

**Focus on regional
competitiveness**

15





Introduction

This chapter provides a summary of an [EU Regional Competitiveness Index, RCI 2013](#) (Annoni and Dijkstra) report that was published by the [European Commission](#) (Joint Research Centre and Directorate-General for Regional and Urban Policy), available at http://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/6th_report/rci_2013_report_final.pdf.

The regional competitiveness index (RCI) is based on [NUTS 2](#) regions. It extends the traditional analysis of competitiveness as a purely economic measure to incorporate social elements too. In this way, the definition of competitiveness moves beyond the perspective of businesses to also integrate the perspectives of residents / consumers. The RCI builds on the current debate that prosperity should not only be measured by [gross domestic product \(GDP\)](#) but also through a range of other criteria — such as health or human capital developments (Stiglitz et al., 2009, available at http://www.stiglitz-sen-fitoussi.fr/documents/rapport_anglais.pdf). The definition of regional competitiveness underpinning the RCI may therefore be summarised as: *'the ability to offer an attractive and sustainable environment for firms and residents to live and work'*.

The RCI is designed to improve the understanding of territorial competitiveness at the regional level; after all, different regions have different strengths and weaknesses. Understanding differences in regional competitiveness may help provide an insight into social and economic conditions and offers policymakers a clearer idea of what policy initiatives work in a specific region.

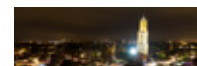
Consider the following scenario: economic and social differences between neighbouring regions have grown to the point where there are considerable flows of people from one region to another; this could lead to a deterioration in the quality or cost of services both in relation to the strain on the overburdened region and the inefficiency in the depopulated area, a deterioration in social cohesion, and perhaps even abandonment of land and / or property in the depopulated area. By understanding the differences in each region's competitive development, policymakers have the opportunity to make policy decisions tailored to each region.

The results presented in this chapter demonstrate that territorial competitiveness in several EU Member States has a strong regional dimension which cannot be observed from an analysis at the national level; the differences are often most pronounced when comparing regions with capital cities to other regions in the same Member State. These gaps and variations in regional competitiveness might be considered as harmful for national competitiveness and could potentially be used by policymakers to target specific actions with the goal of moderating the differences observed, potentially improving overall national competitiveness.

The RCI is a weighted composite measure of multiple dimensions (or pillars). Each dimension, that cannot be directly observed, is indirectly quantified by a set of indicators, statistically assessed and aggregated. Eleven dimensions (which are explained in detail in the Data sources and availability section) are incorporated into the RCI — see **Diagram 15.1**; these different dimensions are aggregated into three sub-indices of competitiveness and an overall composite index. The RCI therefore quantifies in a single index what may otherwise be difficult to measure: the level of competitiveness of an individual region. The eleven dimensions are classified into these three sub-indices / groups:

Diagram 15.1: Typology of sub-indices and dimensions within the regional competitiveness index (RCI)

Regional competitiveness index (RCI)
I. Basic sub-index
i) Institutions
ii) Macroeconomic stability
iii) Infrastructure
iv) Health
v) Basic education
II. Efficiency sub-index
vi) Higher education
vii) Labour market efficiency
viii) Market size
III. Innovation sub-index
ix) Technological readiness
x) Business sophistication
xi) Innovation



COMPOSITE INDICATORS OF COMPETITIVENESS

A number of studies measure competitiveness at the country level through the use of composite indicators. A composite indicator is one which is formed from individual indicators that are compiled into a single index, on the basis of an underlying model covering a multi-dimensional concept that is being measured. Each dimension, that cannot be directly observed, is indirectly quantified by a set of indicators, statistically assessed and aggregated. Two of the most well-known composite indicators in the domain of competitiveness studies are the Global Competitiveness Index (published by the World Economic Forum) and the World Competitiveness Yearbook (released by the Institute for Management Development).

In recent years, several attempts have been made to extend competitiveness analysis to the regional level. For example, the European Competitiveness Index (ECI) focuses on NUTS 1 regions in Europe; this study was conducted before the accession of Bulgaria, Croatia and Romania to the EU. A simpler but more detailed geographical description of competitiveness is presented in the Atlas of Regional Competitiveness, which covers NUTS 2 regions, although this approach does not aggregate indicators to a single composite index. Moreover, a number of EU Member States have made efforts to construct their own national measures of regional competitiveness — for example, Croatia, Lithuania, Finland and the United Kingdom. However, the regional competitiveness index (RCI) offers the first comprehensive picture of the situation for all NUTS 2 regions in the EU-28.

The RCI takes a wider approach to competitiveness, looking at a range of dimensions that focus not only on the productivity of firms (enterprises), but also on societal well-being and the long-term potential for growth. In doing so, the RCI departs from traditional theories which maintain that regional economic performance is derived solely from enterprise performance, and instead reflects the on-going debate that prosperity should not only be measured through GDP (per inhabitant) but that it should also take account of other aspects such as health and human capital development, as expressed within the Stiglitz, Sen and Fitoussi report and the EU's 'Beyond GDP' initiative.

For more information:

Global Competitiveness Index: <http://www.weforum.org/issues/global-competitiveness>

World Competitiveness Yearbook: <http://www.imd.org/wcc/news-wcy-ranking/>

Stiglitz, Sen and Fitoussi report: http://www.stiglitz-sen-fitoussi.fr/documents/rapport_anglais.pdf

European Commission — beyond GDP: http://ec.europa.eu/environment/beyond_gdp/index_en.html

Main statistical findings

Regional competitiveness gaps within the same country — harmful for national competitiveness?

There are not only wide variations in the competitiveness of EU Member States but also between regions within the same country. These differences in regional competitiveness within a country highlight the limitations of analyses that are based on the national level and may evoke a debate about whether regional competitiveness gaps are harmful for national competitiveness and how they might be closed.

Map 15.1 shows the regional heterogeneity (except for six countries where NUTS level 2 coincides with the country level) of competitiveness across the EU in 2013 as measured by the composite RCI which is presented in relation to the EU-28 average.

The most competitive regions in the EU in 2013, as measured by the RCI, were principally found in the north-west of Europe, comprising most regions in the **Benelux** countries, Denmark,

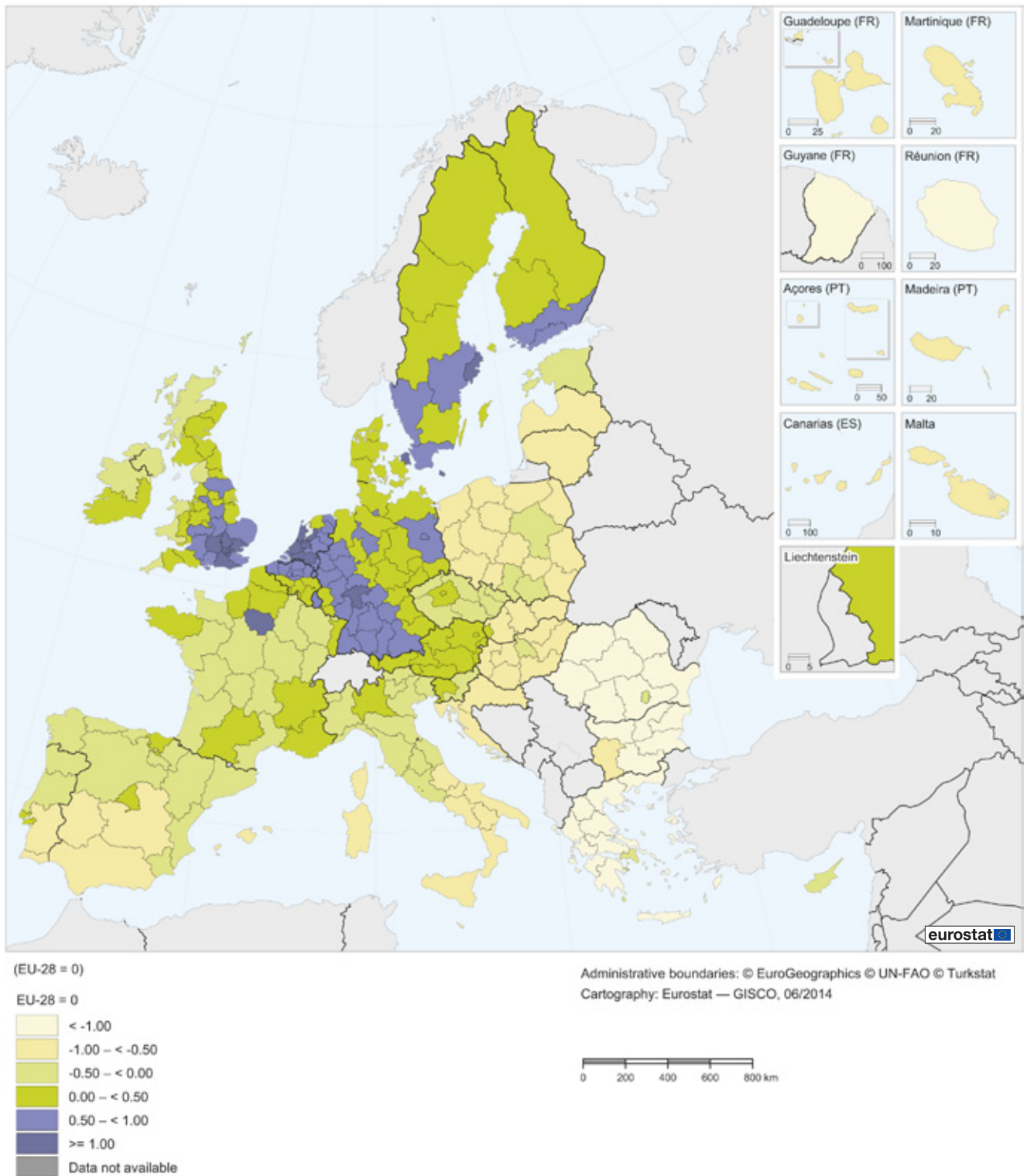
Germany, Austria, Sweden and Finland, while high levels of regional competitiveness were also calculated for the south-east of the United Kingdom and northern France (each of these regions is marked in purple on **Map 15.1**). In contrast, the least competitive regions (marked in pale yellow) were generally located in the south-east of Europe, in particular within Bulgaria, Greece and Romania, as well as in some of the French overseas regions.

