

# Eurostat regional yearbook

2018 edition



STATISTICAL  
BOOKS

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**Eurostat regional  
yearbook**

**2018 edition**

*Printed by Imprimerie Centrale in Luxembourg*

Manuscript completed in August, 2018.

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Luxembourg: Publications Office of the European Union, 2018

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Theme: General and regional statistics

Collection: Statistical books

PDF: ISBN 978-92-79-87878-7  
ISSN 2363-1716  
doi:10.2785/231975  
Cat. No: KS-HA-18-001-EN-N

Print: ISBN 978-92-79-87876-3  
ISSN 1830-9674  
doi:10.2785/220518  
Cat. No: KS-HA-18-001-EN-C

## Foreword

The *Eurostat regional yearbook* provides statistics on the economy and people in the regions of the [European Union \(EU\)](#). National figures alone cannot reveal the full and sometimes complex picture of what is happening at a more detailed level within the EU.

Regional and local data help to increase the understanding of the diversity that exists between regions, cities and other geographical classifications that may be used to analyse the EU, complementing information for the EU-28, euro area and individual Member States.

Within the EU, regional statistics are based on the three-level classification of territorial units for statistics, known by the acronym [NUTS](#). The classification, updated every three years, uses harmonised conventions to define regions in a comparable manner, reflecting their diverse physical, demographic and administrative situations.

As well as standard chapters covering social, economic and environmental issues, the 2018 edition also has a special focus on city statistics and a broad range of metropolitan, coastal and border regions.

The *Eurostat regional yearbook* is based on the most recent data available, usually for 2015 or 2016. Whenever possible, it also provides analyses of changes over a five- or ten-year period. These analyses are supported by a range of maps, tables and figures showing regional variations.

The publication is available online in [Statistics Explained](#) on the [Eurostat website](#). The latest figures can be downloaded from [Eurostat's database](#), where more disaggregated (and fresher) data may be found.

I hope that you enjoy exploring the regions of the European Union!



**Mariana Kotzeva**

Director-General, Eurostat



## Abstract

Statistical information is an important tool for understanding and quantifying the impact of political decisions in a specific territory or region. The *Eurostat regional yearbook 2018* gives a detailed picture relating to a broad range of statistical topics across the regions of the EU Member States, as well as the regions of the EFTA and candidate countries.

Each chapter presents statistical information in maps, tables, figures and infographics, accompanied by a descriptive analysis highlighting the main findings. Regional indicators are presented for the following 12 subjects: regional policies and European Commission priorities, population, health, education and training, the labour market, the economy, structural business statistics, research and innovation, the digital economy and society, tourism, transport, and agriculture. In addition, two special chapters are included in this edition: a focus on European cities and a focus on regional typologies.

### Chief editor

Mariana Kotzeva

### Editors

Teodóra Brandmüller, Åsa Önnerfors and Petronela Reinecke  
(Eurostat, Unit E.4., Regional statistics and geographical information)

### Production

Informa S.à r.l. — Giovanni Albertone, Simon Allen and Andrew Redpath

### Map production

Jorge Calvo, Michael Harrop, Åsa Önnerfors, Jørgen Rasmussen and Hannes Reuter  
(Eurostat, Unit E.4., Regional statistics and geographical information)

### Dissemination

Catherine Coyette and Annika Johansson  
(Eurostat, Unit B.4., Dissemination and user support)

### For more information/contact details

Eurostat  
Bâtiment Joseph Bech  
5, rue Alphonse Weicker  
2721 Luxembourg  
LUXEMBOURG  
Internet: <http://ec.europa.eu/eurostat/>  
E-mail: [estat-user-support@ec.europa.eu](mailto:estat-user-support@ec.europa.eu)

### Data extraction

The data presented within this publication were extracted during March and April 2018.

An online data code available under each map/table/figure can be used to directly access the most recent data on Eurostat's website.

All statements on policies within this publication are given for information purposes only. They do not constitute an official policy position of the European Commission and are not legally binding. To know more about such policies, please consult the European Commission's website at: <http://ec.europa.eu>

# Acknowledgements

**Coordination group:** Timothy Allen, Philippe Bautier, Louise Corselli-Nordblad, Baiba Grandovska, Helene Strandell and Pascal Wolff (Eurostat, Unit B.4., Dissemination and user support), Teodóra Brandmüller, Åsa Önnersfors, Petronela Reinecke, Ruxandra Roman-Enescu and Gunter Schäfer (Eurostat, Unit E.4., Regional statistics and geographical information) and Andrew Redpath (Informa s.à r.l.)

## We would like to thank all colleagues involved in the editorial work of each chapter:

- **Introduction:** Valeriya Angelova-Tosheva and Oliver Müller (Eurostat, Unit E.4., Regional statistics and geographical information)
- **Regional policies and European Commission priorities:** Simon Bley, Fritz Gebhard and Nicola Massarelli (Eurostat, Unit E.2., Environmental statistics and accounts; sustainable development); Lewis Dijkstra and Hugo Poelman (Directorate-General for Regional and Urban Policy, Unit B.1., Economic analysis); Igor Caldeira and Wolfgang Petzold ([European Committee of the Regions](#))
- **Population:** Elena Capiluppi, Veronica Corsini, Giampaolo Lanzieri, Monica Marcu and Gabriela Senchea Badea (Eurostat, Unit F.2., Population and migration)
- **Health:** Ilze Burkevica, Margarida Domingues de Carvalho, Ángeles Hermosa López and Jacques Lanneluc (Eurostat, Unit F.5., Education, health and social protection); Lucian Agafitei, Emilio di Meglio and Cristian Rusu (Eurostat, Unit F.4., Income and living conditions; Quality of life)
- **Education and training:** Jacques Lanneluc, Eric Gere and Małgorzata Stadnik (Eurostat, Unit F.5., Education, health and social protection); Elodie Cayotte, Sabine Gagel and Fabienne Montaigne (Eurostat, Unit F.3., Labour market and lifelong learning)
- **Labour market:** Daniela Sciranková (Eurostat, Unit E.4., Regional statistics and geographical information); Håvard Lien, Fabienne Montaigne and Hartmut Schrör (Eurostat, Unit F.3., Labour market and lifelong learning)
- **Economy:** Luis Biedma and Krystian Wladyslaw Gajda (Eurostat, Unit C.2., National accounts production)
- **Structural business statistics:** Vaida Bakšytė, Samuli Rikama and Sarmite Visocka (Eurostat, Unit G.2., European businesses)
- **Research and innovation:** Gregor Kyi, Magdalena Kaminska and Stefania Panaitescu (Eurostat, Unit G.4., Innovation and digitalisation)
- **Digital economy and society:** Michaela Grell and Jadwiga Tudek (Eurostat, Unit G.4., Innovation and digitalisation)
- **Tourism:** Christophe Demunter and Krista Dimitrakopoulou (Eurostat, Unit G.2., European businesses)
- **Transport:** Emilia Iscru, Nikolaos Roubanis and Georgios Xenellis (Eurostat, Unit E.3., Transport)
- **Agriculture:** Edward Cook, Michel Henrard, Marjo Kasanko, Pol Marquer, Anna Rybkowska and Johan Selenius, (Eurostat, Unit E.1., Agriculture and fisheries)
- **Focus on European cities:** Filipe Alves, Valeriya Angelova-Tosheva and Teodóra Brandmüller (Eurostat, Unit E.4., Regional statistics and geographical information)
- **Focus on regional typologies:** Valeriya Angelova-Tosheva, Teodóra Brandmüller, Oliver Müller and Daniela Sciranková (Eurostat, Unit E.4., Regional statistics and geographical information); Lewis Dijkstra and Hugo Poelman (Directorate-General for Regional and Urban Policy, Unit B.1., Economic analysis)

## We are also very grateful to:

- the German and French translation units of the Directorate-General for Translation of the European Commission;
- the Publications Office of the European Union, and in particular Georgia Anargyrou-Hahn and Sabrina Cochepin, Unit B.2., Publications

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# Introduction





Eurostat, the statistical office of the European Union (EU), collects, compiles and publishes statistics for the EU-28 and euro area aggregates, as well as national, regional and other subnational data, primarily for the 28 Member States of the EU, but also for the EFTA and candidate countries.

The Eurostat regional yearbook aims to provide a taste of the wide selection of European statistics that are collected on regions and other subnational classifications across a broad range of subjects.

**Table 1: Number of NUTS 2013 regions and statistical regions by country**

	NUTS level 1	NUTS level 2	NUTS level 3
<b>EU-28</b>	98	276	1 342
Belgium	3	11	44
Bulgaria	2	6	28
Czech Republic	1	8	14
Denmark	1	5	11
Germany	16	38	402
Estonia	1	1	5
Ireland	1	2	8
Greece	4	13	52
Spain	7	19	59
France	9	27	101
Croatia	1	2	21
Italy	5	21	110
Cyprus	1	1	1
Latvia	1	1	6
Lithuania	1	1	10
Luxembourg	1	1	1
Hungary	3	7	20
Malta	1	1	2
Netherlands	4	12	40
Austria	3	9	35
Poland	6	16	72
Portugal	3	7	25
Romania	4	8	42
Slovenia	1	2	12
Slovakia	1	4	8
Finland	2	5	19
Sweden	3	8	21
United Kingdom	12	40	173
	Level 1	Level 2	Level 3
Iceland	1	1	2
Liechtenstein	1	1	1
Norway	1	7	19
Switzerland	1	7	26
Montenegro	1	1	1
Former Yugoslav Republic of Macedonia	1	1	8
Albania	1	3	12
Serbia	2	4	25
Turkey	12	26	81

Source: Eurostat

## Subnational statistics

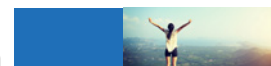
EU Member States are often compared with each other, but in reality it can be difficult to compare a small country like Malta, which had 460 thousand inhabitants on 1 January 2017, or Luxembourg, which had 591 thousand inhabitants, with larger Member States, such as Germany, the most populous EU Member State, where there were almost 83 million inhabitants.

Comparing data at a regional or subnational level is often more meaningful and such an analysis may also highlight disparities within countries, such as an east-west divide in Germany or a north-south divide in Italy. Alternatively, such analyses may reveal differences in patterns of economic development, for example, Germany and Poland have polycentric patterns of development with several relatively large cities spread across their territory, whereas France and the United Kingdom are examples of a more monocentric pattern of development, as their economic activity is more concentrated in and around the capital cities of Paris and London.

Over the past few years, Eurostat has expanded the range of statistics that it provides beyond regional information to cover other territorial typologies, addressing the growing needs of policymakers within the context of cohesion and territorial development policies. These changes are based on harmonising and integrating the various typologies under two broad headings, those linked to regional statistics and those linked to statistics for local administrative units (LAU or municipalities), with legislative consolidation provided by an amending Regulation ((EU) 2017/2391) as regards the territorial typologies (Tercet). Some of the regional typologies developed include urban-rural regions, metropolitan regions, border regions, coastal regions, island regions, mountain regions and outermost regions. Some of the typologies that are based on statistics at a local level include data by degree of urbanisation or data for functional urban areas (FUAs). This edition of the Eurostat regional yearbook presents an overview of these developments in its final chapter, within a special focus on regional typologies.

## Statistics on regions

At the heart of regional statistics is the NUTS classification — a classification of territorial units for statistics. It is a regional classification for the EU Member States that is based on a hierarchy of regions and subdivides each EU Member State into regions that are classified according to three different levels, covering NUTS levels 1, 2 and 3 from larger to smaller areas. Some EU Member States have a relatively small population and may therefore not be subdivided at some (or even all) of the different levels of



the NUTS classification. For example, Estonia, Cyprus, Latvia, Lithuania, Luxembourg and Malta are each composed of a single NUTS level 2 region according to the [2013 version of the NUTS classification](#). A similar situation exists in Iceland, Liechtenstein, Montenegro and the former Yugoslav Republic of Macedonia, which are each composed of a

single level 2 region. **Table 1** provides an overview of the number of NUTS and statistical regions for each of the EU Member States and non-member countries that are covered by the *Eurostat regional yearbook*. Note that since the last edition of the publication an agreement has been reached on the introduction of statistical regions for Serbia.

## The NUTS regulation and classification

The NUTS classification is defined in [Regulation \(EC\) No 1059/2003](#) of the European Parliament and of the Council, which has to be amended by a [European Commission](#) regulation each time the classification is updated (when a new version of the NUTS is needed). The NUTS regulation specifies that there should be a minimum period of three years stability during which time the classification should not be changed; exceptions are made for the inclusion of additional regions when the accession of a new EU Member State occurs. Since 2003, the NUTS classification has been amended several times, partly due to regular amendments, partly due to the accession of new Member States or changes to the territorial boundaries of existing Member States (for example, the inclusion of data for the French region of Mayotte).

The third regular amendment of the NUTS classification ([Commission Regulation \(EU\) No 1319/2013](#)) was adopted in December 2013 and applies to data collected for reference periods from 1 January 2015 onwards; it is referred to as NUTS 2013. This version of NUTS is the basis for classifying regional statistics as used in the 2018 edition of the *Eurostat regional yearbook*. It should be noted that for time series, the data presented in this publication could often have been collected using a previous version of NUTS and that these statistics have been recoded to NUTS 2013; as a consequence data are sometimes not available for a small number of regions where a simple recoding or aggregation of data from previous versions of NUTS was not possible (due to changes in boundaries).

The next regular amendment of the NUTS classification ([Commission Regulation \(EU\) 2016/2066](#)) was adopted in December 2016 and applies to data collected for reference periods from 1 January 2018 onwards; it is referred to as NUTS 2016. This version of NUTS will be used as the basis for the next edition of the *Eurostat regional yearbook*.

As noted above, the NUTS classification was also amended by the [Regulation \(EU\) 2017/2391](#) as regards the territorial typologies (Tercet), establishing a common statistical classification of territorial units, to enable the collection, compilation and dissemination of European statistics at different territorial levels for the EU.

## The main principles of the NUTS classification

**Principle 1:** the NUTS regulation defines minimum and maximum population thresholds for the size of NUTS regions (see **Table 2**). Deviations from these thresholds are only possible when particular geographical, socioeconomic, historical, cultural or environmental circumstances exist.

**Principle 2:** NUTS favours administrative divisions. If available, administrative structures are used for the different NUTS levels. In those EU Member States where there is no administrative layer corresponding to a particular level, regions are created by aggregating smaller administrative regions.

**Table 2:** Size constraints for NUTS 2013 regions, by population (number of inhabitants)

	Minimum population	Maximum population
NUTS level 1 regions	3 000 000	7 000 000
NUTS level 2 regions	800 000	3 000 000
NUTS level 3 regions	150 000	800 000

Source: Eurostat

In a similar vein, regions have also been defined and agreed with the EFTA and candidate countries on a bilateral basis; these are called statistical regions and follow exactly the same rules as the NUTS regions in the EU, although they have no legal basis.



Most of the regional statistics shown in the *Eurostat regional yearbook* are for NUTS level 2 regions, but, subject to data availability, some maps, tables and figures are shown for either NUTS level 1 regions (more aggregated geographical information) or NUTS level 3 regions (the most detailed level of regional information); these more detailed statistics are only available for a limited selection of indicators that include agriculture, demography, economic accounts, business demography, transport and science and technology indicators.

There may also be specific cases (normally related to the limits of data availability) where particular regions are presented using a different NUTS level compared with the remainder of the regions in the same map, table or figure; these cases are documented in footnotes and are included to improve data coverage. Where little or no regional data exist for a particular EU Member State, use has been made of national data; these exceptions are again documented in the footnotes.

Note: a map with NUTS and statistical regions at level 2, together with their corresponding codes and region names, is included in a plastic sleeve that is attached to the inside back cover of this publication.

## Statistics by degree of urbanisation

The [degree of urbanisation](#) is a classification originally introduced in 1991. Initially it distinguished between

densely, intermediate and thinly populated areas, using information on numbers of inhabitants, population density and the contiguity of local administrative units at level 2 (LAU2 or municipalities).

In 2014, a new degree of urbanisation classification was introduced. This is based on three types of area, which are defined using a criterion of geographical contiguity based on a population grid of 1 km<sup>2</sup> in combination with a minimum population threshold (see **Table 3** for a summary of the spatial concepts employed). The revised classification identified [cities](#) (densely populated areas), [towns and suburbs](#) (intermediate density areas) and [rural areas](#) (thinly populated areas); **Map 1** shows the distribution for each of these across the EU. Within this edition of the *Eurostat regional yearbook*, statistics by degree of urbanisation are used in the chapters on [health, the labour market, the digital economy and society, tourism, and cities](#).

The revision of the degree of urbanisation classification also provided the opportunity to streamline and harmonise a number of similar but not identical spatial concepts, for example, the use of [urban centres](#) to identify European cities with at least 50 thousand inhabitants, or the aggregation of data for cities and for towns and suburbs which are covered by the common heading of [urban areas](#).

### For more information:

[A harmonised definition of cities and rural areas: the new degree of urbanisation](#), Directorate-General for Regional and Urban Policy (2014)

**Table 3: Spatial concepts used in the degree of urbanisation**

Grid cell concept	Criteria
High density clusters ( <a href="#">urban centres</a> )	Population ≥ 50 000 inhabitants and contiguous grid cells of 1 km <sup>2</sup> with ≥ 1 500 inhabitants per km <sup>2</sup>
Urban clusters	Population ≥ 5 000 inhabitants and contiguous grid cells of 1 km <sup>2</sup> with ≥ 300 inhabitants per km <sup>2</sup>
Rural grid cells	Grid cells outside urban clusters and urban centres

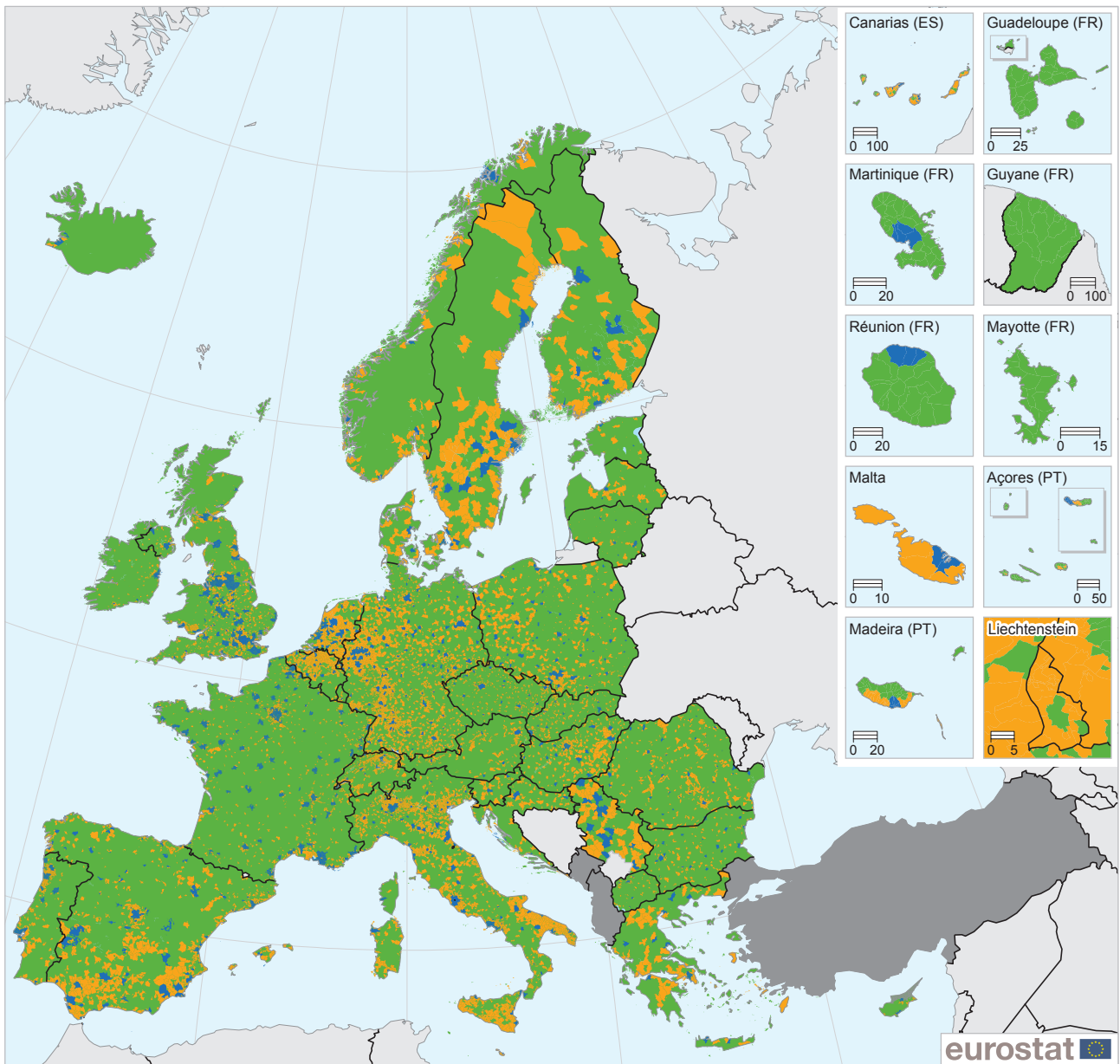
Degree of urbanisation concept	Alternative terminology	UN classification	Criteria
Cities	Densely populated areas	Large urban areas	≥ 50 % of the population lives in high-density clusters
Towns and suburbs	Intermediate urbanised areas	Small urban areas	< 50 % of the population lives in rural grid cells and < 50 % of the population lives in high-density clusters
Rural areas	Thinly populated areas	Rural areas	> 50 % of the population lives in rural grid cells

Note: the sum/average for cities may be combined with towns and suburbs and are then referred to as urban areas (in contrast to rural areas).

Source: Eurostat, the European Commission Directorate-General for Regional Policy, OECD

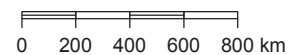


**Map 1: Degree of urbanisation for local administrative units (LAU)**



Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 05/2018

- Cities**  
(Densely populated areas: at least 50 % of the population lives in urban centres)
- Towns and suburbs**  
(Intermediate density areas: less than 50 % of the population lives in rural grid cells and less than 50 % of the population lives in urban centres)
- Rural areas**  
(Thinly populated areas: more than 50 % of the population lives in rural grid cells)
- Data not available**

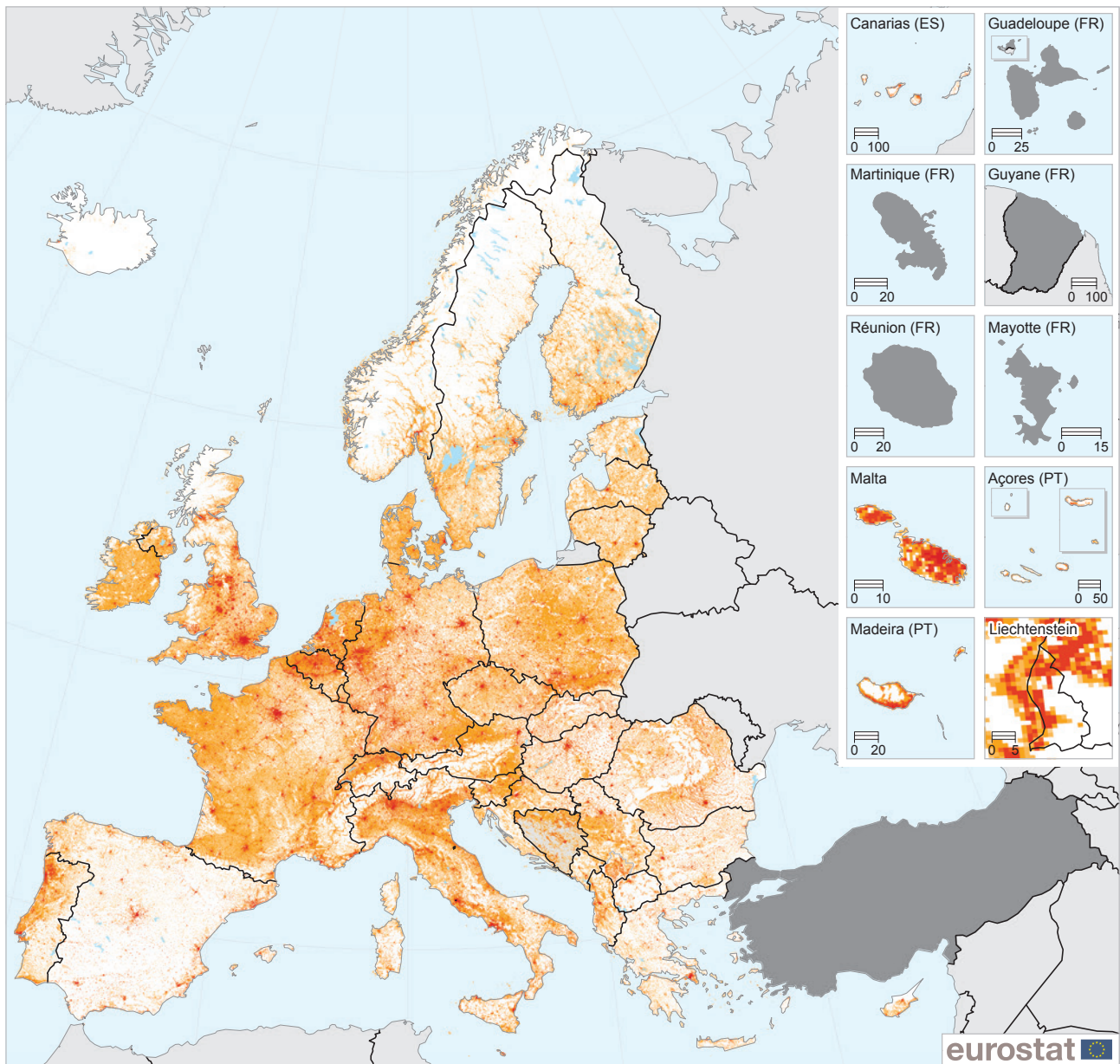


Note: Based on population grid from 2011 and LAU 2016.

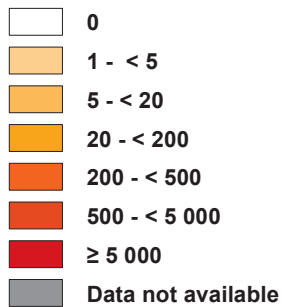
Source: Eurostat, JRC and European Commission Directorate-General for Regional Policy



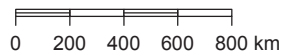
**Map 2: Population density based on the GEOSTAT population grid, 2011**  
(number of inhabitants per km<sup>2</sup>)



number of inhabitants/km<sup>2</sup>



Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 05/2018



Source: JRC, Eurostat, GEOSTAT Population Grid 2011



## Statistics on cities

European cities face a variety of challenges, from poverty, crime and social exclusion, to urban sprawl, pollution and counteracting climate change. By contrast, cities also have considerable potential for attracting investment, people and services, encouraging research, creativity and innovation. Cities can therefore be seen as both the source of and solution to some of the most pressing economic, social and environmental challenges in the EU, which makes them central to the [Europe 2020 strategy](#) for 'smart, sustainable and inclusive growth', designed to improve the EU's competitiveness and productivity, while underpinning its sustainable social market economy.

In 2011 and 2012, work carried out by the European Commission's [Directorate-General for Regional and Urban Policy \(DG REGIO\)](#), Eurostat and the [OECD](#) resulted in a new harmonised definition of cities and their surrounding areas being introduced.

- A city consists of one or more [local administrative units \(LAUs\)](#) where the majority of the population lives in an urban centre of at least 50 thousand inhabitants (previously referred to as a 'core city').
- A greater city is an approximation of the urban centre when this stretches beyond the administrative city boundaries (previously referred to as the 'kernel').
- A functional urban area consists of the city and its surrounding commuting zone (previously known as a 'larger urban zone (LUZ)').

The EU has a specific [city data collection](#) exercise undertaken by the national statistical authorities, DG REGIO and Eurostat. It provides statistics on a range of socioeconomic aspects relating to urban life in almost a thousand cities that are spread across the EU; in addition, data has also been collected for cities in Norway, Switzerland and Turkey. Note there may be a considerable difference between the latest reference periods for which data are available when comparing statistics for different cities.

[City statistics](#) based on LAUs provide a wide range of information to assess the quality of urban life and living standards, supplementing regional statistics. The data collection exercise includes several variables/indicators, with statistics for: demography, housing, health, crime, the labour market, income disparities, educational qualifications, the environment, the climate, travel patterns and cultural infrastructure. Alongside this regular, annual data collection exercise, the European Commission's Directorate-General for Regional and Urban Policy requests, every three years, a perception survey concerning the quality of life in European cities. The most recent of these surveys was conducted in 2015 and covered more than 40 thousand people across 79 cities and 4 greater cities.

In this edition of the *Eurostat regional yearbook*, statistics on European cities are presented in the penultimate chapter through a [special focus on European cities](#).

### For more information:

[Methodological manual on city statistics](#), Eurostat (2017)



## A short reading guide

### Coverage and timeliness

The *Eurostat regional yearbook* contains statistics for the 28 Member States of the EU and, where available, data are also shown for the EFTA countries (Iceland, Liechtenstein, Norway and Switzerland) and the candidate countries (Montenegro, the former Yugoslav Republic of Macedonia, Albania, Serbia and Turkey). The designations employed and the presentation of material in maps, tables and figures does not imply the expression of any opinion whatsoever on the part of the European Union concerning the legal status of any country, territory or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The geographical descriptions used to group EU Member States, for example, 'northern', 'eastern', 'southern' and 'western' are not intended as political categorisations. Rather, these references are made in relation to the geographical location of one or more EU Member States, as listed within the geography domain of Eurovoc, the European Commission's [multilingual thesaurus](#). The northern Member States are often distinguished between the [Baltic Member States](#) (Estonia, Latvia and Lithuania) and the [Nordic Member States](#) (Denmark, Finland and Sweden).

There is a wide range of surveys and data collection exercises whose data feed into the *Eurostat regional yearbook*. As a result, there may be differences concerning the latest available reference year between the different chapters as each aims to show the latest information available. In general, 2017 data are available from the labour force survey (used in the chapters on education and training or the labour market) and from the information society survey (used in the chapter on the digital economy and society). Otherwise, the most common reference period is 2016, which is generally the latest date for which information is available in most of the other chapters, for example, population (with some data for 1 January 2017), the economy, tourism, transport or agriculture. Note that [Eurostat's website](#)

may have fresher data due to the continuous nature of data collection and processing (resulting in updates and new reference periods being added throughout the year).

Regional data sets on Eurostat's website generally include national data alongside regional information. As such, both national and regional statistics may be accessed through a single online data code. The online data code(s) below each map, table and figure helps users to locate the freshest data.

Eurostat's data are published with accompanying metadata that provide background information on each source, as well as specific information (flags) for individual data cells. The flags provide information pertaining to the status of the data, for example, detailing whether the data are estimated, provisional or forecasted. These flags have either been converted into footnotes which appear under each map or figure, while in tables these flags are indicated through the use of an *italic font*.

### DATA PRESENTATION

In order to improve readability, only the most significant information has been included as footnotes under the maps, tables and figures. In addition to footnotes, the following formatting and symbols are used in tables, where necessary:

*Italic font* data value is estimated, provisional or forecasted (and is hence likely to change);  
: not available, confidential or unreliable value;  
– not applicable.

Breaks in series are indicated, as appropriate, in the footnotes provided under each map, table or figure. Throughout the *Eurostat regional yearbook* a billion is used to mean a thousand million and a trillion to mean a thousand billion.



