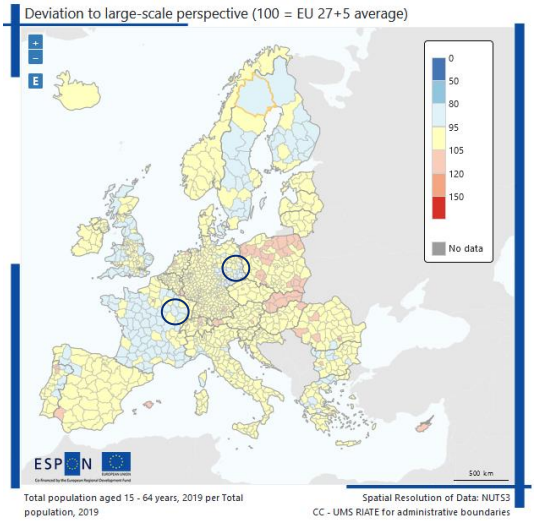
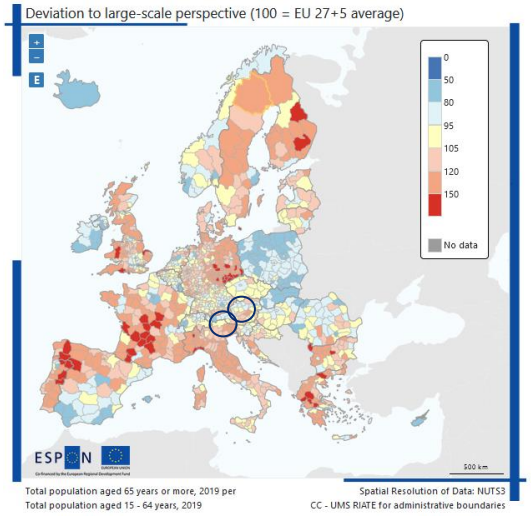


Figure 2.8: Relative deviation to EU27+5, Old age dependency ratio



The indicator old age dependency ratio (available from the list of predefined indicators in ESPON REGICO) is composed of the total population aged 65 and more (nominator) per total population aged 14-64 years (denominator), see Figure 2.8.

This indicator examines the problem of the low share of working age population from a different angle.

As regards the old age dependency ratio Norrbottens län ranks 27% above the EU 27+5 average. Two Finish (Kaninuu and Etalä-Savo) regions show values above 50% from the average (index 151 and 169). Regions with a relatively high old age dependency ratio can be found in Eastern German, France, the West of Spain and in Bulgaria.

Out of the forested areas depicted in Figure 2.6, some Austrian regions (e.g. Upper Styria East) and Italy (Belluno) are identified as regions with similar characteristics as Norrbottens län.

From the national perspective of forested areas (Figure 2.9), Norrbottens län is less intensely forested as compared to the Mid-Swedish regions. This might be due to the climatic differences of these regions, e.g. warmer winters and thus longer vegetation periods.

However, in the less forested regions, the differences within the countries become now more pronounced. In France for example national disparities for both indicators are more easily to depict in Figure 2.9 and Figure 2.10 which makes it easier to identify partner regions for Norrbottens län. Especially the regions in the East of France might be interested in joining an initiative, as they have a high share of forested area as compared to the national average and might thus be more sensible for the chances and problems the foresting industry. Further they have a similar old age dependency ratio as compared to the national average

(Figure 2.10). Same holds true for the North-Western regions of Dordogne and Corrèze with even higher old age dependency ratios within France.

Figure 2.9: Deviation to the national average, Share of forest area on total area

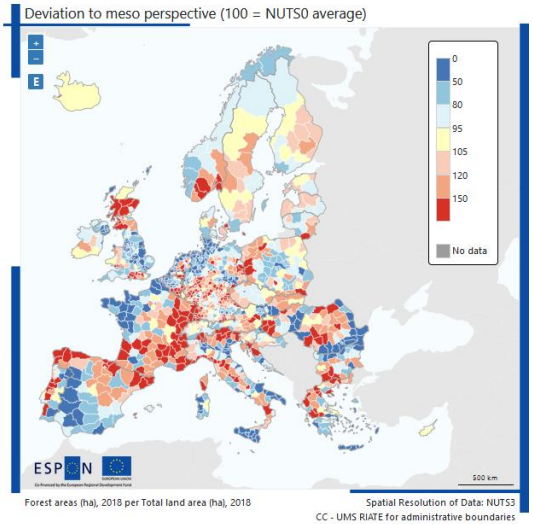
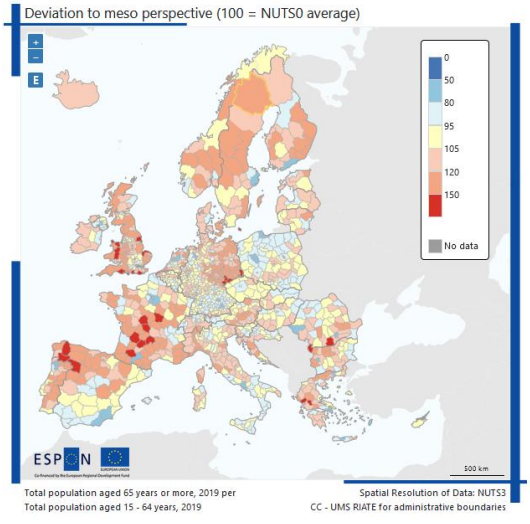


Figure 2.10: Deviation to the national average, Old age dependency ratio



Finally, the situation of the regions is compared to their neighbourhood region. Neighbourhood regions are defined as all regions reachable in less than 90 minutes by car (from the center of a region to a center of another region). Even though the limitation to 90 minutes by car is not a useful definition for the large NUTS-region of Norrbottens län, it can well be used to the task at hand, namely identifying partner region in the rest of Europe with smaller NUTS3 regions. Here the definition of neighbouring region as an isochrone of 90 Minutes can mostly be considered as a maximum driving distance for commuters.

Within the map each region has its own “neighbouring area”, in other words, all regions are related to another reference value. This needs some consideration when interpreting the results, as the size of the regions has to be considered as well, as it limits the number of regions within the “neighbouring perspective. When looking at the neighbouring area for a wider mapping frame (e.g. EU27+5), it thus is better to stick to the concept of continuous bordering regions, as they are easier to perceive. If working on a more regional scale, other concepts might however be more interesting.

As potential partner regions in Finland and France were already spotted in the analysis above, the focus is now on the regions within the Alps. Zooming into the Alpine region, regions in Styria (Upper Styria East), Germany (Garmisch-Partenkirchen) and the Italian Regions of Como, Bergamo, Ticino, Verbano-Cusio-Osola can be identified as with similar characteristics.

As regards the neighbourhood perspective of the old age dependency ratio, the close up to the Alpine regions allows to more detailed analysis (Figure 2.12). There are a number of regions highlighted well above average, like Upper Styria East (AT), Liezen (AT), Berchtesgadener Land, etc. These are all in vicinity to larger agglomerations (Graz, Munich) and could thus be more affected of out-migration to the larger city centers. This would be an interesting topic to address with the initiative.