Capital and metropolitan regions often had the highest levels of competitiveness

Map 15.1 also shows a relatively polycentric pattern, with a number of highly competitive capital and metropolitan regions spread across Europe. Some capital regions were surrounded by similarly competitive regions (for example, in the Netherlands and the United Kingdom), whereas in other countries (such as Spain, France and many of the Member States that joined the EU in 2004 or later), several of the regions neighbouring the capital were less competitive. This suggests that there are limits to the spill-over effect that might lift the competitiveness of regions surrounding capital cities.

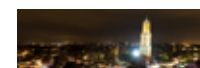


Map 15.1: Regional competitiveness index, by NUTS 2 regions, 2013 ⁽¹⁾
(EU-28 = 0)



⁽¹⁾ Chemnitz (DED4), Leipzig (DED5), Emilia-Romagna (ITH5), Marche (ITI3), Cheshire (UKD6) and Merseyside (UKD7): estimates based on the NUTS 2006 classification.

Source: European Commission (Joint Research Centre and Directorate-General for Regional and Urban Policy)



Utrecht maintained its position with the highest competitiveness index

The RCI ranks each region according to its level of competitiveness. The highest ranking region in 2013 was Utrecht (in the Netherlands); Utrecht was also the region with the highest competitiveness index in 2010 (which is when a similar study was last conducted). The least competitive region in 2013 was Severozapaden (in Bulgaria).

Table 15.1 shows the 10 most competitive regions across the EU and the 10 least competitive regions, based on normalised scores (where the region with the highest RCI was rebased to have a score of 100 points and the region with the lowest RCI was rebased to have 0 points — all other regions were reclassified within this range).

Of the 10 most competitive regions in the EU-28 in 2013, seven were either capital regions or regions that included large cities. The Netherlands and the United Kingdom each had three regions that were present among the top 10 most competitive regions. By contrast, Greece had 5 of the 10 least competitive regions in the EU in 2013.

No region in Bulgaria, Greece, Croatia, Hungary, Poland or Romania, nor any of the [Baltic Member States](#) or Cyprus (each a single region at this level of analysis), had an RCI above the EU-28 average in 2013. Furthermore, all but one of the regions in Italy and Portugal had an RCI below the EU-28 average. In the case of the two exceptions — Lombardy in Italy and Lisboa in Portugal — the latest RCI values were very close to the EU-28 average.

By contrast, all of the regions in Belgium, Denmark, Germany, the Netherlands, Austria, Finland and Sweden were more competitive — in terms of their RCIs — than the EU-28 average in 2013; this was also the case for Luxembourg (a single region at this level of analysis).



SPOTLIGHT ON THE REGIONS: UTRECHT (NL31), THE NETHERLANDS



Oudegracht, Utrecht

The regional competitiveness of the 12 NUTS 2 regions across the Netherlands was consistently higher than the EU-28 average.

Utrecht had the highest regional competitiveness index in 2013. Flevoland (NL23) and the capital region of Noord-Holland (NL32) were also present among the top 10 regions in the EU.

Photo: Michiel Verbeek

Table 15.1: Top 10 most and least competitive regions in the EU-28, by NUTS 2 regions, 2013 ⁽¹⁾ (index, 0 – 100)

Top 10	Region (NUTS code)	RCI 2013	Bottom 10	Region (NUTS code)	RCI 2013
1	Utrecht (NL31)	100.0	257	Peloponnisos (EL25)	5.1
2	London area (UKH2, UKH3, UKI1 and UKI2) ⁽²⁾	94.2	258	Sud-Vest Oltenia (RO41)	4.2
3	Berkshire, Buckinghamshire and Oxfordshire (UKJ1)	93.5	259	Centru (RO12)	4.2
4	Stockholm (SE11)	92.7	260	Anatoliki Makedonia, Thraki (EL11)	3.9
5	Surrey, East and West Sussex (UKJ2)	90.7	261	Notio Aigaio (EL42)	3.7
6	Amsterdam area (NL23 and NL32) ⁽²⁾	90.1	262	Dytiki Makedonia (EL13)	2.8
7	Darmstadt (DE71)	89.2	263	Yugoiztochen (BG34)	2.7
8	Île de France (FR10)	89.1	264	Stereia Ellada (EL24)	2.2
9	Hovedstaden (DK01)	88.8	265	Sud-Est (RO22)	0.1
10	Zuid-Holland (NL33)	87.6	266	Severozapaden (BG31)	0.0

⁽¹⁾ Chemnitz (DED4), Leipzig (DED5), Emilia-Romagna (ITH5), Marche (ITI3), Cheshire (UKD6) and Merseyside (UKD7): estimates based on the NUTS 2006 classification.

⁽²⁾ Aggregated data to take account of commuting patterns, comprising: Bedfordshire and Hertfordshire (UKH2), Essex (UKH3), Inner London (UKI1) and Outer London (UKI2).

⁽³⁾ Aggregated data to take account of commuting patterns, comprising: Flevoland (NL23) and Noord-Holland (NL32).

Source: European Commission (Joint Research Centre and Directorate-General for Regional and Urban Policy)



Biggest differences in regional competitiveness within the same country in France and Spain

Map 15.1 shows that there was a highly competitive core zone in the north-west of Europe that stretched down through Germany and into Austria. It also shows some divisions within individual EU Member States; for example, a north-south divide in Italy (lower levels of competitiveness in the south), and a north-west-south-east divide in the United Kingdom (with Northern Ireland, northern Scotland, parts of Wales, Cumbria and Cornwall being less competitive).

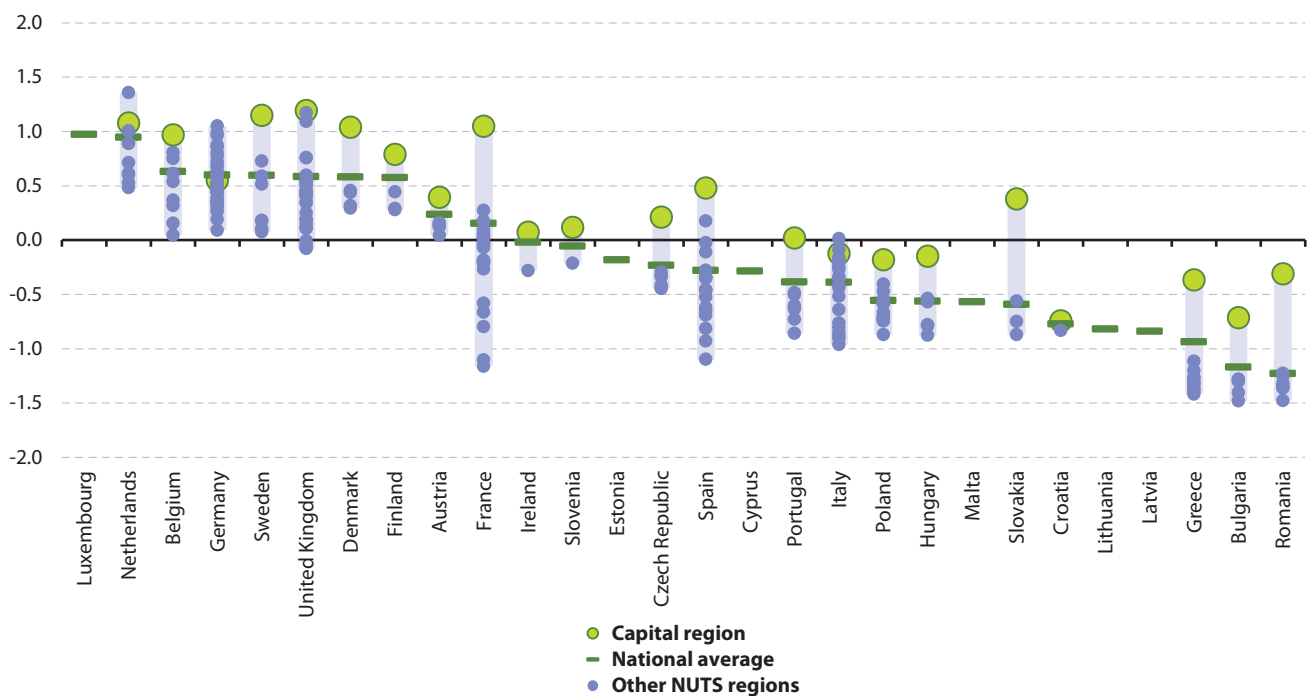
Figure 15.1 looks at these regional differences in more detail. Within most EU Member States there were considerable differences in regional competitiveness. On the basis of the coefficient of variation for the latest RCIs in 2013, the largest differences across regions in the same EU Member State were in France and Spain (although these results were exacerbated by the presence of overseas regions for both of these countries). Relatively large differences were also apparent in Sweden and the United Kingdom.

Berlin — the only capital region with a competitiveness index below its national average

In most of the EU Member States, the region containing the capital city generally had a far higher level of competitiveness than any other region within the same country. Of the three exceptions to this rule, the regions containing the capitals of Italy and the Netherlands were, nevertheless, among the most competitive regions in their respective countries. By contrast, the competitiveness of Berlin was lower than in many of the other German regions — and also slightly lower than the national average for Germany; it should be borne in mind that Berlin only relatively recently returned to being the capital of Germany following German reunification.

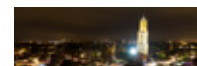
The gaps in competitiveness between capital regions and the second most competitive region in the same country were often quite wide: this pattern was particularly evident in Slovakia, Romania, France, Greece, Denmark and Bulgaria.

