



Regional Focus

A series of short papers on regional research and indicators
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Metropolitan regions in the EU

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1. Introduction

This regional focus analyses the 258 metropolitan regions¹ in the European Union. It asks two main questions: 1) Is the EU becoming more metropolitan? and 2) Why do some metros grow fast?

It shows that overall, the population and GDP share of metros have not increased substantially since 2000. Most countries² in the Union did not see a significant change in the share³ of population in metros between 2000 and 2006. Five countries even saw their population share in metros shrink, as for example in Ireland and the UK (see table 1). Some countries did see an increase in the population share of their metros, including Bulgaria, Austria and Finland. In most EU countries, economic activity did not shift to metros. Some of the less developed EU countries, however, did experience a significant shift in economic activities to their metros and especially their capital metro. This was notably the case in the three Baltic States, as well as Bulgaria, Hungary and Greece (see table 1).

As a result, the EU became slightly more metropolitan, mostly due to increases in some of the EU countries with lower shares of population and GDP in metros.

A high concentration of economic activity and growth in one or two metros is typical of the less developed EU countries. In the more developed EU countries, the differences between the metros and the rest of the country are smaller and growth is far less concentrated. In several of them, growth is higher outside the metros. This confirms the Williamson hypothesis that agglomeration economies are more important in less developed countries.

Both the level of economic development and the economic growth in metros show a highly diverse pattern. The big difference in GDP per head indicates that not all metros are able to generate substantial agglomeration economies. In more developed EU countries, a slightly lower growth rate in metros than the rest of the country is normal. However, many metros have suffered

significant declines in their GDP per head relative to the country as a whole. More than half of the metros suffered a decline in their GDP per head relative to that of their country and in 41 metros this decline was more than 5% points. This suggests that many metros are confronted with a stronger development issue than merely a reduction in the benefits of agglomeration economies, due to higher overall levels of development.

2. Is population shifting to metros?

Overall, the EU has barely become any more metropolitan between 2000 and 2006. The share of EU population in metros in 2006 was 59%. In 2000, it was only half a percentage point lower. In two out of three EU countries, the population share in metros only changed between plus and minus half a percentage point (see table 1).

A few countries, however, have experienced more marked changes in the share of population in metros. Bulgaria, Austria, Finland and Sweden have seen a shift in population towards the metros, with the latter gaining between one and two percentage points between 2000 and 2006 (see table 1).

Ireland and the UK have both seen a decrease in their population share in metros. In Ireland, both the Cork and Dublin metros saw a decline in their share of national population. The UK is confronted with a varied situation. The Liverpool and Belfast metros saw their share of population decline by 4% over the period, while the Bristol and Northampton metros increased their share by around 3%. In the UK, more than half the metros experienced a decline in their share of population (see map 1 and figure 1).

The countries with stronger shifts towards metros have a population share in metros below the EU average. But the relationship is not very strong. For example, Bulgaria and Romania both have around 30% of their population in metros, half the EU average. But the share of population in metros in Bulgaria grew by 2% points, while it has not changed in Romania (see table 1). Countries with a population share in metros above the EU average have seen little change in that share since 2000, with the exception of Germany, which may be due to the migration from former East Germany to the rest of the country.

¹ Metropolitan regions, metros for short, are NUTS-3 regions or groupings of NUTS-3 regions representing all urban agglomerations of more than 250 000 inhabitants.

² In the analysis per country, Cyprus and Luxembourg cannot be included, as they consist of a single NUTS-3 region. Malta is not included because it consists of only two NUTS-3 regions and one has more than 90% of the total population and GDP.

³ Most of the analysis in this paper is done based on changes in the share of national population and national GDP for two reasons: it takes into account whether a metro region is located in a country with a growing population or in a country with a declining one. It allows for easy comparison, which fluctuates with GDP share. (GDP growth cannot be calculated at NUTS-3 level, due to the lack of GDP in constant prices.) A decline in share of population can thus mean either an absolute decline in population or a population that grows more slowly than the country as a whole.

3. Are economic activities shifting to metros?

The share of EU GDP in metros is 67% and, as with population, this has only increased by half a percentage point since 2000⁴ (see table 1). The GDP share in metros is higher than the population share, due to higher productivity levels and/or higher employment rates (Metro regions have been designed to contain the commuter belts surrounding large cities, as a result the impact of commuting on GDP shares is limited).

GDP shares have shifted more than population, particularly in the three Baltic States, Bulgaria, Greece, Hungary and Romania, where metros gained between two and nine percentage points in GDP shares. In many of the large MS, the share did not change at all, including Germany, Spain, the UK and France. Austria and Portugal even saw a small decrease in the GDP share of metros (see figure 2 and map 2).

The changes over time seem less related to the share of GDP in metros than the overall level of development. All the countries with high increases of GDP share in metros have a GDP below the EU average. Most countries in the EU with a high level of development have experienced almost no change in their share of GDP in metros.

Considering the less developed EU countries in isolation could lead one to conclude that agglomeration economies become more important as countries develop and that higher economic growth in metros is an inevitable consequence of development. However, the opposite is true. The difference in GDP per head between metros and the rest of the country is lower in more developed countries in the EU (see figure 2). This supports the 'Williamson hypothesis'⁵ that agglomeration boosts GDP growth only up to a certain level of economic development. So, although economic growth favoured metros in less developed countries between 2000 and 2006, as development continues, growth is likely to be higher outside metros. This could be because the advantages of agglomeration become more widely available throughout the country due to improvements in the business environment, communication and transport infrastructure and the education of the labour force outside the main cities.