Figure 2.11: Deviation to the neighbouring regions, Share of forest area

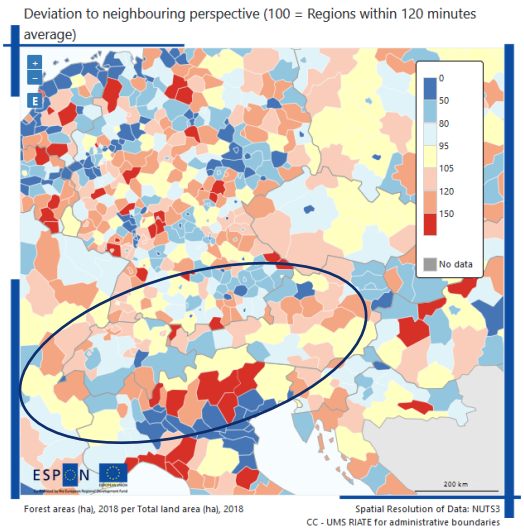
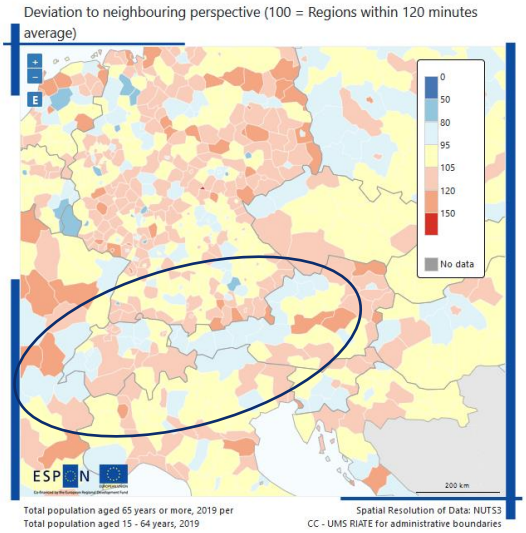


Figure 2.12: Deviation to the neighbouring regions, Old age dependency ratio



2.5 Summary on findings

The synthesis maps Figure 2.13 and Figure 2.14 present an overview on the situation regarding both indicators. The threshold was set to 110 (10% above the average) instead of 100 in order to emphasize the regions with high shares of forest area respectively old-age dependency ratio.

Which regions in Europe are have a similar forest density? Which regions in Europe are likewise below average as regards the share of working age population?

From an EU perspective (EU 27+5) Norrbottens län has a share of forest area above average (orange), see Figure 2.13. The forested area exceeds the European average by 66%. Only the regions in the middle of Sweden have even higher shares of forested area and exceed the national average as well.

In terms of old age dependency ratio, Norrbottens län is likewise above the European average (Figure 2.14), actually it exceeds the European average by 27%.

When looking the other European regions on the Synthesis map of forested area (Figure 2.13), one needs to beer in mind that other countries are less forested than Sweden. For identifying regions with similar forest density, the focus is laid on the regions above average as regards all three perspectives. These are:

- Finland with similar or higher values as regards old age dependency ratio
- Estonia, Slovakia and Romania, although with lower values as regards the old age dependency ratio (Figure 2.14).
- Alpine Regions e.g. in Austria: Upper Styria East and Liezen with similar values in terms of old age dependency, in German: Berchtesgadener Land, in Italy: Belluno
- Regions in the East of France (Vosges, Haute-Marne)

The regions identified interesting to contact for an exchange of experiences are the Finish Regions as well as the regions in the Alpine Regions and in the East of France. These regions show a relatively high old age dependency rate which manifests in a lack of population in working age (15-64 years) as compared to the demographic situation and they need to attract skilled labour force for the industries of the region.

Figure 2.13: Regions performing over average regarding all three spatial contexts (share of forest area)

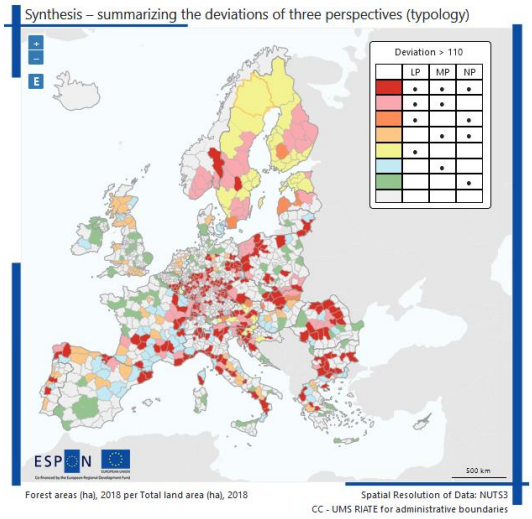
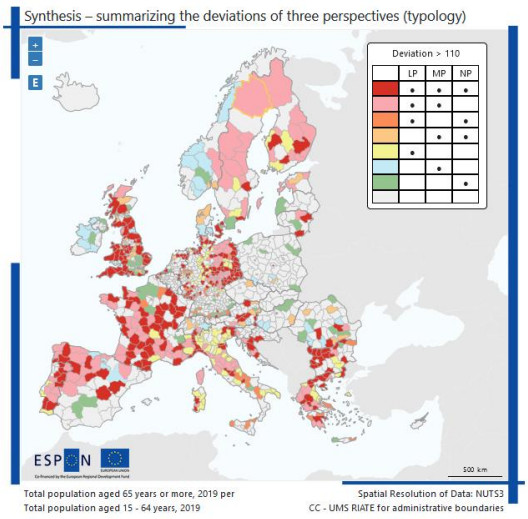


Figure 2.14: Regions performing over average regarding all three spatial contexts (Old age dependency ratio, above 110)



At the national perspective – where could regions be found which have more difficulties to attract skilled labour force as compared to other regions in the same country?

From a national point of view the Regions in Eastern Germany as well as in the West of France have a high old age dependency ratio, as well as some Alpine Regions in Austria and the North of Italy. Generally, the maps show

Generally, the availability of jobs in these forested regions with often corresponding industries, seems to counteract the often peripheric situation of these regions. It will thus be interesting to compare other aspects of these regions, e.g. share of women in the overall population which tends to be lower in regions strongly relying on primary industries.

Norrbottens län is a large region including several economic locations and the University of Lulea. How is the workforce situation in Europe for smaller regions as compared to their neighbourhood?

From a neighbouring perspective it clearly is difficult to compare the large region of Norrbottens län with significant smaller NUTS-regions. As regional actors of Norrbotten we are however aware that our regions consist of several economic and industrial centers as Lulea, Kiruna or Pitea-Kalix region, to name just a few. In order to answer this question, we go back to Figure 2.12 showing the old age dependency ratio for the example of the Alpine regions. Here, it becomes evident that the more forested regions, e.g. of Upper Styria East also have more problems in attracting (or holding) workforce as the surrounding regions, especially when located in longer driving distances to agglomeration centers (see example Upper Styria East and Graz (see blue region at the right bottom of Figure 2.12). Same holds true for the regions in Bavaria next to Munich in the North, the economy strong regions of Upper Austria in the East and Tyrol in the south all 5-20% below the average of their neighbour regions.