# 1

## Regional policies and European Commission priorities



## Key findings

- **EU cohesion policy during the current programming period covering 2014-2020, has a total expenditure of EUR 352 billion.**
- **Regional European policymaking for the 2014-2020 funding period has changed to recognise the important role that may be played by promoting an urban agenda.**
- **The EU's rural development policy is designed to help rural areas in the EU meet a wide range of economic, social and environmental challenges.**

European policymaking is inherently multidimensional: on the one hand, it has to encompass an overall framework providing objectives for the continent as a whole, while on the other it needs to acknowledge the often specific needs of national and subnational territories, as these are the driving forces behind the delivery of results. Recent challenges such as the global financial and economic crisis, the increased flow of migrants into Europe, or security concerns from terror attacks provide examples of the two-sided need to deliver both global and local solutions in a coherent manner.

One of the main policy challenges for the [European Union \(EU\)](#) is to ensure that all developments are scrutinised to ensure that they take account of the considerable geographical diversity within the EU. The territorial dimension of EU policy is increasingly recognised, as growth and job creation depend on making the best use of all assets, while ensuring that common resources are used in a coordinated and sustainable way.

This chapter provides an overview of some of the main EU policy developments that have a territorial impact. It starts with information on how the EU attributes its cohesion policy funding with the goal of reducing socioeconomic disparities between regions, before providing information on a range of policy developments which influence life in Europe's regions, cities and rural areas.

## Cohesion policy — investing to reduce regional disparities in the EU

### WHAT IS COHESION POLICY?

The EU's cohesion policy invests in growth and jobs and promotes territorial cooperation; it is behind thousands of projects that have taken place all over

Europe. It aims to reduce the disparities that exist between EU regions, promoting a balanced and sustainable pattern of territorial development, by supporting job creation, business competitiveness, economic growth, sustainable development, and an overall improvement in the quality of life. The bulk of cohesion policy funding is concentrated on less developed European regions in order to help them to catch-up and to reduce the economic, social and territorial disparities that exist across the EU.

The EU's cohesion policy is established on the basis of seven-year funding periods; the current period covers 2014-2020, for which expenditure of EUR 352 billion has been allocated for measures in the EU Member States, equivalent to almost one third of the total EU budget. At the time of writing, European institutions are in the process of discussing the delivery and implementation of cohesion policy post-2020.

During the period 2014-2020, cohesion policy is based around 11 thematic objectives:

- strengthening research, technological development and innovation;
- enhancing access to, and use and quality of information and communication technologies (ICT);
- enhancing the competitiveness of small and medium-sized enterprises (SMEs);
- supporting the shift towards a low-carbon economy in all sectors;
- promoting climate change adaptation, risk prevention and management;
- preserving and protecting the environment and promoting resource efficiency;
- promoting sustainable transport and removing bottlenecks in key network infrastructures;
- promoting sustainable and quality employment and supporting labour mobility;
- promoting social inclusion, combating poverty and any discrimination;
- investing in education, training and vocational training for skills and lifelong learning;
- enhancing institutional capacity of public authorities and stakeholders and efficient public administration.



Cohesion policy is delivered through three main funds: the [European regional development fund \(ERDF\)](#), the [European social fund \(ESF\)](#) and the [cohesion fund](#). The first of these, the European regional development fund, concentrates its actions on innovation and research, the [digital agenda](#), support for [small and medium-sized enterprises \(SMEs\)](#), and the low-carbon economy. The resources allocated to each of these depends upon the region concerned: for example, in more developed regions, at least 80 % of any funding should focus on at least two of these priorities, whereas in less developed regions this share falls to 50 %. The European social fund aims to improve employment and education opportunities in the EU, as well as the situation of the most vulnerable people, for example, those at risk of poverty, by investing in people. More than EUR 80 billion has been earmarked for human capital investment across the EU Member States during the period 2014-2020. The European social fund focuses on supporting four thematic objectives: promoting employment and supporting labour mobility; promoting social inclusion and combating poverty; investing in education, skills and lifelong learning; enhancing institutional capacity and an efficient public administration. The cohesion fund supports EU Member States whose [gross national income \(GNI\)](#) per inhabitant is less than 90 % of the EU average. During the period 2014-2020 it allocates a total of EUR 63.4 billion to a range of investment projects primarily in relation to trans-European networks (TENs) and the environment, through a focus on the following areas: the shift towards a low-carbon economy; promoting climate change adaptation and risk prevention; preserving and protecting the environment and promoting resource efficiency; promoting sustainable transport and removing key bottlenecks in network infrastructures; enhancing institutional capacity. It is subject to the same rules of programming, management and monitoring as the European regional development fund and European social fund.

**For more information:**

[http://ec.europa.eu/regional\\_policy/en/policy/what/investment-policy/](http://ec.europa.eu/regional_policy/en/policy/what/investment-policy/)

## COHESION POLICY: HOW IS THE BUDGET DECIDED?

The total budget for cohesion policy and the rules associated with its allocation are jointly decided by the [Council](#) and the [European Parliament](#). A [legislative package for cohesion policy for 2014-2020](#) was adopted on 17 December 2013. This included a [common provisions regulation \(CPR\)](#) which lays down general provisions and the simplification of [European structural and investment funds \(ESIF\)](#); the CPR was amended in October 2015 to take account of the unique situation of Greece resulting from the global financial and economic crisis and its subsequent sovereign debt crisis.

## THE NUTS CLASSIFICATION — AN OBJECTIVE BASIS FOR THE ALLOCATION OF COHESION POLICY FUNDING

As noted above, priority for cohesion policy funding is given to regions whose development is lagging behind the EU average, with more than half (EUR 181 billion) of the total allocation set aside for less developed regions whose GDP per inhabitant is lower than 75 % of the EU average. Statistics on regional accounts are used to classify regions for the allocation of structural and investment funds, with the [NUTS](#) classification providing the basis for regional boundaries and geographic eligibility.

Regional eligibility for the European regional development fund and the European social fund during the funding period 2014-2020 was calculated on the basis of regional GDP per inhabitant (in [PPS](#)) averaged over the period 2007-2009. NUTS level 2 regions were ranked and split into three groups:

- less developed regions where GDP per inhabitant was less than 75 % of the [EU-27](#) average;
- transition regions where GDP per inhabitant was between 75 % and 90 % of the EU-27 average; and
- more developed regions where GDP per inhabitant was more than 90 % of the EU-27 average.

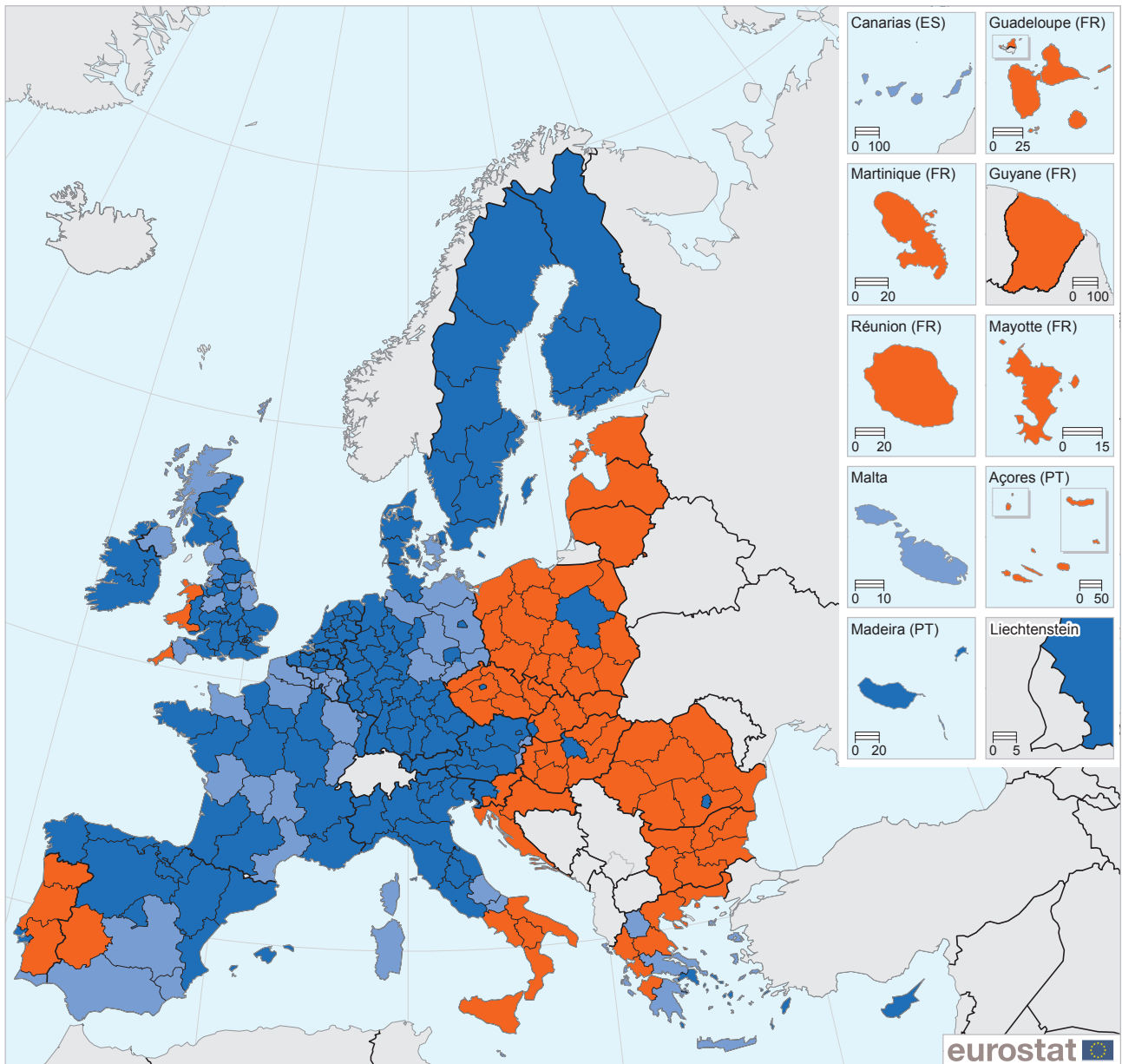
**Map 1.1** shows the eligibility of NUTS level 2 regions for structural funds over the funding period 2014-2020. The less developed regions (shaded in orange), which receive the highest proportion of funds, are predominantly in the east and south of the EU, and also include the [Baltic Member States](#) and several outermost regions.

Eligibility for the cohesion fund was initially calculated using a different indicator and for a slightly different period from the two other funds: eligibility is based on GNI per inhabitant (in [PPS](#)) averaged over the period 2008-2010. Only EU Member States whose GNI per inhabitant was less than 90 % of the EU-27 average were supported, with funds to cover actions designed to reduce economic and social disparities and promote [sustainable development](#). Bulgaria, the Czech Republic, Estonia, Greece, Croatia, Latvia, Lithuania, Hungary, Malta, Poland, Portugal, Romania, Slovenia and Slovakia were covered during the period 2014-2016, while Cyprus was eligible for a phase-out fund. During 2016, a review of cohesion fund eligibility was conducted, based on information for GNI per inhabitant averaged over the period 2012-2014. As a result, the only change was that Cyprus became fully eligible for cohesion fund support (from 1 January 2017 onwards).

**For more information:**

[http://ec.europa.eu/regional\\_policy/en/](http://ec.europa.eu/regional_policy/en/)

**Map 1.1: Eligibility of regions for cohesion funds, by NUTS 2 regions, for the programming period 2014-2020**  
(% of EU-27 average, based on GDP per inhabitant in PPS)



(% of EU-27 average, based on GDP per inhabitant in PPS)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 04/2018

- Less developed regions (GDP per inhabitant, < 75)**
- Transition regions (GDP per inhabitant, ≥ 75 - < 90)**
- More developed regions (GDP per inhabitant, ≥ 90)**

0 200 400 600 800 km

Note: GDP per inhabitant (in PPS) over the period 2007-2009 was used as the basis for the allocation of structural funds for 2014-2020; as such, calculations relating to regional eligibility were based on the NUTS 2006 classification and with reference to the EU-27 average. The EU-28 regions in this publication are delineated on the basis of the NUTS 2013 classification and as a result there are regions where regional eligibility does not follow the new NUTS boundaries: Chemnitz (DED4) and Merseyside (UKD7) are partly eligible as transition regions and partly as more developed regions; Vzhodna Slovenija (SI03) is mostly eligible as a less developed region and partly as a more developed region.

Source: European Commission, Directorate-General for Regional and Urban Policy



## COHESION POLICY: IMPLEMENTATION

Structural and investment funds are attributed through a process which involves European, national, regional and local authorities, as well as social partners (for example, organisations representing employers or employees) and organisations from civil society. Each Member State produces a draft partnership agreement and draft operational programme, which provides information on their regional strategy and a list of proposals for various programmes. Having negotiated the contents of these with the [European Commission](#), national/regional managing authorities in each of the EU Member States then select, monitor and evaluate thousands of potential projects. The European Commission commits funds to allow these authorities to start spending funds on their programmes, with each programme monitored by both the European Commission and the Member State in question; payments are made on the basis of certified expenditure and a series of reports.

For the period 2014-2020 the rules for cohesion policy funding have been simplified so that a harmonised set of rules now applies to all of the funds. The policy has been adapted so that it is based upon a results-orientated approach with more transparent controls, less red tape, the introduction of specific preconditions before funds can be released, and the introduction of measurable targets for better accountability.

## COHESION POLICY: INTEGRATED INTO BROADER POLICY GOALS

Regional policy and funding help deliver many of the EU's overall policy objectives, for example, contributing directly to the [EU's priorities for 2015-2019](#). Cohesion policy is closely integrated with the [Europe 2020 strategy](#) and the [EU's investment plan for Europe](#) — see below for more information. During the period 2014-2020, cohesion policy programming is, for the first time, embedded within overall economic policy coordination, in particular the [European semester](#), which is a regular cycle of economic policy coordination that is designed to coordinate the individual efforts of EU Member States. These links between cohesion policy and broader economic reforms has been strengthened such that the European Commission may suspend regional funding to any Member State which does not comply with the EU's economic rules.

## Other policy areas that impact on regions

As already noted, regional policy can play an important role in delivering broader EU policy goals — such as the European Commission's priorities — while cohesion policy investments may also complement a range of policy initiatives in other areas, for example, education, employment, energy, the environment, the single market, research and innovation.

## URBAN DEVELOPMENT IN THE EU

The various dimensions of urban life — economic, social, cultural and environmental — are closely inter-related. Successful urban developments are often based on coordinated/integrated approaches that seek to balance these dimensions through a range of policy measures such as urban renewal, increasing education opportunities, preventing crime, encouraging social inclusion or environmental protection. As such, urban development has the potential to play an important role in promoting the Europe 2020 strategy and delivering smart, sustainable and inclusive growth.

## WHAT IS URBAN DEVELOPMENT POLICY?

One important change in European policymaking for the 2014-2020 funding period is recognition of the important role that may be played by the urban dimension of regional policy, in particular concerning measures that are designed to assist in the fight against poverty and social exclusion. Indeed, the EU has put the urban dimension at the heart of cohesion policy, with at least half of the resources foreseen under the European regional development fund being invested in urban areas. The European Commission estimates that during this six-year period some EUR 10 billion from the European regional development fund will be allocated to sustainable urban development, covering around 750 different European cities. The EU's regional policy will target, among others, urban development through:

- focusing investment priorities on issues such as sustainable urban mobility, the regeneration of deprived communities, or improved research and innovation capacity;
- committing at least 5 % of the European regional development fund to integrated sustainable urban development;
- setting-up an urban development network to be responsible for reviewing the deployment of European funds;
- encouraging cities to promote community-led local developments for urban regeneration.

Urban development policy seeks to promote the economic, social and environmental transformations of cities through integrated and sustainable solutions. It can play a valuable role in the implementation of the Europe 2020 strategy, through a range of initiatives, extending the territorial coverage of the strategy to an additional level of governance. Indeed, a number of commentators and stakeholders have argued that cities need to be more involved in the conception and implementation of EU policies, as, despite their economic weight, there is no explicit urban dimension to the Europe 2020 strategy or its targets, although three flagship projects — the digital agenda, the [innovation union](#) and [youth on the move](#) — each address particular urban challenges.

**For more information:**

[http://ec.europa.eu/regional\\_policy/index.cfm/en/policy/themes/urban-development/](http://ec.europa.eu/regional_policy/index.cfm/en/policy/themes/urban-development/)

### WHAT IS THE EU'S URBAN AGENDA?

In February 2014, the European Commission organised a CITIES forum, to discuss how to strengthen the urban dimension of EU policymaking; it was centred on a debate over the need for an EU urban agenda, designed to bring together the increasing number of sectoral policies that impact on the EU's urban areas, for example, within the domains of energy, the information society, climate action, the environment, transport, education or culture. Many stakeholders saw an opportunity to implement a framework to bring coherence to a diversity of initiatives and policies, and to give clear roles for European, national, regional and local authorities.

The forum was followed, in July 2014, by a European Commission Communication [The urban dimension of EU policies — key features of an EU urban agenda](#) (COM(2014) 490). It discussed a range of options for developing an urban agenda, including:

- a role for the EU institutions as a facilitator of urban development;
- further integration of sectoral policies so that these are better adapted to urban realities;
- an instrument to involve cities and their political leaders in EU policymaking and policy implementation;
- a tool to integrate the goals of the Europe 2020 strategy with cities' own strategies.

At the end of May 2016, a meeting of ministers responsible for urban matters was held in Amsterdam, the Netherlands. It reached an agreement on an [urban agenda for the EU](#), as established by the [Amsterdam pact](#). The agreement foresaw the development of 12 priority themes as partnerships between European institutions, EU Member States, European cities and

other stakeholders; each has the goal of ensuring that the urban dimension of policymaking is strengthened. The themes include: the inclusion of migrants and refugees; air quality; urban poverty; housing; the circular economy; jobs and skills in the local economy; climate adaptation; energy transition; sustainable land use; urban mobility; digital transition; public procurement.

The urban agenda is a new method of working designed to maximise the growth potential of cities, while tackling the social challenges associated with urban areas. It seeks to promote cooperation, economic growth, the quality of life and innovation across European cities through the creation of European partnerships, which:

- promote the involvement of cities in EU policymaking ('urban friendly' legislation);
- ensure better access to and utilisation of European (structural and investment) funds;
- improve the EU's urban knowledge base, thereby leading to cities increasing their level of cooperation and sharing best practices.

**For more information:**

<http://ec.europa.eu/futurium/en/content/what-urban-agenda>

### Rural development in the EU

Having outlined EU policy developments in relation to cities and urban areas, this next section looks at policy developments for rural areas. There are considerable differences between the EU Member States as regards their urban-rural territorial divides. Some Member States — for example, Ireland, Sweden or Finland — are very rural in character. By contrast, the Benelux Member States and Malta have a high degree of urbanisation. Equally, within individual Member States there can be a wide range of different typologies, for example, the densely-populated, urbanised areas of Nordrhein-Westfalen in western Germany may be contrasted with the sparsely-populated, largely rural areas of Brandenburg or Mecklenburg-Vorpommern in north-eastern Germany.

The EU's rural development policy is designed to help rural areas in the EU meet a wide range of economic, social and environmental challenges; it complements the system of direct payments to farmers and measures to manage agricultural markets. Indeed, rural development policy was introduced as the second pillar of the EU's [common agricultural policy \(CAP\)](#) during the [Agenda 2000 reform](#).

The [European agricultural fund for rural development \(EAFRD\)](#) provides finance for the EU's rural development policy, which is used to promote sustainable rural development and to contribute towards the goals



of the Europe 2020 strategy for smart, sustainable and inclusive growth. For the period 2014-2020, the EAFRD has been allocated EUR 99.6 billion. If national contributions are included, the funding available for this second pillar of the CAP amounts to EUR 161 billion for the whole of the funding period 2014-2020, with France (EUR 11.4 billion) and Italy (EUR 10.4 billion) the largest beneficiaries.

The EAFRD is intended to help develop farming and rural areas, by providing a competitive and innovative stimulus, at the same time as seeking to protect biodiversity and the natural environment. There are six priority areas, namely, to promote:

- knowledge transfer and innovation in agriculture and forestry;
- the viability and competitiveness of all types of agriculture and support sustainable forest management;
- the organisation of the food production chain, animal welfare and risk management in farming;
- the restoration, preservation and enhancement of agricultural and forest ecosystems;
- the efficient use of natural resources and support the transition to a low-carbon economy;
- social inclusion, poverty reduction and economic development in rural areas.

As with other structural and investment funds, from 2014 onwards, rural development policy is based on the development of multiannual partnership and operational programmes which are designed at a national/regional level by individual EU Member States. Each programme should cover the priorities set by the EU and their contents are the subject of negotiations with the European Commission. Once the general programmes are agreed, national/regional managing authorities in each of the EU Member States are responsible for selecting, evaluating and monitoring individual projects.

#### For more information:

[http://ec.europa.eu/agriculture/rural-development-2014-2020\\_en](http://ec.europa.eu/agriculture/rural-development-2014-2020_en)

## European Committee of the Regions

The [European Committee of the Regions \(CoR\)](#) is the EU's assembly of regional and local representatives. It was created in 1994 and is composed of 350 members who are regional presidents, mayors or elected representatives of regions and cities in the 28 Member

States of the EU; successive European treaties have broadened its role. The Committee of the Regions works closely with the European Commission, the European Parliament and the Council of the EU, as well as various tiers of authority in the EU Member States to promote multi-level governance. It seeks to ensure that European policy developments uphold the principles of subsidiarity and proportionality and promotes economic, social and territorial cohesion in the EU through autonomy for regional and local authorities.

With a view to the important role that may be played by Europe's regions and cities for achieving the EU's objectives of 'smart, sustainable and inclusive growth', the Committee of the Regions has adopted [five political priorities](#) for its current mandate (2015-2020): a fresh start for the European economy (creating jobs and sustainable growth in cities and regions to provide a better quality of life for citizens); the territorial dimension of EU legislation (working in the interest of citizens, no matter where they choose to live and work); a simpler, more connected Europe (reconnecting citizens and businesses at local and regional level); stability and cooperation within and outside the EU (supporting our neighbours on their path towards European values); a Europe of citizens is Europe's future (enhancing forward-looking partnerships between the EU and its people). With this in mind, the Committee of the Regions has set up the [CoR monitoring platform](#) to observe the involvement of local and regional authorities in the European semester, the implementation of structural reforms, and in the EU's long-term strategy for sustainable growth.

### #COHESIONALLIANCE

As noted above, approximately one third of the EU's budget is devoted to cohesion policy, designed to reduce regional disparities, create jobs, open new business opportunities and address major global issues such as climate change and migration.



The [#CohesionAlliance](#) is a coalition of those who believe that EU cohesion policy should continue to be a pillar for the EU's future. The Alliance was created through cooperation between leading European associations of cities and regions and the European Committee of the Regions. It demands that the EU budget after 2020 makes cohesion policy stronger, more effective, visible and available for every region in the EU.

By end of May 2018, more than 400 local and regional authorities, federations of local and regional authorities and civil society organisations and over 5 000 individual supporters had joined the #CohesionAlliance. The local and regional authorities and their national federations from across the EU that have officially signed up to the Alliance represent around 97 % of the EU's population.

## EUROPEAN WEEK OF REGIONS AND CITIES

The European Week of Regions and Cities is an annual four-day event which allows regions and cities to showcase their capacity to encourage growth and job creation, implement EU cohesion policy, and provide evidence of the importance of the regional level for good European governance.



Organised by the Committee of the Regions and the European Commission's Directorate-General for Regional Policy, it has become a networking platform for regional and local development, which is viewed as a key event for policy practitioners. The 16th European Week of Regions and Cities will be held under the title, *For a strong EU cohesion policy beyond 2020*, with three principal themes:

- territorial development (regional, urban, rural);
- future of cohesion policy, EU budget;
- education, culture and youth.

### For more information:

[http://ec.europa.eu/regional\\_policy/regions-and-cities/#!/home](http://ec.europa.eu/regional_policy/regions-and-cities/#!/home)

## MASSIVE OPEN ONLINE COURSE (MOOC)

In January and February 2018, the Committee of the Regions, together with several Directorates-General of the European Commission — Regional and Urban Policy; Eurostat; Budget; Employment, Social Affairs and Inclusion; Agriculture and Rural development — the European Investment Bank (EIB), Interreg Europe and URBACT, presented an online training course designed to explain how to make the most of EU resources for regions and cities. The course was targeted at people interested in the EU and its regional and local affairs, in particular, for officials of regional and local administrations involved in EU affairs.

The course covered the following subjects: regions and cities in the EU; the EU budget — revenue, expenditure, management and prospects; EU structural funds and

cohesion policy — supporting growth and solidarity; the social dimension of EU funding; stimulating the local and regional economy — financing and advice for investment in regions and cities; the future of Europe — options and debates. The course remains available online until mid-January 2019.

### For more information:

[http://cor.europa.eu/en/events/Pages/MOOC-2018.aspx?utm\\_source=ShortURL&utm\\_medium=Other&utm\\_campaign=Mooc2018](http://cor.europa.eu/en/events/Pages/MOOC-2018.aspx?utm_source=ShortURL&utm_medium=Other&utm_campaign=Mooc2018)

## The Europe 2020 strategy: creating a smart, sustainable and inclusive economy

The *Europe 2020 strategy*, designed as the successor to the *Lisbon strategy*, was adopted by the *European Council* on 17 June 2010. It is the EU's common agenda for this decade, placing emphasis on promoting a growth pact that can lead to a smart, sustainable and inclusive economy, in order to overcome structural weaknesses, improve Europe's competitiveness and productivity, and underpin a sustainable social market economy. The Europe 2020 strategy seeks to achieve the following five targets by 2020.

- **Employment** — increase the employment rate among those aged 20-64 years to at least 75 %.
- **Research and development** — increase combined public and private investment in R & D to 3.00 % of gross domestic product (GDP).
- **Climate change and energy sustainability** — reduce greenhouse gas emissions by at least 20 % (or even 30 %, if conditions are right) compared with 1990 levels, increase the share of renewable energy in final energy consumption to 20 %, and achieve a 20 % increase in energy efficiency.
- **Education** — reduce the rate of early leavers from education and training to less than 10 % and increase the proportion of those aged 30-34 years having completed tertiary education to at least 40 %.
- **Fighting poverty and social exclusion** — lift at least 20 million people out of the risk of poverty and social exclusion.

## EUROPE 2020: COORDINATION OF EU POLICIES

In March 2015, the European Commission proposed a new set of *Broad guidelines for the economic policies of the Member States and of the Union* (COM(2015) 99 final) which focused on: boosting investment; enhancing growth through the implementation of structural reforms in the EU Member States; removing key barriers to growth and jobs; improving



the sustainability and growth-friendliness of public finances. At the same time, the Commission also proposed a set of [Guidelines for the employment policies of the Member States](#) (COM(2015) 098 final): boosting demand for labour; enhancing labour supply and skills; enhancing the functioning of labour markets; ensuring fairness, combatting poverty and promoting equal opportunities. At the end of 2017, in the context of the European semester, the European Commission presented its [Annual growth survey 2018](#) (COM(2017) 690 final), which invited Member States to continue building on the 'virtuous triangle' of economic policy: boosting investment, pursuing structural reforms and ensuring responsible fiscal policies. Focus was placed on reforms to boost investment, including in human capital, and to improve the functioning of product, service and labour markets, which it is hoped will increase innovation, competitiveness, productivity and long-term growth.

**For more information:**

[http://ec.europa.eu/info/strategy/european-semester/framework/europe-2020-strategy\\_en](http://ec.europa.eu/info/strategy/european-semester/framework/europe-2020-strategy_en)

[http://ec.europa.eu/info/strategy/european-semester\\_en](http://ec.europa.eu/info/strategy/european-semester_en)

## EUROPE 2020: A REGIONAL PERSPECTIVE

There has been a growing volume of work — for example, by the European Commission's Directorate-General for Regional and Urban Policy, the [Joint Research Centre \(JRC\)](#), the European Committee of the Regions and the European Parliament — on the relationship between regional development and the Europe 2020 strategy. Although the Europe 2020 strategy does not specifically refer to regional policy, the European Commission has underlined that it may be neither realistic nor desirable that all regions seek to attain the same national targets. Rather, it was considered important for the Member States to take account of their different needs and to draw up national and regional programmes that reflect local specificities so as to promote smart, sustainable and inclusive growth.

Highlighting regional and territorial aspects, there have been a number of calls to align regional funding more closely with the Europe 2020 strategy and to monitor

in more detail the performance of EU regions with respect to Europe 2020 targets. The Joint Research Centre and the European Commission's Directorate-General for Regional and Urban Policy have released three studies based on [composite indicators](#) linked to the socioeconomic performance of EU regions, which provide a set of subnational analyses in relation to the Europe 2020 strategy and broader measures of competitiveness. Their work was supported by the findings of the [mid-term review of the Europe 2020 strategy](#), which noted that there was growing evidence of regional divergence in several of the EU Member States. More practically, the Directorate-General for Regional and Urban Policy has increased its efforts to align the various dimensions of regional funding more closely to the Europe 2020 targets.

**For more information:**

<http://ec.europa.eu/eurostat/web/europe-2020-indicators/europe-2020-strategy>

[Smarter, greener, more inclusive? – Indicators to support the Europe 2020 strategy](#), 2018 (Eurostat)

[The Europe 2020 index: the progress of EU countries, regions and cities to the 2020 targets](#), 2015 (Dijkstra L. and Athanasoglou S.)

[EU regional competitiveness index](#), 2013 (Annoni P. and Dijkstra L.)

## Sustainable development goals

Sustainable development has long been part of the political agenda within the EU. However, this subject area was given fresh impetus with the adoption of the [2030 sustainable development agenda](#) in September 2015 by the [United Nations \(UN\)](#) General Assembly. At the core of the agenda, there is a set of [17 sustainable development goals \(SDGs\)](#), which provide a global policy framework for stimulating action over the next 12 years in areas of critical importance related to people, the planet, prosperity, peace and partnership.

The [2030 sustainable development agenda](#) came into force on 1 January 2016 and, under the auspices of the UN, work has been finalised on developing a detailed set of targets and a global list of indicators covering three main dimensions: social solidarity, economic efficiency and environmental responsibility.

Infographic 1.1: Progress towards the sustainable development goals, EU-28



Note: the share of indicators for which it is possible to calculate the latest five-year development has to be at least 75 % to calculate these summary results; below this threshold the number of available indicators is considered insufficient to make a representative statement on the SDG level.

Source: Eurostat



Under the auspices of the UN Statistical Division, the inter-agency and expert group on SDG indicators (IAEG-SDG) developed a global list of indicators covering the three main dimensions of sustainability: social solidarity, economic efficiency and environmental responsibility.

On 22 November 2016, the European Commission adopted the Communication [Next steps for a sustainable European future](#) (COM(2016) 739 final). This Communication identifies the EU policies that contribute to the implementation of the SDGs; it shows the significance of the SDGs, explains how the EU contributes to achieving them and announces a detailed regular monitoring of the SDGs in an EU context. The Communication also announced the creation of a [multi-stakeholder platform on SDGs](#); it is made up of 30 organisations from the public and private spheres including territorial organisations,

business and non-profit organisations (NGOs). The platform is designed to support and advise the European Commission and stakeholders on the implementation of SDGs, it is a more inclusive approach to plan and help foster action on SDGs. The platform was launched in March 2018 and has notably produced recommendations for a reflection paper on a sustainable Europe by 2030. The recommendations are centred on the need for an overarching framework for SDGs at EU level (an EU strategy) as well as a territorial perspective with involvement of cities and regions, engagement of stakeholders and EU leadership to step-up implementation on the ground.