4. How do the different types of metros perform?

Less than half the metros have a higher GDP per head than that of their country (see figure 3). Even compared to the GDP per head in the non-metros, only three out of four metros score higher. Also, economic growth in metros was not particularly strong. Between 2000 and 2006, more than half the metros experienced a decline in their GDP per head relative to the national level (see map 3 and figure 4). If metros are truly the drivers of a country's economy, only a few are driving in the fast lane.

4.1. Capital metros

In three out of four countries, the capital metro has the highest GDP per head. This is particularly the case in Slovakia, Romania,

Bulgaria and Poland, where they have a GDP per head which is more than double the national average (see figure 3).

Change in GDP per head relative to the national average was also extremely high in the capital metros in the Central and Eastern EU countries (see figure 4 and map 3). Five of their capital metros even increased their GDP per head by more than 10% points relative to the national: Budapest, Sofia, Vilnius, Bucharest and Bratislava.

In more developed EU countries, the capital metro rarely has a GDP per head which is more than 50% higher than the national level. In addition, growth is less concentrated in the capital metro in these countries. Seven capital metros of the more developed EU countries faced a relative decline in their GDP per head: Brussels, Paris, Stockholm, Madrid, Helsinki, Berlin and Vienna. The remaining five capital metros did increase their GDP per head relative to the national level but only by between one and five percentage points as compared to increases of up to 44 percentage points in the less developed EU countries (see figure 4).

Given that in more developed EU countries the difference between the capital metro and the country as a whole are much smaller and growth is less concentrated in the capital metro, the high concentration of economic activity and growth in the capital metro in the Central and Eastern EU countries seems unlikely to continue in the medium term.

In most Central and Eastern EU countries, the capital metro is very dominant, with a GDP per head far higher than any other metro and the rest of the country, which is often described as monocentric development. The most extreme case is Bratislava, which has a GDP per head almost three times higher than that of Košice, the Slovak metro with the second highest GDP per head. The difference is also large in Hungary, Bulgaria, Slovenia, the Czech Republic, Latvia and Poland. To a certain extent these differences in economic development reflect differences in the quality of the business environment. Large differences in the quality of the business environment can hinder economic growth in spilling over to other regions, which may reduce the growth potential of a country. Countries with several metros with a high quality business environment offer a range of locations to entrepreneurs and investors, instead of just one high quality location and the others lagging behind.

4.2. Second tier metros and other metros

The metros outside the capital have been grouped into two categories for this analysis. Second tier metros are clustered close to or just below the capital city in terms of population size. For example, in Italy, the second tier metros are Milan, Napoli and Torino. These metros have the potential to become attractive alternative locations for high added value economic activities and investments because of their critical mass. The group of second largest cities have a large labour market and often good transport connections and universities. As second tier metros are defined nationally, they can differ in size from one country to the next. For a complete list, see annex 1.

In six countries, the capital metro does not have the highest GDP per head. In some cases this is one of the second tier metros in the country, such as Milan in Italy or Linz in Austria, in others it is a city further down the urban hierarchy, such as Donostia-San Sebastián in Spain or Groningen in the Netherlands (see figure 1).

⁴ The change in GDP does not include Poland, due to insufficient data related to changes in NUTS boundaries.

⁵ Williamson, Jeffrey G. (1965) *Regional Inequality and the Process of National Development. Economic Development and Cultural Change*, 13(4): 3-45. See also Brülhart, Marius and Sbergami, Federica (2008) *Agglomeration and Growth: Cross-country evidence*. CEPR Discussion Paper No. 6941. www.cepr.org/pubs/dps/DP6941.asp

In some countries, the second tier metros are among the best performing regions. For example, in Germany the second tier metros have among the highest GDP per head levels in the country and far higher than that of Berlin, with the exception of the Ruhr Gebiet. In countries like the Netherlands, Ireland and Poland, the second tier metros have higher economic development than the country and come close to the level of development of the capital.

In the UK and Hungary, on the other hand, second tier metros have a lower level of economic development than the country in which they are located and some even lower than the non-metros. This is also the case in Sweden, Denmark and Finland, although their level of development never drops below the EU average.

In some countries, the level of development of second tier metros is mixed, with some scoring very high and others very low. Three clear examples of this situation are Italy, Spain and Romania, where Barcelona, Milan and Timisoara do well, while Sevilla, Napoli and Iasi do not.

5. Conclusion

Only half the EU metros have a higher level of development than their country, indicating that benefits from agglomeration are far from automatic. The capital metros tend to have the highest GDP per head, while most of the smaller metros and some of the second tier metros score low.

In the less developed EU countries, the capital metro attracts a large share of economic growth and has a far higher level of development than the other metros and the rest of the country. A comparison with the more developed EU countries suggests that this trend will likely reverse with higher growth outside the capital.