2.6 Additional analysis useful for answering the task

In order to more thoroughly analyse the study question at hand, other indicators should be analysed as e.g. the share of women in the total population, because especially in primary sector intensive regions women often migrate to the more densely populated areas providing e.g. a wider range of job opportunities.

Within the analysis it always helps to zoom into certain regions, especially where NUTS-regions are small or to go one level up and analyse the situation at the level of NUTS2 regions.

Overall, the results of ESPON REGICO allows for quickly exploring different indicators to answer the questions at hand and even if one indicator is not as informative as envisaged, other indicators are available to explain the situation.

The analysis above was done by visually comparing the maps. Another possibility is of course to extract the dataset the two maps are based on, merge the two datasets and analyse the values behind the maps, e.g. by ranking them according to the results of the deviation maps.

3 Storyline B – national player/macro-region

3.1 Context

Macro-regional strategies were endorsed by the European Council to address common challenges faced by a defined geographical area and encourage strategic cooperation. 19 EU Member States participate in one or more of the four macro-regional strategies. Although different in their thematic focus, they all aim at contributing to achieve economic, social and territorial cohesion within their realm.

The EU-strategy of the Danube Region (EUSDR) was endorsed in 2011, including regions of EU and Non-EU countries. The Macro Region has a complex governance structure, with a political, strategic and operational sphere. Within the operational spheres, priority areas are defined and respective boards established to ensure the implementation of the EUSDR. Austria is among others responsible for the overall coordination and the priority area focusing on “investing in people and skills”.

3.2 Task description

The overall policy question asks for the extent to which the overall goal of cohesion has been achieved. The focus lies on the Austrian regions, which are benchmarked against their fellow regions participating in the macro-regional strategy in terms of territorial inequality and non-exclusive growth.

ESPON REGICO is used to answer the following policy questions:

- Are there significant variations in terms of territorial inequality and non-exclusive growth within the administrative boundaries of Austria, and within the macro-region?
- What changes can be observed since the creation of the EUSDR in 2011?
- Are the chosen indicators suitable for answering the policy questions? Is the data quality and availability in the ESPON database and EuroStat satisfactory?

Lastly, the ESPON REGICO tool is used to produce expressive maps which support the demonstration of results.

3.3 Use of ESPON REGICO

3.3.1 Indicators useful for this task and availability of these indicators in the ESPON REGICO Tool

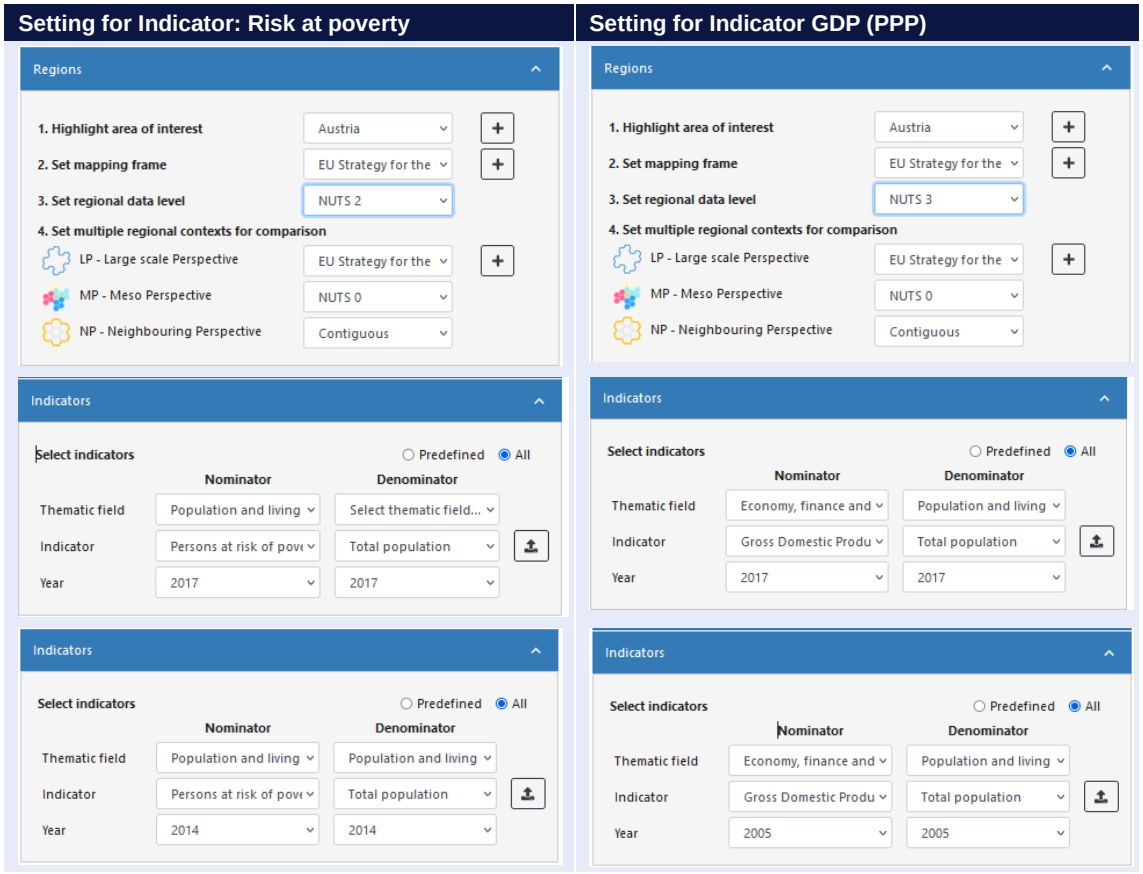
For the questions at hand, following indicators are useful, respectively available in in ESPON REGICO. Information on the indicators included and their limitations can be derived from looking at the nominator map, extracting the data from the tool or looking at the table in the User Manual, chapter 6.

Useful indicator	Availability in ESPON REGICO	Limitations of data in ESPON REGICO
People at risk of poverty (2011-2020), NUTS 3	Persons at risk of poverty (% of total population) (2005-2019) NUTS 2	NUTS 2010/13, Data available at NUTS2 level In some countries only in NUTS 1 or 0 (e.g. Germany: NUTS 0)
Gross domestic product (GDP) at current market prices by Purchasing Power Standard per inhabitant (2011-2020), NUTS 3	Gross domestic product (GDP) at current market prices by Purchasing Power Standard per inhabitant (2005-2018), NUTS 3	Data gaps for Austria 2018. GDP data available on NUTS3 and level, no limitations.

3.3.2 Final settings

To ensure replicability, this sub-chapter shares the selected settings.

Figure 3.1: Regional scope and selected indicators



No changes were made to the colour settings and the synthesis thresholds.

As no policy question asks for comparison of the regional situation in a neighbouring perspective, no changes are made to the Neighbouring perspective setting.