Figure 15.1: Regional disparities in the competitiveness index, by NUTS 2 regions, 2013 ⁽¹⁾
(EU-28 = 0)



⁽¹⁾ The light purple shaded bar shows the range of the highest to lowest region for each country. The dark green bar shows the national average. The green circle shows the capital city region. The dark purple circles show the other regions. Chemnitz (DED4), Leipzig (DED5), Emilia-Romagna (ITH5), Marche (ITI3), Cheshire (UKD6) and Merseyside (UKD7): estimates based on the NUTS 2006 classification.

Source: European Commission (Joint Research Centre and Directorate-General for Regional and Urban Policy)



Three different stages of competitiveness: an analysis of the sub-indices

An analysis of the RCI sub-indices calculated from basic indicators, efficiency indicators and innovation indicators can promote a better understanding of regional competitiveness. It can indicate why a particular region may be lagging in terms of its relative competitiveness, or which dimensions form part of a region's relative strengths.

I. The basic sub-index

The basic sub-index consists of an aggregated score based on the assessment of the regional quality of institutions, macroeconomic stability, infrastructure, health and basic education. The macroeconomic stability and basic education dimensions are only measured at the country level. These elements are considered to be necessary conditions for developing the basic functions of any economy — they cover aspects like the unskilled or low skilled labour force, infrastructure, the quality of governance and public health (which are also important economic and social determinants).

Map 15.2 shows the regional distribution of the basic sub-index of competitiveness which is relatively homogenous within individual countries. This is partially because some components of the basic sub-index (one sub-dimension of the

institution dimension plus macroeconomic stability and basic education) are only measured at the country level. The map shows that a number of regions in the south and east of the EU had relatively low sub-indices for these basic measures.

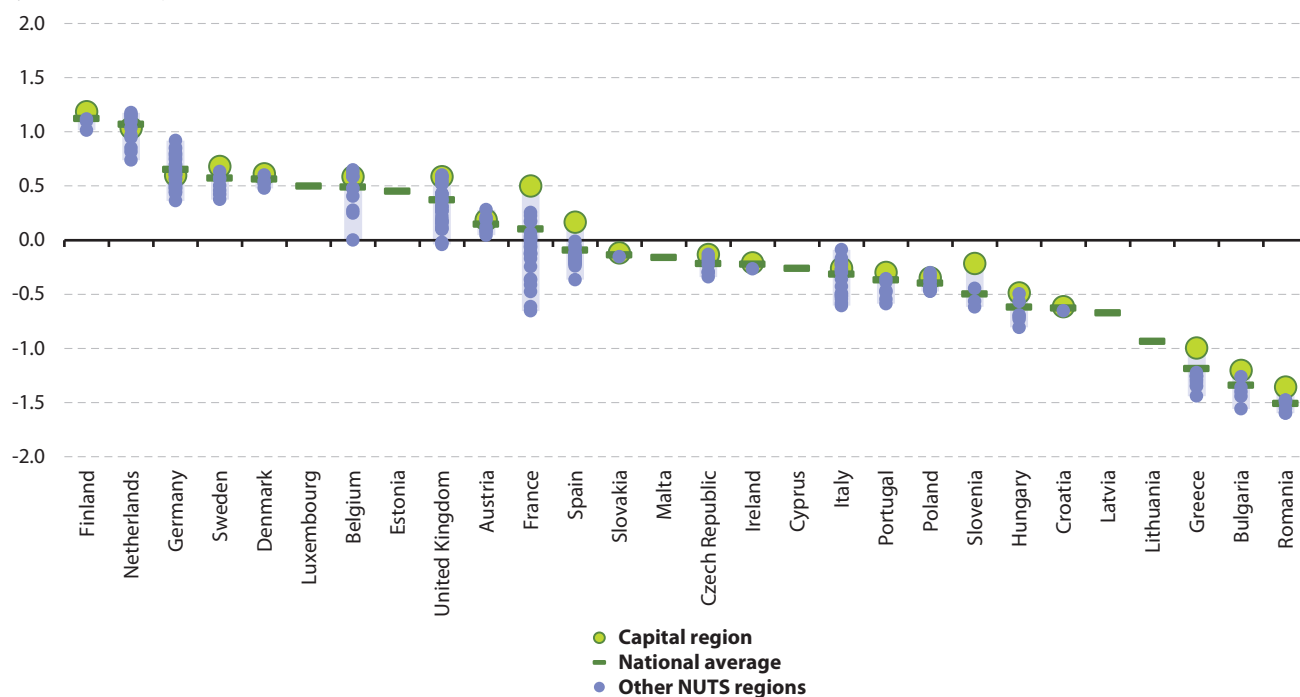
Basic competitiveness: relatively large differences between French regions

Figure 15.2 provides more information on the regional distribution of the basic competitiveness sub-index in 2013. When compared with the results for the other two sub-indices (see Figures 3 and 4) it is evident that the level of within-country variation for the basic sub-index was lowest.

Among the EU Member States which have more than a single NUTS 2 region, every region in Belgium, Denmark, Germany, the Netherlands, Austria, Finland and Sweden had a level of basic competitiveness that was above the EU-28 average in 2013. By contrast, basic competitiveness was below the EU-28 average in each and every region of the Czech Republic, Ireland, Croatia, Italy, Hungary, Poland, Portugal, Slovenia and Slovakia, and was particularly low in all the regions of Bulgaria, Greece and Romania.

France had the highest variation, as more than half of its regions had a level of basic competitiveness that was below the EU-28 average, while basic competitiveness was relatively high in the capital region of Île de France.

Figure 15.2: Regional disparities in competitiveness for the basic competitiveness sub-index, by NUTS 2 regions, 2013 ⁽¹⁾

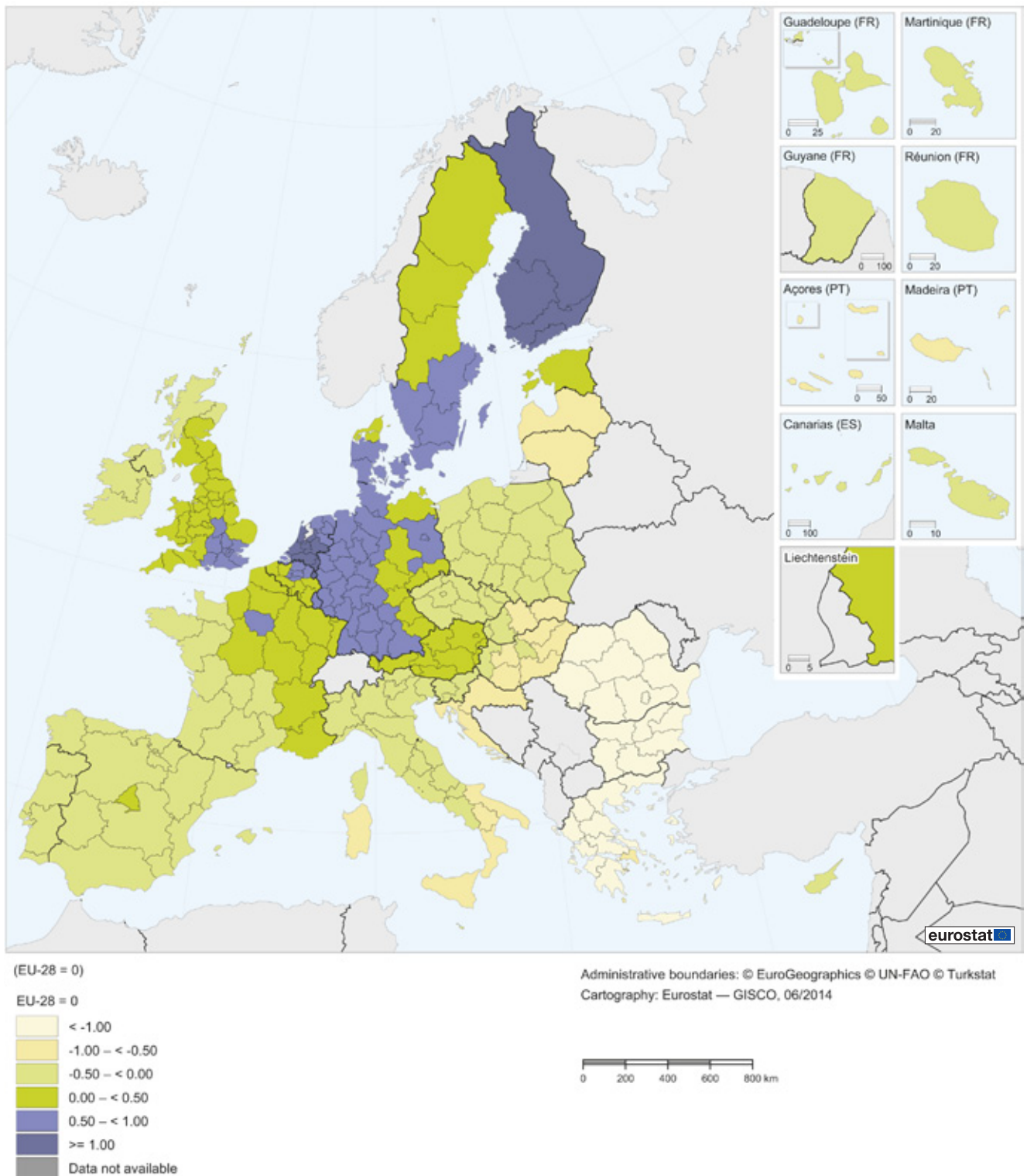


⁽¹⁾ The light purple shaded bar shows the range of the highest to lowest region for each country. The dark green bar shows the national average. The green circle shows the capital city region. The dark purple circles show the other regions. Chemnitz (DED4), Leipzig (DED5), Emilia-Romagna (ITH5), Marche (ITI3), Cheshire (UKD6) and Merseyside (UKD7): estimates based on the NUTS 2006 classification.