Table 1: Metropolitan regions' share in population and GDP, and change by MS

	Country	Number of metros	% Population in 2006	Change in population share, in % points 2000-2006	% GDP in 2006	Change in GDP share, in % points 2000-2006	GDP per head in PPS, 2006 EU=100		
							Metros	Non-metro regions	National
1	BE	5	42.2	0.2	53.8	0.4	151	95	118
2	BG	3	31.2	2.0	47.4	9.4	56	28	37
3	CZ	4	51.5	0.2	60.2	2.0	91	63	77
4	DK	4	67.7	0.0	70.9	0.4	129	111	123
5	DE	55	62.2	0.6	67.6	0.1	126	99	116
6	EE	1	38.8	0.5	61.1	4.2	103	42	65
7	IE	2	53.8	-0.4	66.5	1.1	182	107	147
8	GR	2	46.2	0.7	58.5	4.4	119	73	94
9	ES	22	74.2	0.3	76.3	0.1	107	96	104
10	FR	30	65.1	0.0	72.3	0.0	122	87	109
11	IT	26	53.1	0.3	57.1	1.0	111	95	103
12	CY	1	100.0	0.0	100.0	0.0	90		90
13	LV	1	47.9	0.7	68.3	2.6	75	32	53
14	LT	2	45.0	0.5	57.6	5.1	71	43	56
15	LU	1	100.0	0.0	100.0	0.0	267		267
16	HU	3	41.0	0.4	55.8	4.4	86	48	64
17	MT	1	92.4	0.1	94.1	0.2	78	59	77
18	NL	14	64.6	0.2	69.8	0.7	142	111	131
19	AT	5	46.0	1.2	56.5	-0.2	153	100	124
20	PL	22	58.9	0.0	68.7	n/a	61	40	52
21	PT	2	38.4	0.3	48.6	-1.1	97	64	76
22	RO	8	32.6	0.1	46.1	2.0	54	31	38
23	SI	2	40.9	0.3	49.5	2.0	106	75	88
24	SK	2	25.6	-0.1	38.3	0.8	95	53	64
25	FI	3	43.6	1.2	52.4	0.4	138	97	115
26	SE	3	50.8	0.9	57.0	0.5	136	106	121
27	UK	34	72.8	-0.1	77.0	0.0	127	102	120
	EU27	258	58.7	0.5	66.9	0.0 *	114	80	100

* The change in GDP share does not include Poland

6. Methodology

Metros are NUTS-3 regions or a combination of NUTS-3 regions which represent all agglomerations of at least 250 000 inhabitants. These agglomerations were identified using the Urban Audit's Larger Urban Zones.

Each agglomeration is represented by at least one NUTS-3 region. If in an adjacent NUTS-3 region more than 50% of the population also lives within this agglomeration, it is included in the metro.

As the metros are based on agglomerations, which by definition include the commuter belt around a city, this approach corrects the distortions created by commuting in virtually all cases. The only exception is Luxembourg, where a significant share of the people working in Luxembourg lives in Belgium, France or Germany. Because metros eliminate the commuting distortion almost entirely, the comparison of GDP per head becomes meaningful, whereas comparison of GDP per head of NUTS-3 regions is far more difficult to interpret, since the difference may be largely artificial.

To access the data behind the figures and maps, table 1 and the NUTS-3 composition of each metropolitan region, please follow this data link: <https://circabc.europa.eu/d/d/workspace/SpacesStore/39649b4b-3d50-4806-a63f-13dd7bbd61d2/0903-005.xls> Please note that this link does not work with certain versions of Internet Explorer. The link works consistently with other browsers, such as Firefox and Safari.