It was necessary to add a custom study area. To do this, press the + button next to “1.Highlight area of interest” and then select Austria as custom area.

3.3.3 Methods and maps useful to solve this task

The ESPON REGICO Tool offers a wide range of tools which inform parts of the policy interest.

- RATIO map: a map on the geographical distribution of the ratio selected in the Danube region.
- RELATIVE CONTEXT – RELATIVE DEVIATION TO LP (Large-scale Perspective): a map on the relative deviation of the regions participating in the macro-strategy to the average ratio of the regional context. Values are expressed as index, 100 stands for the average value of the regional context area.
- RELATIVE CONTEXT – RELATIVE DEVIATION TO MP (Meso Perspective): a map on the relative deviation of the regions participating in the macro-strategy to the average ratio of the regional context
- SYNTHESIS: Map overlaying the results of the above mentioned two maps on relative contexts.
- The tool can produce maps on the topic for different points of time, which allow the user to interpret the results as development over time.

3.4 Interpretation of the results

3.4.1 Mapping Areas with population at risk of poverty (Map: ratio)

Figure 3.2: Ratio – people at risk (2014)

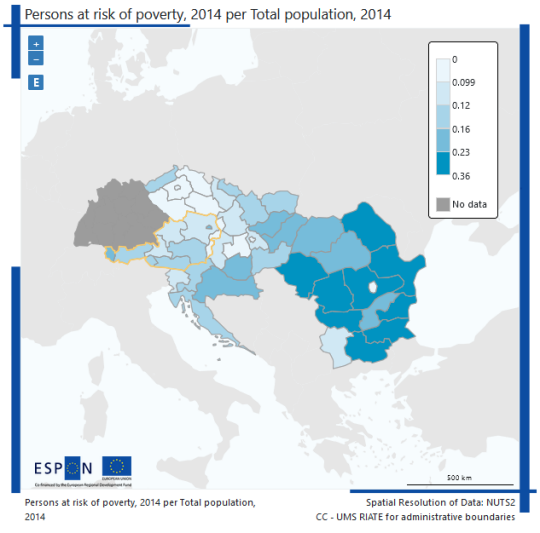
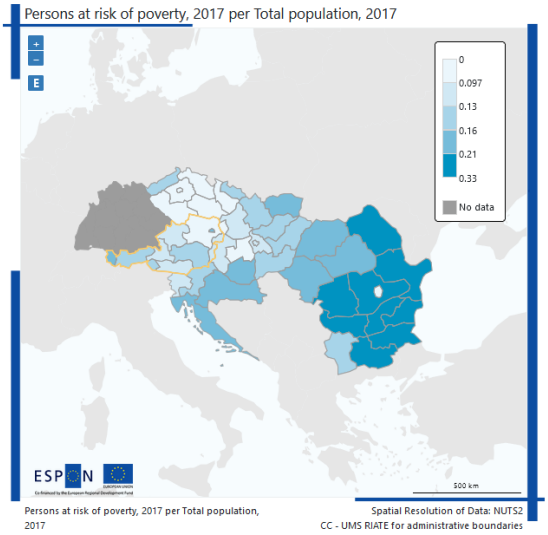


Figure 3.3: Ratio – People at risk (2017)



The maps show the ratio of the population at risk of poverty per total population. They depict those NUTS 2 regions which have a higher rate of people at risk of poverty, situated mostly in the South and East of the macro-region. Especially most regions in Bulgaria, Romania and Croatia show a high risk, but also some regions in Austria, Slovenia and Hungary.

On the opposite, the regions with the lowest risk of poverty are to be found mostly in the northern and central parts and Bucharest. Interesting inner-state heterogeneity is visible a number of countries: in Slovenia and Hungary and more so in Slovakia a strong west-east divide is obvious. In Czech Republic, the northern NUTS 2 Regions look slightly worse (but still good in comparison to the macro-region),

These results hold true over time. There are no significant changes over the 3-year time period under consideration. Three years is usually not a period in which social-economic factors change substantially, especially if there is no social upheaval. One can argue that the EUSDR came into being in 2011 and hence it would be worthwhile to assess the differences almost one decade after its coming to existence. However, in this case the data availability is a limiting factor. The earliest data entry that covers most of the area is in 2014 and the most recent one in 2017. Hence the comparison of those two points in time does not supplement the information.

Further information helpful for interpreting the results

The maps show the ratio of the population at risk of poverty per total population in the Danube macro region, excluding the non-EU areas. The dark grey areas indicate the missing data for the German regions. This entails a caveat: all calculated averages and deviations do not include data from Germany and non-EU countries participating in the EU strategy for the Danube region.

Further, the missing data availability over a longer period of time limits the explanatory power of a comparison over time.

3.4.2 Mapping the risk of poverty in national context (Map: Relative Context - Relative deviation to national average)

Figure 3.4: Relative deviation to the national average – people at risk (2014)

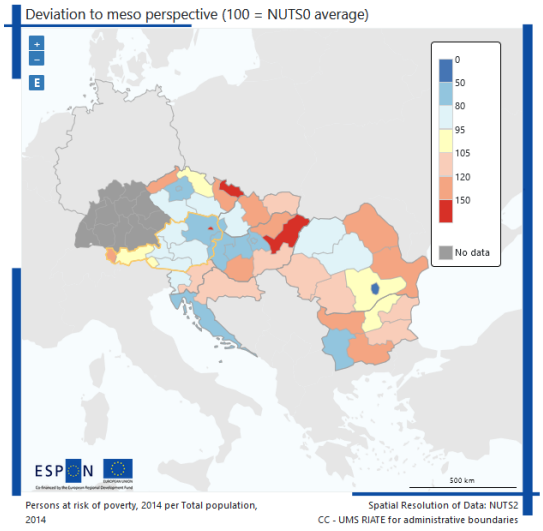


Figure 3.5: Relative deviation to national average – people at risk, zoom at AT (2014)

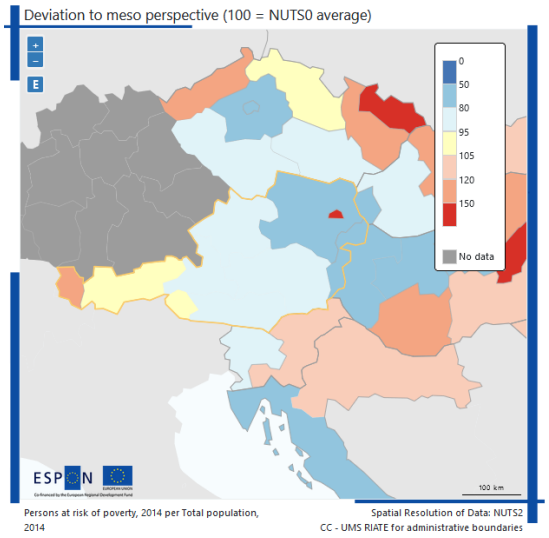


Figure 3.6: Relative deviation to the national average – people at risk (2017)