**For more information:**

<http://ec.europa.eu/eurostat/web/sdi/>

<http://ec.europa.eu/eurostat/web/sdi/publications>



# 2

## Population



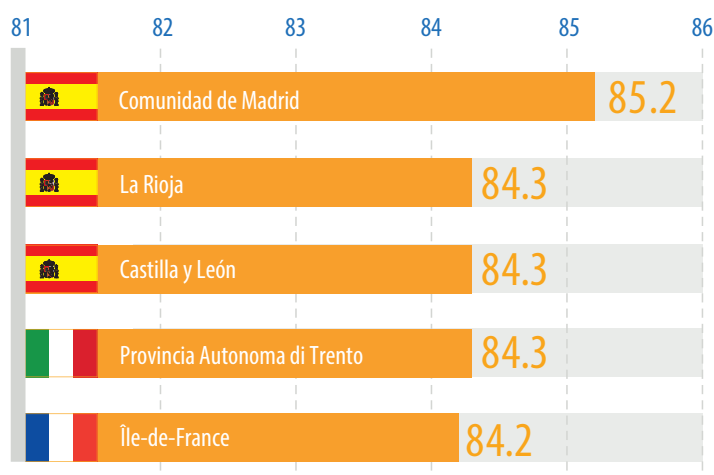


## Key findings

- The three **Baltic Member States** had the largest gender gaps among EU regions for **life expectancy at birth**.
- Excluding the EU's outermost regions, the eastern London borough of Tower Hamlets had the lowest old-age dependency ratio (7.9 %) among NUTS level 3 regions.
- Among EU regions, the Greek island region of Lesvos, Limnos had the highest crude rate of net migration (4.6 %).

### TOP 5 REGIONS IN THE EU

#### LIFE EXPECTANCY AT BIRTH, 2016 (years)



There are considerable differences in regional demographic patterns across the **European Union (EU)** from overcrowded, dynamic metropolises which may have relatively youthful populations to more remote, rural regions that are often characterised by declining population numbers, a relatively elderly population structure and poor access to a range of services.

Demographic developments have the potential to influence regional economic performance, resource consumption and other environmental pressures. In recent decades, many of the EU Member States have been characterised by an increasing pattern of population concentration, as people move from rural areas towards large cities (and surrounding areas). There has been considerable policy interest in the blurring of borders between urban centres and their adjacent regions, as low-density suburban developments have social, economic and environmental implications. Most population projections indicate that the

EU's population will continue to age as a result of consistently low levels of fertility and extended longevity. Although migration can play an important role in the population dynamics within many of the EU Member States, it is unlikely that it can reverse the ongoing trend of population ageing. The social and economic consequences associated with population ageing are likely to have profound implications both nationally and regionally, for example, impacting the capacity of governments to raise tax revenue, balance their own finances, or provide adequate pensions and healthcare services.

Statistics on regional demography are one of the few areas where detailed **NUTS** level 3 data are collected and published for each of the EU Member States, EFTA and candidate countries. The demographic characteristics of a given territory are the cumulative result of a range of demographic events: live **births**, **deaths**, emigration and immigration.



## Life expectancy

Historically, increased longevity may be attributed to a range of factors including improved socioeconomic and environmental conditions, changes in working conditions/occupations, lifestyle changes or better medical treatment and care.

In 2016, the life expectancy of a new born child in the EU-28 was 81.0 years. Across the EU Member States, life expectancy at birth ranged from highs in Spain (83.5 years) and Italy (83.4 years) down to lows of 74.9 years in Bulgaria, Latvia and Lithuania.

**Life expectancy in the EU ranged from a high of 85.2 years in the Spanish capital city region down to 73.3 years in the north-western Bulgarian region of Severozapaden — a difference of 11.9 years**

**Map 2.1** presents life expectancy at birth for NUTS level 2 regions, detailing the average (mean) number of years that a new born child could expect to live if subjected throughout his/her life to current mortality conditions. The regions with the highest levels of life expectancy were principally located in Spain and Italy; note there were also three regions in Switzerland — Ticino, Région lémanique and Zentralschweiz — where life expectancy at birth reached a similar level.

Looking in more detail, there were 11 NUTS level 2 regions where life expectancy at birth in 2016 was 84.0 years or more (as shown by the darkest shade of yellow in **Map 2.1**). The highest level of life expectancy in the EU was recorded in the Spanish capital city region of Comunidad de Madrid (85.2 years), while the three other Spanish regions with high levels of life expectancy were neighbouring, interior regions located in the northern half of the country, running from west to east — Castilla y León, La Rioja and Comunidad Foral de Navarra.

In Italy, Provincia Autonoma di Trento had the highest level of life expectancy, at 84.3 years, and was joined to by two neighbouring northern regions — Provincia Autonoma di Bolzano/Bozen and Lombardia (which includes the city of Milano) — as well as the central

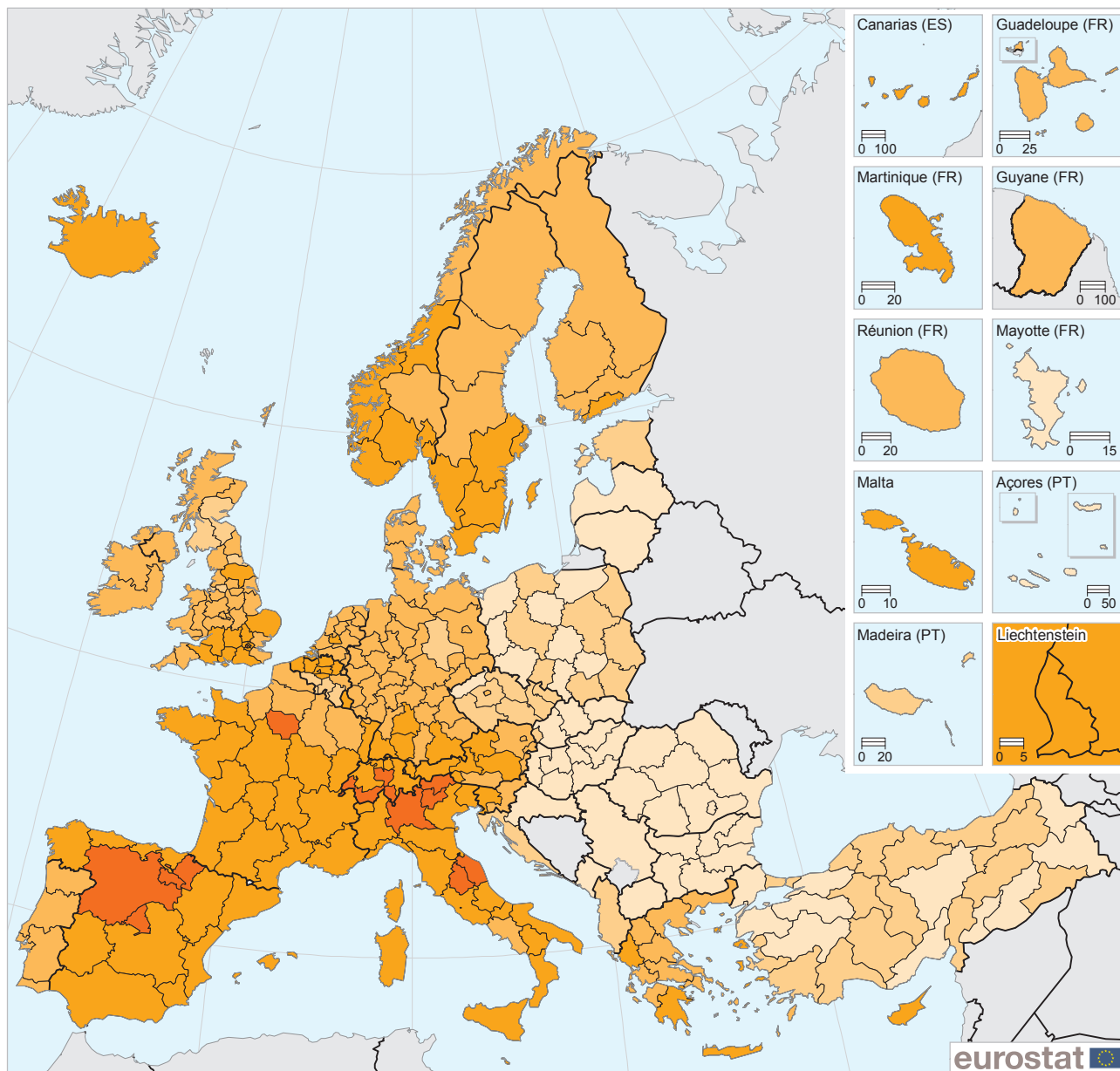
regions of Umbria and Marche, such that there were five Italian regions where life expectancy stood at 84.0 years or more.

Aside from these nine regions in Spain and Italy, the two remaining regions with the highest levels of life expectancy were both capital city regions, namely, Île de France (84.2 years) and Inner London - West (84.1 years). The relatively high level of life expectancy in the capital city regions of Spain, France and the United Kingdom may be attributed, among other reasons, to the close proximity and wide range of healthcare services that are available, alongside relatively high levels of income and living conditions. The situation in the United Kingdom (which has two capital city regions at NUTS level 2) was of particular interest insofar as life expectancy at birth in Inner London - West was, on average 2.1 years higher than in the adjacent region of Inner London - East, which, among other things, is generally considered to be less affluent.

At the other end of the range, there were 38 NUTS level 2 regions where average life expectancy was less than 78.0 years (as shown by the lightest shade of yellow in **Map 2.1**). In 2016, the lowest life expectancy at birth was recorded in the north-western Bulgarian region of Severozapaden, at 73.3 years. This reinforces the link between life expectancy and income and living conditions, insofar as Severozapaden also recorded the lowest level of economic activity in the EU, as its [gross domestic product \(GDP\)](#) per inhabitant was less than 30 % of the EU-28 average.

The majority of the regions with relatively low levels of life expectancy were predominantly located in the easternmost regions of the EU, including: all six regions from Bulgaria, all seven regions from Hungary and all eight regions from Romania, as well as three out of four regions from Slovakia, 8 out of 16 regions from Poland, one of the two Croatian regions, and one of the eight Czech regions. There were four more regions in the EU where life expectancy at birth was less than 78.0 years: two of the three Baltic Member States — Latvia and Lithuania (both single regions at this level of detail) — as well as the outermost regions of Mayotte (France) and Região Autónoma dos Açores (Portugal).

**Map 2.1: Life expectancy at birth, by NUTS 2 regions, 2016**  
(years)

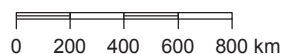


(years)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 04/2018

EU-28 = 81.0

- < 78
- 78 - < 80
- 80 - < 82
- 82 - < 84
- ≥ 84
- Data not available



Note: Albania and Serbia, national data. Mayotte (FRA5): 2015. EU-28: estimate.

Source: Eurostat (online data codes: [demo\\_r\\_mlifexp](#) and [demo\\_mlexpec](#))



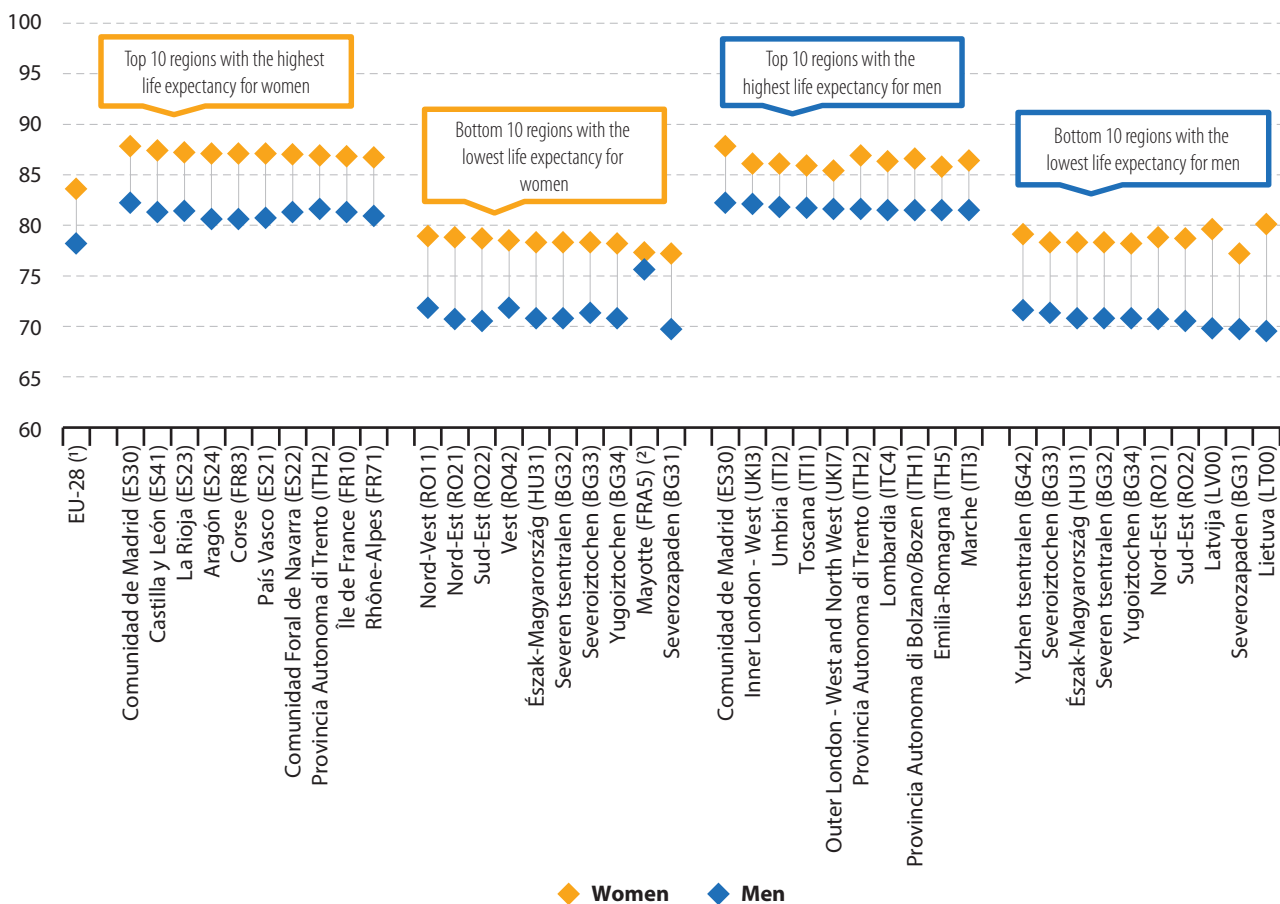
**The largest gender gap for life expectancy at birth was recorded in Lithuania, where women could expect to live 10.6 years more than men**

**Figure 2.1** provides more detailed information on the highest and lowest levels of life expectancy, with a specific analysis by sex. In 2016, life expectancy at birth for women (83.6 years) was some 5.4 years higher than that for men (78.2 years).

Among the top 10 regions in the EU with the highest levels of life expectancy for women, there were six regions from Spain and three from France, the remaining region being Provincia Autonoma di Trento (Italy). A similar analysis for men reveals that the top 10 regions was composed of seven regions from Italy, two from the United Kingdom and one from Spain. The highest levels of male and female life expectancy at birth were recorded in the Spanish capital city region, Comunidad de Madrid, where a new born child could on average be expected to live 87.8 years if female and 82.2 years if male.

The largest gender gaps for NUTS level 2 regions were recorded in the three Baltic Member States (each a single region at this level of detail), as women could expect to live 10.6 years more than men in Lithuania, 9.8 years more in Latvia and 8.9 years more in Estonia, and in several Polish regions — Łódzkie, Lubuskie, Warminsko-Mazurskie, Podlaskie and Lubelskie — where the gender gap ranged from 8.9 years to 9.4 years. There were no regions in the EU where men could expect to live longer than women. However, the gap in life expectancy between the sexes was generally quite small in the Netherlands, Sweden and the United Kingdom. The difference was no more than 3.0 years in Devon (the United Kingdom) and three Dutch regions — Drenthe, Overijssel and Utrecht — the latter recording the lowest gender gap, at 2.8 years.

**Figure 2.1: NUTS 2 regions with the highest and lowest life expectancy at birth, by sex, 2016** (years)



(\*) Estimates.  
(?) 2015.

Source: Eurostat (online data codes: [demo\\_r\\_mlifexp](#) and [demo\\_mlexpec](#))



## Fertility

Historically low fertility rates have led to a gradual ageing of the EU's population structure, which has been driven, among others, by a growing proportion of women choosing to delay/postpone childbirth. Women in the EU-28 are having fewer children, which may, at least in part, be attributed to a growing share of women participating in further education and/or trying to establish a professional career (before starting a family).

***It was commonplace to find that childbirth was delayed in capital city regions, while women living in former industrial heartlands tended to give birth at a much younger age***

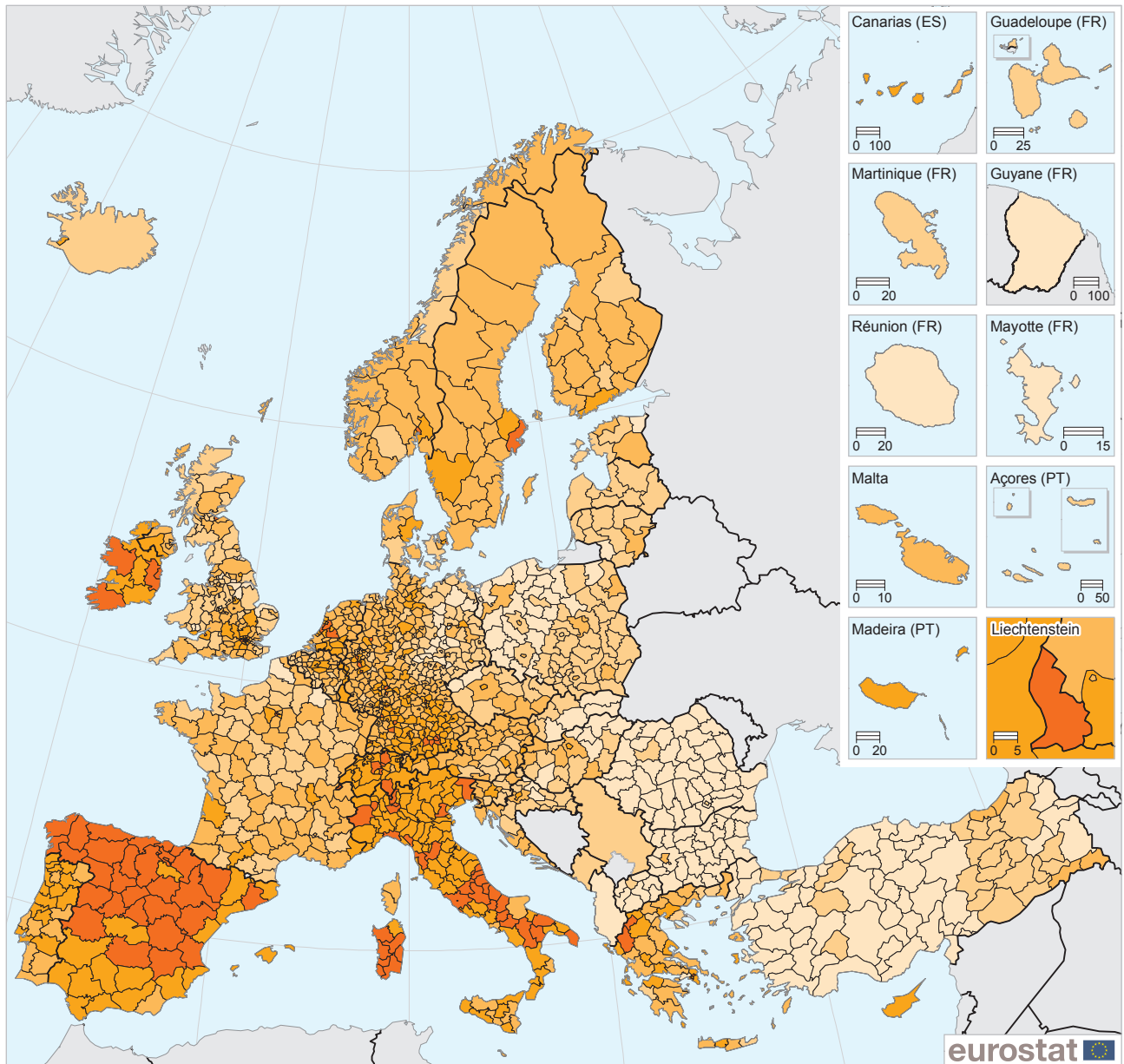
In 2016, the average (mean) age for childbirth in the EU-28 was 30.6 years. Looking in more detail by NUTS level 3 region, the mean age of women at childbirth was generally quite high across Ireland, Spain and Italy and quite low in much of eastern Europe (see **Map 2.2**).

There were eight regions in the EU where the average age at childbirth was above 33.0 years, these were principally urban regions in capitals, including Voreios Tomeas Athinon (in the north of the Greek capital), Paris (defined here as the centre of the French capital within the confines of the *périphérique*) and the four London boroughs of Westminster; Kensington and Chelsea & Hammersmith and Fulham; Camden & City of London; and Wandsworth (the United Kingdom). The other two regions were somewhat atypical: Heidelberg Stadtkreis (a university town in Germany) and Medio Campidano

(a relatively rural region in Sardegna, Italy). With the exception of the latter, these figures tend to support the view that some women delay having children in order to study or pursue a career.

At the other end of the range, there were 40 NUTS level 3 regions located across Bulgaria and Romania where the mean age of women at childbirth was less than 27.5 years in 2016. Among these, there were four city regions in Bulgaria where the average age at childbirth was below 26.0 years: Montana, Pazardzhik, Yambol and Sliven; the last of these recorded the lowest mean age of women at childbirth across the EU, at 25.1 years. The two regions with the lowest mean ages in Romania were also city regions and were located in the south of the country: Giurgiu (26.2 years) and Calarasi (26.3 years). Apart from these bottom 40 regions that were exclusively located in Bulgaria and Romania, the lowest mean ages of women at childbirth were recorded in the neighbouring, industrial regions of Kosický kraj (eastern Slovakia) and Borsod-Abaúj-Zemplén (northern Hungary). These figures tend to support the view that some of the lowest mean ages for women at childbirth were recorded in regions characterised as former industrial heartlands (often with relatively low levels of economic development). This is supported when extending the analysis to other EU Member States, as the mean age of women at childbirth was also relatively low — less than 29.0 years — in regions such as Bremerhaven Kreisfreie Stadt and several parts of Saxony-Anhalt in Germany, Ardennes or Pas-de-Calais in France, and Central Valleys or Hartlepool and Stockton-on-Tees in the United Kingdom.

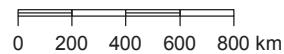
**Map 2.2: Mean age of women at childbirth, by NUTS 3 regions, 2016**  
(years)



(years)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 04/2018

EU-28 = 30.6



Note: Albania and Serbia, national data. EU-28: estimate.

Source: Eurostat (online data codes: demo\_r\_find3 and demo\_find)



## Population structure

With life expectancy at birth rising for successive generations and historically low fertility rates, it is not surprising to find that the **median** age of the EU-28 population has increased. During the most recent decade for which data are available it has risen by 2.7 years, reaching 42.8 years on 1 January 2017. The median age of the population also rose in each of the EU Member States during the last decade, with particularly rapid changes in the age structures of Greece, Portugal and Romania. On 1 January 2017, the lowest median ages among the Member States were recorded in Ireland (36.9 years) and Cyprus (37.4 years), while the highest median ages were recorded in Germany and Italy (both 45.9 years).

***Although childbirth was often postponed in capital city regions, some of the lowest median ages were often recorded in these regions***

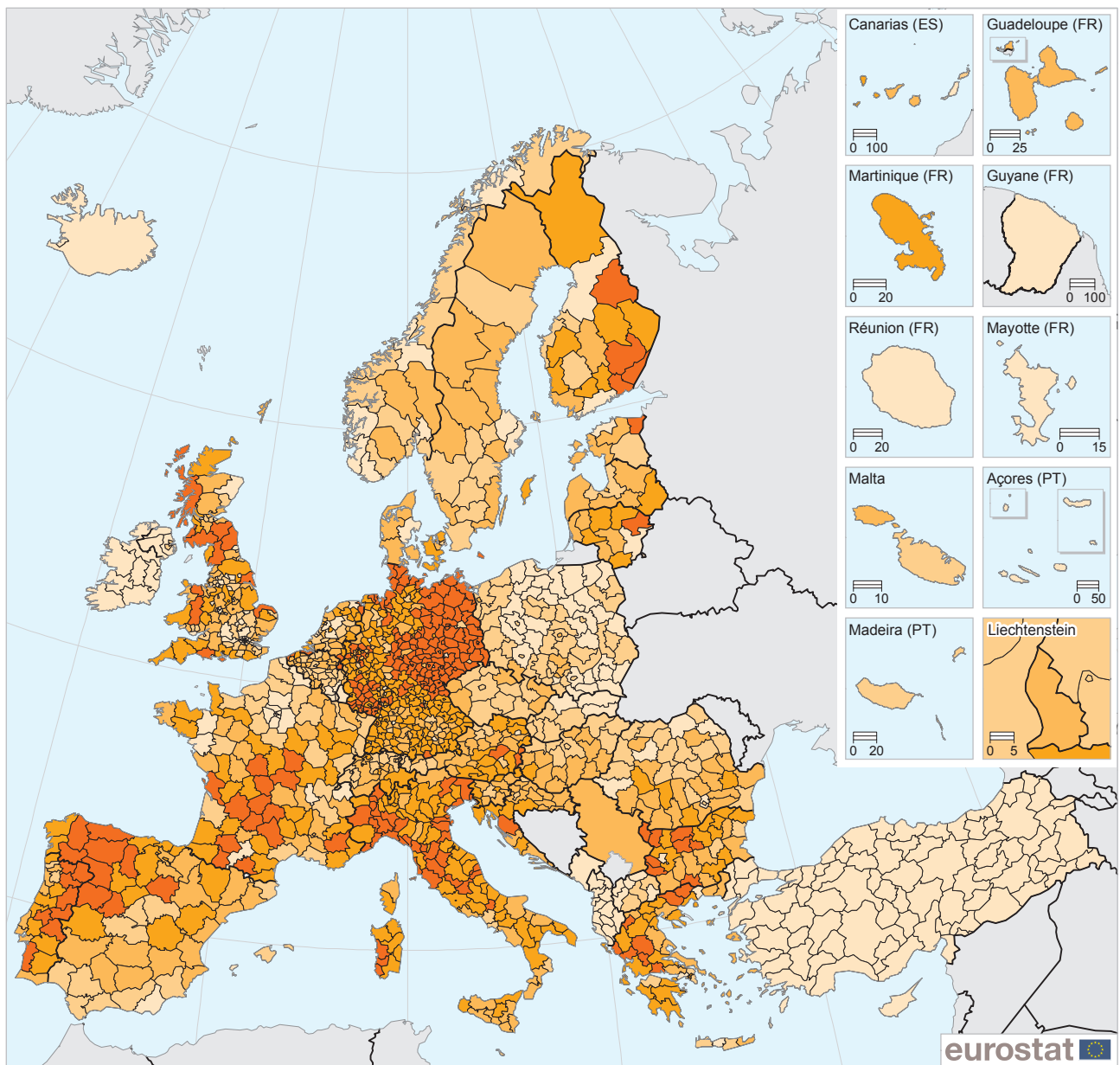
**Map 2.3** shows the median age of NUTS level 3 regions at the start of 2017. It is interesting to note that several of the EU Member States displayed a considerable range of ages: these intra-regional differences were most apparent in France, the United Kingdom, Denmark and Belgium, where the uppermost region had a median age that was at least 1.5 times as high as the lowermost region. Such differences often reflect relatively low median ages in those regions characterised as thriving, urban/metropolitan regions (with a wide variety of educational/employment opportunities and relatively high numbers of migrants), whereas the highest median ages are often recorded in regions characterised as sparsely populated areas and/or regions that are popular retirement destinations.

Across the whole of the EU, the lowest median ages among NUTS level 3 regions were recorded in two overseas French regions, Mayotte and Guyane (17.8 years and 25.6 years); these atypical regions both had relatively high fertility rates and lower than average levels of life expectancy. There followed 14 urban regions from the United Kingdom, where the median age of the population was lower than anywhere else in the EU; this group of regions included Manchester (30.1 years), Nottingham (30.3 years) and Tower Hamlets (eastern London; 30.7 years), as well as five additional boroughs in London. There were several

other EU Member States where the lowest median ages were recorded in capital city regions, for example, in Bruxelles-Capitale/Brussel-Hoofdstad (Belgium), Sofia stolitsa (Bulgaria), Byen København (Denmark), Dublin (Ireland), Groot-Amsterdam (the Netherlands), Wien (Austria) or Stockholms län (Sweden). In those cases where the capital city region did not have the lowest median age, it was often the case that the lowest median age was recorded in a suburban region close to the capital, such as Stredocesky kraj (which surrounds the Czech capital of Hlavní mesto Praha), Dytiki Attiki (the western agglomeration of Athens), or Seine-Saint-Denis, Val-d'Oise or Val-de-Marne (each of which is a suburban area close to Paris). Another pattern observed in several Member States was for the lowest median age to be recorded in a university city, for example, Heidelberg Stadtkreis (Germany), Gdanski (Poland) or Manchester (the United Kingdom).

Looking in more detail at those regions with the highest median ages, perhaps the most striking feature of **Map 2.3** is the high concentration of regions in eastern Germany. Of the 31 regions in the EU-28 where the median age of the population on 1 January 2017 was 51.5 years or more, 24 were located in eastern Germany and they were joined by Osterode am Harz in north-west Germany. In the aftermath of German reunification, many of these regions were characterised by a lack of varied employment opportunities and comparatively low living standards, which may have stimulated particularly young people to move in search of more varied and better paid work. This pattern was more generally repeated in most of the other EU Member States: for example, the remaining six regions where the median age was 51.5 years or more were composed of the central Greek region of Evrytania (54.3 years; the highest value across the EU), the central French region of Creuse (51.9 years), the Danish island of Bornholm (51.8 years), Zamora in north-west Spain, Alto Tâmega in northern Portugal and Etelä-Savo in southern Finland (all 51.5 years). Another characteristic apparent for several regions with relatively high median ages was that they were sometimes popular retirement destinations, with their median ages being pushed up by an influx of retirees. For example, this pattern could be seen on the Danish island of Bornholm, in the northern Italian coastal regions of Savona, Genova (both Liguria) and Trieste (Friuli Venezia Giulia), or several coastal regions in the United Kingdom (Dorset CC, North & West Norfolk, or the Isle of Wight).

**Map 2.3: Median age, by NUTS 3 regions, 2017**  
(years)



(years)

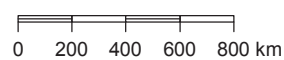
EU-28 = 42.8

- < 40.0
- 40.0 - < 42.5
- 42.5 - < 45.0
- 45.0 - < 47.5
- ≥ 47.5
- Data not available

Note: Serbia, national data.