Figure 1: Population change in metropolitan regions

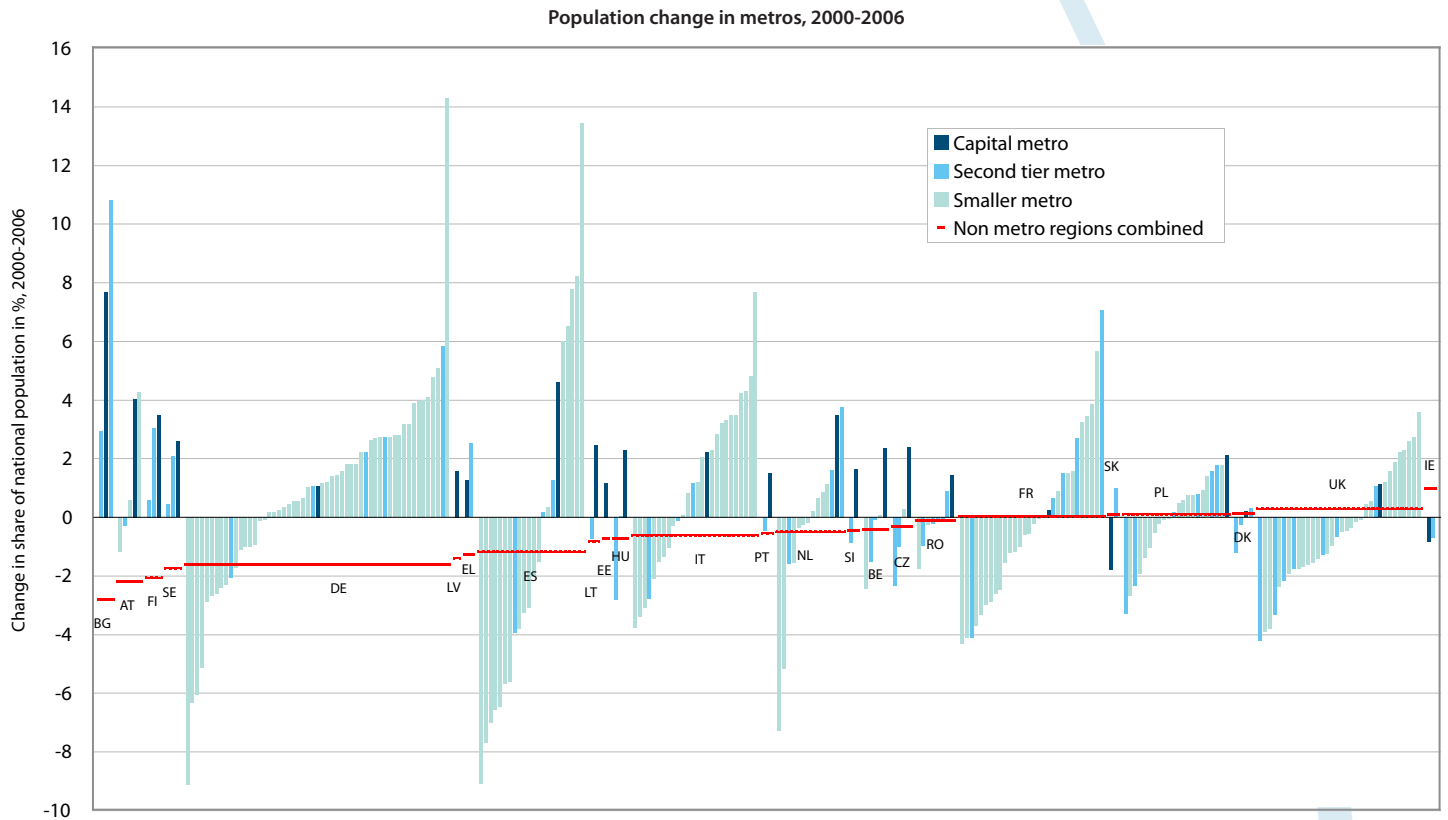


Figure 2: GDP change in metropolitan regions, 2000-2006

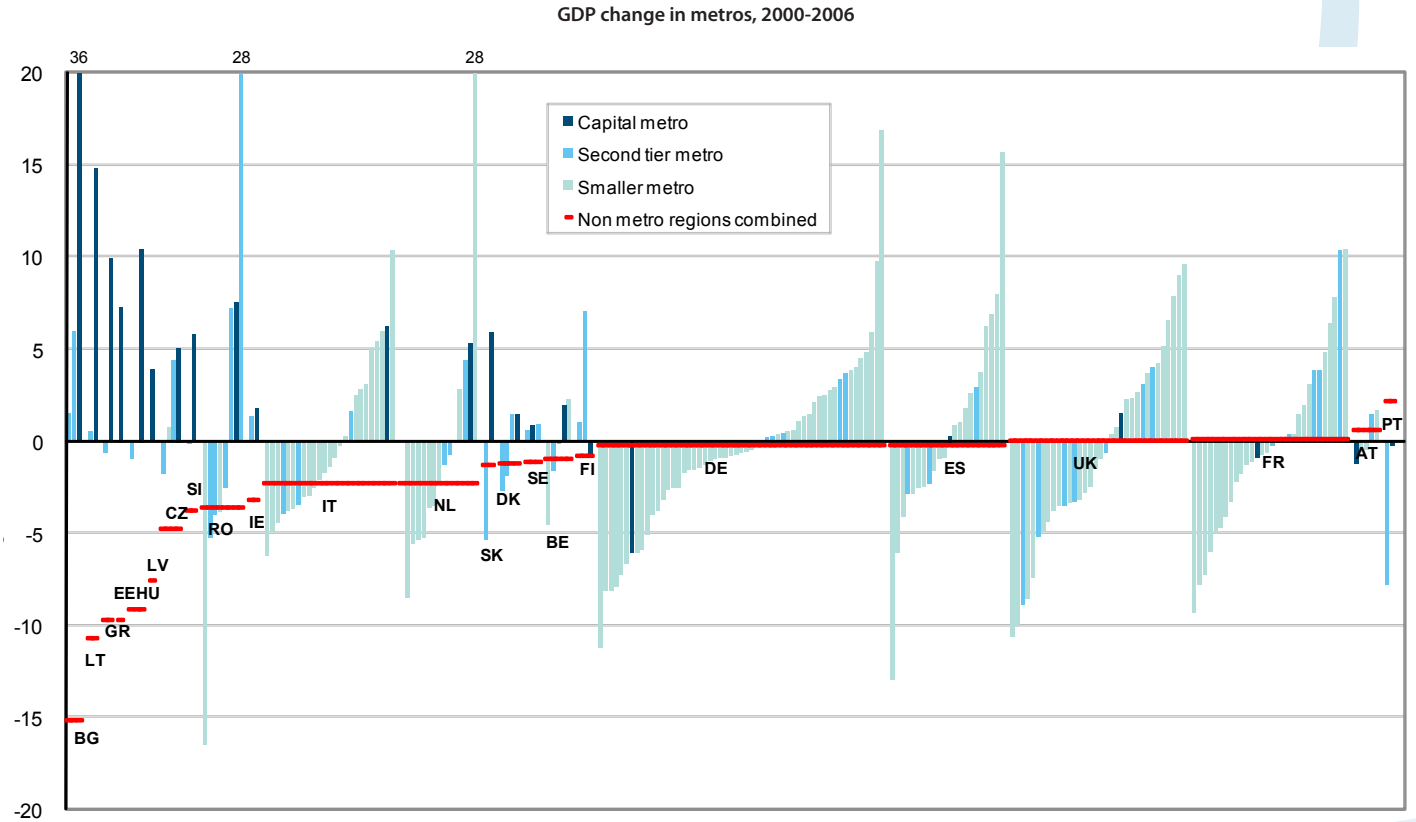


Figure 3: GDP per head in metropolitan and non-metropolitan regions by MS in 2006