Source: European Commission (Joint Research Centre and Directorate-General for Regional and Urban Policy)



Map 15.2: Regional competitiveness for the basic competitiveness sub-index, by NUTS 2 regions, 2013 ⁽¹⁾
(EU-28 = 0)



⁽¹⁾ Chemnitz (DED4), Leipzig (DED5), Emilia-Romagna (ITH5), Marche (ITI3), Cheshire (UKD6) and Merseyside (UKD7): estimates based on the NUTS 2006 classification.

Source: European Commission (Joint Research Centre and Directorate-General for Regional and Urban Policy)

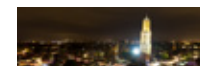


Table 15.2 presents results for some of the dimensions that are included in the basic competitiveness sub-index at the national level. Estonia, Luxembourg, the Netherlands, Finland and Sweden were ranked among the top five EU Member States for at least two of the three dimensions shown, while Denmark was consistently among the top five in each ranking (third place for institutions, fourth for macroeconomic stability and fifth for basic education). By contrast, Greece ranked among the bottom three Member States for all of the dimensions in **Table 15.2**, while Bulgaria, Croatia, Italy and Romania were present among the bottom five Member States for two out of the three dimensions shown.

II. The efficiency sub-index

As a regional economy develops, several factors may play a role in terms of further advancing its competitiveness — for example, a more skilled workforce or a more efficient labour market. This second group of indicators is categorised under the heading of efficiency measures and covers statistics on the following dimensions: higher education and lifelong learning, labour market efficiency and market size.

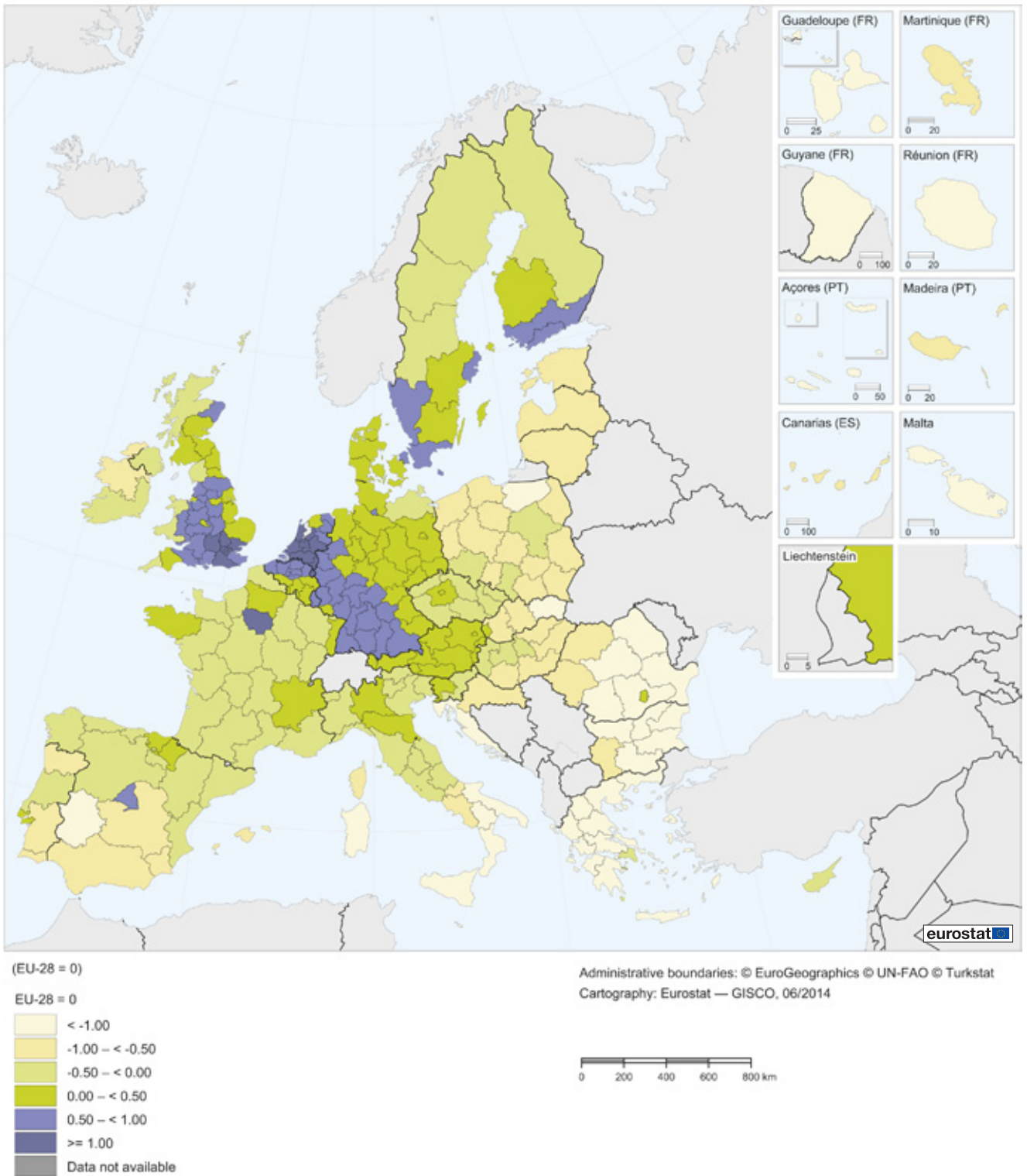
Table 15.2: Competitiveness for selected dimensions of basic competitiveness sub-index, 2013
(EU-28 = 0)

	Institutions	Rank	Macroeconomic stability	Rank	Basic education	Rank
Belgium	0.45	10	0.24	14	0.29	11
Bulgaria	-1.70	28	0.78	7	-2.93	25
Czech Republic	-0.61	20	0.61	11	-0.25	18
Denmark	1.34	3	1.00	4	0.75	5
Germany	0.79	6	0.74	8	0.49	6
Estonia	0.27	12	2.04	1	2.17	2
Ireland	0.64	9	-1.88	27	0.42	7
Greece	-1.34	26	-2.76	28	-0.96	24
Spain	-0.26	15	-0.21	21	-0.15	15
France	0.29	11	-0.01	16	-0.17	16
Croatia	-1.24	25	0.96	5	-0.79	22
Italy	-1.21	24	-0.42	24	-0.46	19
Cyprus	-0.01	14	-0.41	22	:	
Latvia	-0.65	21	-0.09	17	0.32	10
Lithuania	-0.55	19	-0.42	23	-0.52	20
Luxembourg	1.35	2	1.49	2	-0.87	23
Hungary	-0.83	23	-0.15	19	0.38	8
Malta	0.07	13	-0.20	20	:	
Netherlands	1.33	4	0.66	10	1.43	3
Austria	0.74	7	0.71	9	-0.77	21
Poland	-0.43	18	-0.14	18	0.81	4
Portugal	-0.29	16	-1.15	26	0.12	13
Romania	-1.56	27	0.05	15	-2.98	26
Slovenia	-0.38	17	0.47	12	0.18	12
Slovakia	-0.79	22	0.34	13	-0.24	17
Finland	1.77	1	0.86	6	3.94	1
Sweden	1.29	5	1.43	3	0.11	14
United Kingdom	0.72	8	-0.46	25	0.38	9

Source: European Commission (Joint Research Centre and Directorate-General for Regional and Urban Policy)

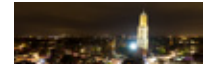


Map 15.3: Regional competitiveness for the efficiency sub-index, by NUTS 2 regions, 2013 ⁽¹⁾
(EU-28 = 0)



⁽¹⁾ Chemnitz (DED4), Leipzig (DED5), Emilia-Romagna (ITH5), Marche (ITI3), Cheshire (UKD6) and Merseyside (UKD7): estimates based on the NUTS 2006 classification.

Source: European Commission (Joint Research Centre and Directorate-General for Regional and Urban Policy)



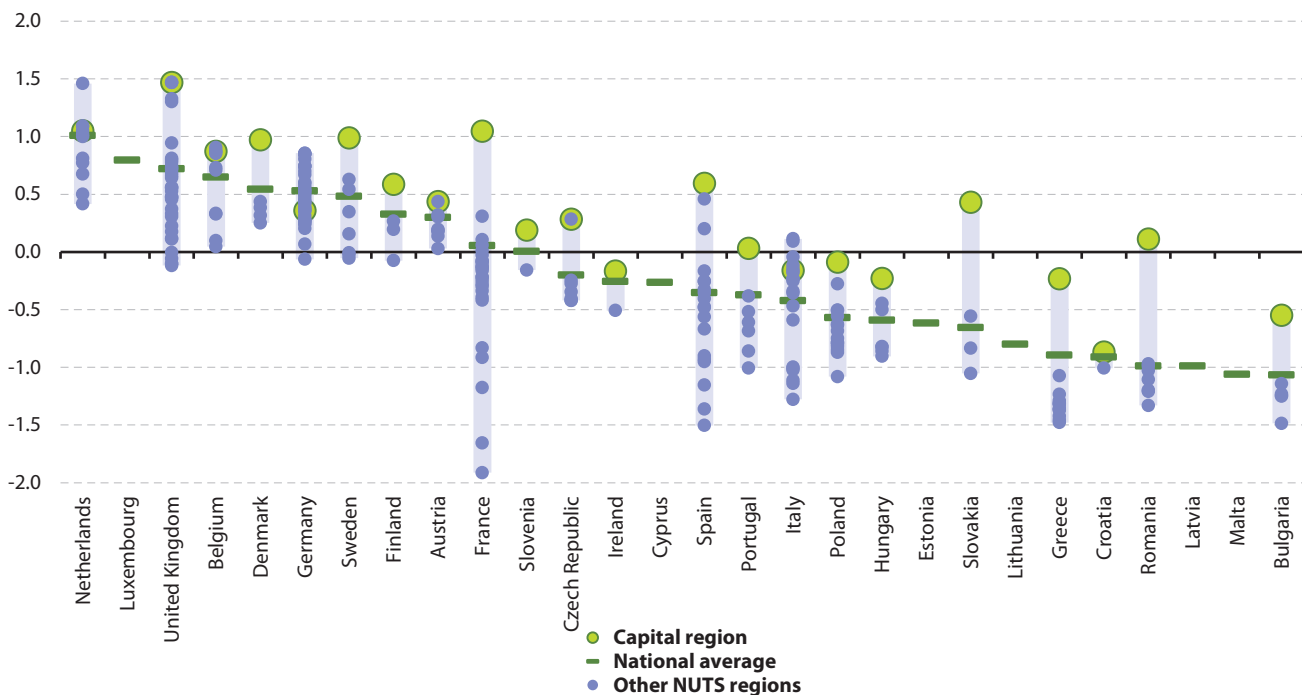
The efficiency group: most regions with relatively low levels of basic competitiveness also had low scores for the efficiency sub-index

Map 15.3 shows that many of the regions with low scores in the basic aspects of competitiveness were also low performers for the efficiency aspects of RCI. However, there were some regions in the Czech Republic, Estonia (a single region for this analysis), Ireland, Spain, France and Austria — where basic competitiveness was above the EU-28 average — which were lagging behind the EU-28 average for the efficiency sub-index.