Source: Eurostat (online data codes: [demo\\_r\\_pjanind3](#) and [demo\\_pjanind](#))

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Cartography: Eurostat — GISCO, 04/2018





***The high share of young people living in many urban regions of the EU may be linked to lifestyle choices that are linked to education and labour force opportunities***

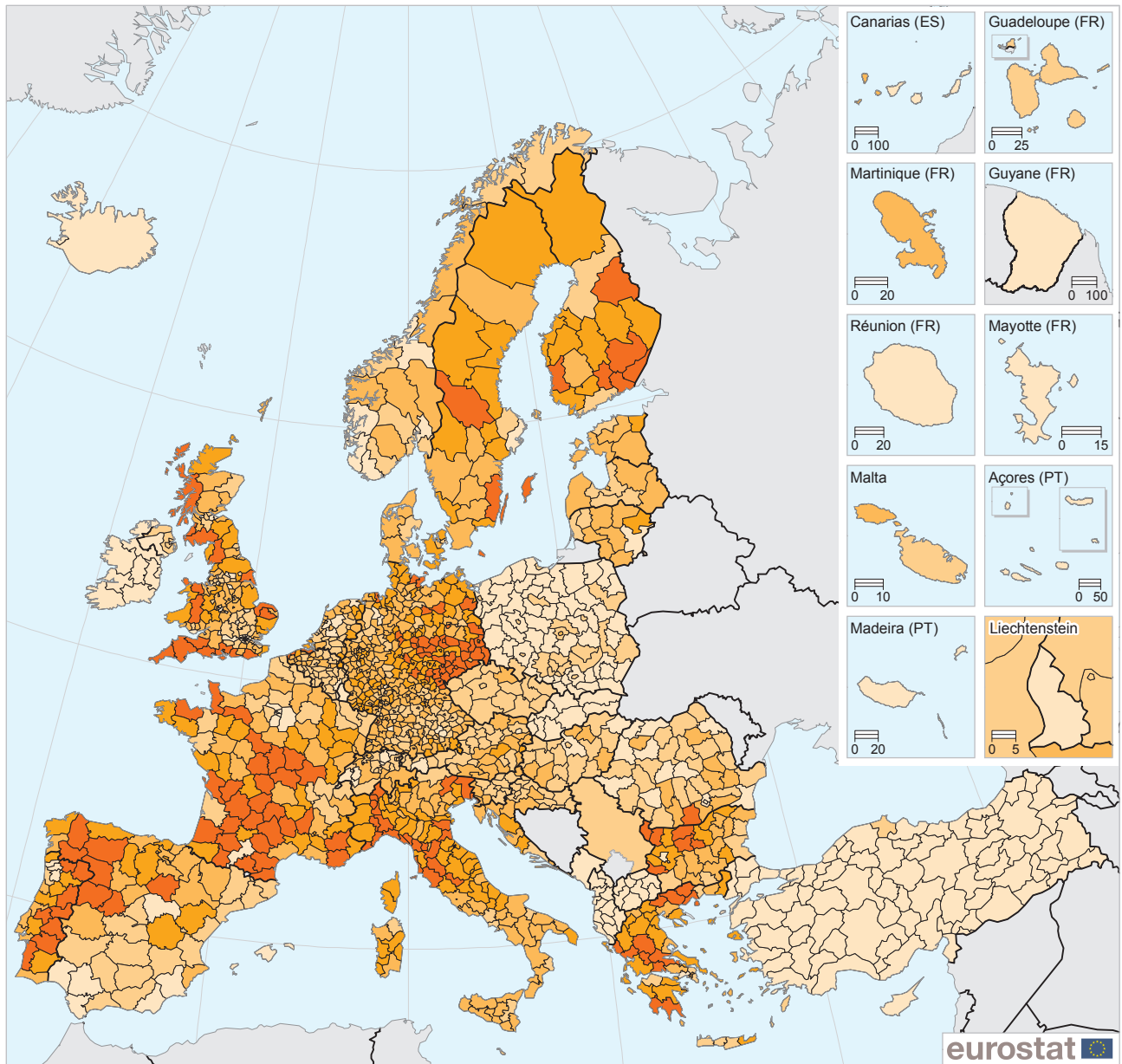
The information shown in **Map 2.4** is based on the **old-age dependency ratio**, defined here as the number of elderly people (aged 65 years and over) compared with the number of people of working age (aged 15-64 years). On 1 January 2017, this ratio stood at 29.9 % across the whole of the EU-28; in other words, there were just over three people of working-age for every elderly person. According to Eurostat's population projections, continued increases in longevity, coupled with low fertility rates can be expected to result in the old-age dependency ratio continuing to rise in most EU Member States during the next 20-30 years, raising concerns for the sustainability of public finances, pension and healthcare systems. These concerns may be mitigated, to some degree, by overall improvements in health status coupled with changes to social security systems that may result in a greater share of elderly people remaining active within the labour force.

The information presented in **Map 2.4** mirrors, to some degree, that shown in the previous map, as old-age dependency ratios are usually closely related to the median age of the population. That said, other demographic events — births, deaths and net migration — may also impact on these ratios. The lowest old-age dependency ratios in the EU-28

were generally recorded in urban centres — often capital cities and their surrounding areas — or in the outermost regions of the EU which are generally characterised by high fertility rates and low levels of life expectancy. The lowest rate among NUTS level 3 regions on 1 January 2017 was recorded in the French region of Mayotte (4.9 %), where there were, on average, slightly more than 20 persons of working-age for each elderly person; another French overseas region, Guyane, had the third lowest ratio in the EU (8.3 %). Tower Hamlets (7.9 %) and Hackney & Newham (9.9 %) — neighbouring boroughs in the east of London — were only other regions in the EU to record old-age dependency ratios below 10.0 %.

At the other end of the ranking, there were 10 regions in the EU which recorded an old-age dependency ratio that was higher than 50.0 % on 1 January 2017; in other words, where there were fewer than two people of working-age for every elderly person. Several of these were already mentioned when analysing the regions with the highest median ages — Dorset CC (the United Kingdom), Dessau-Roßlau Kreisfreie Stadt, Suhl Kreisfreie Stadt (both Germany), Creuse (France), Arr. Veurne (Belgium) and Evrytania (Greece). The last of these had by far the highest old-age dependency ratio, at 65.0 %; in other words, for every two elderly persons there were approximately three people of working-age. The other four regions with old-age dependency ratios above 50.0 % were: Arta, Preveza in north-west Greece; Lot and Nièvre (largely rural regions in south-western and central France); Ourense in north-west Spain.

**Map 2.4:** Old-age dependency ratio, by NUTS 3 regions, 2017  
(%)

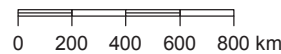


(%)

EU-28 = 29.9



Administrative boundaries: © EuroGeographics © UN-FAO © INSTAT  
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Cartography: Eurostat — GISCO, 04/2018



Note: the old-age-dependency ratio is the number of elderly people (aged 65 and over) compared with the number of people of working age (15-64 years old), expressed in percentage terms. Serbia: national data.

Source: Eurostat (online data codes: [demo\\_r\\_pjanind3](#) and [demo\\_pjanind](#))



### Population change

The final section in this chapter provides a description of changes in the total number of inhabitants living in NUTS level 3 regions. Historically, population growth in the EU has been largely driven by **natural population change** (the total number of births minus the total number of deaths), with a relatively minor role being played by migratory patterns. However, following the end of the post-war baby-boom, the rate of natural population growth started to slow from the 1970s onwards. This was followed in the 1990s by a quickening pace to political and economic union, as successive enlargements of the EU took place alongside the development of the European single market; this period was characterised by an increase in the relative importance of net **migration** (the difference between immigration and emigration) for explaining overall changes in population numbers. Since many of the EU Member States do not have accurate figures on immigration and emigration, net migration often has to be estimated; this is usually done by analysing, each year, the difference between the total population change and the natural change.

There are wide-ranging differences in patterns of demographic change across the EU. Some of the most common medium-term developments may be summarised as follows:

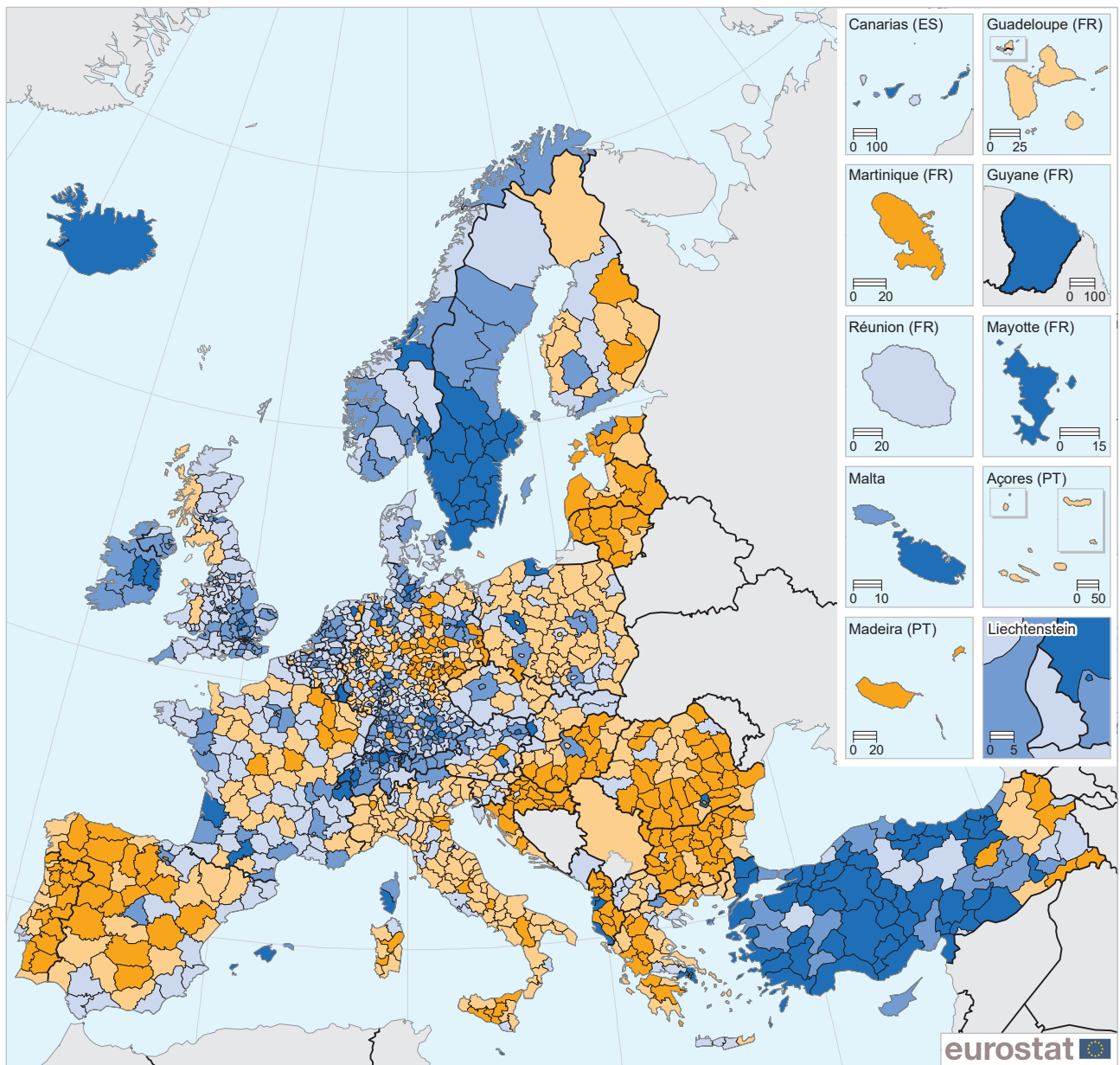
- a capital city region effect, as populations continue to expand in and around many capital cities which exert a 'pull effect' on national and international migrants associated with (perceived) education and/or employment opportunities;
- an urban-rural split, with the majority of urban regions continuing to report population growth, while the number of persons resident in many peripheral, rural and post-industrial regions decline;
- a north-south split between EU Member States, with a high proportion of the population in northern Member States being single and living alone, whereas Mediterranean regions are often characterised by lower birth rates but a more important role for family units;
- regional divergences within individual EU Member States which may impact on regional competitiveness and cohesion, for example, between the eastern and the western regions of Germany, or between northern and southern regions of Belgium, Italy and the United Kingdom.

**Map 2.5** presents the **crude rate of total population change** in 2016: this is composed of two different effects: natural population change and net migration. Between 1 January 2016 and 1 January 2017, the EU-28's population rose by 1.2 million inhabitants, equivalent to a growth rate of 2.4 per 1 000 inhabitants; this increase was wholly attributable to net migration, as the number of births and deaths was balanced. Among the 1 342 NUTS level 3 regions shown in **Map 2.5**, a majority (768) reported an increase in their overall number of inhabitants, while there were 568 regions that recorded a decline in population numbers, leaving six regions where the number of inhabitants remained unchanged.

In 2016, the fastest expanding populations were often concentrated in eastern Ireland, western Germany, southern Sweden, and the south-eastern corner of the United Kingdom. The darkest shade of blue in **Map 2.5** shows the 95 NUTS level 3 regions where the population grew, on average, by at least 12 per 1 000 inhabitants during 2016. Among these were 15 regions where population growth was at least 20 per 1 000 inhabitants (or 2.0 %): five of these were located in Germany, while there were two regions from each of Greece (both island regions), Spain (both island regions) and France (both outermost regions) and single regions from Malta, Romania (Ilfov, which is a commuter belt surrounding the Romanian capital city region of Bucuresti), Sweden (Uppsala län, just to the north of the capital city region of Stockholm) and the United Kingdom (Tower Hamlets, an eastern borough of London). The last four of these regions were synonymous with a relatively common pattern, insofar as some of the highest crude rates of population change were recorded in capital cities and/or their surrounding areas: see, for example, the Czech Republic, Germany, Estonia, Ireland, Greece, Spain, France, Hungary, Poland or the United Kingdom in **Map 2.5**.



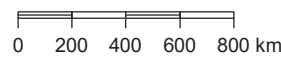
**Map 2.5: Crude rate of total population change, by NUTS 3 regions, 2016**  
(per 1 000 inhabitants)



(per 1 000 inhabitants)



Administrative boundaries: © EuroGeographics © UN-FAO © INSTAT © Turkstat  
Cartography: Eurostat — GISCO, 04/2018



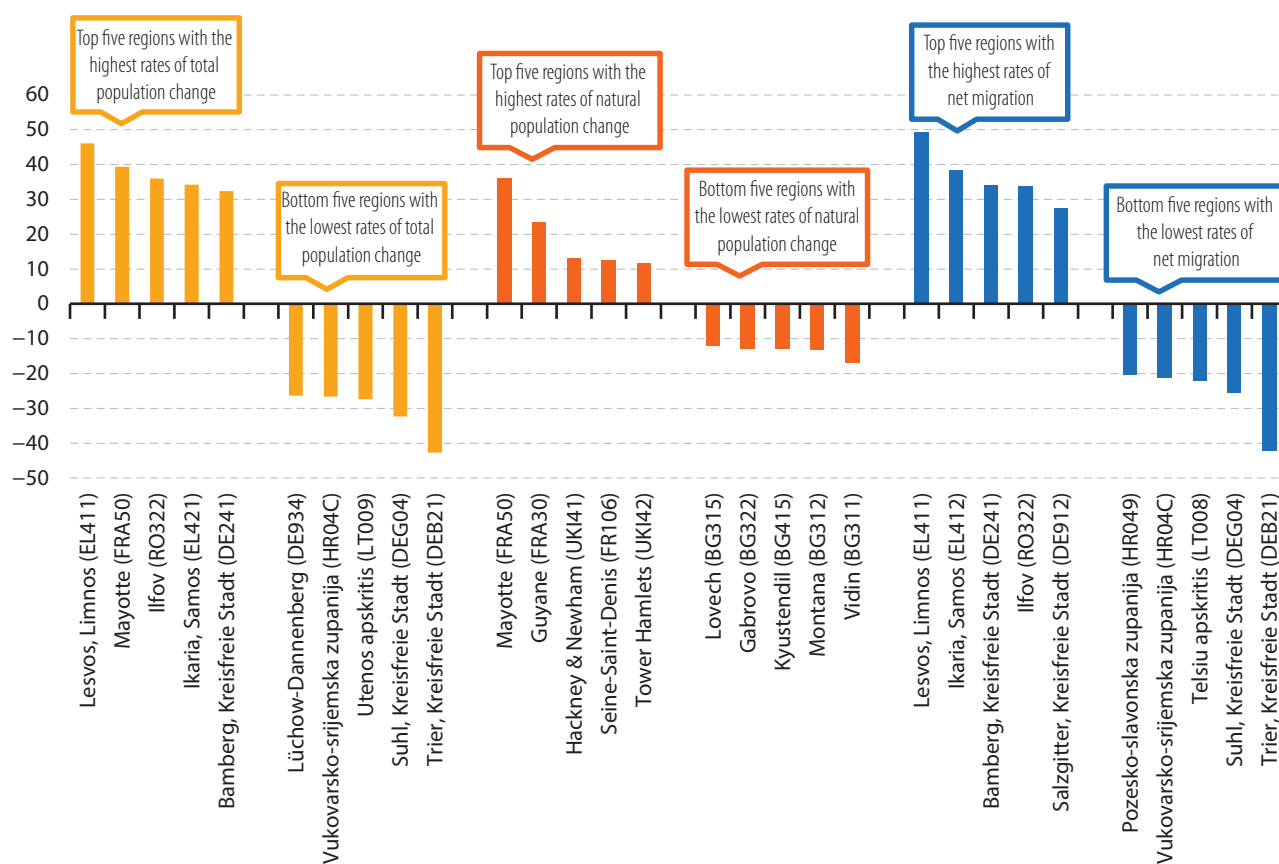
Note: Serbia, national data. EU-28 and United Kingdom: estimates. France: provisional.  
Source: Eurostat (online data codes: demo\_r\_gind3 and demo\_gind)

**In 2016, the fastest overall population growth in the EU was recorded in the northern Aegean island region of Lesvos, Limnos (Greece); its total number of inhabitants grew by 4.6 %**

Figure 2.2 provides a more detailed regional analysis of the NUTS level 3 regions with the highest and lowest rates of overall population change, with similar information for natural population change and net migration. By far the highest crude rates of natural population change were recorded in the outermost

French regions of Mayotte and Guyane, while the next highest rates were in the urban centres of Hackney & Newham, Tower Hamlets (both eastern boroughs of London) and Seine-Saint-Denis (a northern suburb of Paris). On the other hand, the five regions with the highest crude rates of net migration included: two island regions in Greece (Lesvos, Limnos and Ikaria, Samos); two German regions (Bamberg Kreisfreie Stadt (which has a federal centre for migrants) and Salzgitter Kreisfreie Stadt (which decided in 2017 to no longer allow migrants to settle on its territory)); and Ilfov in Romania.

**Figure 2.2: NUTS 3 regions with the highest and lowest crude rates of population change, 2016**  
(per 1 000 inhabitants)



Note: the United Kingdom, estimates. Germany and France: provisional.

Source: Eurostat (online data codes: [demo\\_r\\_gind3](#) and [demo\\_gind](#))

# 3

## Health

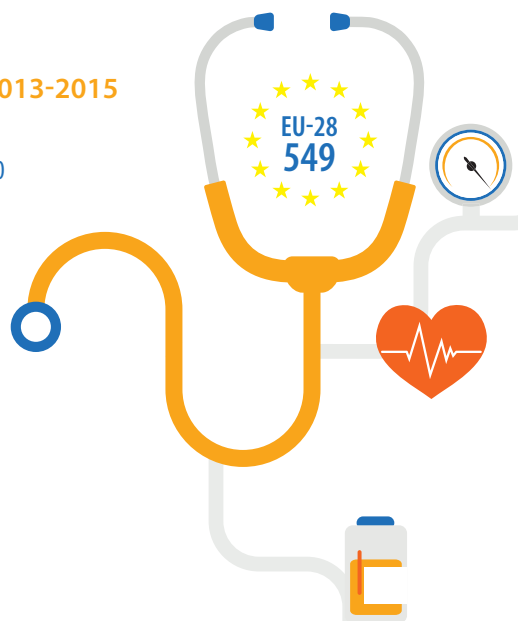
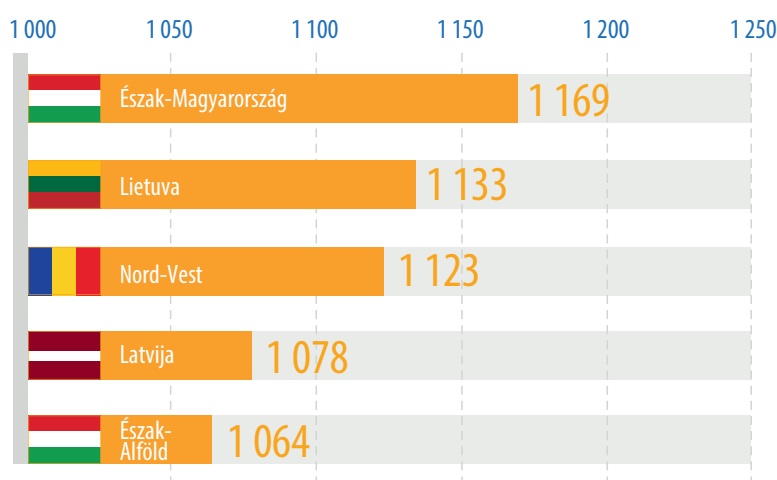


## Key findings

- The highest regional standardised death rates from chronic diseases was recorded in the Hungarian region of Észak-Magyarország (1 168.6 per 100 000 inhabitants).
- Lithuania had the highest regional standardised death rate from suicide for men (60.5 deaths per 100 000 inhabitants), more than three times as high as the EU-28 average.
- More than two thirds of the EU-28 adult population living in cities perceived their own health as good or very good.

### 5 REGIONS IN THE EU WITH THE HIGHEST RATES

#### STANDARDISED DEATH RATES FROM CHRONIC DISEASES, 2013-2015 (per 100 000 inhabitants)



Health is an important priority for Europeans, who expect to be protected against illness and accident and to receive appropriate healthcare services. In the coming decades, population ageing is likely to be a major challenge for the [European Union's \(EU's\)](#) health sector: indeed, the demand for healthcare will probably increase at a rapid pace, while the ageing population could result in staff shortages for certain medical specialisations or in specific geographic regions. According to the [Directorate-General for Health and Food Safety](#), more than 60 thousand doctors (or 3.2 % of the EU-28 workforce) are expected to retire/leave the profession each year during the period up to 2020.

This chapter presents recent statistics on health for the regions of the EU, providing information concerning some of the most common [causes of death](#). It also looks at healthcare services through an analysis of the number of [hospital beds](#) and [healthcare professionals \(physicians\)](#) and concludes with information on people with unmet healthcare needs and people's perceptions of their own health.

Health systems across the EU are organised, financed and managed in very different ways and the competence for the delivery of these services largely

resides with the 28 individual EU Member States. Indeed, EU health policy is designed to complement national strategies by pooling resources and assisting Member States to tackle common challenges. The EU's main policy objectives include: improving access to healthcare for all through effective, accessible and resilient health systems, fostering health coverage as a way of reducing inequalities and tackling social exclusion; promoting health information and education, healthier lifestyles and individual well-being; investing in health through disease prevention, for example, through the creation of specialised centres of expertise for health experts, [European reference networks \(ERNs\)](#); preventing cross-border threats such as pandemics; improving safety standards for patients, pharmaceuticals/drugs and medical devices; guaranteeing/recognising prescriptions in other Member States.

The EU may adopt health legislation when this concerns the protection of public health, the approximation of laws, or social policy. Some areas where the EU has done so include: providing a legal framework for guaranteeing medicinal/pharmaceutical products; regulating tobacco products and creating smoke-free environments; or providing standards for



the exchange of human organs between EU Member States. On a more practical level, the [European health insurance card \(EHIC\)](#) allows travellers from one EU Member State to obtain medical treatment if they fall ill whilst temporarily visiting another Member State or EFTA country. The EU has also introduced legislation on the [application of patients' rights in cross-border healthcare \(Directive 2011/24/EU\)](#) which allows patients to go abroad for treatment when this is either necessary (specialist treatment is only available abroad) or easier (if the nearest hospital is just across a border). The [European Centre for Disease Prevention and Control](#) in Sweden is an EU agency that provides surveillance of emerging health threats so that the EU can respond rapidly. It pools knowledge on current and emerging threats, and works with national counterparts to develop disease monitoring across Europe, strengthening the EU's defences against infectious diseases. The [European Medicines Agency \(EMA\)](#), which is in the process of relocating to Amsterdam (the Netherlands), helps national regulators by coordinating scientific assessments concerning the quality, safety and efficacy of medicines that are used across the EU. All medicines in the EU must be approved national or for the EU before being placed on the market. The safety of pharmaceuticals that are sold in the EU is monitored throughout a product's life cycle and individual products may be banned, or their sales/marketing suspended.

## Causes of death

Many factors determine mortality patterns, for example, age, sex, living/working conditions and the surrounding environment. Each individual may also influence their chances of leading a long and healthy life by adapting their lifestyle choices concerning, for example, exercise, diet, alcohol consumption, smoking or driving behaviour.

In 2016, there were 5.13 million deaths in the EU-28: this was somewhat lower than a year before, as the total number of deaths fell by approximately 92 thousand. This pattern was repeated in a majority (19) of the EU Member States, with the number of deaths falling at a particularly rapid pace in Cyprus (–6.6 %), Italy (–5.0 %) and Croatia (–4.9 %). By contrast, the total number of deaths rose by 1.0-2.0 % in Estonia, the Netherlands, Ireland and Portugal, while the highest increase was recorded in Finland (2.7 %).

The most recent mortality statistics by cause of death are available for 2015 when there were 5.21 million deaths in the EU-28. The four leading causes of death were: diseases of the circulatory system (1.9 million deaths); cancer (1.3 million); diseases of the respiratory system (442 thousand); and external causes of morbidity and mortality (238 thousand), the latter includes, among others, intentional self-harm, falls and transport accidents.

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## Statistics on causes of death

The medical certification of death is an obligation in all EU Member States. Causes of death statistics are based on two pillars: medical information on [death certificates](#), which may be used as a basis for ascertaining the cause of death; and the coding of causes of death following the [International Statistical Classification of Diseases and Related Health Problems \(ICD\)](#).

Statistics on causes of death provide information about diseases (and other eventualities, such as suicide or transport accidents) that lead directly to death; they can be used to help plan health services. These statistics refer to the *underlying disease or injury which initiated the train of morbid events leading directly to death, or the circumstances of an accident or an act of violence which produced a fatal injury*, classified according one of 86 different causes, as defined by the [European shortlist for causes of death \(2012\)](#).

In [Maps 3.1](#) and [3.2](#) and [Figure 3.1](#), statistics on causes of death are presented as [standardised death rates](#). [Crude death rates](#) are compiled by calculating a simple ratio of the number of deaths compared with the number of inhabitants; such rates are strongly influenced by differences in age structures between regions, as elderly persons are more likely to die (than younger persons) or catch/contract a specific illness/disease. Standardised death rates are regarded as being more comparable (for example, across countries/regions or over time) as age-specific mortality rates are adjusted to reflect the structure of a [standard population](#) (a hypothetical population for the EU and EFTA countries). The use of standardised rates allows statisticians to control for different age distributions across populations or over time and allows subgroups or regions with different age structures to be compared. Regional standardised death rates are provided in the form of three-year averages, in order to smooth out some of the relatively large fluctuations that might occur from one year to the next.

---

During the three-year period covering 2013 to 2015, the EU-28 standardised death rate was 1 023 deaths per 100 000 inhabitants. Bulgaria, Romania and Latvia were the only EU Member States where the standardised death rate was above 1 500 deaths per 100 000 inhabitants, while Italy, Spain and France were the only Member States where this rate was below 900 deaths per 100 000 inhabitants.

During the period 2013 to 2015, the standardised death rates for the most common causes of death in the EU-28 were 380.9 per 100 000 inhabitants for diseases of the circulatory system, 261.7 per 100 000 inhabitants for cancer, 83.5 per 100 000 inhabitants for diseases of the respiratory system and 46.2 per 100 000 inhabitants for external causes of morbidity and mortality.

### CHRONIC DISEASES

Chronic diseases are the leading cause of disability and death in the EU: for the purpose of this publication they are defined as cancers (more detailed information is provided below), diabetes mellitus, ischaemic heart diseases, cerebrovascular diseases, chronic lower respiratory diseases and chronic liver diseases. This broad range of medical conditions accounted for more than half of all deaths in the EU-28 during the period 2013 to 2015, with a combined death rate of 548.8 deaths per 100 000 inhabitants.

#### *Deaths from chronic diseases were concentrated in eastern Europe and the Baltic Member States*

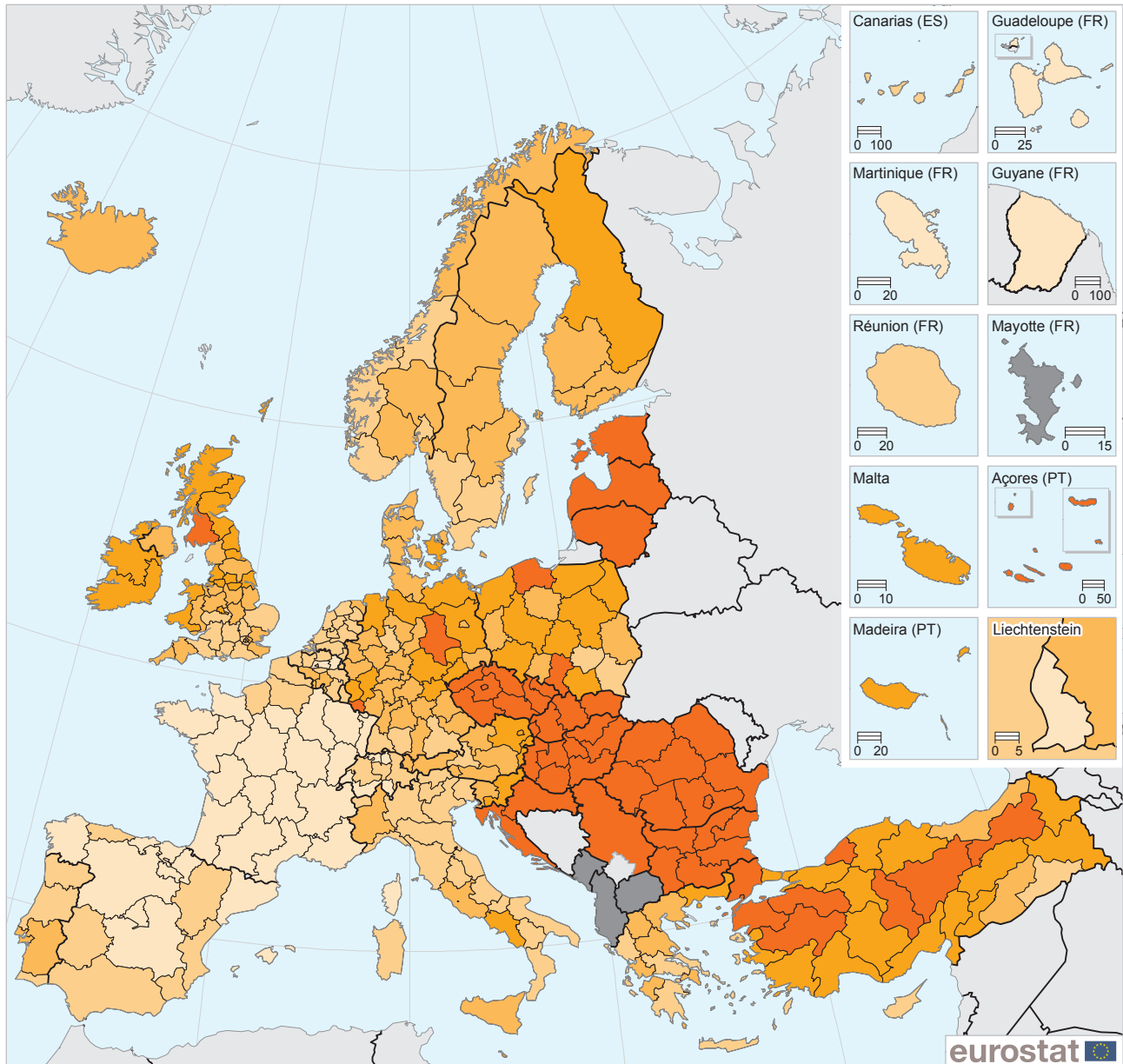
**Map 3.1** shows that the highest standardised death rates from chronic diseases were recorded in eastern Europe and the [Baltic Member States](#), although both regions in Slovenia and all but two regions in Poland — Pomorskie and Slaskie — had lower death rates. There were, in total, 44 [NUTS](#) level 2 regions in the EU where the standardised death rate from chronic diseases was

greater than 650 deaths per 100 000 inhabitants (as shown by the darkest shade in **Map 3.1**), including also two German regions — Sachsen-Anhalt and Saarland — and a single region from the United Kingdom — South Western Scotland. A more detailed analysis reveals that there were 11 regions in the EU where the standardised death rate from chronic diseases was higher than 1 000 per 100 000 inhabitants (or 1.0 % of the population), including all but one of the regions in Hungary — the exception being the capital city region of Közép-Magyarország; three regions in Romania — Nord-Vest, Centru and Sud-Vest Oltenia; Latvia and Lithuania (both single regions at this level of detail).