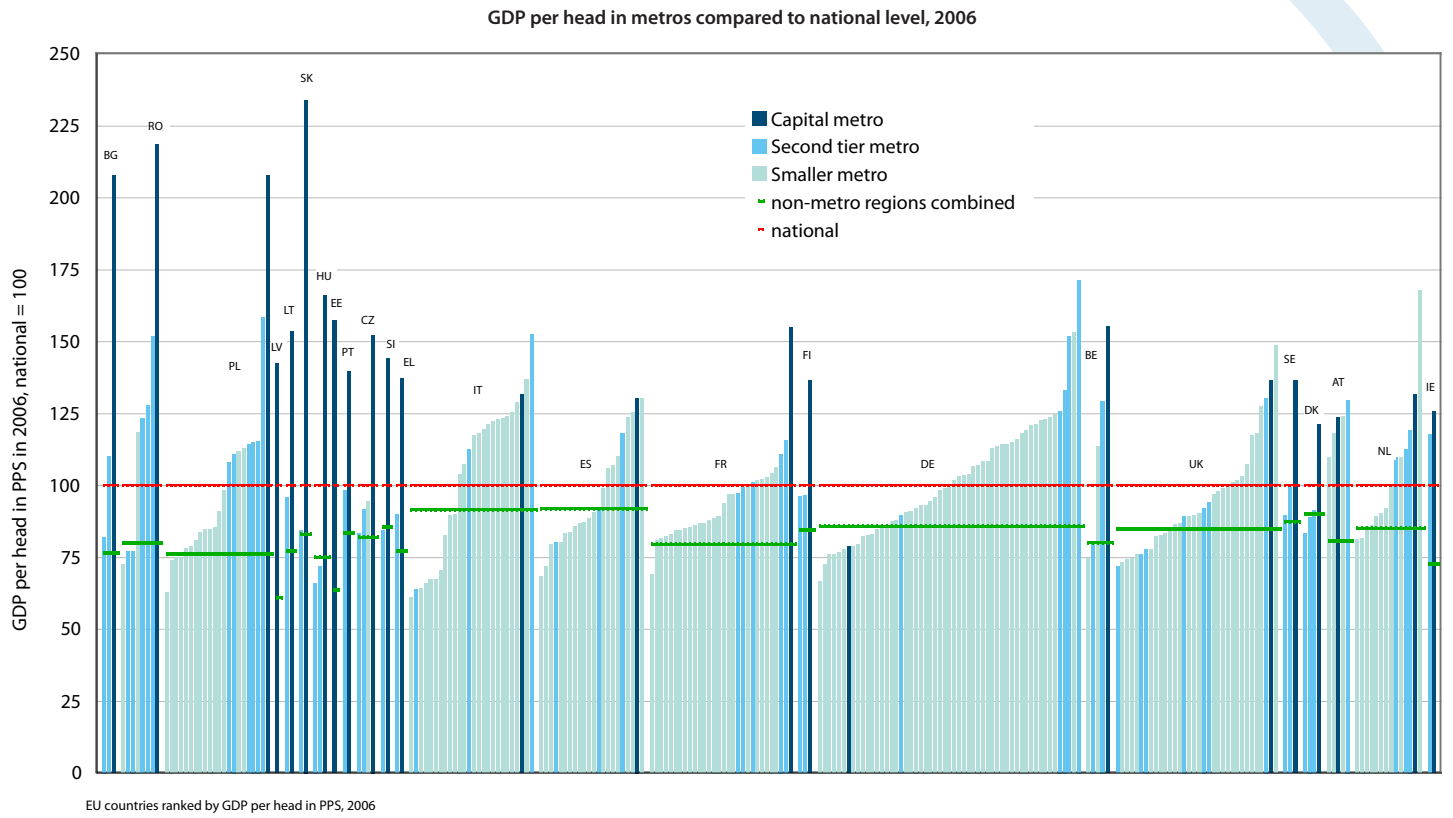
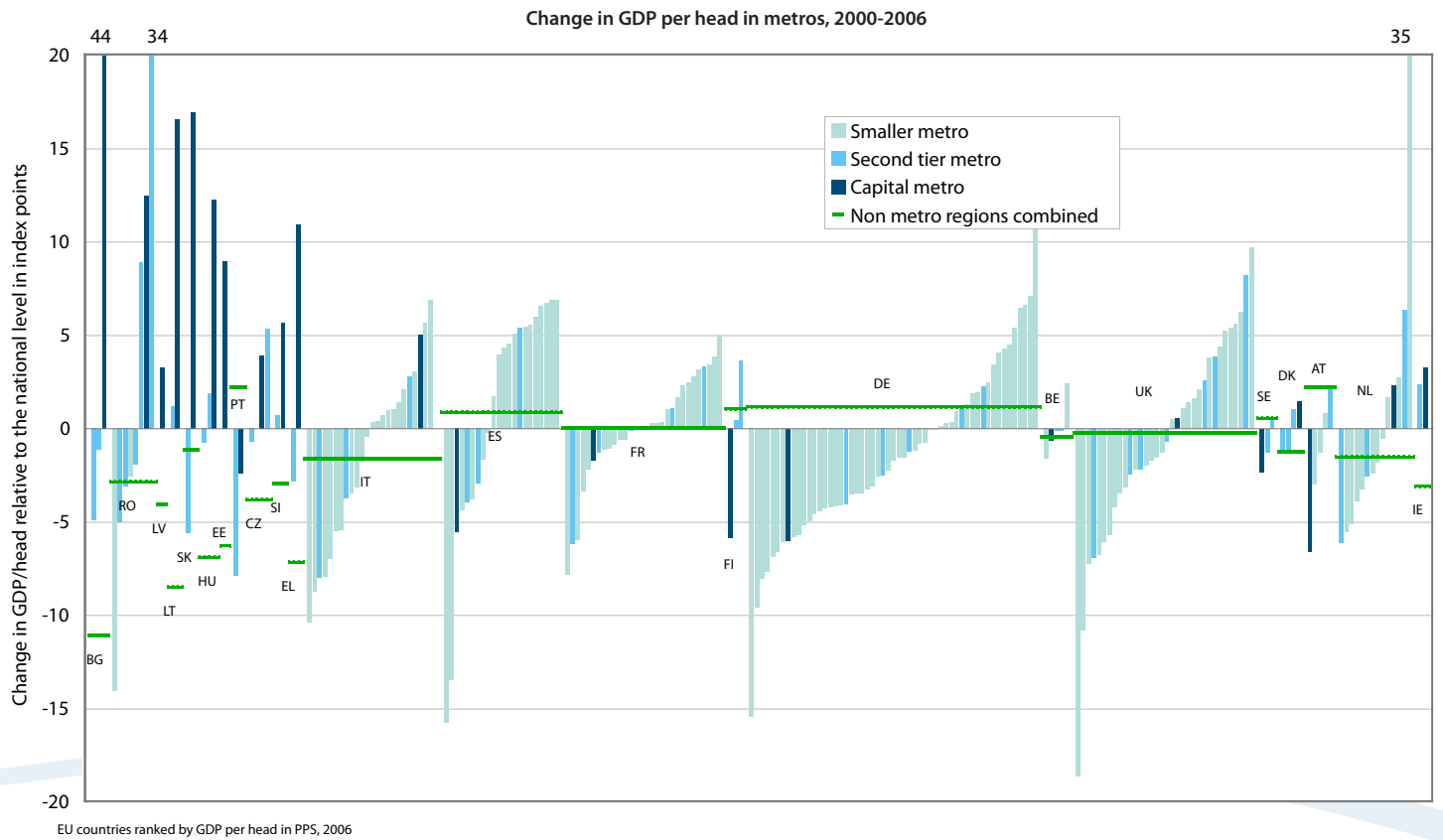