Figure 15.3 shows wide within-country variability for the efficiency sub-index. The largest variations were (again) for France and Spain, where only a handful of regions had levels of competitiveness above the EU-28 average. The level of efficiency competitiveness was below the EU-28 average in each and every region of Bulgaria, Ireland, Greece, Croatia, Italy, Hungary and Poland, while in the Czech Republic, Portugal, Romania and Slovenia, only the capital region had a score above the EU-28 average.

The highest ranked regions for the efficiency sub-index were generally located in Denmark, Sweden, the United Kingdom, Finland and the Netherlands in 2013. The lowest ranked regions tended to be in Greece, Bulgaria, Romania, southern Italy, as well as parts of Spain and Poland.

Figure 15.3: Regional disparities in competitiveness for the efficiency sub-index, by NUTS 2 regions, 2013 ⁽¹⁾ (EU-28 = 0)



⁽¹⁾ The light purple shaded bar shows the range of the highest to the lowest region for each country. The dark green bar shows the national average. The green circle shows the capital city region. The dark purple circles show the other regions. Chemnitz (DED4), Leipzig (DED5), Emilia-Romagna (ITH5), Marche (ITI3), Cheshire (UKD6) and Merseyside (UKD7): estimates based on the NUTS 2006 classification.

Source: European Commission (Joint Research Centre and Directorate-General for Regional and Urban Policy)



Highest competitiveness for higher education and lifelong learning generally in capital regions

Capital regions were generally among those with the highest scores for the higher education and lifelong learning dimension (see **Table 15.3**) of the efficiency sub-index. There were nevertheless a few exceptions, as Hamburg in Germany, the País Vasco in Spain, Umbria in Italy, Utrecht

in the Netherlands, and Berkshire, Buckinghamshire and Oxfordshire in the United Kingdom each had higher scores than their respective capital regions. Three out of these five regions also featured among the top 20 EU regions for the higher education and lifelong learning dimension of competitiveness (the País Vasco, Utrecht, and Berkshire, Buckinghamshire and Oxfordshire).

Table 15.3: Regional competitiveness for selected dimensions of efficiency sub-index, by NUTS 2 regions, 2013 ⁽¹⁾

	Higher education and lifelong learning ⁽²⁾			
	Highest region	Rank	Lowest region	Rank
Belgium	Brussels area (BE10, BE24 and BE31) ⁽³⁾	21	Prov. Hainaut (BE32)	136
Bulgaria	Yugozapaden (BG41)	192	Severozapaden (BG31)	261
Czech Republic	Prague area (CZ01 and CZ02) ⁽⁴⁾	63	Střední Morava (CZ07)	175
Denmark	Hovedstaden (DK01)	1	Syddanmark (DK03)	51
Germany	Hamburg (DE60)	59	Weser-Ems (DE94)	165
Estonia	Eesti (EE00)	138	-	-
Ireland	Southern and Eastern (IE02)	80	Border, Midland and Western (IE01)	126
Greece	Attiki (EL30)	148	Notio Aigaio (EL42)	262
Spain	País Vasco (ES21)	16	Ciudad Autónoma de Ceuta (ES63)	224
France	Île de France (FR10)	55	Corse (FR83)	251
Croatia	Kontinentalna Hrvatska (HR04)	231	Jadranska Hrvatska (HR03)	232
Italy	Umbria (IT12)	166	Valle d'Aosta/ Vallée d'Aoste (ITC2)	254
Cyprus	Κύπρος / Kýpros (CY00)	162	-	-
Latvia	Latvija (LV00)	201	-	-
Lithuania	Lietuva (LT00)	179	-	-
Luxembourg	Luxembourg (LU00)	28	-	-
Hungary	Közép- Magyarország (HU10)	156	Dél-Alföld (HU33)	222
Malta	Malta (MT00)	249	-	-
Netherlands	Utrecht (NL31)	8	Friesland (NL12)	93
Austria	Vienna area (AT12 and AT13) ⁽⁵⁾	128	Kärnten (AT21)	176
Poland	Mazowieckie (PL12)	134	Warmińsko- Mazurskie (PL62)	237
Portugal	Lisboa (PT17)	103	Reg. Autón. - Açores (PT20)	225
Romania	Bucureşti - Ilfov (RO32)	127	Sud-Est (RO22)	258
Slovenia	Zahodna Slovenija (SI02)	62	Vzhodna Slovenija (SI01)	106
Slovakia	Bratislavský kraj (SK01)	54	Východné Slovensko (SK04)	228
Finland	Helsinki-Uusimaa and Etelä-Suomi (FI1B and FI1C)	9	Åland (FI20)	118
Sweden	Stockholm (SE11)	2	Norra Mellansverige (SE31)	102
United Kingdom	Berkshire, Buckinghamshire and Oxfordshire (UKJ1)	3	Cumbria (UKD1)	142

⁽¹⁾ Chemnitz (DED4), Leipzig (DED5), Emilia-Romagna (ITH5), Marche (ITI3), Cheshire (UKD6) and Merseyside (UKD7): estimates based on the NUTS 2006 classification.

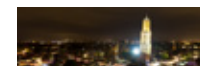
⁽²⁾ Guadeloupe (FR91), Martinique (FR92), Guyane (FR93) and Réunion (FR94): not available.

⁽³⁾ Aggregated data to take account of commuting patterns, comprising: Région de Bruxelles-Capitale / Brussels Hoofdstedelijk Gewest (BE10), Prov. Vlaams-Brabant (BE24) and Prov. Brabant Wallon (BE31).

⁽⁴⁾ Aggregated data to take account of commuting patterns, comprising: Praha (CZ01) and Střední Čechy (CZ02).

⁽⁵⁾ Aggregated data to take account of commuting patterns, comprising: Niederösterreich (AT12) and Wien (AT13).

Source: European Commission (Joint Research Centre and Directorate-General for Regional and Urban Policy)



Labour market efficiency generally higher outside the capital region

The most competitive regions for the labour market efficiency dimension were widely spread, with the capital region having the highest score in 10 out of the 21 EU Member States for which a regional breakdown is available. The region with the highest labour market efficiency score was consistently outside of the capital in the five largest

EU Member States (when measured by population) — the highest levels of labour market efficiency were in Oberbayern (Germany), the País Vasco (Spain), Bretagne (France), the Provincia Autonoma Bolzano/Bozen (Italy) and North-East Scotland (the United Kingdom). Of these, two regions featured among the top 20 EU regions for the labour market efficiency dimension of competitiveness (Oberbayern and North-East Scotland).

Table 15.3 (continued): Regional competitiveness for selected dimensions of efficiency sub-index, by NUTS 2 regions, 2013 ⁽¹⁾

	Labour market efficiency			
	Highest region	Rank	Lowest region	Rank
Belgium	Prov. W-Vlaanderen (BE25)	14	Prov. Hainaut (BE32)	200
Bulgaria	Yugozapaden (BG41)	136	Severozapaden (BG31)	238
Czech Republic	Prague area (CZ01 and CZ02) ⁽⁴⁾	89	Severozápad (CZ04)	203
Denmark	Hovedstaden (DK01)	26	Nordjylland (DK05)	61
Germany	Oberbayern (DE21)	5	Berlin area (DE30 and DE40)	132
Estonia	Eesti (EE00)	183	-	-
Ireland	Southern and Eastern (IE02)	196	Border, Midland and Western (IE01)	226
Greece	Attiki (EL30)	231	Sterea Ellada (EL24)	264
Spain	País Vasco (ES21)	152	Ciudad Autónoma de Ceuta (ES63)	266
France	Bretagne (FR52)	65	Réunion (FR94)	263
Croatia	Jadranska Hrvatska (HR03)	212	Kontinentalna Hrvatska (HR04)	218
Italy	Provincia Autonoma Bolzano/Bozen (ITH1)	53	Puglia (ITF4)	253
Cyprus	Κύπρος / Kýpros (CY00)	104	-	-
Latvia	Latvija (LV00)	222	-	-
Lithuania	Lietuva (LT00)	209	-	-
Luxembourg	Luxembourg (LU00)	59	-	-
Hungary	Nyugat- Dunántúl (HU22)	153	Észak- Magyarország (HU31)	228
Malta	Malta (MT00)	189	-	-
Netherlands	Utrecht (NL31)	2	Drenthe (NL13)	36
Austria	Salzburg (AT32)	10	Vorarlberg (AT34)	51
Poland	Mazowieckie (PL12)	121	Kujawsko- Pomorskie (PL61)	221
Portugal	Centro (PT16)	164	Norte (PT11)	204
Romania	București - Ilfov (RO32)	94	Sud-Est (RO22)	230
Slovenia	Zahodna Slovenija (SI02)	96	Vzhodna Slovenija (SI01)	141
Slovakia	Bratislavský kraj (SK01)	80	Východné Slovensko (SK04)	237
Finland	Åland (FI20)	1	Pohjois-Suomi (FI1D)	97
Sweden	Stockholm (SE11)	8	Östra Mellansverige (SE12)	68
United Kingdom	North-East Scotland (UKM5)	19	West Midlands (UKG3)	181

⁽¹⁾ Chemnitz (DED4), Leipzig (DED5), Emilia-Romagna (ITH5), Marche (IT3), Cheshire (UKD6) and Merseyside (UKD7): estimates based on the NUTS 2006 classification.