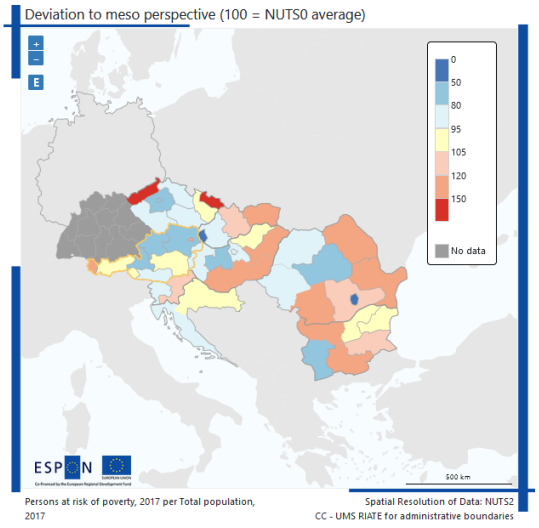
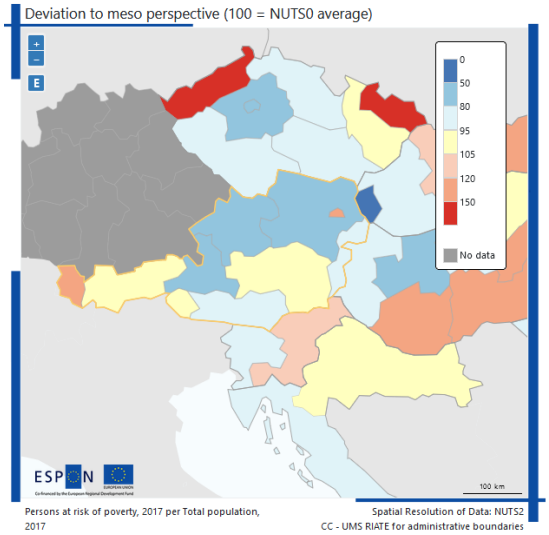


Figure 3.7: Relative deviation to national average – people at risk, zoom at AT (2017)



The relative deviation maps on the aggregated NUTS level show how the NUTS 2 regions are performing in contrast to the national average. In Romania, Slovakia and to a lesser extent also Hungary, Czech Republic and the NUTS 2 region including Bulgaria's capital, the capital regions stand out as those regions with by far the lowest poverty risk for its population while in Austria the situation is reversed: it is the capital city which shows the highest risk for poverty. To a lesser extent this situation is also true for the NUTS 2 region including Slovenia's and Croatia's capital region. In Bratislava this situation grew even more pronounced over the 3 years observation period, whereas in all other capitals/capital regions involved, the deviation to national average grew smaller. This decrease in inner-national deviation points to a balancing development within the countries.

In the Austrian context, the capital of Vienna and the most western province of Vorarlberg stand out as those regions in which the risk of poverty proportional to the total population is the highest within Austria. While in Vienna (in 2017) the risk is about 50% (relative deviation: 1,48) higher, the lowest risk face inhabitants of the province surrounding the capital: Lower Austria lies one third below the average risk facing poverty. This

can point to a rather rich sub-urban population living in Lower Austria, while population at risk tend to move/stay in the capital due to the better social welfare system. This situation slightly decreases between 2014 and 2017.

Further information helpful for interpreting the results

As the indicator chosen as nominator describes a negative connotated situation (being at risk of being poor) one has to take care to interpret the colour coding of the maps. The redder the regions the higher above the average of people at risk is this region, the bluer, the minor the risk of the population to suffer poverty.

3.4.3 Mapping the economic performance (Map: Ratio – GDP/capita PPS)

Figure 3.8: GDP/cap (PPS) (2010)

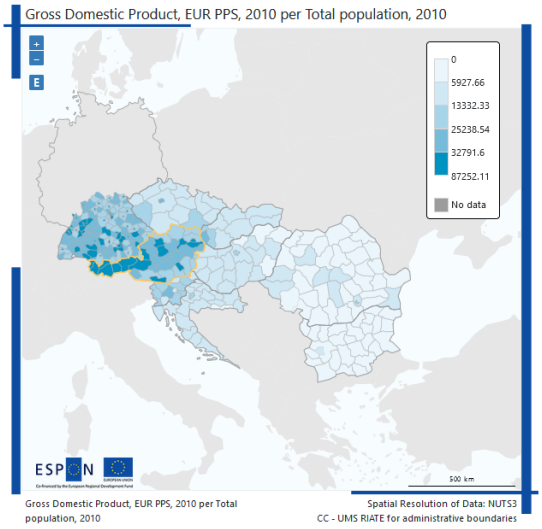
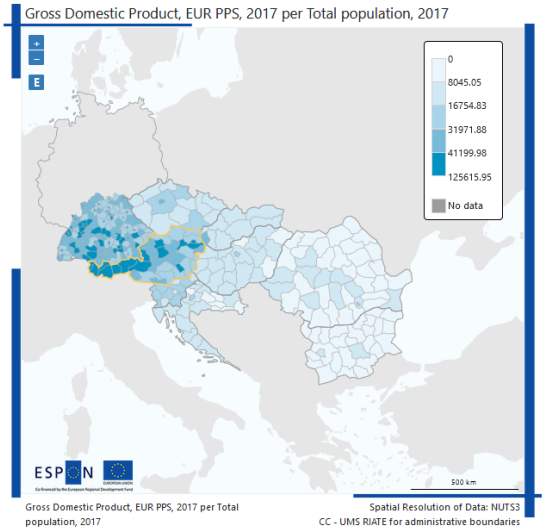


Figure 3.9: GDP/cap (PPS) (2017)



The maps clearly depict two results: First, there is an undeniable west-east divide. The largest concentration of well performing regions in an economic sense are situated in Bavaria and Austria and the lowest in the most south-eastern regions. Second, the capital regions clearly stick out as the best performing regions.

The observation period shows generally positive developments in the entire Danube region with an overall increase of the GDP per capita. Please note, that this conclusion is not derived from the number of dark blue regions – because the classes are built according to the distribution of values in the year selected. This conclusion derives from the shift of classes notable in the legend.