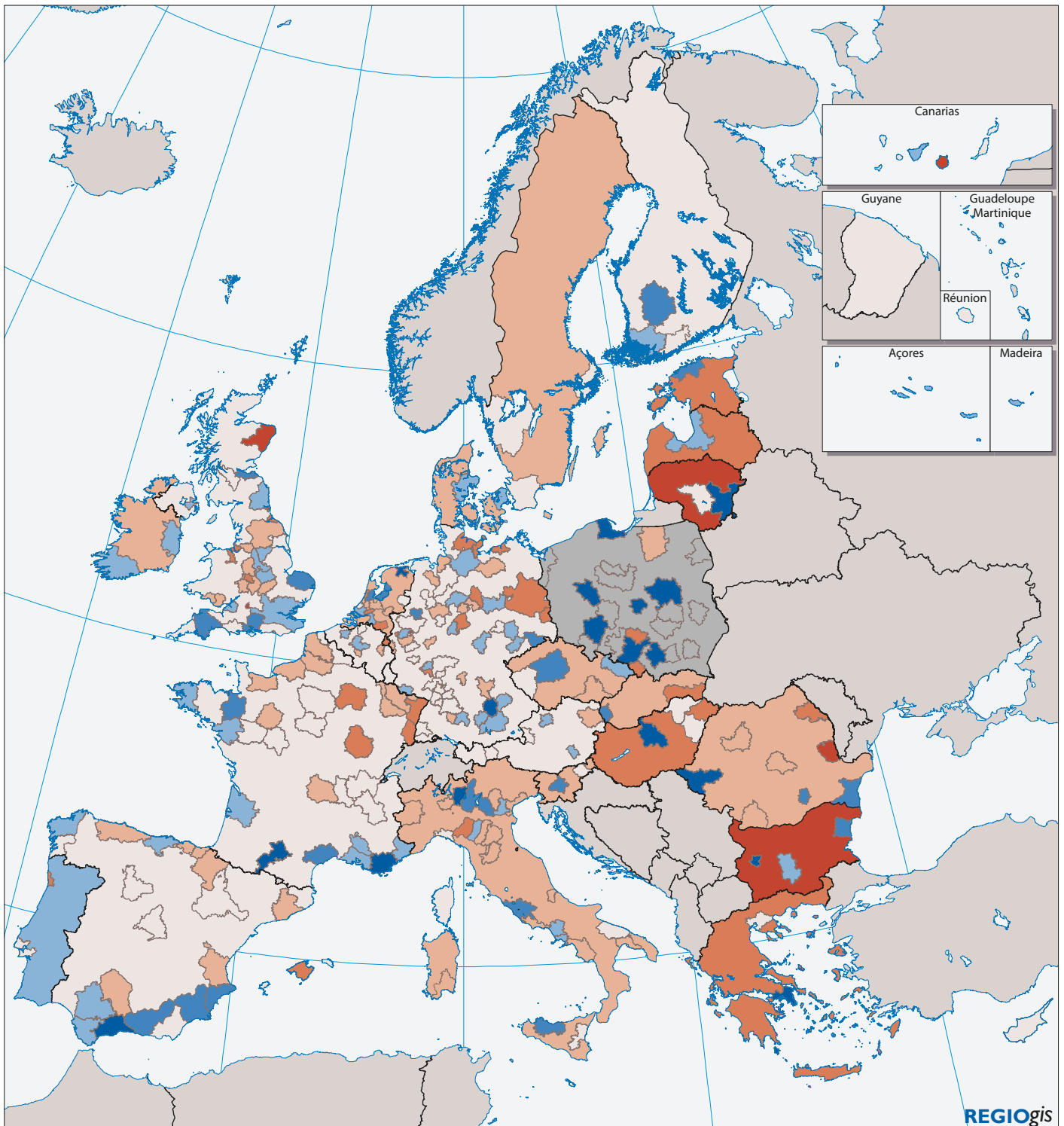