⁽²⁾ Guadeloupe (FR91), Martinique (FR92), Guyane (FR93) and Réunion (FR94): not available.

⁽³⁾ Aggregated data to take account of commuting patterns, comprising: Région de Bruxelles-Capitale / Brussels Hoofdstedelijk Gewest (BE10), Prov. Vlaams-Brabant (BE24) and Prov. Brabant Wallon (BE31).

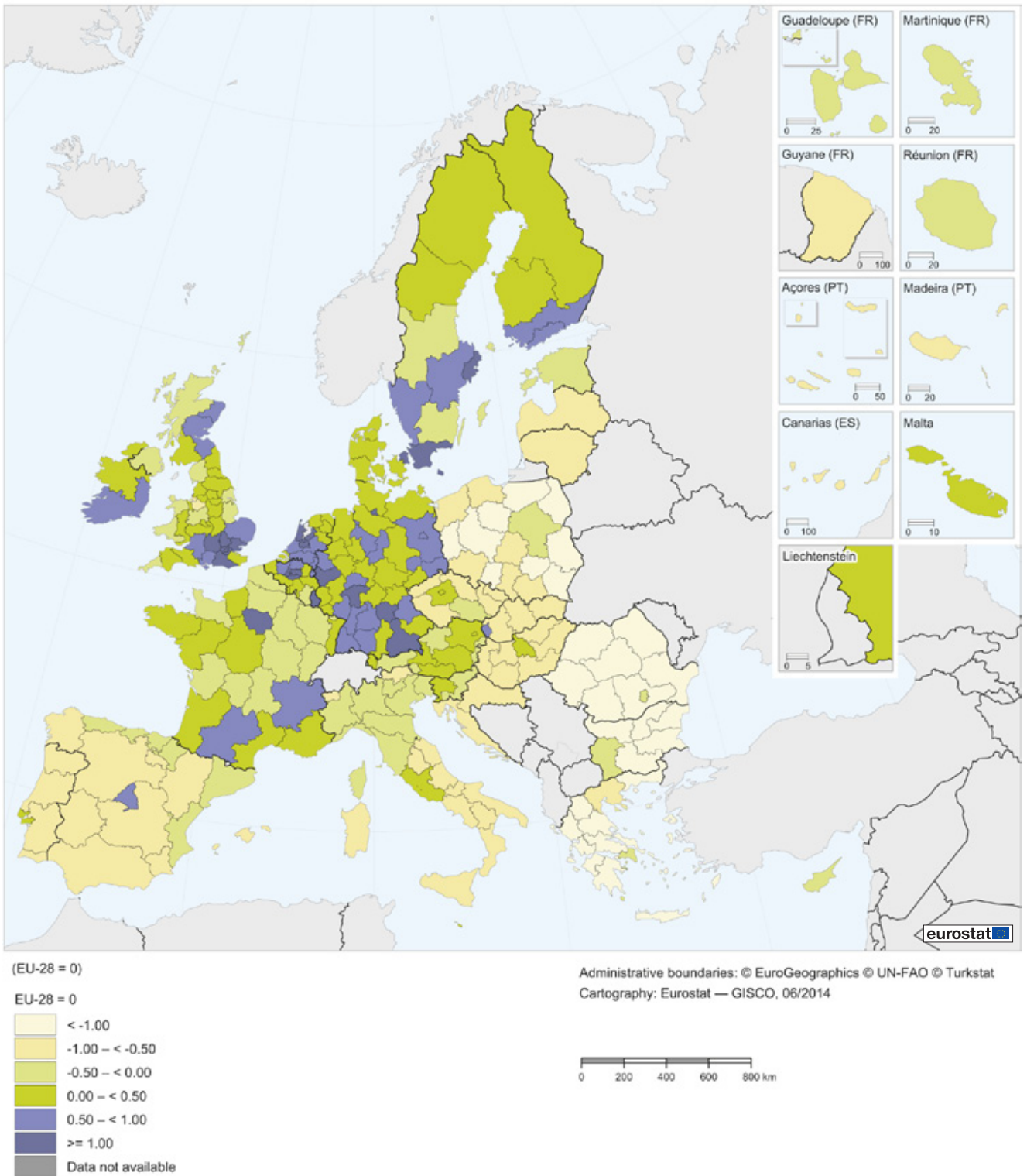
⁽⁴⁾ Aggregated data to take account of commuting patterns, comprising: Praha (CZ01) and Střední Čechy (CZ02).

⁽⁵⁾ Aggregated data to take account of commuting patterns, comprising: Niederösterreich (AT12) and Wien (AT13).

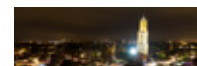
Source: European Commission (Joint Research Centre and Directorate-General for Regional and Urban Policy)



Map 15.4: Regional competitiveness for the innovation sub-index, by NUTS 2 regions, 2013 ⁽¹⁾
(EU-28 = 0)



⁽¹⁾ Chemnitz (DED4), Leipzig (DED5), Emilia-Romagna (ITH5), Marche (ITI3), Cheshire (UKD6) and Merseyside (UKD7): estimates based on the NUTS 2006 classification.
Source: European Commission (Joint Research Centre and Directorate-General for Regional and Urban Policy)



III. The innovation sub-index

The last group of RCI dimensions includes measures relating to the level of technological readiness of enterprises and households, business sophistication and innovation. Information and communication technologies (ICT) have changed the organisational structure of both households and enterprises, facilitating the adoption of new and efficient work practices, improving productivity and speeding-up commercial processes. Business sophistication gives an indication of an enterprise's productivity and its potential for responding to competitive pressures. Innovation is especially relevant for developed economies, where most commentators agree there is a clear need to be at the forefront of new technologies, producing cutting-edge products and processes in order to maintain a competitive advantage.

Innovative activity concentrated in regional pockets...

The highest level of heterogeneity across the EU is shown by the innovation sub-index (see **Map 15.4**). Its distribution is characterised by 'islands' of highly innovative territories surrounded by lower performers. The widest variations across regions within the same EU Member State were observed for France and the United Kingdom, with the region of Île de France and the London area clearly established as innovation hotspots.



SPOTLIGHT ON THE REGIONS: STOCKHOLM (SE11), SWEDEN



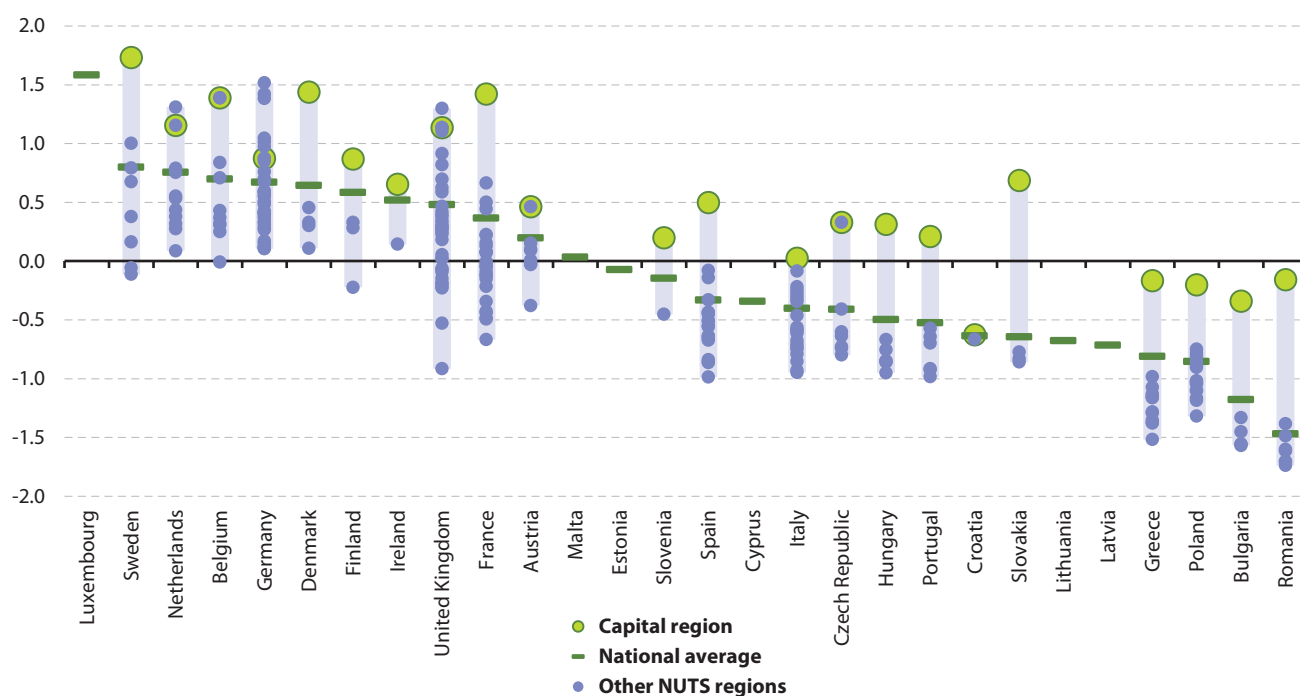
Riddarholmen (part of the old town), Stockholm

Regional competitiveness was generally high across all eight of the NUTS 2 regions that combine to make up Sweden. This was particularly true in the capital region of Stockholm, which ranked as the fourth most competitive region in the EU-28 in 2013.