3.4.4 Mapping the economic performance in context to the Macro Region (Map: Relative Context - Relative deviation to macro-region's average)

Figure 3.10: Relative deviation to the macro region' average –GDP/cap (PPS) (2010)

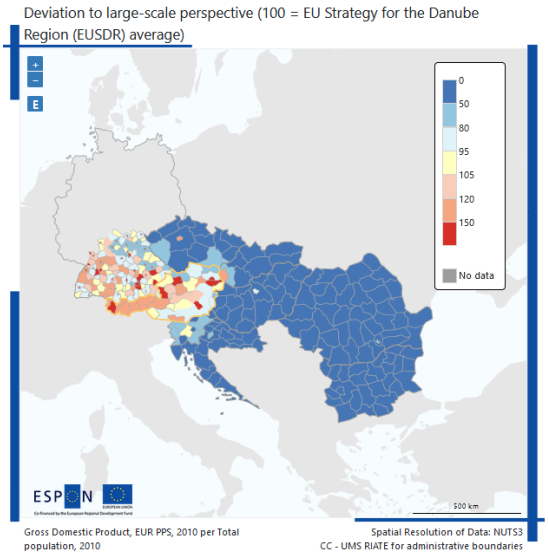


Figure 3.11: Relative deviation to the macro region' average –GDP/cap (PPS), zoom at AT (2010)

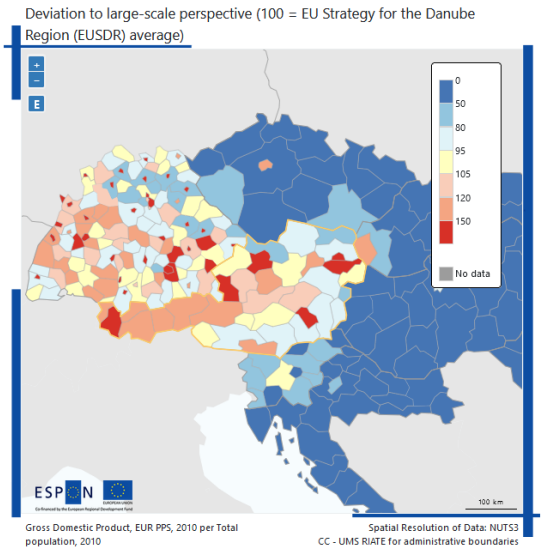


Figure 3.12: Deviation to the macro region' average –GDP/cap (PPS) (2017)

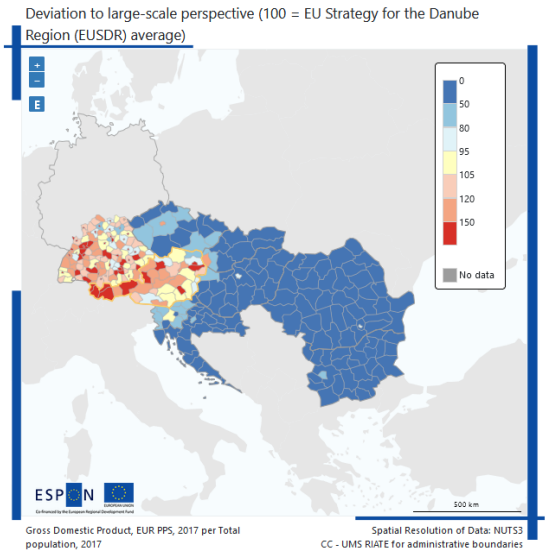
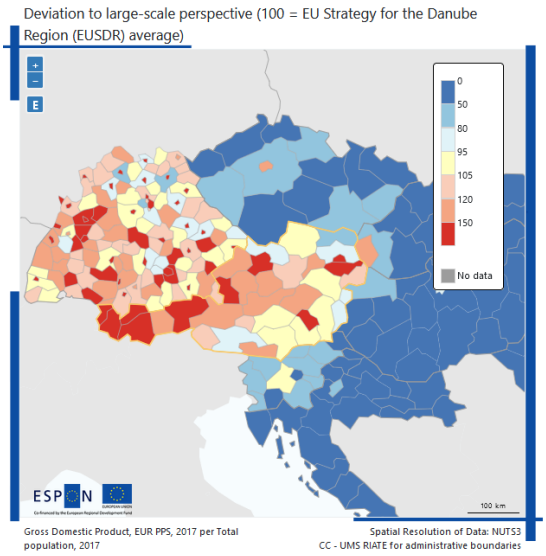


Figure 3.13: Deviation to the macro region' average –GDP/cap (PPS), zoom at AT (2017)



These maps depict the deviation of each region to the macro-region's average in terms of their economic performance in two points of time: 2010 and 2017. Yellowed regions depict the regions at the macro-regions's average. The more pronounced colour red or blue gets, the higher is the deviation from the average.

The maps show a significant west-east divide, with the exception of the capital regions, with higher GDP/capita. The West-East divide persists within the observation period of 7 years for most of the regions, with only the Czech Republic advancing as well as the Eastern Regions of Hungary and

In Austria, a positive development is visible over time, as for some regions their relative situation to the Macro Region rose and they changed into another class. In comparison to the average of the Danube-region most Austrian regions perform above-average in both points of time. However, the Border regions to the

Czech Republic as well as regions bordering Hungary and Italy are below the average of the macro region in 2017. Further, a clear East-West divide is visible.

3.4.5 Mapping the economic performance in national context (Map: Relative Context - Relative deviation to national average)

Figure 3.14: Relative Deviation to the national average –GDP/cap (PPS) (2010)

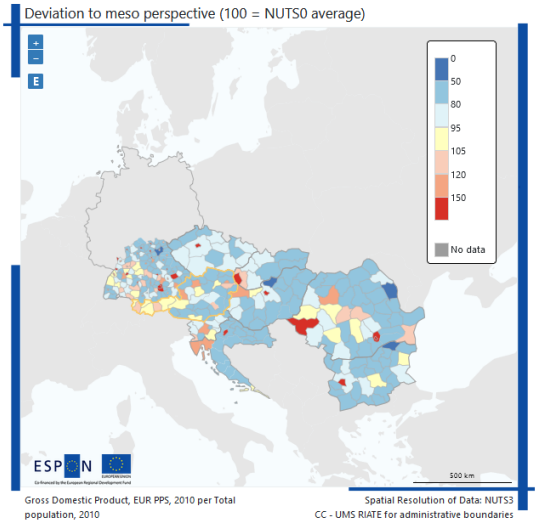


Figure 3.15: Relative Deviation to national average –GDP/cap (PPS), zoom at AT (2010)

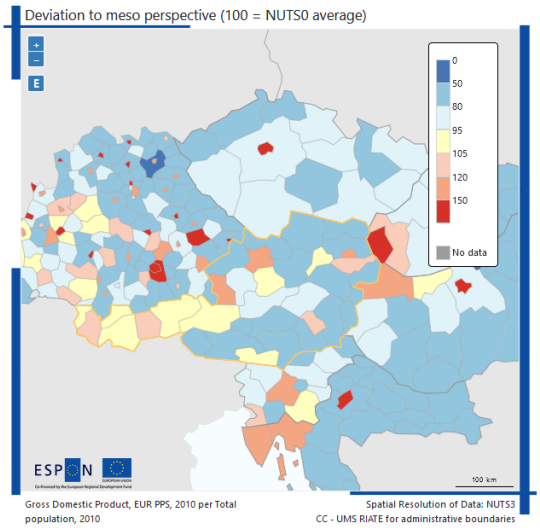


Figure 3.16: Relative Deviation to the national average –GDP/cap (PPS) (2017)