Figure 4: Change in GDP per head in metropolitan regions relative to national level, 2000-2006

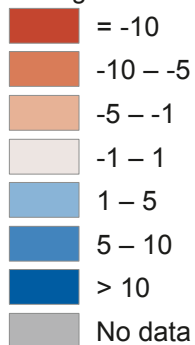


Map 1: Change in the share of GDP of metropolitan and urban regions, 2000-2006



Change in the share of GDP of metropolitan and urban regions, 2000-2006

Change in share of national GDP (%)

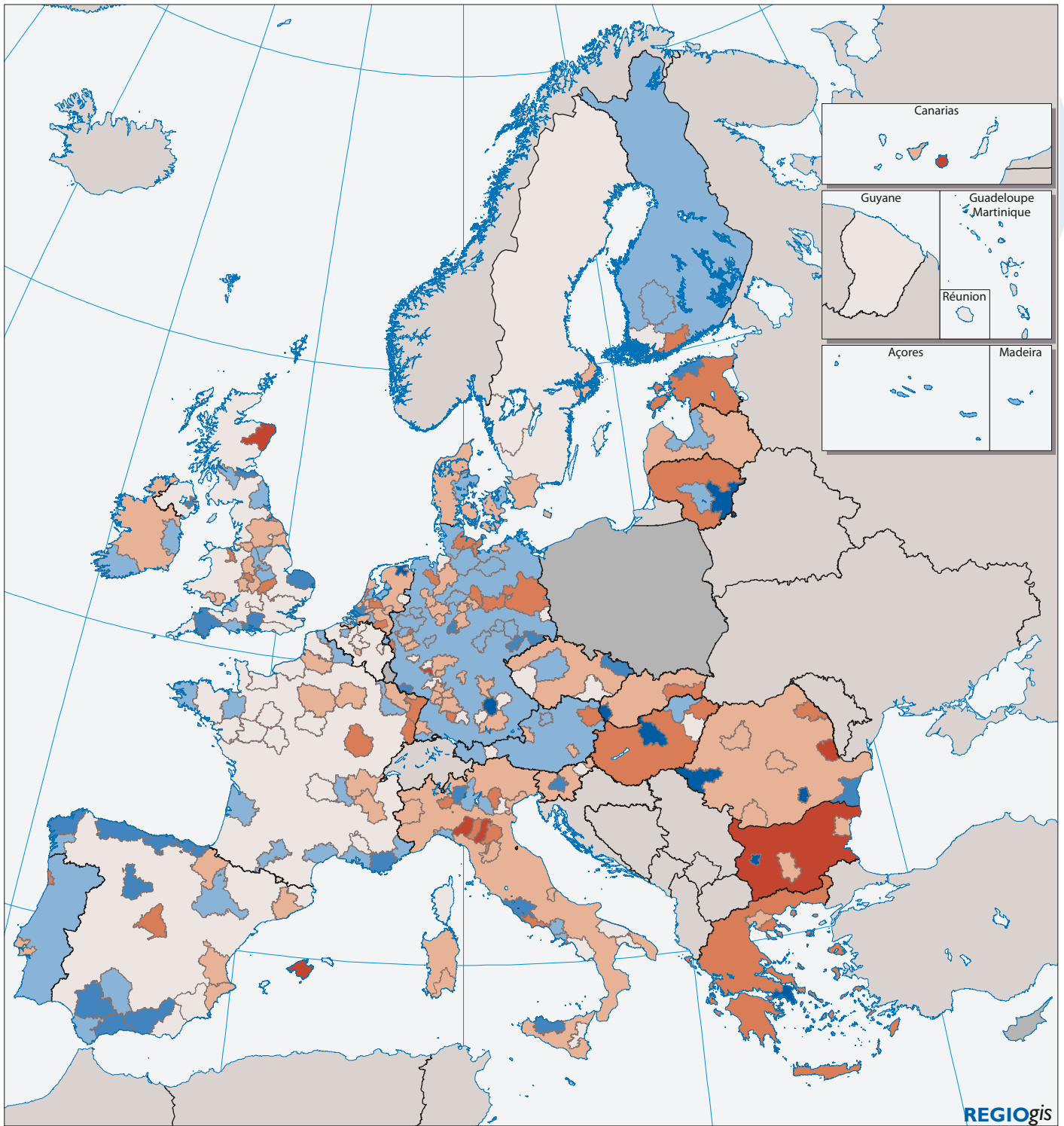


Source: Eurostat, DG Regio



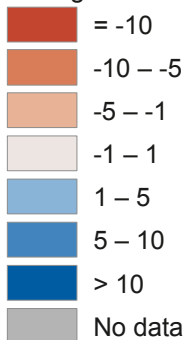
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Map 2: Change in GDP/head of metropolitan and urban regions, 2000-2006