The highest standardised death rate for chronic diseases among NUTS level 2 regions was recorded in the northern Hungarian region of Észak-Magyarország, at 1 168.6 per 100 000 inhabitants. By contrast, the lowest standardised death rate was recorded in the French outermost region of Guadeloupe, at 314.1 deaths per 100 000 inhabitants; as such a person living in Észak-Magyarország was 3.7 times as likely to die from a chronic disease as someone living in Guadeloupe.

More generally, the lowest standardised death rates from chronic diseases were almost exclusively recorded in French regions. Of the 17 regions in the EU-28 where this rate was less than 400 deaths per 100 000 inhabitants, the only region from outside France was the Spanish capital city region of Comunidad de Madrid. The second lowest standardised death rate for chronic diseases was in Île de France, the French capital city region. People living in capital city regions may benefit from rapid access to emergency care and the availability of a wide variety of specialists. By contrast, the regions in the EU with the highest death rates from chronic diseases were often characterised as traditional, industrial regions, where, among others, environmental concerns and a high share of manual work had the potential to impact on an individual's health.

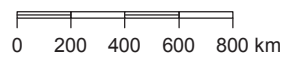
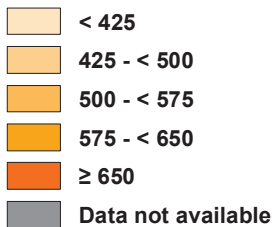
**Map 3.1: Standardised death rates from chronic diseases, by NUTS 2 regions, 2013-2015**  
(per 100 000 inhabitants)



(per 100 000 inhabitants)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 04/2018

EU-28 = 548.8



Note: information shown for a three-year average. Chronic diseases are defined as cancer (malignant neoplasms), diabetes mellitus, ischaemic heart diseases, cerebrovascular diseases, chronic lower respiratory diseases and chronic liver diseases. Serbia: national data. Thessalia (EL61): 2011-2013. Liechtenstein: excludes diabetes mellitus.

Source: Eurostat (online data code: [hith\\_cd\\_ysdr2](#))

## CANCERS

Although significant advances have been made in the fight against cancer, it remains a key public health concern and a considerable burden on society. In 2015, there were 1.32 million people in the EU-28 that died from cancer, which equated to just over one quarter (25.4 %) of all deaths; this figure was higher than the number of deaths attributed to ischaemic heart diseases or cerebrovascular diseases.

### ***All seven Hungarian regions featured among the top 10 regions in the EU with the highest standardised death rates from cancer***

The EU-28 standardised death rate from cancer averaged 261.7 deaths per 100 000 inhabitants during the period 2013 to 2015. As for chronic diseases, **Map 3.2** shows a relatively clear east-west split in terms of death rates from cancer across the different regions of the EU, although this was less pronounced. The highest standardised death rates from cancer — above 300 deaths per 100 000 inhabitants (as shown by the darkest shade) — were concentrated in Croatia (both regions), Hungary (all seven regions), Poland (half of its 16 regions), Slovenia (both regions), Slovakia (all four regions) and the United Kingdom (eight regions in northern England or Scotland). The remainder of the 36 regions with the highest death rates was composed of single regions from each of the Czech Republic, Denmark, the Netherlands, Portugal and Romania. The south-western Hungarian region of Dél-Dunántúl had the highest standardised death rate from cancer among NUTS level 2 regions, averaging 367.0 deaths per 100 000 inhabitants during the period 2013 to 2015. The six other Hungarian regions were also present among the ranking of the top 10 regions in the EU with the highest death rates, where they were joined by Kontinentalna Hrvatska (inland Croatia), South Western Scotland (the United Kingdom) and Západné Slovensko (western Slovakia).

The French outermost regions of Guyane and Guadeloupe (both 174 deaths per 100 000 inhabitants) were the only regions in the EU to report standardised death rates from cancer below 200.0 deaths per 100 000 inhabitants for the period covering 2013 to 2015. The next lowest death rates were recorded in: Cyprus (a single region at this level of detail); the southern Italian regions of Molise, Calabria, Abruzzo and Basilicata; another outermost French region, Martinique; Pohjois- ja Itä-Suomi (northern and eastern Finland); and the Spanish capital city region of Comunidad de Madrid.

## SUICIDE

External causes of mortality were the fourth most common cause of death in the EU-28 during the period 2013 to 2015. This heading is composed of a number of different causes of death, including intentional self-harm — hereafter referred to as suicide — falls or (transport) accidents. Suicide is defined as a deliberate attempt to kill oneself: the statistics presented therefore relate only to the situations where the outcome was fatal, excluding failed attempts to commit suicide or other non-fatal forms of self-harm.

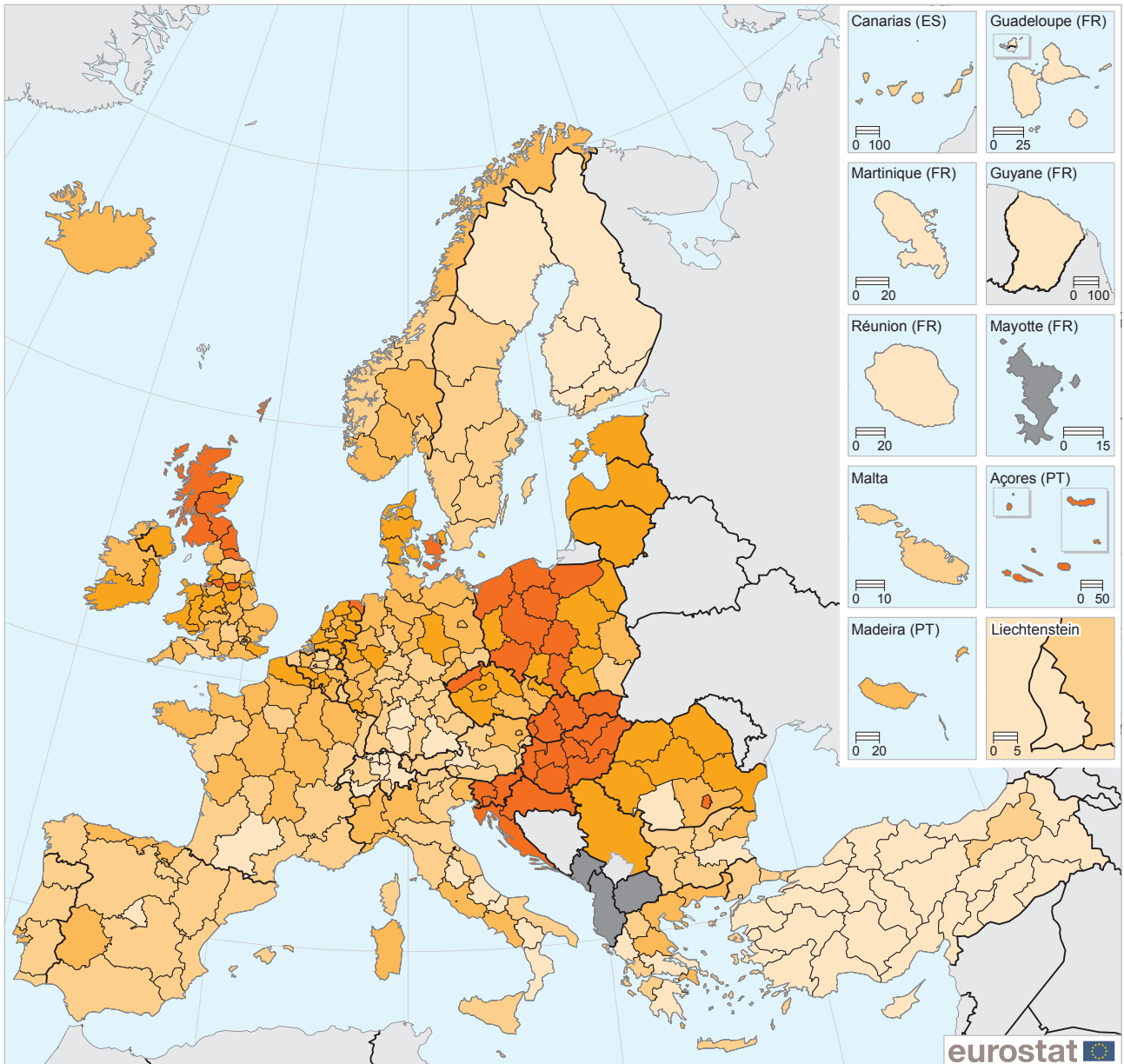
There is a considerable gender gap for suicide in the EU-28: during the period 2013 to 2015, the standardised death rate for men (18.5 deaths per 100 000 male inhabitants) was almost four times as high as that for women (4.9 deaths per 100 000 female inhabitants). Such differences may, at least in part, be attributed to the likelihood of success from the chosen suicide method with men often choosing more impulsive (and deadly) methods, such that, in keeping with other external causes of death, they are over-represented in terms of deaths from violent or criminal behaviour, drug use or extreme sports. This gender gap was repeated in each of the EU Member States and was most pronounced in eastern Europe, where standardised death rates from suicide for men in Romania, Slovakia and Poland were six or seven times as high as those for women; this was also the case in Malta.

### ***Across EU regions, Lithuania recorded the highest standardised death rate from suicide for men and the fifth highest rate for women***

**Figure 3.1** identifies those NUTS level 2 regions with the highest and lowest standardised death rates from suicide. Lithuania (a single region at this level of detail) had the highest rate among men (60.5 deaths per 100 000 male inhabitants), more than three times as high as the EU-28 average. The next highest male death rates were recorded in: two neighbouring, rural Hungarian regions — Észak-Alföld and Dél-Alföld; Lubuskie (western Poland); Vzhodna Slovenija (eastern Slovenia); and two neighbouring, rural regions in France — Basse-Normandie and Bretagne. Lithuania also featured among the 10 regions with the highest female standardised death rates from suicide, in fifth position. Relatively high female death rates were recorded in: Dél-Alföld (also present in the ranking for men); and in three Belgian regions — Prov. West-Vlaanderen, Prov. Liège and Prov. Namur, where the highest female rate was recorded, at 14.6 deaths per 100 000 female inhabitants.



**Map 3.2: Standardised death rates from cancer (malignant neoplasms), by NUTS 2 regions, 2013-2015**  
(per 100 000 inhabitants)

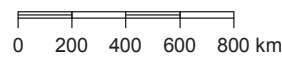


(per 100 000 inhabitants)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 04/2018

EU-28 = 261.7

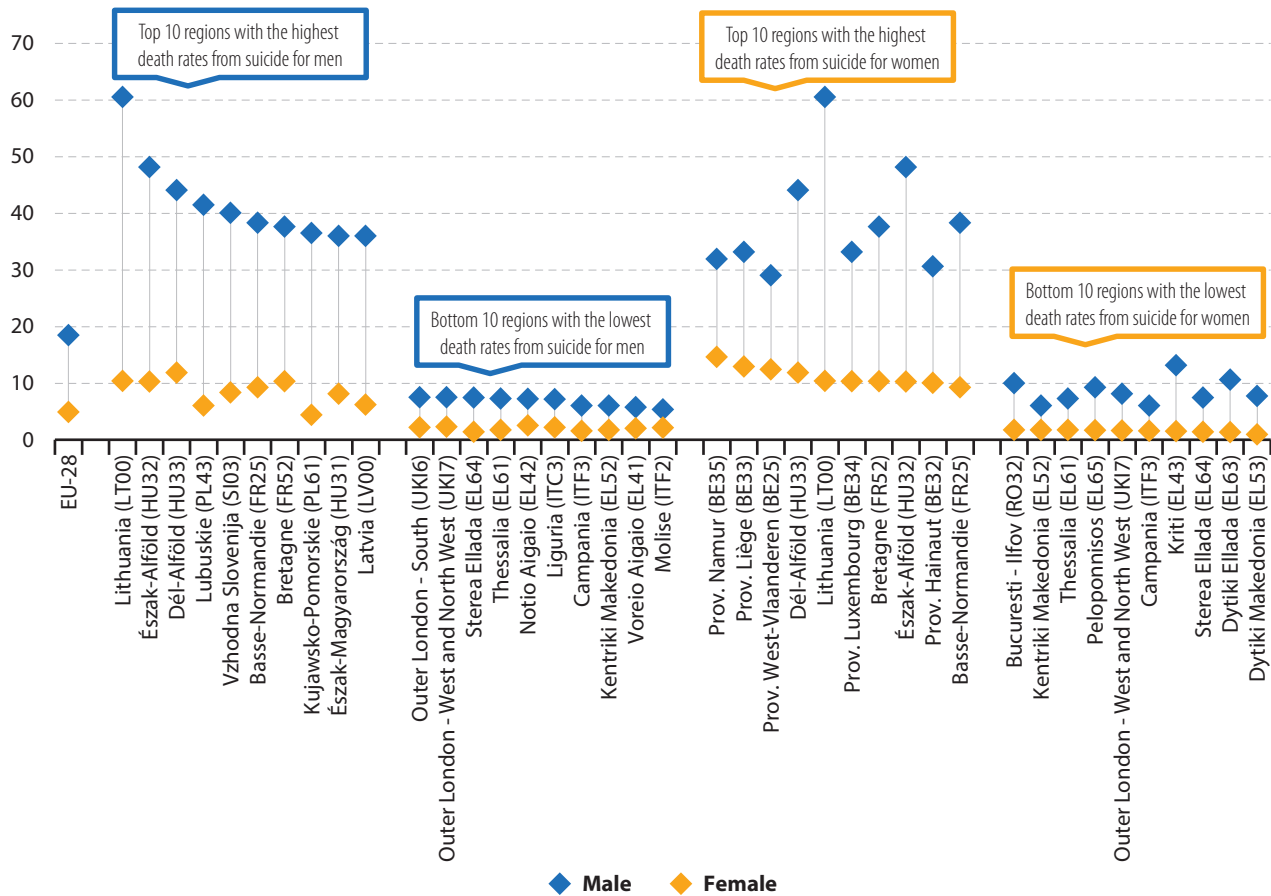
- < 225
- 225 - < 250
- 250 - < 275
- 275 - < 300
- ≥ 300
- Data not available



Note: information shown for a three-year average. Serbia: national data. Thessalia (EL61): 2011-2013.

Source: Eurostat (online data code: hlth\_cd\_ysdr2)

**Figure 3.1: NUTS 2 regions with the highest and lowest standardised death rates from suicide, by sex, 2013-2015**  
(per 100 000 inhabitants)



Note: information shown for a three-year average. Thessalia (EL61): 2011-2013. Ciudad Autónoma de Ceuta (ES63) and Ciudad Autónoma de Melilla (ES64): female rate, not available. Mayotte (FRA5) and Åland (FI20): not available.  
Source: Eurostat (online data code: [hlth\\_cd\\_ysdr2](#))

## Healthcare

**Maps 3.3 and 3.4** present indicators related to healthcare provision, the first concerning access to hospital beds and the second access to doctors/physicians. These two maps reflect country-specific ways of organising health care and the types of service provided to patients.

### HOSPITAL BEDS

For many years, the number of hospital beds available across the EU has decreased: this may be linked to changes in healthcare policies in a majority of the EU Member States, whereby the average length of hospital stays has been reduced by the introduction of new treatments and less-invasive forms of surgery, some of which may be delivered through ambulatory (out-patient) care.

Hospital beds are defined as those which are regularly maintained and staffed and immediately available for the care of patients admitted to hospitals; these statistics cover beds in general and speciality hospitals. There were 2.62 million hospital beds in the EU-28 in 2015, which meant that the total number of beds had fallen overall by 9.5 % during the most recent 10-year period for which data are available.

**Aside from Berlin, some of the highest numbers of hospital beds relative to population size were recorded in Germany**

The average number of hospital beds in the EU-28, relative to population size, fell by 69 beds per 100 000 inhabitants between 2005 and 2015, such that there were on average 515 hospital beds per 100 000 inhabitants in 2015.

**Map 3.3** provides confirmation of the very high density of hospital beds in almost all German regions (as shown

by the darkest shade in the map). Indeed, the capital city region of Berlin was the only one among the 16 NUTS level 1 regions in Germany to record less than 700 hospital beds per 100 000 inhabitants. The highest ratio was recorded in the northern German region of Mecklenburg-Vorpommern — a predominantly rural area with a low level of population density — with just over 1 300 hospital beds per 100 000 inhabitants. There were only three other regions in the EU that recorded ratios in excess of one hospital bed per 1 000 inhabitants, they were: the eastern German (NUTS level 1) region of Thüringen; the Romanian capital city region of Bucuresti - Ilfov; and the northern Polish region of Zachodniopomorskie, which shares a border with Mecklenburg-Vorpommern.

There were 17 regions in the EU where there were fewer than 250 hospital beds per 100 000 inhabitants (as shown by the lightest shade in the map). These regions were distributed as follows: five regions from Spain; five regions from Sweden (including the capital city region of Stockholm); three regions from Denmark (including the capital city region of Hovedstaden); two regions from Portugal; and single regions from each of Ireland and Italy. Aside from the atypical Spanish regions of Ciudad Autónoma de Melilla and Ciudad Autónoma de Ceuta, the lowest ratios were recorded in the southern regions of Calabria in Italy (210.3 beds per 100 000 inhabitants), Alentejo in Portugal (217.2 beds per 100 000 inhabitants) and Andalucía in Spain (220.1 beds per 100 000 inhabitants).

It is interesting to contrast the ratio of hospital beds relative to population size for capital city regions with other regions, looking across the EU Member States. For example, in the eastern Member States of the Czech Republic, Hungary and Romania, the capital city region had (one of) the highest ratios, whereas in many western

and northern Member States, it was more commonplace to find capital city regions recording relatively low ratios, whereas the highest numbers of beds per inhabitant were usually recorded in rural, sparsely populated regions (perhaps reflecting a higher level of availability in these regions to counteract the considerable distances that some people may need to travel in order to receive treatment) and the lack of economies of scale available in large, densely populated urban areas.

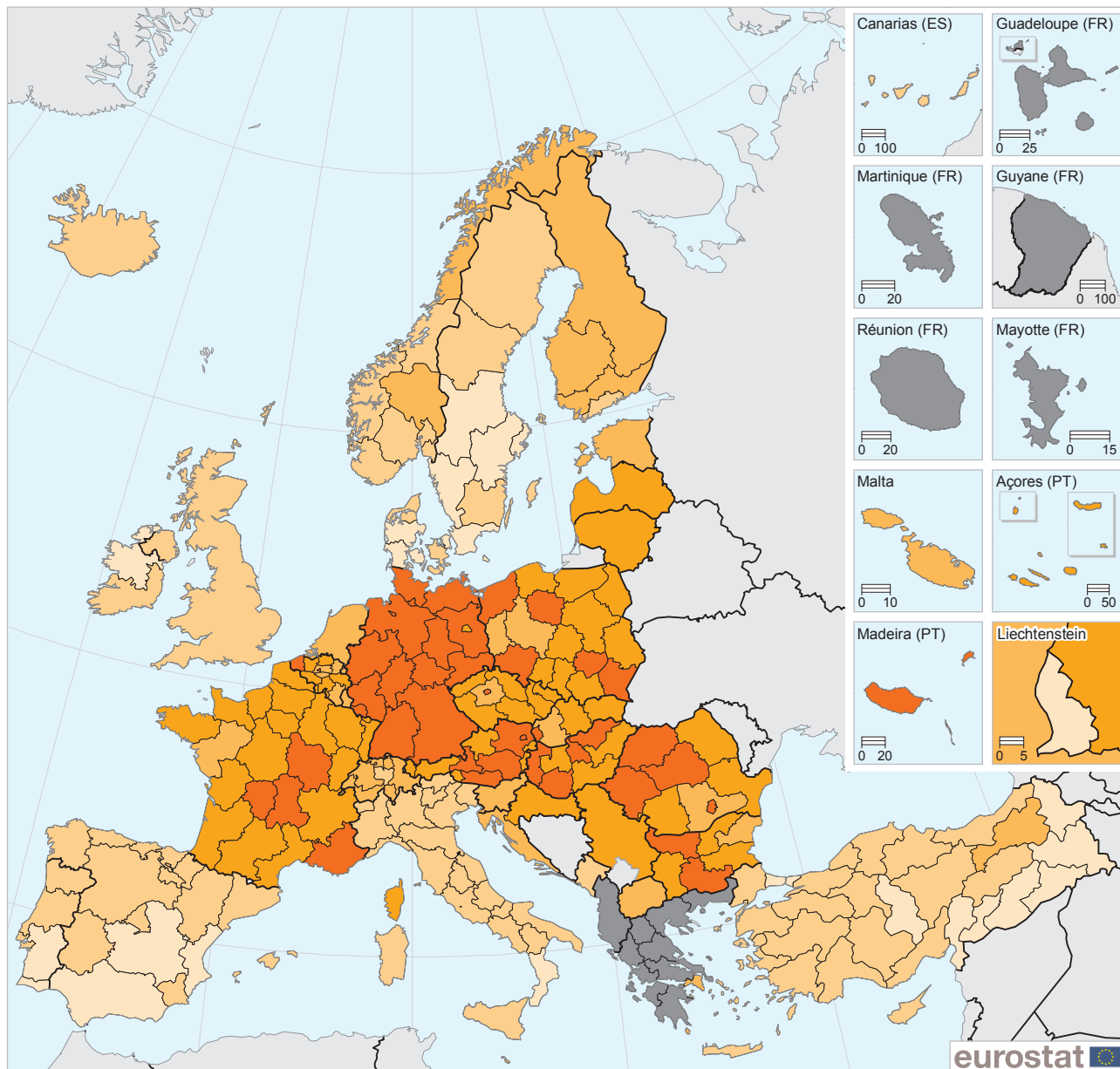
## NUMBERS OF PHYSICIANS

Physicians or (medical) doctors have a degree in medicine and provide services directly to patients as consumers of healthcare. In the context of comparing health care services across EU Member States, Eurostat gives preference to the concept of practising physicians, although data are only available for professionally active (Greece, Slovakia and Finland, as well as the former Yugoslav Republic of Macedonia, Serbia and Turkey) or licensed physicians (Portugal) in some countries (1).

In 2015, there were 1.81 million physicians in the EU-28, which equated to 356 per 100 000 inhabitants. **Map 3.4** shows that the highest ratios of physicians relative to population size were often recorded in capital city regions, where it is likely that specialist practitioners are concentrated. The four highest regional ratios were in the Greek, Czech, Austrian and Slovak capital city regions of Attiki, Praha (2013 data), Wien and Bratislavský kraj (2014 data), while Área Metropolitana de Lisboa (Portugal), Bucuresti - Ilfov (Romania) and Berlin (Germany; note that the information presented is for NUTS level 1) were also among the 17 regions in the EU where there were in excess of 500 (practising) physicians per 100 000 inhabitants.

(1) A practising physician provides services directly to patients — these may include: conducting medical examinations and making diagnoses; prescribing medication and treating diagnosed illnesses, disorders or injuries; giving specialised medical or surgical treatment for particular illnesses, disorders or injuries; giving advice on and applying preventive medical methods and treatments. A professionally active physician is a practising physician or any other physician for whom medical education is a prerequisite for the execution of the job (for example, verifying medical absences from work, drug testing, medical research). A licensed physician is a physician licensed to practise; this category includes practising physicians, professionally active physicians, as well as any other registered physicians who are entitled to practise as healthcare professionals.

**Map 3.3: Number of hospital beds relative to population size, by NUTS 2 regions, 2015**  
(number per 100 000 inhabitants)

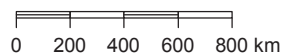


(number per 100 000 inhabitants)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 04/2018

EU-28 = 515

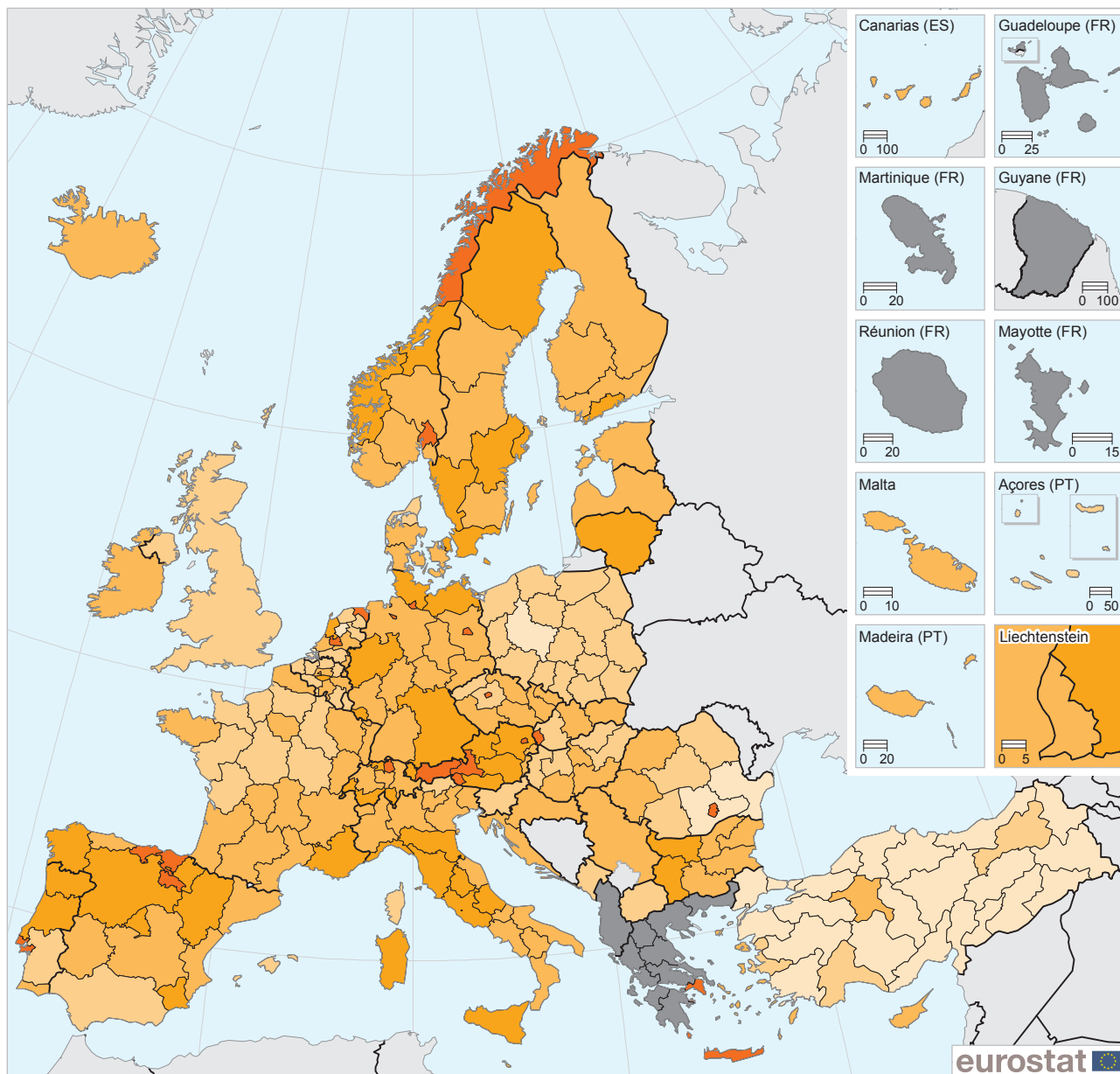
- < 250
- 250 - < 400
- 400 - < 550
- 550 - < 700
- ≥ 700
- Data not available



Note: Germany, NUTS level 1. The Netherlands, Slovenia, the United Kingdom and Serbia: national data. France, Slovakia and Serbia: 2014. The Netherlands: 2013. Denmark: estimates. Portugal: provisional.

Source: Eurostat (online data codes: hlth\_rs\_bdsrg and hlth\_rs\_bds)

**Map 3.4: Number of (practising) physicians relative to population size, by NUTS 2 regions, 2015**  
(number per 100 000 inhabitants)

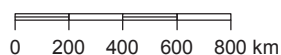


(number per 100 000 inhabitants)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 04/2018

EU-28 = 356

- < 200
- 200 - < 300
- 300 - < 400
- 400 - < 500
- ≥ 500
- Data not available



Note: in the context of comparing health care services across EU Member States, Eurostat gives preference to the concept of practising physicians. Greece, Slovakia, Finland, the former Yugoslav Republic of Macedonia, Serbia and Turkey: professionally active physicians. Portugal: physicians licensed to practise. Germany: NUTS level 1. Ireland, Slovenia, the United Kingdom and Serbia: national data. Denmark, France, Slovakia, Finland, Sweden and Serbia: 2014. The Czech Republic: 2013. Serbia: definition differs (see metadata).