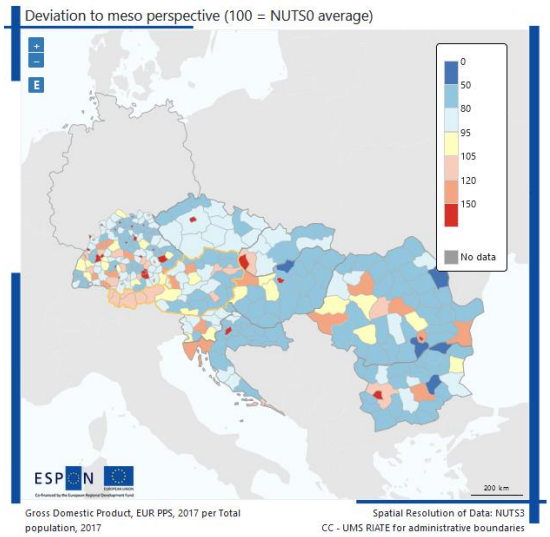
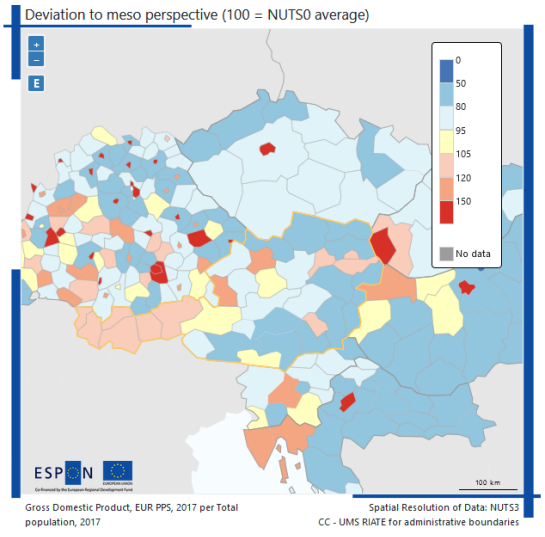


Figure 3.17: Relative Deviation to national average –GDP/cap (PPS), zoom at AT (2017)



These maps depict the relative deviation of each region to the national average in terms of their economic performance in two points of time: 2010 and 2017. Yellowed regions depict those at a national average. The more pronounced colour red or blue gets, the higher is the relative deviation from the average. All in all, the maps depict a more scattered distribution of economic performance with highlights in the capital cities.

Again, as in the case of the Ratio-map, the capital cities stick out in both points of time as those regions with the best economic performance. In Bavaria, Hungary, Bulgaria and Romania one region is found in each case which perform far below the national average in 2010. Seven years later, the Bavarian region has caught up, whereas in Bulgaria and Romania a second region fell below 50% of the national average.

In Austria the economic performance is rather equally distributed. There are no regions falling far off either side of the national average, but regions in the West improved significantly. In both points of time economic power of the capital regions of each province are depicted by the map, more pronounced in 2010.

3.4.6 Mapping a Synthesis of economic performance (Map: Synthesis)

Figure 3.18: Synthesis – GDP/cap (PPS) (2010)

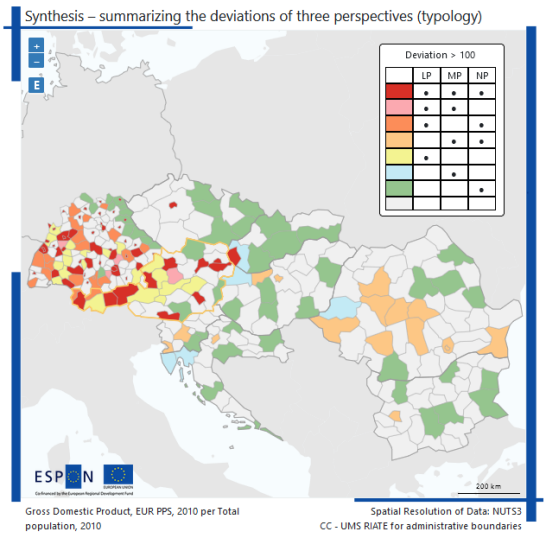


Figure 3.19: Synthesis – GDP/cap (PPS), zoom at AT (2010)

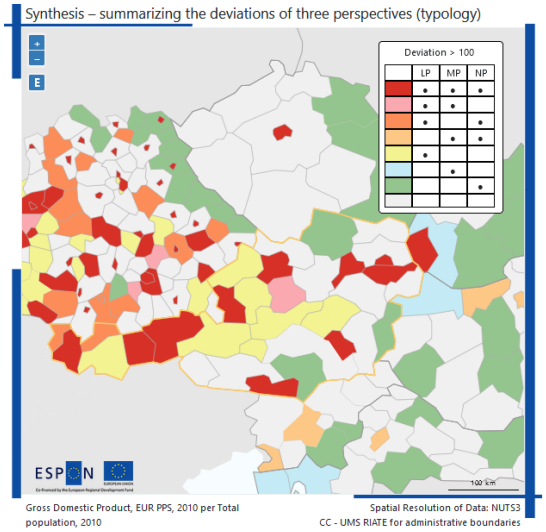


Figure 3.20: Synthesis – GDP/cap (PPS) (2017)

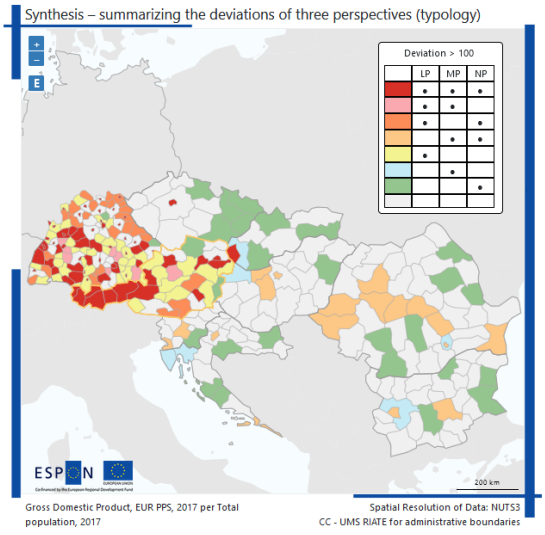
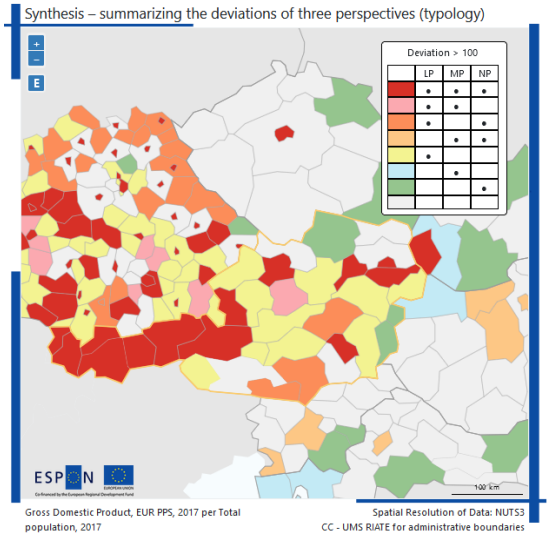


Figure 3.21: Synthesis –GDP/cap (PPS), zoom at AT (2017)



The synthesis maps join the results of the deviation maps at the different spatial contexts. “1” relates to the macro-regional context, “2” to the national context and “3” to the neighbouring regions. For the task at hand, the third spatial context was of no interest which is why the third column (high performing regions are coloured in green) can be ignored. Red and pink indicate those regions, that have an economic performance above the average regarding both analysed spatial contexts (macro-regional and national), whereas the dark orange-coloured regions perform above-average in the macro-regional context and the light-coloured one in the national context.