Change in GDP/head of metropolitan and urban regions, 2000-2006

Change in index, MS=100

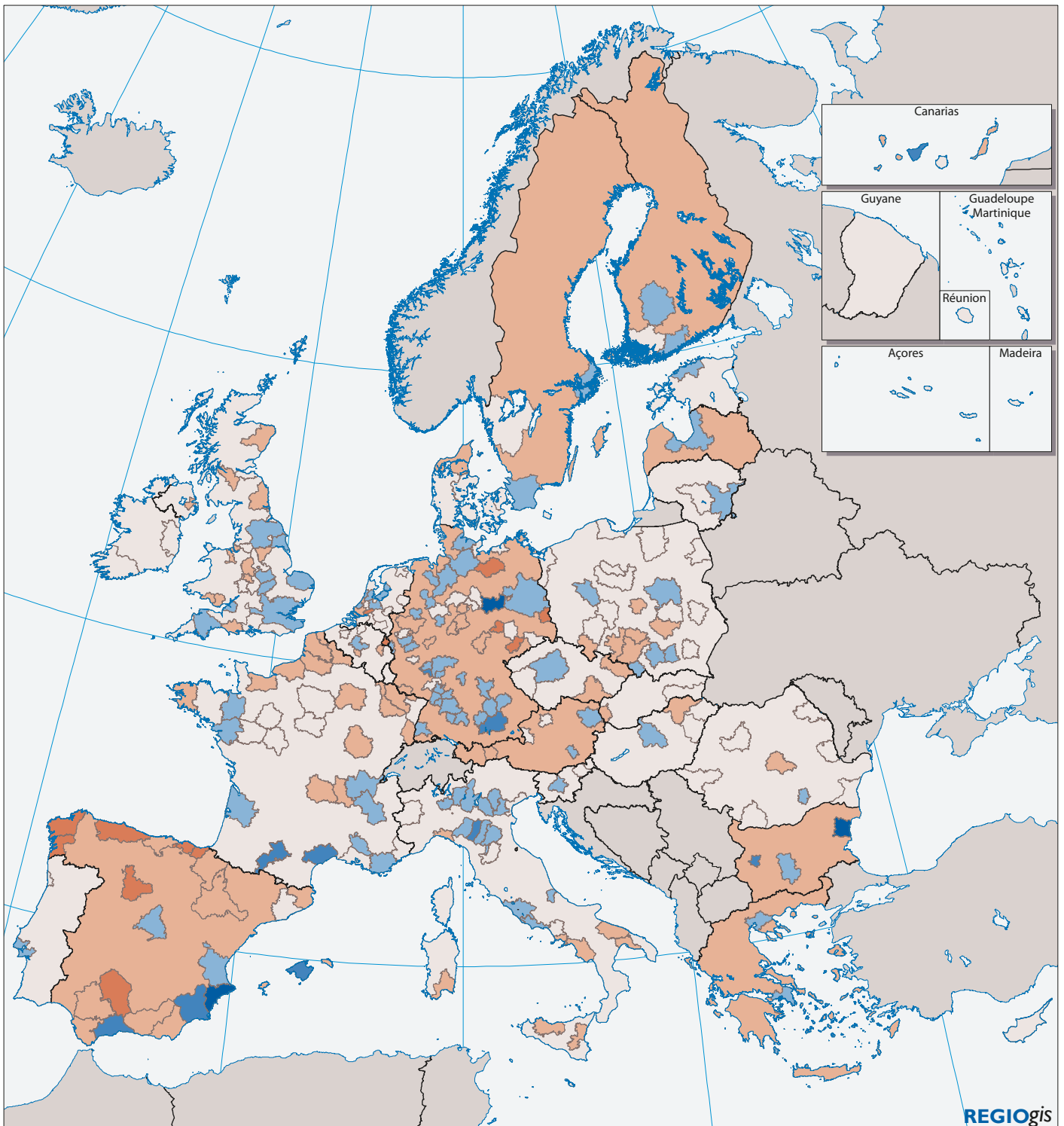


Source: Eurostat, DG Regio



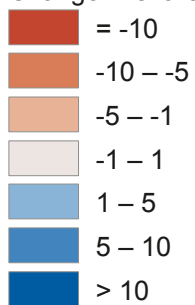
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Map 3: Change in the share of population of metropolitan and urban regions, 2000-2006



Change in the share of population of metropolitan and urban regions, 2000-2006

Change in share of national population (%)



Source: Eurostat, DG Regio



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