Source: Eurostat (online data code: [hlth\\_rs\\_prsrg](#))

### UNMET NEEDS FOR HEALTHCARE

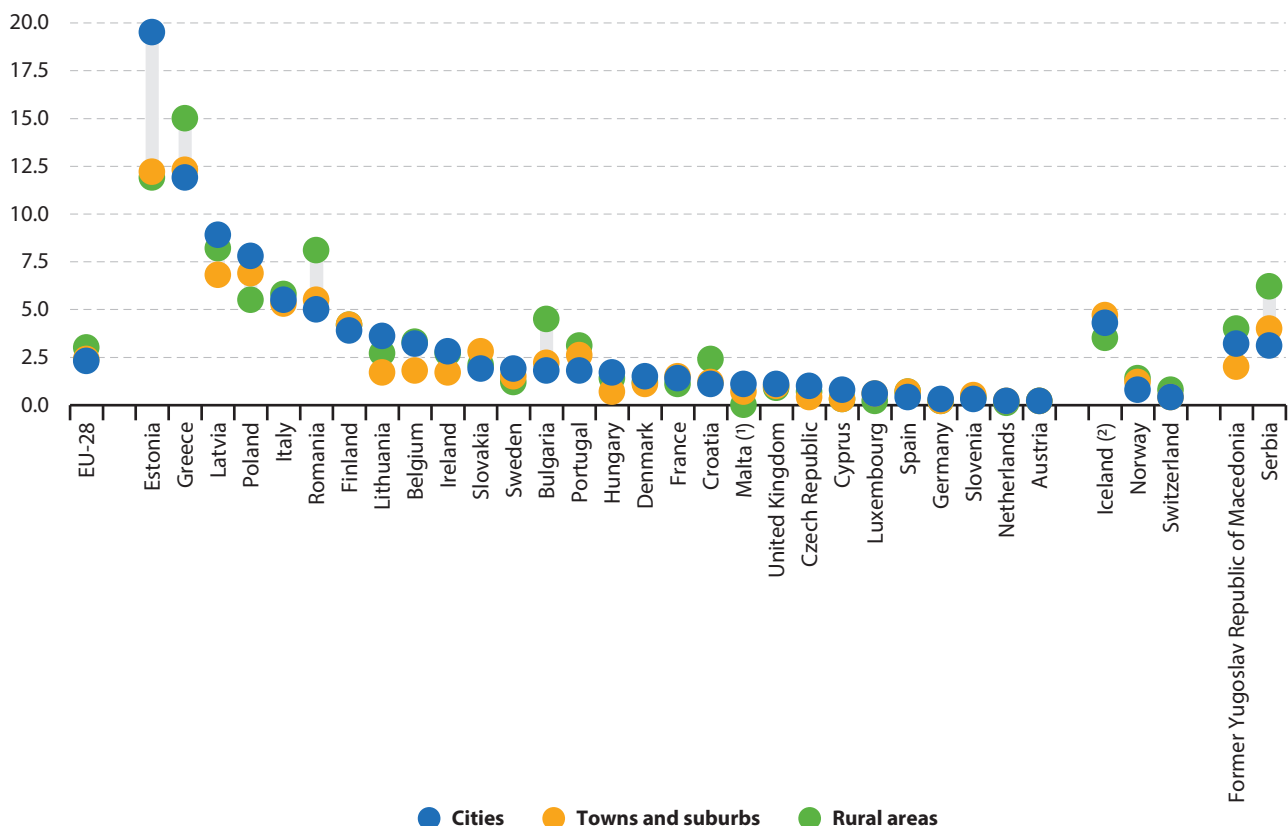
There are a variety of reasons why an individual may claim that their need for medical care remains unmet. These include, among others: cost (services are considered too expensive); distance (too far to travel to a clinic or hospital); timeliness (waiting lists); or a lack of cultural sensitivity/discrimination. These issues have the potential to restrict an individual's access to healthcare services and impinge upon their quality of life, well-being and social participation, as well as influencing socioeconomic developments at a more aggregated level.

In 2016, the proportion of the EU-28 adult population with unmet needs for healthcare — due to it being too expensive; too far to travel; or because of waiting lists — was 2.5 %. An analysis by [degree of urbanisation](#) (see **Figure 3.2**) reveals that this share was slightly higher in rural areas (3.0 %) than it was in either towns and suburbs (2.4 %) or cities (2.3 %).

The proportion of people aged 16 and over with unmet needs for healthcare was below the EU-28 average in a majority of the EU Member States and fell as low as 0.2 % in both the Netherlands and Austria. However, there was a considerable degree of variation among the remaining Member States, with the share of people having unmet needs for healthcare more than twice as high as the EU-28 average in Italy, Romania and Poland, more than three times as high in Latvia, more than five times as high in Greece, peaking at more than six times as high in Estonia.

An analysis by degree of urbanisation for 2016 reveals that the share of people with unmet needs for healthcare was particularly high for people living in the cities of Estonia; this was also the case in Luxembourg, Cyprus, the Netherlands and Sweden. By contrast, in Romania, Bulgaria and Croatia, a much higher share of the adult population living in rural areas had unmet needs for healthcare; this pattern was repeated in Portugal and Spain, where the share of people living in rural areas with unmet needs for healthcare was particularly high relative to the equivalent share for people living in cities.

**Figure 3.2: Proportion of people with unmet needs for healthcare, by degree of urbanisation, 2016**  
(% share of population aged 16 and over)



Note: ranked on cities. Unmet needs for healthcare due to it being too expensive, too far to travel, or because of waiting lists.

(1) Rural areas: 2015 and low reliability.

(?) 2015.

Source: Eurostat (online data code: hlth\_silc\_21)

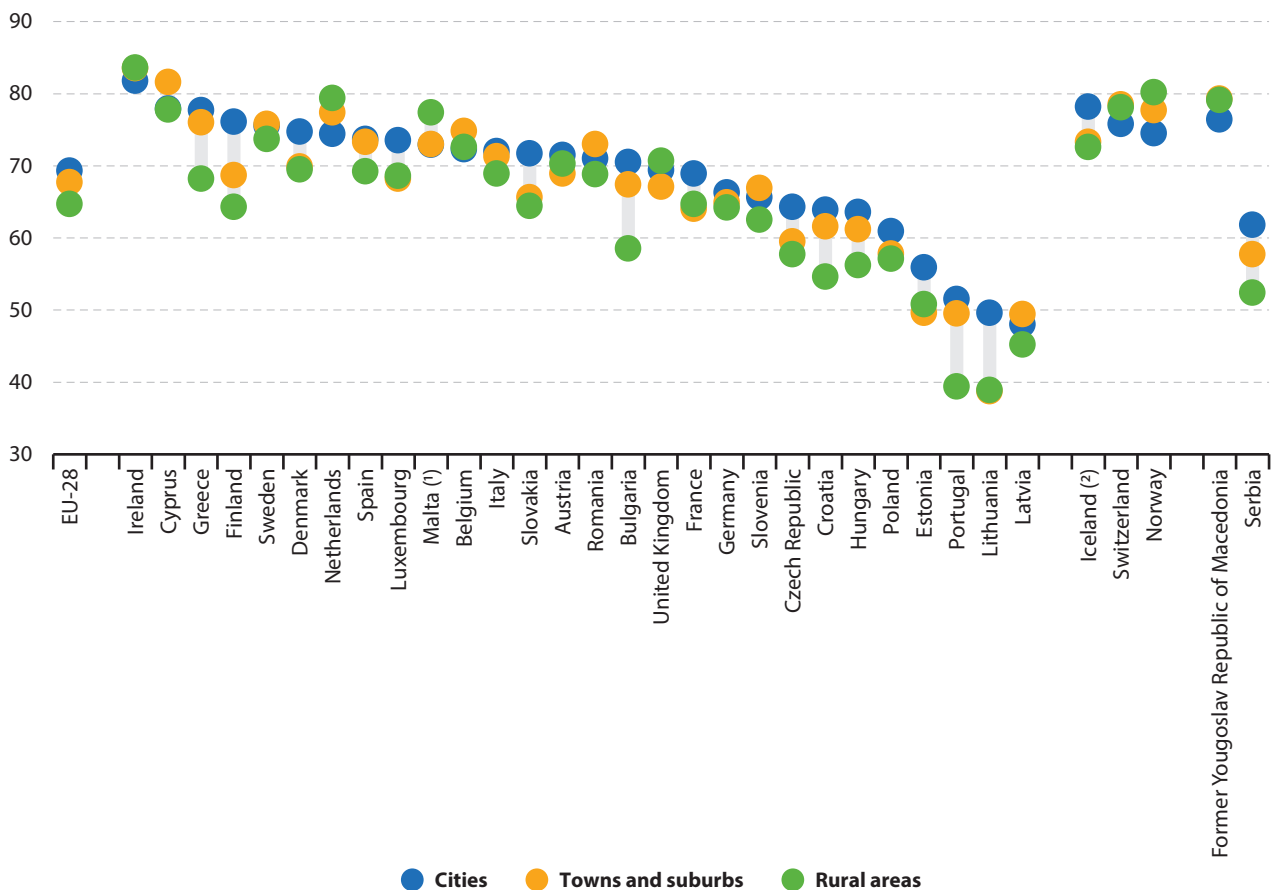
## Self-perceived health status

**Figure 3.3** provides an alternative analysis by degree of urbanisation, detailing the proportion of the adult population who declared their **self-perceived health** as good or very good. Across the EU-28, more than two thirds (67.5 %) of the population aged 16 and over perceived their own health as good or very good in 2016. Looking in more detail, this share was higher across the EU-28 for people living in cities (69.3 %) than it was for people living in towns and suburbs (67.7 %) or rural areas (64.7 %).

In a majority (18) of the EU Member States, a higher proportion of people living in cities (rather than people living in towns and suburbs or rural areas) perceived their own health as good or very good. By contrast, in Ireland, the Netherlands, Malta and the United Kingdom, people living in rural areas were more likely to perceive their own health as good or very good.

It should be noted that (self-perceived) health status is quite strongly related to age, and so the analysis of health status by degree of urbanisation may reflect differences in the age structure by degree of urbanisation.

**Figure 3.3: Proportion of people who perceive their own health as good or very good, by degree of urbanisation, 2016** (% share of population aged 16 and over)



Note: ranked on cities. Unmet needs for healthcare due to it being too expensive, too far to travel, or because of waiting lists.

(\*) Rural areas: low reliability.

(2) 2015.

Source: Eurostat (online data code: hlth\_silc\_18)





# 4

## Education and training



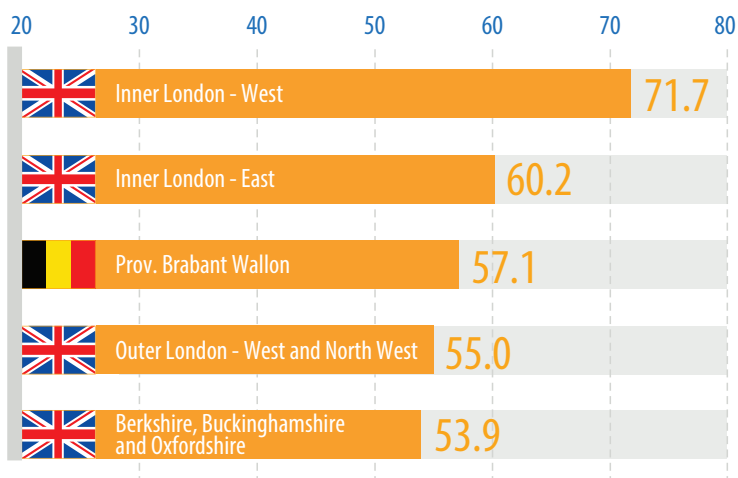
## Key findings

- The Greek capital, Attiki, was the only region in the EU where less than 50 % of four year-old children attended early childhood education.
- Capital city regions act as magnets for highly-qualified people: especially in Inner London - West, where more than 7 out of 10 in working-age had a tertiary education.
- The highest adult participation rates in learning were distributed across Nordic regions, with a peak of 31.6 % for two regions in Sweden — Sydsverige and Stockholm.

### TOP 5 REGIONS IN THE EU

#### TERTIARY EDUCATIONAL ATTAINMENT, 2017

(% share of population aged 25-64)



Education, vocational training and more generally lifelong learning play a vital role in the economic and social strategies of the European Union (EU). This chapter presents data following the natural progression through different levels of the education system (following the international standard classification of education (ISCED)) and also analyses transitions into the labour force, with data on: participation rates among four year-olds; students in vocational training; early leavers from education and training; the share of young people neither in employment nor in education or training (NEET); the share of the population with a tertiary degree; employment rates for recent graduates; and adult participation in learning.

In 2016, there were 109 million children, pupils and students enrolled in the EU-28 across all levels of education from pre-primary through to postgraduate studies. It is widely accepted that a basic level of education is desirable, so that everyone has the opportunity to participate in economic and social life, raising their chances of finding employment and reducing their risk of falling into poverty or social exclusion. While education and training may help increase an individual's personal development and well-being, from a broader perspective, they are also considered crucial to driving forwards both economic and social progress. This is particularly the case in a globalised and knowledge-driven economy, where a highly-skilled workforce is necessary to compete in terms of productivity, quality, and innovation.



## Early childhood education

Research has shown that children's first years are often critical for their long-term development, as early childhood and primary education can play a key role in redressing life chances through tackling inequalities and raising proficiency in basic competences. Early childhood education (ISCED level 0) is typically designed with a holistic approach to support children's early cognitive, physical, social and emotional development, with two categories of programmes: early childhood educational development (level 01) and pre-primary education (level 02). Primary education (ISCED level 1) programmes are typically designed to provide students with fundamental skills in reading, writing and mathematics, in other words developing literacy and numeracy.

The [education and training 2020 \(ET 2020\)](#) strategic framework set a headline target, whereby at least 95 % of children between the age of four and the age for starting compulsory primary education should participate in early childhood education by 2020; this share already stood at 95.5 % in the EU-28 in 2016.

***The Greek capital city region of Attiki was the only region in the EU where fewer than half of all four year-olds participated in early childhood education***

**Figure 4.1** shows information for 2016 in relation to those NUTS level 2 regions with the highest and lowest participation rates of four year-olds in early childhood education; note that data for Germany and the United Kingdom are presented for NUTS level 1 regions. In 2015, the vast majority (93.8 %) of four year-old children in the EU-28 were enrolled in some form of education; most of them attended pre-primary education; although some children already attended primary education in Ireland, France and the United Kingdom at the age of four, it was not compulsory to do so.

The participation rate of four year-olds in early childhood education was 100 % in 12 regions across France, nine English regions in the United Kingdom (2015 data), four regions in Belgium, three regions in southern Italy, and in Malta (a single region at this level of detail; 2015 data). By contrast, 8 of the 10 lowest regional participation rates were recorded in Greece (2014 data), with by far the lowest rate in the capital city region of Attiki (28.3 %). The two non-Greek regions that featured among the bottom 10 were Východné Slovensko (eastern Slovenia) and Kontinentalna Hrvatska (continental Croatia).

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## International standard classification of education (ISCED)

As national education systems vary in terms of structure and curricular content, it can be difficult to make spatial or temporal comparisons when assessing the performance of different systems. In order to interpret the inputs, processes and outcomes of education systems from a global perspective, education statistics are compiled according to the international standard classification of education (ISCED). It is used to assemble a wide variety of statistics on a broad range of education topics including enrolments and attendance, human or financial investment in education, and educational attainment.

ISCED is the reference classification for organising education programmes and related qualifications by education levels and fields into internationally agreed categories. The framework is occasionally updated in order to capture new developments in education systems worldwide better and the most recent version of the classification — [ISCED 2011](#) — was adopted by the UNESCO General Conference in November 2011. Categories have been added to the classification of education levels in recognition of the expansion of early childhood education and the restructuring of tertiary education. Within ISCED 2011 the following levels are identified:

- Early childhood education — ISCED level 0;
- Primary education — ISCED level 1;
- Lower secondary education — ISCED level 2;
- Upper secondary education — ISCED level 3;
- Post-secondary non-tertiary education — ISCED level 4;
- Short-cycle tertiary education — ISCED level 5;
- Bachelor's or equivalent level — ISCED level 6;
- Master's or equivalent level — ISCED level 7;
- Doctoral or equivalent level — ISCED level 8.

Tertiary education refers to an aggregate composed of ISCED levels 5-8.

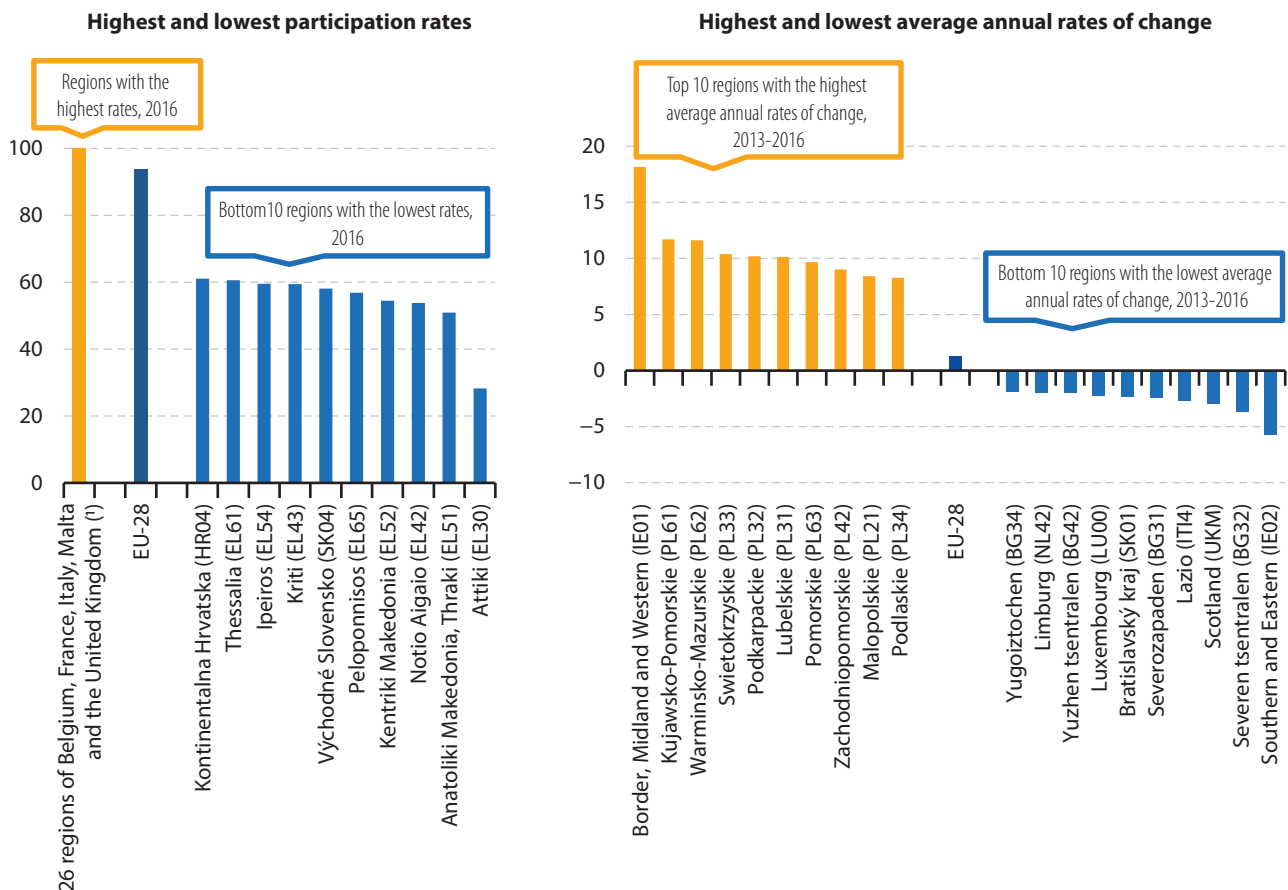
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The second half of **Figure 4.1** shows the regions characterised by the highest and lowest average growth rates concerning the participation of four year-olds in early childhood education during the period 2013-2016. It confirms a broad increase in participation rates for four year-olds across Poland in recent years;

among the 16 NUTS level 2 regions in Poland, average rates of change were within the range of 4.9-11.7 % per annum, with only Cyprus (a single region at this level of detail) and the Irish region of Border, Midland and Western (2013-2015) recording average rates of change that were as high.

**Figure 4.1: NUTS 2 regions with the highest and lowest participation rates of four year-olds in early childhood education**

(%)



Note: Germany and the United Kingdom, NUTS level 1. EU-28, the Czech Republic, Denmark, Germany, Estonia, Ireland, Latvia, Luxembourg, Hungary, Malta and the United Kingdom: 2015 and 2013-2015 for growth rates. Slovenia: 2014-2016 for growth rates. Greece: 2014. Greece, Mayotte (FRA5) and Croatia: growth rates not available. Ireland, France and the United Kingdom: some four year-olds are enrolled in ISCED level 1 (although it is not compulsory to start education at this age).

(\*) Prov. Limburg (BE22), Prov. Oost-Vlaanderen (BE23), Prov. West-Vlaanderen (BE25), Prov. Luxembourg (BE34) Île de France (FR10), Picardie, Haute-Normandie, Centre (FR22-24), Nord - Pas-de-Calais (FR30), Aquitaine (FR61), Rhône-Alpes (FR71), Languedoc-Roussillon, Provence-Alpes-Côte d'Azur (FR81-82), Guadeloupe (FRA1), Martinique (FRA2), La Réunion (FRA5) Campania (ITF3), Puglia (ITF4), Calabria (ITF6), Malta (MT00), North East (UKC), North West (UKD), Yorkshire and The Humber (UKE), East Midlands (UKF), West Midlands (UKG), East of England (UKH), London (UKI), South East (UKJ), South West (UKK).

Source: Eurostat (online data code: educ\_uoe\_enra14)



## Vocational programmes in upper secondary education

Vocational education and training (VET) is designed for students to acquire the knowledge, skills and competencies specific to a particular occupation or trade. A growing number of policymakers have shown an interest in vocational education as it has the potential to help lower youth unemployment rates and facilitate the transition of young people from education into work/the labour market, especially when such programmes/apprenticeships teach specific skills that are required by employers.

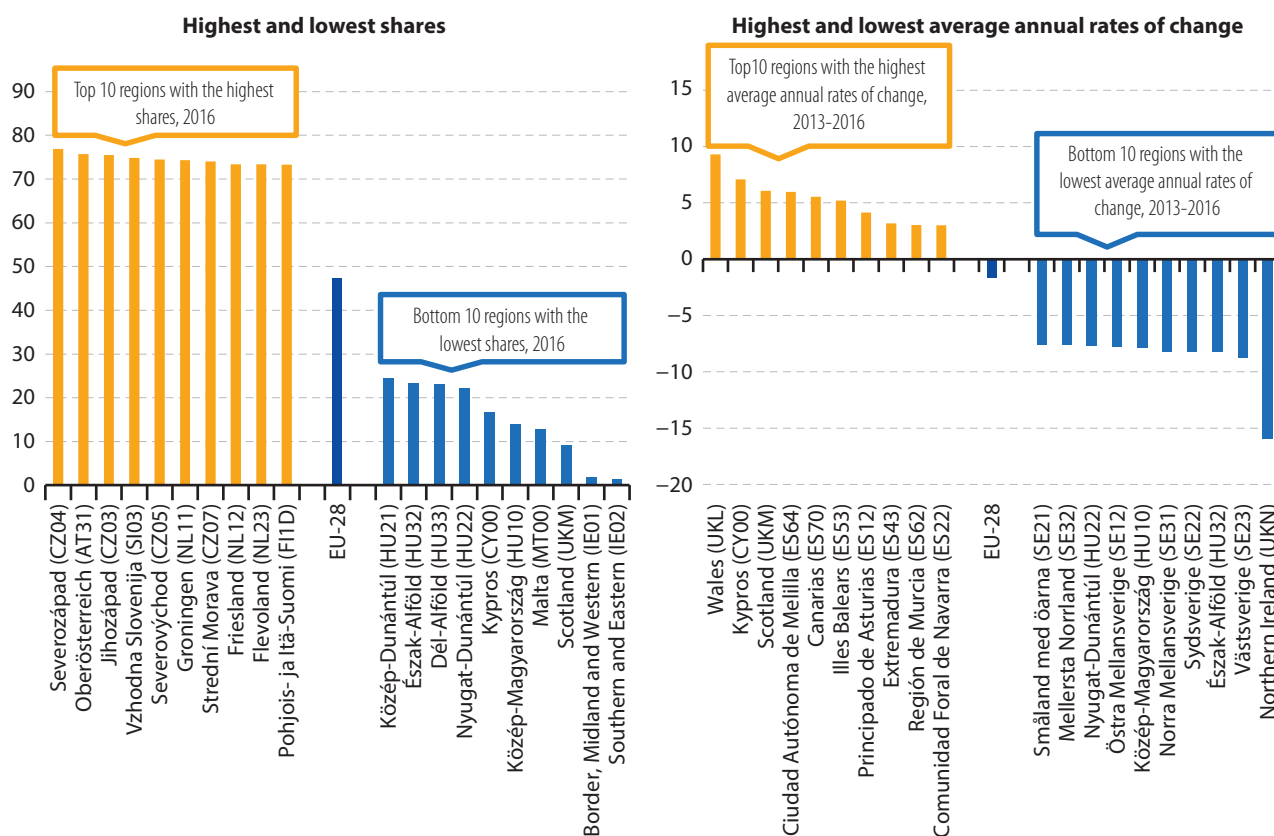
Upper secondary education (ISCED level 3) education typically ends when students are aged 17 or 18. These programmes are usually designed in preparation for tertiary education and/or to provide skills that are relevant for employment. There were 10.3 million upper secondary students in the EU-28 that participated in vocational education programmes in 2015, equivalent to 47.3 % of all upper secondary students; the remainder participated in general upper secondary education programmes.

Figure 4.2 shows that the share of upper secondary students participating in vocational education programmes in 2016 varied considerably across NUTS level 2 regions. Some of these differences may be attributed to the availability of and perceptions concerning vocational education and training: for example, in the Czech Republic, the Netherlands and Austria, vocational education and training is widely seen as an effective way to help facilitate an individual's transition into the labour market. In 2016, there were three NUTS level 2 regions in the EU where more than three quarters of all upper secondary students participated in vocational education: two of these were in the Czech Republic — Severozápad (76.9 %) and Jihozápad (75.5 %) — while the other was Oberösterreich (75.7 %) in western Austria.

### Less than 10 % of all upper secondary students participated in vocational education programmes in Ireland and Scotland

By contrast, vocational education programmes accounted for less than one quarter of all upper secondary students in 10 different regions across the

**Figure 4.2:** NUTS 2 regions with the highest and lowest shares of students in upper secondary education following vocational programmes (%)



Note: Germany and the United Kingdom, NUTS level 1. EU-28, Estonia, Latvia, Luxembourg, Malta and the United Kingdom: 2015 and 2013-2015 for growth rates. Croatia: 2014-2016 for growth rates. Greece: 2014. Ireland: 2013. Ireland, Greece and Mayotte (FRA5): growth rates not available.

Source: Eurostat (online data codes: educ\_uoe\_enra13 and educ\_uoe\_ens05)

EU. The lowest shares, by far, were recorded in the two Irish regions — Southern and Eastern (1.4 %; 2013 data) and Border, Midland and Western (1.7 %; 2013 data) — while the NUTS level 1 region of Scotland (9.0 %; 2015 data) in the United Kingdom was the only other region to record a share below 10 %. There were three NUTS level 2 regions where the share of students participating in vocational programmes was situated within the range of 10-20 %: the island regions of Malta and Cyprus (both single regions at this level of detail) and Közép-Magyarország (the capital city region of Hungary). In general, there were relatively low levels of vocational education across Hungary, as these programmes accounted for less than one quarter of all upper secondary students in four more Hungarian regions, while the shares in the remaining Hungarian regions peaked at 27.9 %.

The second half of **Figure 4.2** shows the regions characterised by the highest and lowest average growth rates concerning their share of students who were in upper secondary education following vocational programmes during the period 2013-2016. It reveals an increase in vocational education in two of the regions with the lowest participation rates — Cyprus and Scotland — although the share of students following vocational educational programmes rose at its most rapid pace in the NUTS level 1 region of Wales (up 9.3 % per annum; 2013-2015). The next highest growth rates were recorded exclusively among Spanish regions.

## Early leavers from education and training

Early leavers from education and training are defined as the proportion of individuals aged 18-24 who have at most a lower secondary level of educational attainment (ISCED levels 0-2), and who were not engaged in any further education and training (during the four weeks preceding the [labour force survey \(LFS\)](#)). This indicator is both an ET 2020 benchmark and a [Europe 2020](#) target; in both cases, the policy goal is to reduce the proportion of early leavers in the EU-28 to below 10 %.

In 2017, the share of EU-28 early leavers from education and training stood at 10.6 %; this was 0.1 [percentage points](#) lower than a year before and continued a pattern of continually falling rates over the last decade.

### *The lowest share of early leavers from education and training was in the Czech capital city region of Praha*

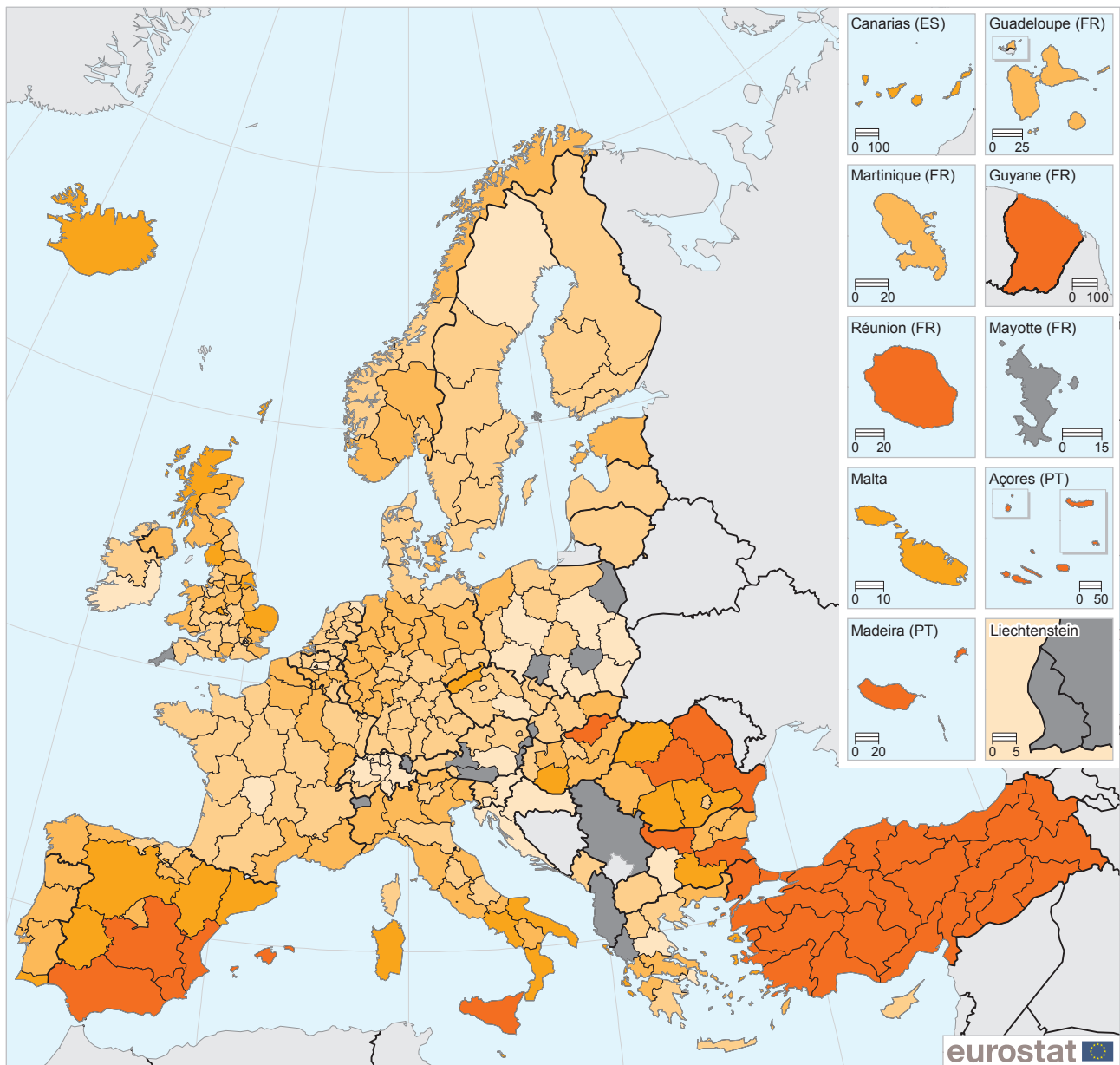
**Map 4.1** shows that it was quite common to find capital city regions and other dynamic, urban regions recording relatively low shares of early leavers from education and training. This may reflect a number of factors, including: more choice for education programmes; a wider range of education and labour market opportunities; or a higher level of educational attainment among parents.