Summarizing the two outputs from before, the synthesis map highlights the capital regions and economically potent regions in the western part of the Danube regions as “regions above average”. Considering only the

macro-regional context, the concentration of "regions above average" in the west increases substantially. Putting the national context as analysing frame, a couple of well performing regions in each country join the league of the regions exceeding average values.

A number of changes can be observed between 2010 and 2017, especially in Austria with the Western Regions now fully range above the average values of the Macro Region and the National average.

3.5 Summary on findings – Answers to the policy questions

1. Are there significant variations in terms of territorial inequality and non-exclusive growth within the administrative boundaries of Austria, and within the macro-region?

The chosen indicators (people at risk of poverty; GSP/cap (PPS)) suggest that there are significant territorial inequalities.

Capital versus non-capital regions

- The most pronounced is to be found between capital cities in contrast to all other regions in terms of their economic performance.
- Considering the people at risk of poverty the result also points to a special role of cities. In this case however, a two-fold situation becomes visible: In some countries the capitals tend to be home to the highest share of people at risk than the national average, while in others the capitals are those regions in the country with the lowest share of people at risk.
- In all capitals/capital regions (excluding Bratislava) the deviation to the national deviation grew smaller over the 3 years observation period possible with the chosen indicator. This decrease in inner-national relative deviation points to a balancing development within the countries.
- In the Austrian context, the result of the capital of Vienna in comparison to its surrounding province Lower Austria is worth noting. Vienna shows the highest deviation from the national average on the negative spectrum (the risk is 50% higher) while inhabitants of the province surrounding the capital face the lowest risk. This can point to a rather rich sub-urban population living in Lower Austria, while population at risk tend to move/stay in the capital due to the better social welfare system. This situation slightly decreases between 2014 and 2017.

West-East divide

- There is a noticeable west-east divide, particularly considering the economic performance. The largest concentration of well performing regions in an economic sense are situated in Bavaria and Austria, especially its Western regions and the lowest in the most south-eastern regions.
- In Austria the economic performance is rather equally distributed. There are no regions falling far off either side of the national average. However, there is a west-east divide to be noted.
- Considering the share of population at risk of poverty the divide is not as apparent but still visible. Regions which have a higher rate of people at risk are situated mostly in the South and East of the macro-region. Especially most regions in Bulgaria, Romania and Croatia show a high risk, but also some regions in Austria, Slovenia and Hungary. Regions with the lowest risk of poverty and social exclusion are to be found mostly in the northern and central parts of the Danube Region and Bucharest.
- Apart from the capital versus non-capital dynamic, some countries show a big heterogeneity within its territory: In Slovenia and Hungary and more so in Slovakia a strong west-east divide is obvious. In Czech Republic, the northern NUTS 2 regions show a higher share of people at risk than they southern regions (but still good in comparison to the macro-region),

2. What changes can be observed since the creation of the EUSDR in 2011?

- The indicator on the people at risk of poverty is not available for most of Danube-region before 2014 and not later than 2017. This entails a rather short observation period of 3 years, in which no significant changes could be found.
- Regarding the economic indicator (GDP/cap (PPS)) a slight decrease in the west-east divide is notable. This could be interpreted as the start of a catching-up process of the eastern regions.

- In Austria, there are only small changes visible over time, but noticeable in western regions. In comparison to the average of the Danube-region Austrian regions perform above-average in both points of time.

3. Are the chosen indicators suitable for answering the policy questions? Is the data quality and availability in the ESPON database and Eurostat satisfactory?

- The topic of territorial inequality and non-exclusive growth is a very comprehensive field. The two chosen indicators put the spotlight on two important issues: the economic performance, and the people at risk of poverty. However, the analysis of those two indicators can only act as a starting point of a more in-depth assessment including a broader range of indicators. E.g., any GDP/capita indicator comes with known limitations, especially if it is used (as was done in this case) as a proxy to social progress: It does not take into account the distribution of income among the residents, or the value of unpaid work. Furthermore, an increase in GDP does not necessarily lead to a higher standard of living, particularly in areas such as healthcare and education.
- Data quality and availability: People at risk of poverty: The dataset has multiple flaws. The most obvious one is the missing data for the German regions participating in the macro-region. As Germany provides data only on NUTS 0 level, there was no possibility to include appropriate regional data in the analysis. The second flaw is the general availability on NUTS 2 level only. Detailed regional analysis asks for detailed regional data. E.g. Sofia and Ljubljana are no separate NUTS 2 region which is why the respective statements on the situations in capital regions are to be treated with caution. Third, the dataset is only available for a very limited timeseries. Forth, the results displayed in the map exhibit probable differences in compiling the data in the respective Member States. For the purpose of the present task the indicator however fulfils its purpose sufficiently.
- Data quality and availability: Economic performance: the GDP indicator shows a very high data quality and availability over a long period of time.
- A general limitation when working with a geographical scope that includes countries which are not part of the EU or ESPON Space is the availability of data. The discussed macro-region includes non-EU countries whose data is not included in the datasets which biases the analysis-

3.6 Additional analysis useful for answering the task

The ESPON REGICO tool provides an overview of the performances of regions in contrast to different regional contexts. It also enables a quick check of the data quality and availability. But the ESPON REGICO has a couple of limitations:

- The results of the analysis and its visualisation in form of maps are linked to the data fed into the tool. Hence, the limitations of the ESPON and Eurostat database are equally limiting the tool.
- Although some datasets are available for Non-EU countries in the ESPON and Eurostat database, they are not part of the calculations in the ESPON REGICO tool by default. This leads to biased results when setting a mapping frame that expands over the EU- or ESPON-space.
- The analysis of the relative deviation to the Large-scale perspective (in this case the Danube region) has to be treated with caution if data is missing for any included region (in this case: German regions).
- Hence: all calculated averages and deviations do not include data from Germany and non-EU countries participating in the EU strategy for the Danube region.
- As the indicator chosen as nominator describes a negative connotated situation (being at risk of being poor) and the indicator chosen as a denominator a positive situation (GDP/cap (PPS)) one has to take care to interpret the colour coding of the maps. For both indicators the same colour codes are applicable but they have different connotations. For the indicator people at risk of poverty blue regions describe those regions with low risk of poverty – a desirable situation. Whereas for the indicator GDP/cap (PPS) blue indicates those regions with a lower-than-average economic performance – an undesirable situation.
- As already stated above, the topic of territorial inequality and non-exclusive growth is a very comprehensive field. Additional analysis could include more indicators, some found in the ESPON REGICO database (like e.g.: level of education, number early leavers, life expectancy, number of hospital beds, etc.) or a counter-factual analysis assuming the EUSDR did not enter into force.

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Inspire Policy Making with Territorial Evidence

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