Stockholm was the most competitive region in the EU with respect to its technological readiness and innovative capabilities.

Photo: Benoît Derrier

Figure 15.4: Regional disparities in competitiveness for the innovation sub-index, by NUTS 2 regions, 2013 ⁽¹⁾ (EU-28 = 0)



⁽¹⁾ The light purple shaded bar shows the range of the highest to lowest region for each country. The dark green bar shows the national average. The green circle shows the capital city region. The dark purple circles show the other regions. Chemnitz (DED4), Leipzig (DED5), Emilia-Romagna (ITH5), Marche (ITI3), Cheshire (UKD6) and Merseyside (UKD7): estimates based on the NUTS 2006 classification.

Source: European Commission (Joint Research Centre and Directorate-General for Regional and Urban Policy)



... in particular within capital regions

All the regions in Denmark, Germany, Ireland and the Netherlands had an innovation score above the EU-28 average (see **Figure 15.4**). By contrast, all the regions in Bulgaria, Greece, Poland and Romania were below the EU-28 average. Apart from the capital region — which was above the EU-28 average — all the regions in the Czech Republic, Spain, Italy, Hungary, Portugal, Slovenia and Slovakia also had levels of innovation competitiveness below the EU-28 average.

A closer examination of the data for the various dimensions within the innovation sub-index reveals that capital regions

were generally at the top of the ranking for the business sophistication dimension; this may well reflect the location of specific service activities in capital cities.

Technological readiness measures the level at which households and enterprises use technology and is based on indicators such as household access to broadband and enterprise-level technological absorption. The EU regions which appeared most ready to exploit high-tech instruments included those in the United Kingdom (Scotland and southern England), Sweden, Denmark, the Netherlands and northern Germany (see **Table 15.4**). Stockholm (the capital

Table 15.4: Regional competitiveness for selected dimensions of the innovation sub-index, by NUTS 2 regions, 2013 ⁽¹⁾

	Technological readiness			
	Highest region	Rank	Lowest region	Rank
Belgium	Prov. Namur (BE35)	75	Prov. Liège (BE33)	121
Bulgaria	Yugozapaden (BG41)	248	Severoiztochen (BG33)	264
Czech Republic	Prague area (CZ01 and CZ02) ⁽²⁾	148	Střední Morava (CZ07)	165
Denmark	Hovedstaden (DK01)	11	Syddanmark (DK03)	34
Germany	Bremen (DE50)	26	Mecklenburg-Vorpommern (DE80)	116
Estonia	Eesti (EE00)	158	-	-
Ireland	Southern and Eastern (IE02)	81	Border, Midland and Western (IE01)	110
Greece	Attiki (EL30)	230	Kentriki Ellada (EL2) ⁽⁴⁾	250
Spain	Comunidad de Madrid (ES30)	150	Galicia (ES11)	195
France	Île de France (FR10)	109	Départements d'outre-mer (FR9) ⁽⁴⁾	168
Croatia	Jadranska Hrvatska (HR03)	209	Kontinentalna Hrvatska (HR04)	219
Italy	Provincia Autonoma Trento (ITH2)	215	Puglia (ITF4)	249
Cyprus	Κύπρος / Kýpros (CY00)	200	-	-
Latvia	Latvija (LV00)	216	-	-
Lithuania	Lietuva (LT00)	187	-	-
Luxembourg	Luxembourg (LU00)	72	-	-
Hungary	Közép-Magyarország (HU10)	166	Észak-Alföld (HU32)	203
Malta	Malta (MT00)	117	-	-
Netherlands	Amsterdam area (NL23 and NL32) ⁽⁵⁾	8	Zeeland (NL34)	33
Austria	Vorarlberg (AT34)	105	Steiermark (AT22)	145
Poland	Region Południowo-Zachodni (PL5) ⁽⁴⁾	201	Region Wschodni (PL3) ⁽⁴⁾	220
Portugal	Lisboa (PT17)	152	Alentejo (PT18)	193
Romania	Bucureşti - Ilfov (RO32)	235	Nord-Est (RO21)	266
Slovenia	Slovenija (SI0) ⁽⁴⁾	185	-	-
Slovakia	Bratislavský kraj (SK01)	172	Východné Slovensko (SK04)	196
Finland	Helsinki-Uusimaa and Etelä-Suomi (FI1B and FI1C)	57	Åland (FI20)	146
Sweden	Stockholm (SE11)	1	Norra Mellansverige (SE31)	13
United Kingdom	Hampshire and Isle of Wight (UKJ3)	21	Northern Ireland (UKN0)	127

⁽¹⁾ Chemnitz (DED4), Leipzig (DED5), Emilia-Romagna (ITH5), Marche (ITI3), Cheshire (UKD6) and Merseyside (UKD7): estimates based on the NUTS 2006 classification.

⁽²⁾ Aggregated data to take account of commuting patterns, comprising: Région de Bruxelles-Capitale / Brussels Hoofdstedelijk Gewest (BE10), Prov. Vlaams-Brabant (BE24) and Prov. Brabant Wallon (BE31).

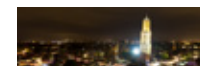
⁽³⁾ Aggregated data to take account of commuting patterns, comprising: Praha (CZ01) and Střední Čechy (CZ02).

⁽⁴⁾ Information only available for NUTS level 1.

⁽⁵⁾ Aggregated data to take account of commuting patterns, comprising: Flevoland (NL23) and Noord-Holland (NL32).

⁽⁶⁾ Aggregated data to take account of commuting patterns, comprising: Niederösterreich (AT12) and Wien (AT13).

Source: European Commission (Joint Research Centre and Directorate-General for Regional and Urban Policy)



region of Sweden) had the highest level of technological readiness across any of the EU-28's NUTS 2 regions in 2013. The lowest scores were in Romania, Bulgaria, Italy, Latvia (a single region for this analysis) and parts of Croatia and Poland.

The level of innovative capability influences the ways in which technology is diffused within a region. The indicators within the innovation dimension include, among others, patent applications, knowledge workers, scientific publications, human resources in science and technology and (the strength of) high-tech clusters. The level of

heterogeneity in this dimension was very high, with the highest scoring regions located in Finland, Luxembourg (a single region for this analysis) and a number of regions in Sweden, Germany, the United Kingdom, France and Ireland. The capital regions of Bratislavský kraj (Slovakia) and București – Ilfov (Romania) also had quite high scores, but were surrounded by regions with much lower scores. As for technological readiness, Stockholm had the highest score for the innovation dimension among any of the EU-28's NUTS 2 regions in 2013. At the other end of the scale, were all of the Bulgarian regions, most regions in Romania, and parts of Poland, Slovakia, Hungary, Italy and Spain.

Table 15.4 (continued): Regional competitiveness for selected dimensions of the innovation sub-index, by NUTS 2 regions, 2013 ⁽¹⁾

	Innovative capability			
	Highest region	Rank	Lowest region	Rank
Belgium	Brussels area (BE10, BE24 and BE31) ⁽²⁾	11	Prov. Luxembourg (BE34)	162
Bulgaria	Yugozapaden (BG41)	148	Yugoiztochen (BG34)	265
Czech Republic	Prague area (CZ01 and CZ02) ⁽³⁾	56	Moravskoslezsko (CZ08)	240
Denmark	Hovedstaden (DK01)	2	Syddanmark (DK03)	137
Germany	Oberbayern (DE21)	4	Weser-Ems (DE94)	169
Estonia	Eesti (EE00)	89	-	-
Ireland	Southern and Eastern (IE02)	41	Border, Midland and Western (IE01)	73
Greece	Attiki (EL30)	117	Stereia Ellada (EL24)	262
Spain	Comunidad de Madrid (ES30)	54	Ciudad Autónoma de Ceuta (ES63)	260
France	Île de France (FR10)	16	Guyane (FR93)	253
Croatia	Kontinentalna Hrvatska (HR04)	198	Jadranska Hrvatska (HR03)	223
Italy	Lazio (IT14)	81	Calabria (ITF6)	247
Cyprus	Κύπρος / Kýpros (CY00)	149	-	-
Latvia	Latvija (LV00)	201	-	-
Lithuania	Lietuva (LT00)	174	-	-
Luxembourg	Luxembourg (LU00)	34	-	-
Hungary	Közép-Magyarország (HU10)	74	Nyugat- Dunántúl (HU22)	219
Malta	Malta (MT00)	153	-	-
Netherlands	Utrecht (NL31)	17	Friesland (NL12)	164
Austria	Vienna area (AT12 and AT13) ⁽⁶⁾	62	Burgenland (AT11)	195
Poland	Mazowieckie (PL12)	111	Świętokrzyskie (PL33)	254
Portugal	Lisboa (PT17)	146	Reg. Autón. da Madeira (PT30)	252
Romania	București - Ilfov (RO32)	51	Sud-Est (RO22)	266
Slovenia	Zahodna Slovenija (SI02)	69	Vzhodna Slovenija (SI01)	165
Slovakia	Bratislavský kraj (SK01)	30	Východné Slovensko (SK04)	238
Finland	Helsinki-Uusimaa and Etelä-Suomi (FI1B and FI1C)	6	Åland (FI20)	80
Sweden	Stockholm (SE11)	1	Småland med öarna (SE21)	143
United Kingdom	Berkshire, Buckinghamshire and Oxfordshire (UKJ1)	3	Lincolnshire (UKF3)	182

⁽¹⁾ Chemnitz (DED4), Leipzig (DED5), Emilia-Romagna (ITH5), Marche (IT3), Cheshire (UKD6) and Merseyside (UKD7): estimates based on the NUTS 2006 classification.