The share of early leavers from education and training was below the 10.0 % benchmark in approximately half — 134 out of 262 — of the NUTS level 2 regions for which data are available (as shown by the two lightest shades in the map). The lowest shares of early leavers were concentrated in eastern Europe, as among the 22 regions with shares below 5 % there were: seven regions from Poland; two regions from the Czech Republic — including the capital city region of Praha (1.6 %), which had the lowest share in the EU; both regions from Croatia; and single regions from Bulgaria and Slovenia. The remaining regions with shares of early leavers that were less than 5 % included: two Greek regions (2016 data for Thessalia) and single regions from each of Belgium, Ireland, France, the Netherlands, Austria, Sweden and the United Kingdom.

The regions with the highest shares of early leavers from education and training were principally concentrated in southern of Spain, Bulgaria and Romania, although it was also quite common to find relatively high shares of early leavers in island and peripheral regions (where it might be the case that students had to leave home if they wished to follow a particular course).

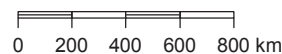
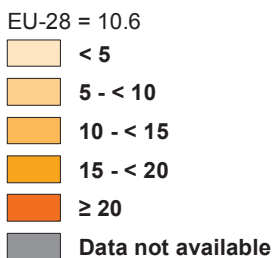


**Map 4.1: Early leavers from education and training, by NUTS 2 regions, 2017**  
 (% share of population aged 18-24)



(% share of population aged 18-24)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
 Cartography: Eurostat — GISCO, 06/2018



Note: includes data of low reliability for some regions. Oberpfalz (DE23), Trier (DEB2), Thessalia (EL61), Corse (FR83), Região Autónoma da Madeira (PT30) and Highlands and Islands (UKM6): 2016. Prov. Luxembourg (BE34), Chemnitz (DED4), Dytiki Makedonia (EL53) and Cumbria (UKD1): 2015. Ionia Nisia (EL62) and Prov. Brabant Wallon (BE31): 2014.

Source: Eurostat (online data code: [edat\\_lfse\\_16](#))

## Young people neither in employment nor in education or training (NEET)

The share of young people (aged 18-24) who were **neither in employment nor in education or training (NEET)**, is expressed relative to the total population of 18-24 year-olds; note that the numerator includes not only young people who are unemployed but also young people who are economically inactive for reasons other than education or training, because they are caring for family members, volunteering or travelling, are disabled, or are economically inactive for some other reason.

Having risen during the global financial and economic crisis to a peak of 17.2 % in 2012, the EU-28's NEET rate fell during five consecutive years to 14.3 % by 2017. Based on an analysis by NUTS level 2 region, 10 of the 14 lowest NEET rates in the EU were located in the Netherlands: Utrecht, Overijssel, Noord-Brabant, Limburg, Groningen, Gelderland and Noord-Holland (the capital city region) all reported NEET rates within the range of 4.6-5.3 % in 2017. However, the Czech capital city region of Praha had the lowest NEET rate within the EU, at 2.7 %.

There were 31 NUTS level 2 regions in the EU where the NEET rate was at least 22.5 % (as shown by the darkest shade in **Map 4.2**); these relatively high shares tended to be concentrated in southern, eastern or

outermost regions. The 11 highest NEET rates — where more than one third of all young people were neither in employment nor in education or training in 2017 — were located in: Sicilia, Campania, Puglia and Calabria (southern Italy); Voreio Aigaio, Peloponnisos, Ionia Nisia and Sterea Ellada (Greece); Guyane and La Réunion (both French overseas regions); and the Spanish region of Ciudad Autónoma de Melilla.

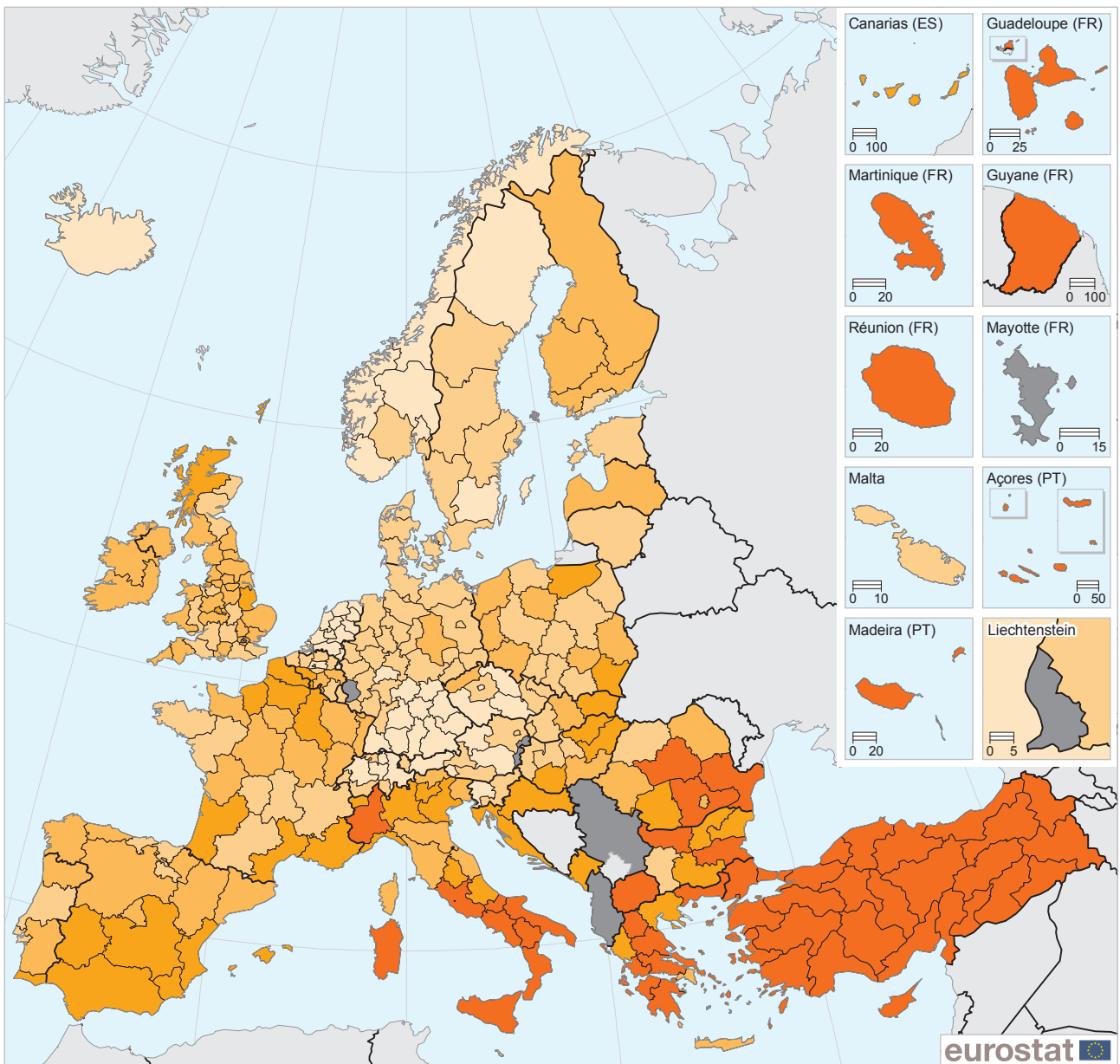
A closer analysis of regional patterns within individual EU Member States reveals that it was common for capital city regions to have relatively low shares of young people who were neither in employment nor in education or training. There were however some exceptions, such as the capital city regions of Belgium, Germany and Austria: the NEET rate for the Belgian capital Région de Bruxelles-Capitale / Brussels Hoofdstedelijk Gewest was 46 % higher than the Belgian national average, while similar comparisons for Berlin and Wien reveal that their NEET rates were 43 % and 36 % higher respectively than national averages.

Another pattern apparent for several EU Member States was for some of the highest NEET rates to be recorded for regions characterised as former industrial heartlands. For example, two of the highest NEET rates in Belgium were recorded in Prov. Hainaut and Prov. Liège, while relatively high NEET rates were recorded in the French regions of Champagne-Ardenne, Picardie and Nord - Pas-de-Calais, or the United Kingdom regions of Merseyside, West Midlands, Tees Valley and Durham.





**Map 4.2: Young people neither in employment nor in education or training (NEETs), by NUTS 2 regions, 2017**  
 (% share of population aged 18-24)

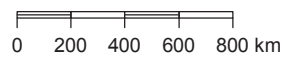


(% share of population aged 18-24)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
 Cartography: Eurostat — GISCO, 06/2018

EU-28 = 14.3

- < 7.5
- 7.5 - < 12.5
- 12.5 - < 17.5
- 17.5 - < 22.5
- ≥ 22.5
- Data not available



Note: includes data of low reliability for some regions. Niederbayern (DE22), Oberpfalz (DE23), Kassel (DE73), Valle d'Aosta/Vallée d'Aoste (ITC2), Zeeland (NL34), Kärnten (AT21), Salzburg (AT32), Algarve (PT15), Região Autónoma da Madeira (PT30), Cumbria (UKD1) and Highlands and Islands (UKM6): 2016. Vorarlberg (AT34): 2014.

Source: Eurostat (online data code: [edat\\_lfse\\_22](#))

## Tertiary educational attainment

Tertiary education (ISCED levels 5-8) builds on secondary education, providing learning activities in particular fields of education at a higher level of complexity. It is offered by universities, vocational establishments, institutes of technology and other institutions that award academic degrees and/or professional certificates.

There are a range of policy challenges in relation to tertiary (higher) education, among which: increasing participation (especially among disadvantaged groups); reducing drop-out rates and the time it takes some individuals to complete their course; making degree courses more relevant for the world of work. With a growing share of the EU-28 population having a tertiary level of educational attainment, some concerns have been expressed that certain regions have developed skills mismatches with a growing share of the labour force overqualified.

### ***More than 7 out of every 10 people of working-age who were living in Inner London - West had a tertiary level of educational attainment***

The tertiary educational attainment indicator shown in **Map 4.3** provides information on the share of the working age population — defined here as 25-64 years — who had successfully completed a tertiary education programme; note that in most countries students have completed their tertiary education programmes before the age of 25. In 2017, almost one third (31.4 %) of the EU-28 working-age population possessed a tertiary level of educational attainment; this was 7.9 percentage points higher than the corresponding share from a decade earlier and 0.7 points higher than a year before.

The main characteristic of **Map 4.3** is that capital city regions would appear to act as a magnet for highly-qualified people. This was particularly true in several northern and western EU Member States, where capital city regions exerted considerable 'pull effects' through the varied employment opportunities that they could

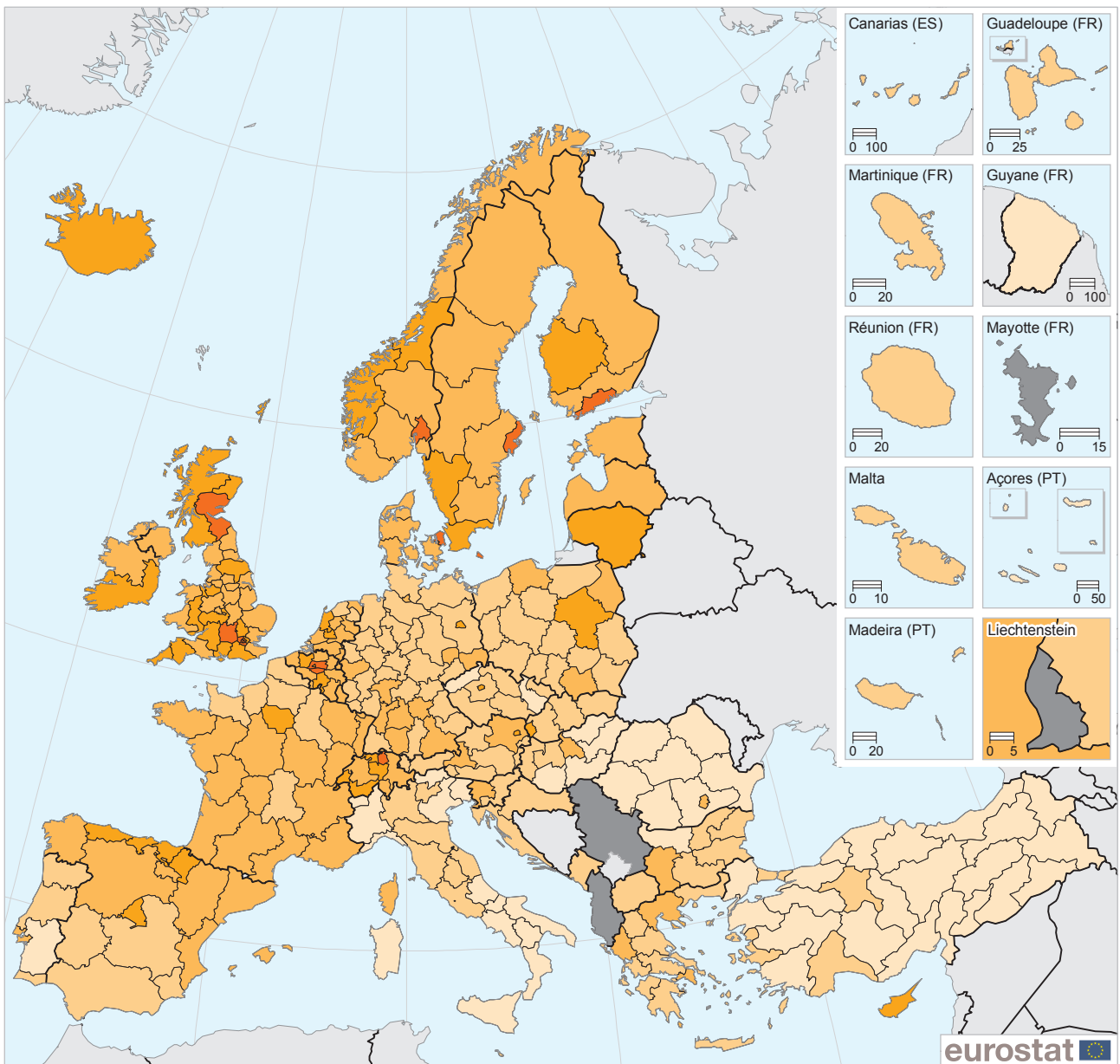
offer higher education graduates; for example, capital cities are often the headquarters for large organisations (in both the public and private sectors), or for creative and dynamic industries. The attraction of some cities has the potential to create labour market imbalances as the growing share of graduates moving towards capital city regions for work, may result in the gentrification of formerly working-class areas, with people on relatively low salaries being driven out of capital city regions (due to the high cost of living) and instead having to commute (often relatively long distances) to work. Furthermore, the pull of capital city regions also means that some graduates are prepared to accept work for which they are over-qualified. In recent years this pattern has extended beyond national labour markets, with a growing share of the EU-28's highly-qualified working-age population crossing borders in search of work (in particular, moving from east to west within the EU).

In 2017, there were 11 NUTS level 2 regions where a majority of the population aged 25-64 had a tertiary level of educational attainment. Six of these regions were in the United Kingdom: five of these were capital city regions (of which the United Kingdom has two at NUTS level 2) or regions within close proximity of the capital, including the region with the highest share, Inner London - West (71.7 %), while the sixth was Eastern Scotland. Outside of the United Kingdom, the remaining five regions where more than half of the working-age population had a tertiary level of educational attainment included the Nordic capital city regions of Helsinki-Uusimaa, Stockholm and Hovedstaden and the two (suburban) regions that surround the Belgian capital, Prov. Brabant Wallon and Prov. Vlaams-Brabant.

By contrast, there were several regions in the EU where less than one fifth of the working-age population had a tertiary level of educational attainment (as shown by the lightest shade in the map). These were often rural regions characterised as local economies concentrated on agriculture, with a generally low level of demand for highly-skilled labour.



**Map 4.3: Working-age people with tertiary educational attainment, by NUTS 2 regions, 2017**  
 (% share of population aged 25-64)

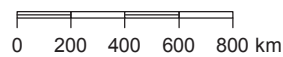


(% share of population aged 25-64)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
 Cartography: Eurostat — GISCO, 06/2018

EU-28 = 31.4

- < 20
- 20 - < 30
- 30 - < 40
- 40 - < 50
- ≥ 50
- Data not available



Note: Luxembourg (LU00), low reliability.

Source: Eurostat (online data code: edat\_lfse\_04)

## Employment rates of recent graduates

The indicator for the employment rate of recent graduates (as shown in **Map 4.4**) is focused on young people aged 20-34 who were in employment and who had successfully completed their education within the previous 1-3 years, obtaining at least an upper-secondary level of educational attainment: hereafter these are referred to as recent graduates. Increasing the employability of young people is considered to be an integral part of the ET 2020 strategy, with the goal that education and training can be used to meet current and future labour market challenges. In 2012, a benchmark on the employability of graduates from education and training was established, whereby EU policymakers sought to ensure that 82 % of recent young graduates should be in employment by 2020.

### *Recent graduates in Greece and southern Italy appeared to face considerable difficulties in finding work*

The EU-28 employment rate for recent graduates was 80.2 % in 2017: this was 4.8 points higher than the latest relative low recorded in the aftermath of the global financial and economic crisis, 75.4 % in 2013. The employment rate for recent graduates was equal to or above the 82 % benchmark in more than half — 145 out of 268 — of the NUTS level 2 regions for which data are available. The highest rates were concentrated across much of Sweden, the Netherlands, Germany, the Czech Republic and Austria.

A more detailed analysis shows that employment rates for recent graduates stood at 100.0 % in North Eastern Scotland and Cumbria (both in the United Kingdom). The next highest employment rates for recent graduates were located in the Czech region of Střední Čechy (surrounding the capital city region of Praha), Trier (western Germany), Derbyshire and Nottinghamshire; North Yorkshire; Eastern Scotland (all in the United Kingdom): in all five of these, at least 19 out of 20 recent graduates were in employment. In total, 57 regions recorded rates of at least 90.0 % in 2017 (as shown by the darkest shade in **Map 4.4**).

In 2017, there were 14 NUTS level 2 regions where fewer than half of all recent graduates had found employment. These regions were predominantly situated in Greece and (southern) Italy — where the lowest rates in the EU were recorded — for example, Campania (36.4 %), Sicilia (32.2 %) and Calabria (28.3 %); very low rates were also recorded in two French overseas regions, Martinique and La Réunion.

## Adult learning

The participation rate in adult learning is defined as the share of adult population (aged 25-64) that received formal or non-formal education or training (during the four weeks preceding the labour force survey); note that the [adult education survey \(AES\)](#) provides a more comprehensive measure of adult learning (given it is based on a complete 12-month reference period), however, sample sizes are not sufficient for an analysis for NUTS level 2 regions.

In 2017, more than one tenth (10.9 %) of the EU-28 adult population participated in education and training (during the four weeks prior to the survey); this marked a modest increase in relation to a decade before, as the rate had been 9.4 % in 2007. An analysis of participation rates for the 275 NUTS level 2 regions for which data are available reveals that a clear majority of regions — 159, or 58 % of the total — had participation rates that were below the EU-28 average. The distribution of participation rates across individual EU Member States was generally homogeneous, probably reflecting the organisation of education and training initiatives at a national level. The highest participation rates for adult learning were recorded in the [Nordic Member States](#), France and the Netherlands, while the lowest rates were registered in eastern Europe and Greece.

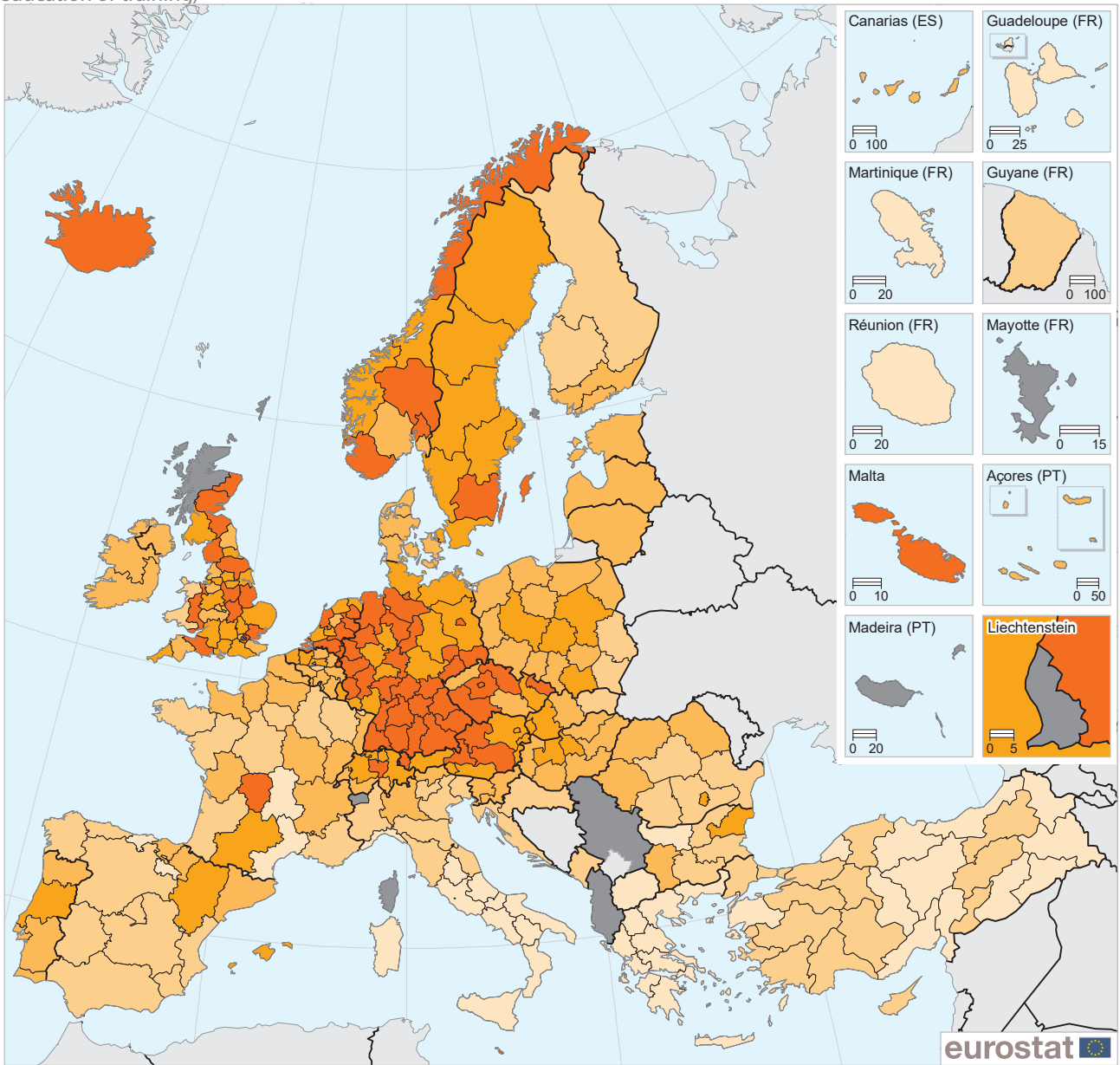
Looking in more detail at the results presented in **Map 4.5**, the southern Swedish region of Sydsverige and the Swedish capital city region of Stockholm (both 31.6 %) recorded the highest participation rates for adult learning in 2017. They were joined by two more Swedish regions — Västsverige and Östra Mellansverige — as well as the other two Nordic capital city regions of Hovedstaden and Helsinki-Uusimaa as the only NUTS level 2 regions in the EU where in excess of 3 out of 10 adults participated in education and training.

At the other end of the range, there were 46 regions in the EU where the participation rate for adult learning was less than 5.0 % (as shown by the lightest shade in the map). They included all six regions from Bulgaria, all eight regions in Romania, both regions in Croatia, 13 of the 16 regions in Poland, 10 of the 13 regions in Greece, three of the four regions in Slovakia, and three of the seven regions in Hungary. These 45 regions from eastern and southern Europe were joined by Prov. Hainaut (Belgium), which was the only region in western Europe to record a rate below 5.0 %.



**Map 4.4: Employment rate of recent graduates, by NUTS 2 regions, 2017**

(% share of population aged 20-34 with at least an upper secondary level of educational attainment and not in any further education or training)

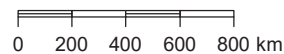


(% share of population aged 20-34 with at least an upper secondary level of educational attainment and not in any further education or training)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 06/2018

EU-28 = 80.2

- < 60
- 60 - < 75
- 75 - < 85
- 85 - < 90
- ≥ 90
- Data not available

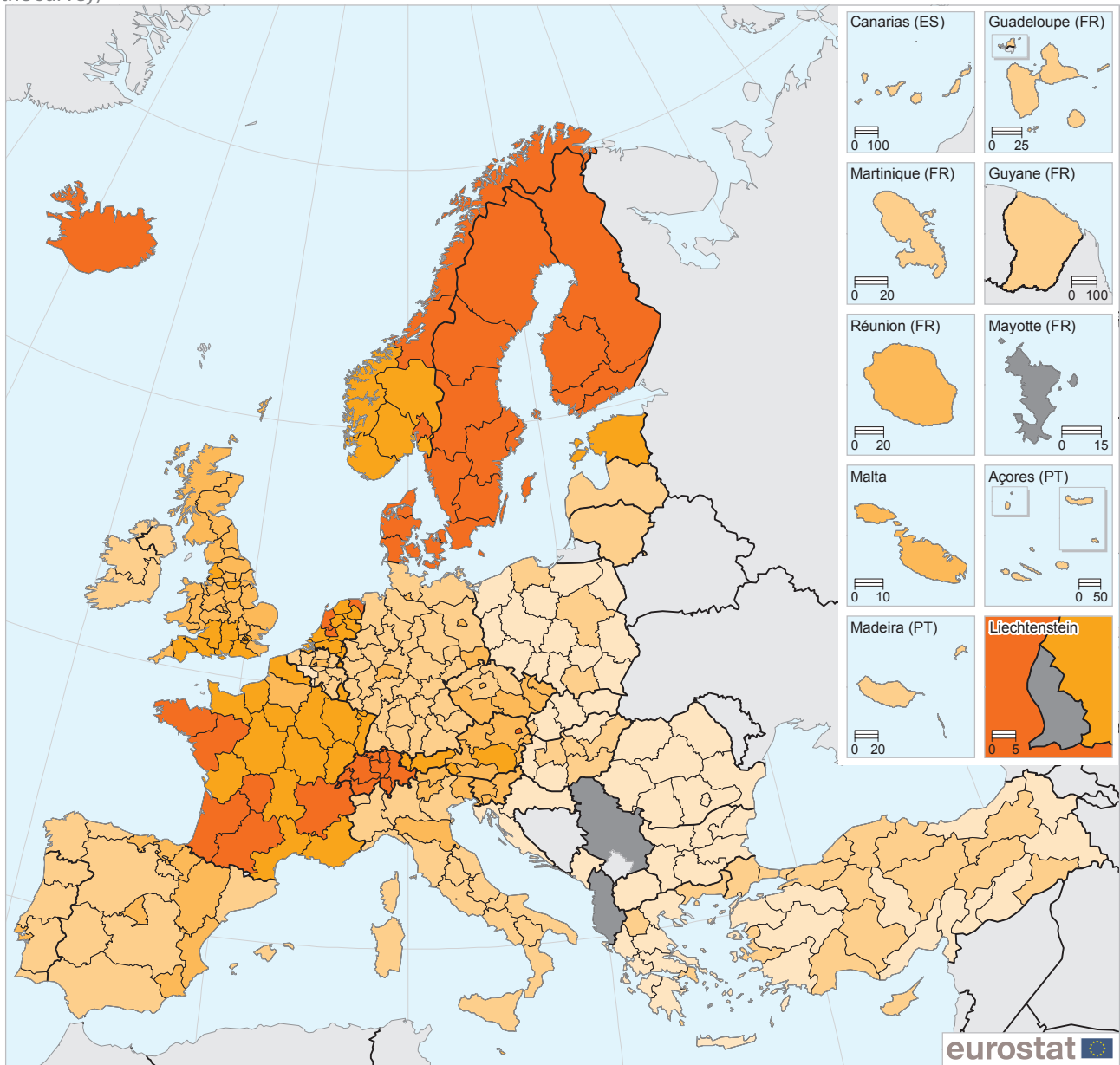


Note: recent graduates are defined as people having completed their highest level of educational attainment between one and three years prior to the reference year. Includes data of low reliability for some regions. Severozapaden (BG31), Voreio Aigaiο (EL41), Lincolnshire (UKF3) and Cornwall and Isles of Scilly (UKK3): 2016.

Source: Eurostat (online data code: [edat\\_lfse\\_33](#))

**Map 4.5: Adult participation in learning, by NUTS 2 regions, 2017**

(% share of population aged 25-64 that received formal or non-formal education or training in the four weeks preceding the survey)

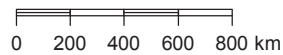


(% share of population aged 25-64 that received formal or non-formal education or training in the four weeks preceding the survey)

EU-28 = 10.9

- < 5
- 5 - < 10
- 10 - < 15
- 15 - < 20
- ≥ 20
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 06/2018



Note: includes data of low reliability for some regions.

Source: Eurostat (online data code: trng\_lfse\_04)

# 5

## Labour market

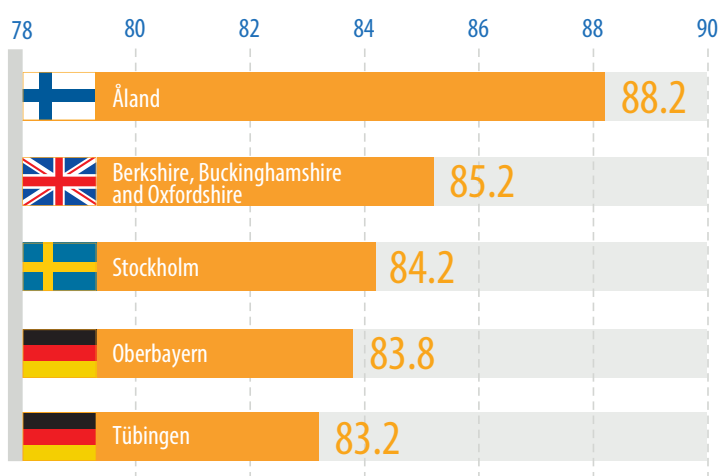


## Key findings

- The highest regional employment rates were concentrated in Germany, the United Kingdom and Sweden.
- Part-time employment rates in all 12 regions of the Netherlands were considerably higher than in any other region of the EU, peaking at 56.4 % in Groningen.
- The Czech capital city region of Praha had the lowest unemployment rate across all regions in the EU, at 1.7 %.