⁽²⁾ Aggregated data to take account of commuting patterns, comprising: Région de Bruxelles-Capitale / Brussels Hoofdstedelijk Gewest (BE10), Prov. Vlaams-Brabant (BE24) and Prov. Brabant Wallon (BE31).

⁽³⁾ Aggregated data to take account of commuting patterns, comprising: Praha (CZ01) and Střední Čechy (CZ02).

⁽⁴⁾ Information only available for NUTS level 1.

⁽⁵⁾ Aggregated data to take account of commuting patterns, comprising: Flevoland (NL23) and Noord-Holland (NL32).

⁽⁶⁾ Aggregated data to take account of commuting patterns, comprising: Niederösterreich (AT12) and Wien (AT13).

Source: European Commission (Joint Research Centre and Directorate-General for Regional and Urban Policy)



The regional competitiveness index — a close relationship with GDP per inhabitant

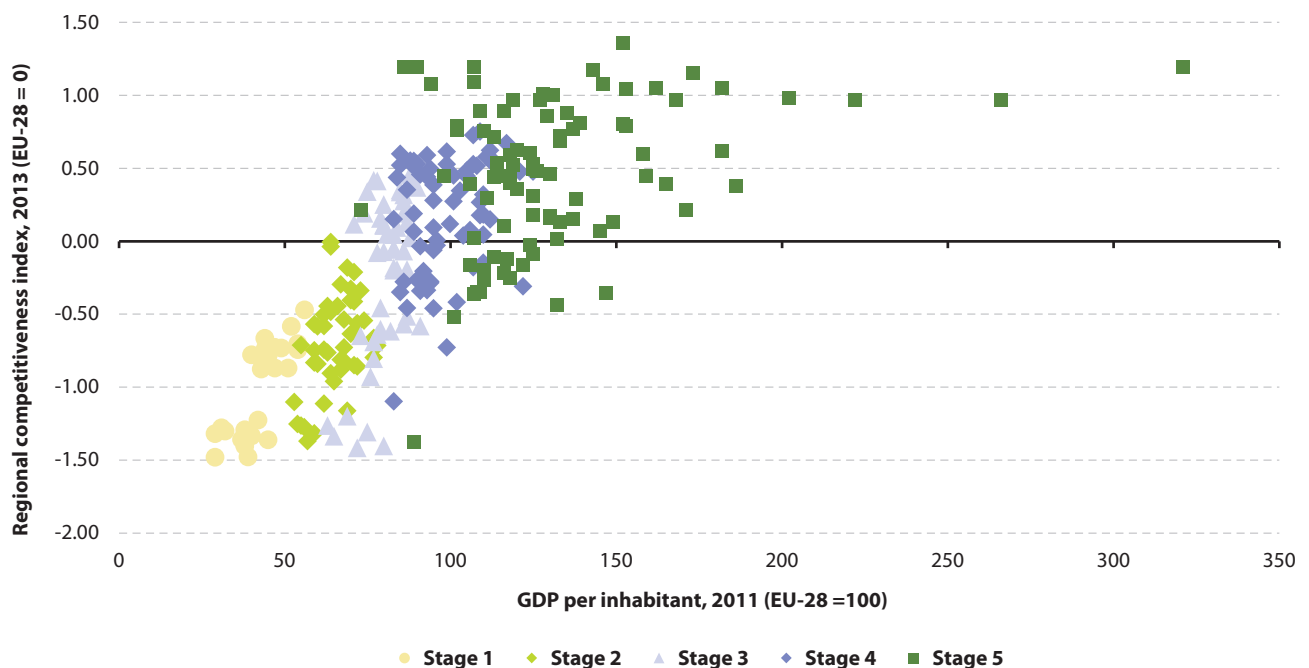
EU-28 regions are at different stages of economic development: each EU region was assigned to one of five stages of economic development (defined on the basis of GDP per inhabitant, expressed in relation to the EU average).

Figure 15.5 compares the calculated RCI values obtained for each NUTS 2 region with the latest information for GDP per inhabitant (covering the 2011 reference year). It shows that there is a close relationship between the two measures and confirms that competitiveness, even when defined using a much wider range of indicators (as in the RCI), tends to be

closely related to levels of GDP per inhabitant. On the other hand, competitiveness embraces more factors than purely economic aspects and, in this sense, it can be considered as a measure which goes *beyond GDP*.

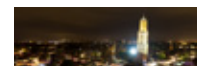
The regions in **Figure 15.5** are colour coded to reflect their different stages of competitive development (stages 1–5 reflect rising levels of GDP per inhabitant). Higher RCI values can be seen to accompany more frequently those regions with higher levels of GDP per inhabitant; while the RCI and GDP per inhabitant of those regions in stages 1 and 2 of their competitive development were clearly at the bottom end of both scales.

Figure 15.5: GDP per inhabitant compared with the regional competitiveness index (RCI), by NUTS 2 regions and by stages of competitiveness, 2011 and 2013 (!)



(!) Chemnitz (DED4), Leipzig (DED5), Emilia-Romagna (ITH5), Marche (IT13), Cheshire (UKD6) and Merseyside (UKD7): estimates based on the NUTS 2006 classification.

Source: European Commission (Joint Research Centre and Directorate-General for Regional and Urban Policy) and Eurostat (online data code: [nama_r_e2gdp](#))



Data sources and availability

As shown in **Diagram 15.1**, there were 11 dimensions ⁽¹⁾ of competitiveness included in the RCI for 2013, each of these reflects a separate element of territorial competitiveness. These eleven dimensions of competitiveness were classified within three sub-indices.

The basic sub-index composed of:

- Institutions are considered important for economic growth insofar as they can improve the provision of public goods, address market and non-market failures, improve efficiency, reduce transaction costs, foster transparency, promote entrepreneurship and facilitate the functioning of labour markets.
- Macroeconomic stability is considered as essential for guaranteeing trust in the market both for consumers and producers of goods and services and for providing the kind of economic conditions that lead to higher rates of long term investment.
- Infrastructure can provide the framework for the maximisation of local economic potential and the optimal use of its resources and is a key factor in determining the location of economic activity.
- Good health among the workforce is one factor in increasing labour market participation and productivity and also leads to a longer working life and lower healthcare and social costs.
- Quality of basic education is considered key to the level of basic skills and competencies required in the workplace. A number of studies have shown a strong, positive association between the quality of schooling and economic growth, and managing human capital at the regional level may be particularly efficient.

The efficiency sub-index composed of:

- Higher education, training and lifelong learning are often cited as key to knowledge-driven economies not only with respect to the generation of knowledge but also in the early adoption of technologies or techniques.
- Labour market efficiency is part of the wider efficient allocation of resources. Employment and unemployment rates provide information as to the level of activity in the regional economy, while long-term unemployment indicates the presence of structural problems.
- Market size points to the ability of enterprises to develop and benefit from economies of scale and may play a part in encouraging / discouraging entrepreneurship and innovation.

The innovation sub-index composed of:

- Technological readiness measures the level at which households and enterprises use technology. The penetration of technology has facilitated new work practices and lifestyles, aimed at improving productivity and the speeding-up of commercial processes.
- Business sophistication points to the degree of enterprise productivity and potential for responding to competitive pressures. It includes direct investment from abroad which can enhance capital and economic endowment of the host region.
- Innovation in products and processes is often considered as a competitive advantage for developed regions / economies.

The eleven dimensions were populated by a set of indicators: the RCI 2013 exercise was based on a total of 73 indicators (that were selected from an initial set of 80 indicators). Most of these indicators were sourced from Eurostat, while other sources included the World Bank (particularly for opinions on institutions), the OECD (for innovation and education), the World Economic Forum and the Cluster Observatory.

The information collected from this wide range of sources was statistically combined to produce a set of indices for each dimension, the three competitiveness sub-indices and the overall composite indicator of the RCI. For the 2013 exercise, the regions of the EU were divided into five different groups — those considered as being in a low, medium, intermediate, high and very high stage of competitive development (competitiveness stages 1–5). The sub-indices and the overall RCI were calculated based on a weighted combination of the various indicators, with the five different stages of competitiveness being used to modulate the weights, thereby refining the calculation of the overall RCI. For more details of the methods employed, refer to the full EU Regional Competitiveness Index, RCI 2013 report, available at http://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/6th_report/rci_2013_report_final.pdf.

⁽¹⁾ The original study released by the Joint Research Centre made use of the term 'pillar', rather than 'dimension' — however, these two terms may be considered as being synonymous.



The data used to calculate the RCI generally refer to the latest reference period available (which was not necessarily the 2013 reference year). When a regional breakdown was provided this was transformed to the NUTS 2006 classification. Subsequently, the data was reclassified to NUTS 2010 (the classification used in this publication), with the following differences:

- for Brussels (Belgium), Prague (the Czech Republic), Berlin (Germany), Amsterdam (the Netherlands), Vienna (Austria) and London (the United Kingdom), a number of NUTS 2 regions were aggregated to take account of commuters (in other words, residents of regions surrounding capital regions who make frequent trips to the capital region in order to work);
- information collected for the individual regions of Itä-Suomi (FI13, NUTS 2006) and Pohjois-Suomi (FI1A, NUTS 2006) was reclassified to Pohjois- ja Itä-Suomi (FI1D, NUTS 2010);
- information collected for Etelä-Suomi (FI18, NUTS 2006) was used for Helsinki-Uusimaa (FI1B, NUTS 2010) and for Etelä-Suomi (FI1C, NUTS 2010);
- there is no one-to-one correspondence between NUTS 2006 and NUTS 2010 for the following regions: Chemnitz (DED4, NUTS 2010), Leipzig (DED5, NUTS 2010), Emilia-Romagna (ITH5, NUTS 2010), Marche (ITI3, NUTS 2010), Cheshire (UKD6, NUTS 2010) and Merseyside (UKD7, NUTS 2010). However, as the differences between the two NUTS versions are generally relatively small, the data based on the NUTS 2006 has been used as a proxy to include information for NUTS 2010 regions (both in maps and in figures).