### TOP 5 REGIONS IN THE EU

EMPLOYMENT RATE, 2017  
(% share of population aged 20-64)



A well-functioning labour market with a highly-qualified workforce that can rapidly acquire new skills is increasingly seen as a prerequisite for delivering a dynamic and competitive economy. Statistics for analysing labour market developments are used by European Union (EU) policymakers, for example, to monitor the [Europe 2020 strategy](#) or to respond to the requirements of the EU's economic and monetary policy. As well as being of concern to governments and policymakers, labour markets are also paramount to personal development, as [employment opportunities](#) provide a means, among others, of gaining independence, financial security and a sense of belonging. While the EU promotes the labour market integration of all members of society, some groups continue to be subject to discrimination (under-represented or excluded).

Under its priority of ensuring a [deeper and fairer economic and monetary union](#), the EU seeks to deliver more job opportunities and better living standards by combining fairness and democratic accountability. The [European pillar of social rights](#) is designed to guarantee effective citizen rights, by ensuring: equal opportunities and access to labour markets; fair working conditions; social protection and inclusion. This initiative is based on [20 underlying principles](#). At the same time, the EU has been working on a range of other initiatives, such as measures promoting work-life balance (minimum standards of parental/care leave, designed

to encourage more men to take-up out-of-work responsibilities) or new ways of providing adequate social security cover for the self-employed and people who work in the gig economy.

This chapter analyses EU labour markets, providing an overview of regional employment and [unemployment](#). Eurostat compiles and publishes labour market statistics for EU regions, the individual EU Member States, as well as the EU-28 aggregate; in addition, data are also available for several EFTA and [candidate countries](#); subnational statistics are presented for NUTS level 2 regions and by [degree of urbanisation](#).

In 2017, the EU-28 population was composed of 380.2 million persons aged 15-74 years. The economically active population — otherwise referred to as the [labour force](#) — accounted for 245.8 million people of this age, while there were 134.4 million who were economically [inactive](#) (in other words, they were neither employed nor unemployed); this latter cohort is largely composed of students, pensioners and people caring for other family members, but also includes volunteers and people unable to work because of disability. The EU-28 labour force aged 15-74 years is made-up of people in work ([employed persons](#); 227.0 million) and people who are not working, but actively seeking and available for work ([unemployed persons](#); 18.8 million). A more detailed analysis detailing the composition of EU-28 employment is presented in [Infographic 5.1](#).



## Employment rates

### **Europe 2020 headline target: to have at least 75 % of the working-age population employed by 2020**

The **employment rate** is the ratio of employed persons (of a given age) relative to the total population (of the same age). For this section, information is presented on the working-age population, defined here as people aged 20-64 years. This definition aims to ensure compatibility at the lower end of the age range, given that an increasing proportion of young people remain within educational systems, which may exclude them from participating in labour markets. At the upper end of the range, rates are usually set to a maximum of 64 years, taking into account (statutory) retirement or pension ages in the EU. Note however that policymakers are increasingly looking to extend retirement/pensionable ages and in the future it is likely that a greater share of older persons will remain in the labour force.

The Europe 2020 strategy set a benchmark target, as part of its agenda for growth and jobs, whereby 75 % of all 20-64 year-olds should be employed by 2020. In order to deliver this overall goal, national targets have been set for each of the EU Member States: these targets range from 80 % or higher in Denmark, the Netherlands and Sweden down to 70 % or lower in Ireland, Greece, Croatia, Italy, Malta and Romania; there is no target in the national reform programme of the United Kingdom. The rationale behind such targets is to increase the number of employed persons in the face of population ageing and its associated challenges in relation to the future sustainability of public finances and social models.

### **The highest regional employment rates in the EU were recorded in Åland (Finland), Berkshire, Buckinghamshire and Oxfordshire (the United Kingdom) and Stockholm (Sweden)**

The EU-28 employment rate for people aged 20-64 stood at 72.2 % in 2017, marking its fourth consecutive increase since a relative low of 68.4 % in 2013. The EU-28 employment rate rose by 1.1 **percentage points** compared with a year before, which was slightly higher

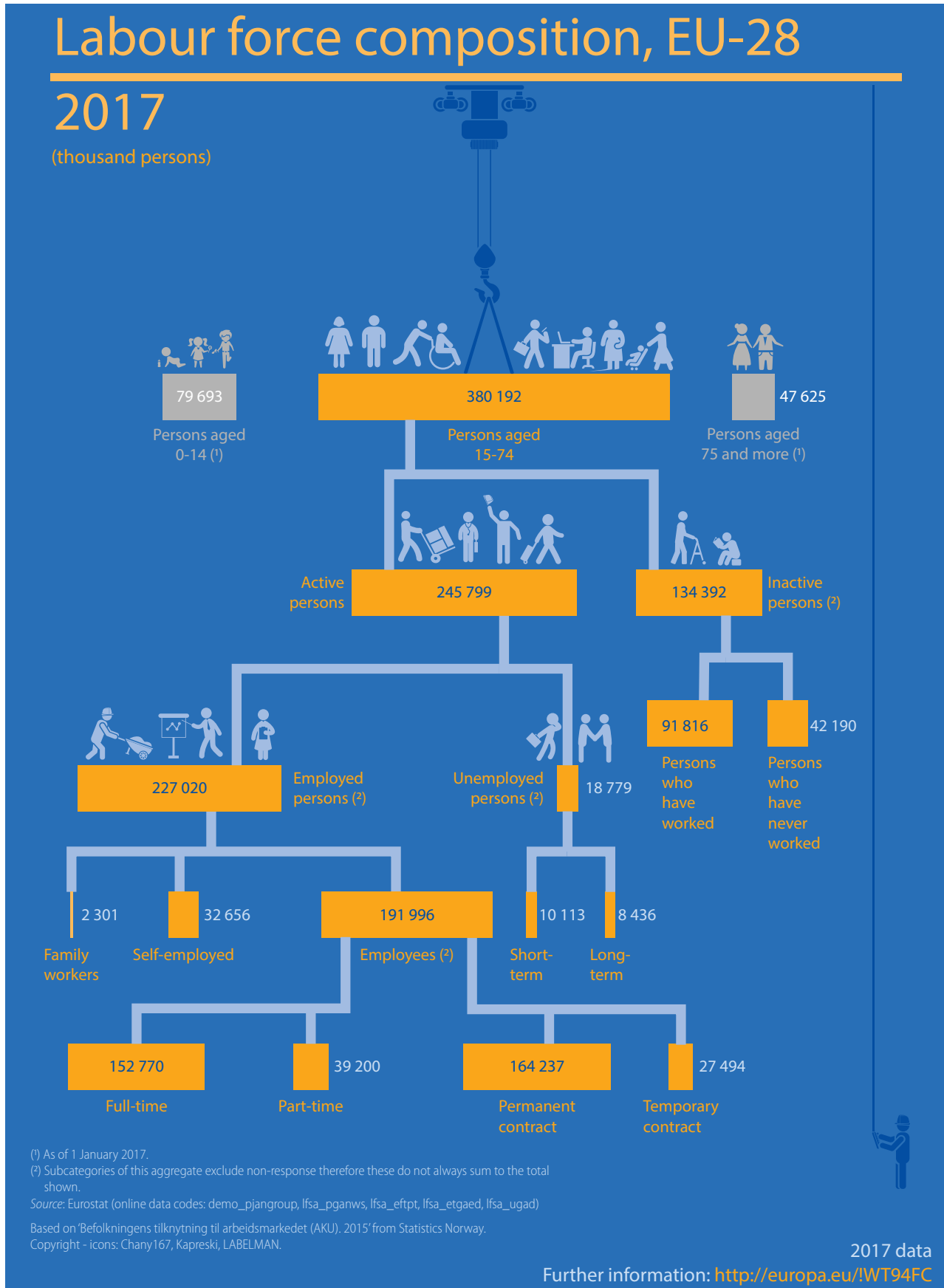
than the annual gains that were recorded during the previous three years (which were all within the range of 0.8-1.0 points). If the employment rate continues to grow at a similar speed during the next three years then the Europe 2020 target should be achieved.

**Map 5.1** presents employment rates for people aged 20-64 across NUTS level 2 regions; the highest employment rates — equal to or above the Europe 2020 target of 75.0 % — are shown by the two darkest shades, with slightly less than half (128 out of 276) of all regions across the EU having such a rate in 2017.

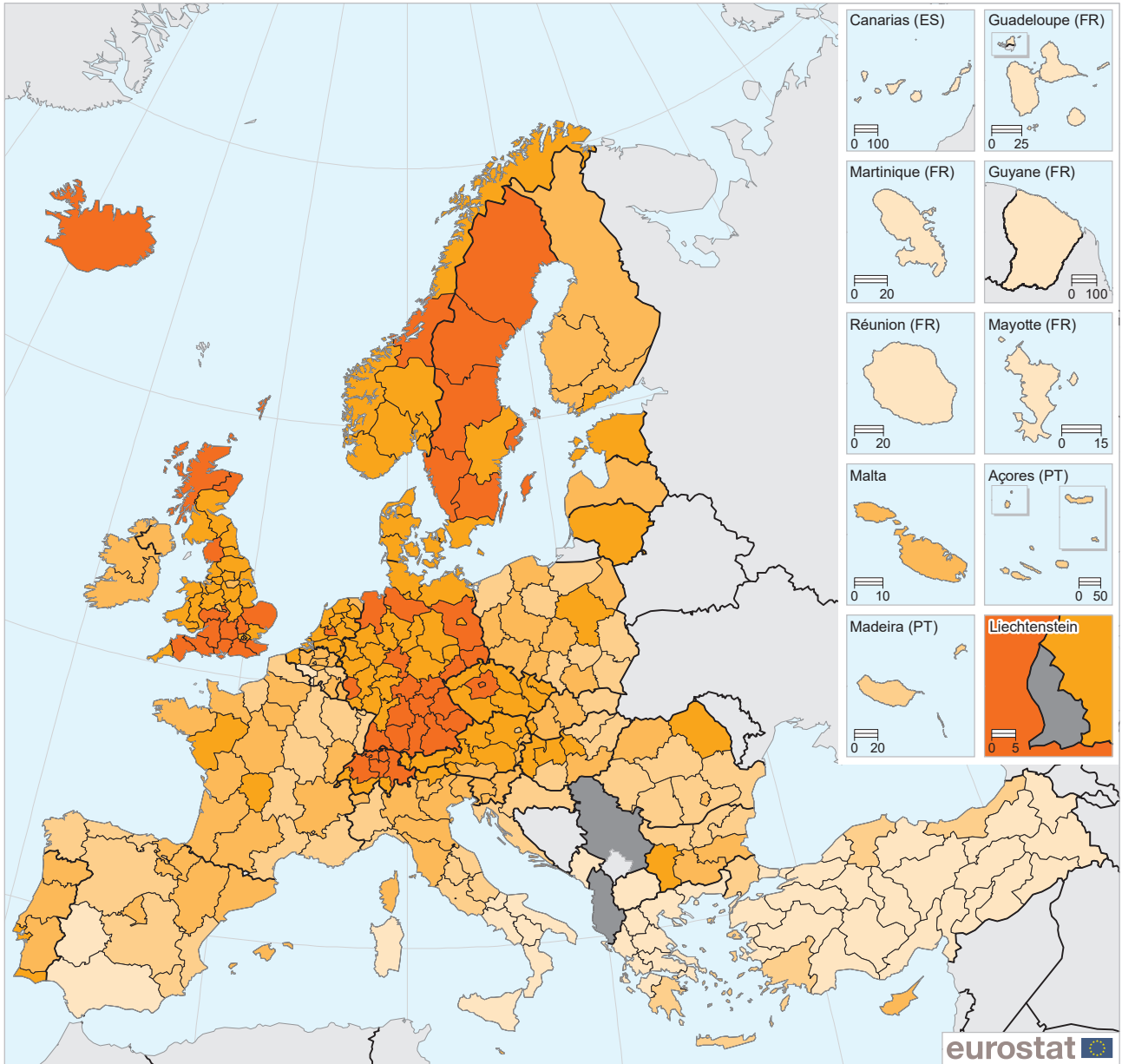
Those regions where at least four out of every five people of working-age were in employment — as shown by the darkest shade in the map — were some of the most dynamic labour markets, often characterised by low levels of unemployment and a relatively high share of women in work. These 41 regions with the highest employment rates were concentrated in Germany (17 different regions), the United Kingdom (14) and Sweden (6), while there were also two regions from the Czech Republic and a single region from each of the Netherlands and Finland. The latter was of particular interest insofar as Åland — an archipelago in the Baltic Sea — had the highest employment rate in the EU, at 88.2 %. The next highest employment rates in the EU were recorded in Berkshire, Buckinghamshire and Oxfordshire (85.2 %; a region situated to the west of London in the United Kingdom) and Stockholm (84.2 %; the Swedish capital city region). Among these 41 regions, it was interesting to note intra-regional differences in some of the larger Member States, for example, somewhat higher employment rates were recorded in southern (rather than northern) regions of both Germany and the United Kingdom.

At the other end of the range, the lowest employment rates for people aged 20-64 years were most frequently located in southern parts of the EU. In 2017, there were five regions where less than half of the working-age population was in work: four of these were in southern Italy — Sicilia, Calabria, Campania and Puglia — while the other was the French overseas region of Mayotte. The lowest regional employment rate was 44.0 %, recorded by the Italian island region of Sicilia. In contrast to intra-regional patterns for Germany and the United Kingdom, employment rates in Italy tended to be lower in southern (rather than northern) regions.

**Infographic 5.1: Labour force composition, EU-28, 2017**  
(thousand persons)

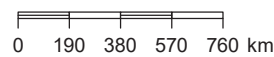
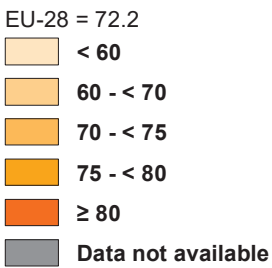


**Map 5.1: Employment rate, by NUTS 2 regions, 2017**  
 (% share of population aged 20-64)



(% share of population aged 20-64)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
 Cartography: Eurostat — GISCO, 04/2018

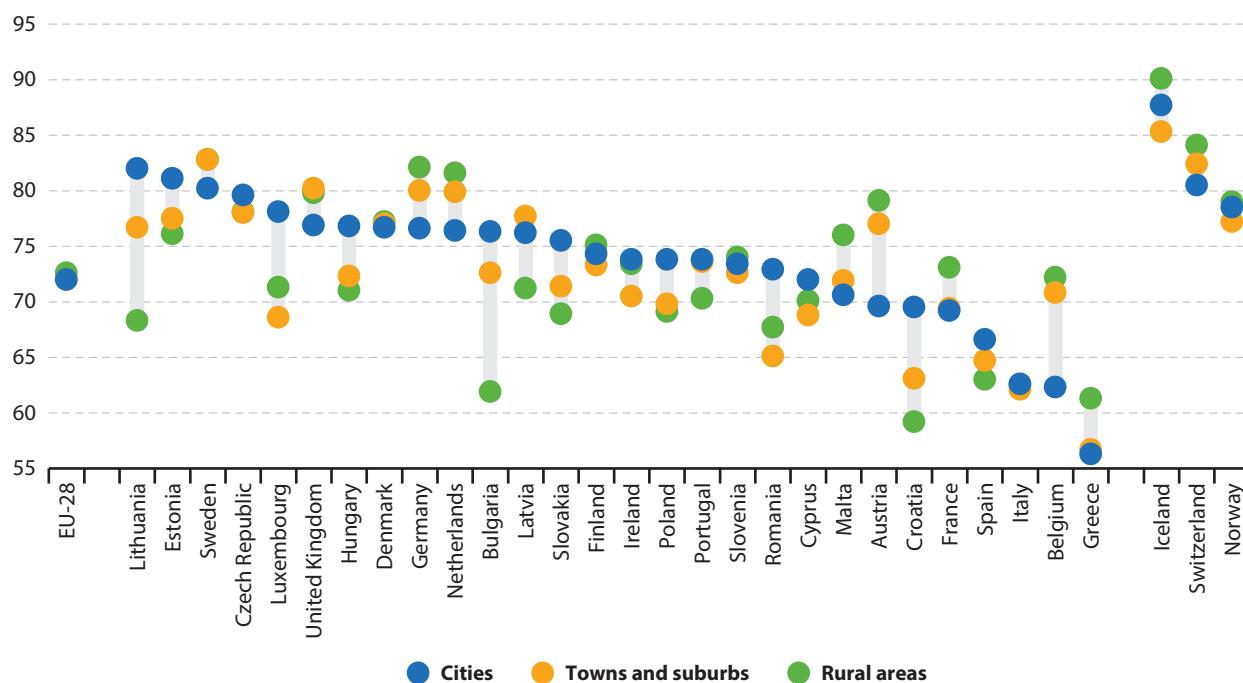


Source: Eurostat (online data codes: lfst\_r\_lfe2emprt and lfsi\_emp\_a)

**Figure 5.1** presents information for employment rates of working-age persons by degree of urbanisation. At an aggregated level, there was little difference between EU-28 employment rates for rural areas (72.6 %), towns and suburbs or cities (both 72.0 %). However, in eastern parts of the EU and the **Baltic Member States** it was commonplace to find that people living in cities were much more likely to be in work. This was particularly the case in Bulgaria, where the employment rate for people living in cities was 14.4 percentage points higher than for people living in rural areas, while double-digit differences in favour of people living in cities were also recorded in Lithuania (13.7 points) and Croatia (10.3 points). The situation in western Member States was

often reversed, insofar as the highest employment rates were usually recorded for people living in rural areas, with the lowest rates for people living in cities, which were in some cases characterised by a higher risk of poverty and social exclusion. In Belgium, the employment rate for working-age persons living in rural areas was 72.2 %, which was 9.9 points higher than for people living in cities. A similar pattern was observed in several other western parts of the EU, including Austria — where the difference in employment rates between people living in rural areas and people living in cities was only slightly lower (9.5 points) — Germany (5.5 points), the Netherlands (5.2 points), France (3.9 points) and the United Kingdom (2.9 points).

**Figure 5.1: Employment rate, by degree of urbanisation, 2017**  
(% share of population aged 20-64)



Note: ranked on cities.  
Source: Eurostat (online data code: [lfst\\_r\\_ergau](#))

## Part-time employment

Modern economies are characterised by flexible forms of work, many of which have arisen following the introduction of information and communication technologies. 'Flexicurity' is a term used to describe a strategy for enhancing — at the same time — the wishes of employers for a more flexible workforce with the desire of employees to have greater security in their jobs.

A simple count of the number of persons in employment may be used to quantify labour input. However, policymakers are increasingly interested in more detailed types of analyses, for example, distinguishing people who work on a full-time basis from part-timers (note that this classification is generally based on a spontaneous response by the respondent). There are a number of reasons why an individual may choose or accept to work on a part-time basis, for example: to have greater flexibility to do other things; to have more variety at work, perhaps combining part-time posts; to supplement an income or pension; to avoid being unemployed; to seek financial independence; to avoid having to pay for childcare.

### ***More than half of all persons employed in seven Dutch regions worked on a part-time basis***

The data presented in **Map 5.2** concerns the share of employed persons who were working on a part-time basis: in 2017, this type of work concerned approximately one in five persons (20.3 %) across the whole of the EU-28. One of the most striking features of the map is the homogeneous pattern of part-time employment rates that are recorded for different regions within each of the EU Member States. Another feature of the map is the distinct split between eastern and western regions, with much lower part-time employment rates generally recorded in the former.

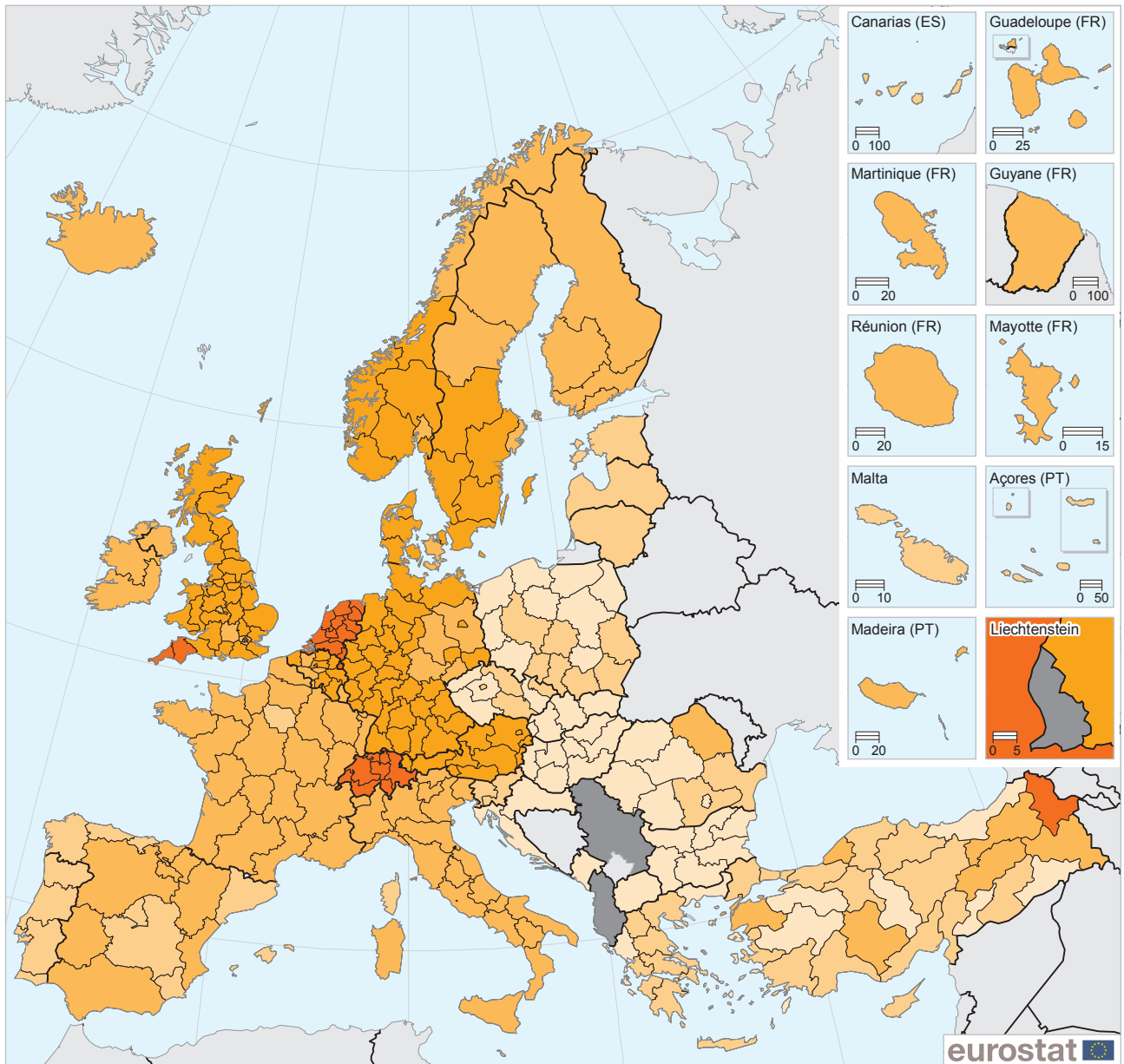
These patterns probably reflect the maturity of labour markets and the impact of national employment legislation alongside a high degree of conformity within each Member State as regards attitudes to part-time work.

In 2017, the highest shares of part-time employment were systematically recorded in the Netherlands. Indeed, the 12 Dutch regions occupied the top 12 places in a ranking of part-time employment rates across NUTS level 2 regions. In seven of these, more than half of all employed persons aged 15 and over worked on a part-time basis, with the highest rate (56.4 %) in the university region of Groningen. The lowest share of part-time employment among the 12 Dutch regions was in Zuid-Holland (48.8 %), however, this was fully 14.1 percentage points higher than the next highest regional part-time employment rate in the EU-28, as recorded in Devon (the United Kingdom; 34.7 %). More generally, outside of the Netherlands, the highest part-time employment rates were concentrated in the United Kingdom, Germany and Austria.

At the other end of the range, there were 42 regions in the EU where fewer than 7.5 % of the total number of persons employed worked on a part-time basis in 2017. These were primarily located in the eastern regions of the EU — Bulgaria, the Czech Republic, Croatia, Hungary, Poland, Romania and Slovakia — but also included five regions in Greece. The lowest share of part-time employment was 0.6 % in the Romanian capital city region, Bucuresti - Ilfov. This situation was observed in several EU Member States, as the capital city regions of Spain, France, Slovakia, Finland, Sweden and the United Kingdom each recorded low shares of part-time employment (in relation to national averages), possibly reflecting the high cost of living in capital cities, which may mean that some people cannot afford to only work on a part-time basis, or also a greater availability of full-time employment opportunities in capital city regions.



Map 5.2: Part-time employment, by NUTS 2 regions, 2017  
(% share of employed persons aged 15 and over)

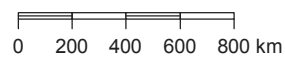


(% share of employed persons aged 15 and over)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 04/2018

EU-28 = 20.3

- < 7.5
- 7.5 - < 15.0
- 15.0 - < 25.0
- 25.0 - < 32.5
- ≥ 32.5
- Data not available



Note: a person in part-time employment is someone whose normal hours of work are less than those of comparable full-time workers. Ciudad Autónoma de Melilla (E564), Corse (FR83), Bucuresti - Ilfov (RO32), Vest (RO42) and Åland (FI20): low reliability.  
Source: Eurostat (online data code: [fst\\_r\\_lfe2eftpt](#))

## Unemployment

Unemployment can have an impact not just on the economic well-being of a country (unused potential labour input and higher social protection payments) but also on the well-being of individuals who are without work. The personal and social costs of unemployment are varied and include a higher risk of [poverty](#), debt or homelessness, while the stigma of being unemployed can cause a reduction in self-esteem, a breakdown in family/personal relations, or [social exclusion](#).

Eurostat's unemployment statistics follow guidelines provided by the [International Labour Organisation \(ILO\)](#): an unemployed person is someone aged 15 to 74 years who is without work, but who has actively sought employment in the last four weeks and is available to begin work within the next two weeks. The unemployment rate is the number of unemployed persons expressed as a percentage of the total labour force.

In 2017, there were 18.8 million unemployed persons in the EU-28, equivalent to 7.6 % of the total labour force. Although these latest figures remain higher than in 2008 at the onset of the global financial and economic crisis — 16.8 million unemployed persons and an unemployment rate of 7.0 % — they did represent a considerable reduction when compared with the situation in 2013, when the total number of unemployed persons in the EU-28 peaked at 26.3 million (a rate of 10.9 %).

### ***The lowest unemployment rate was recorded in the Czech capital city region of Praha***

**Map 5.3** shows that in 2017 the lowest regional unemployment rates in the EU-28 were concentrated in the Czech Republic, Germany, Hungary, Austria, Poland and the United Kingdom. By contrast, the highest unemployment rates were recorded in southern Europe, particularly in Greece, as well as southern regions of Italy and Spain. The distribution of unemployment rates over NUTS level 2 regions was somewhat skewed insofar as there were 179 regions that had rates below the EU-28 average, compared with 94 regions where the unemployment rate was higher than the EU-28 average.

In 2017, the lowest regional unemployment rate in the EU was recorded in the Czech capital city

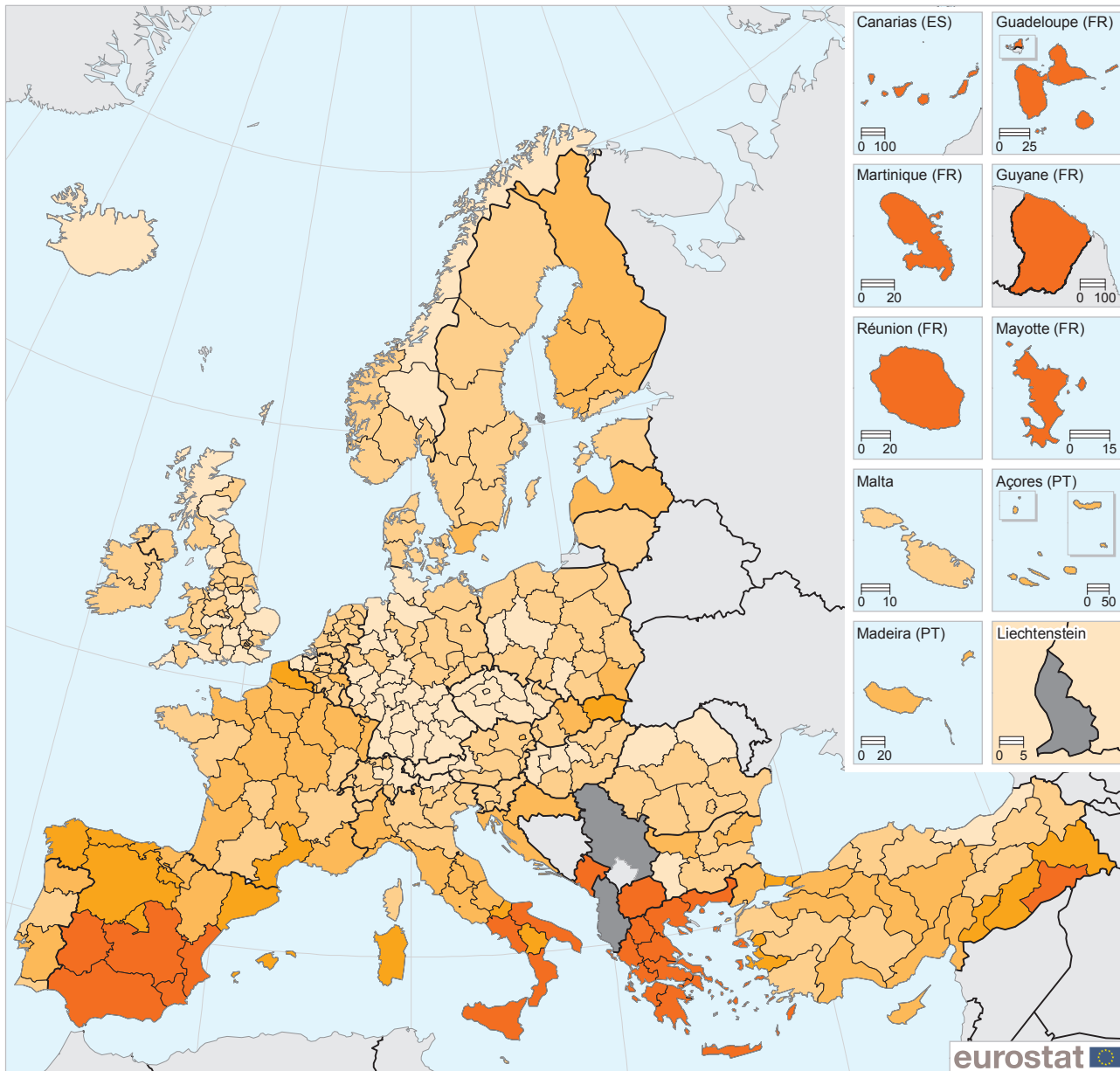
region of Praha, at 1.7 %; in other words, fewer than 1 in 50 people within the labour force were without work. Note that Åland (Finland) had the highest employment rate and hence it is also likely to have a very low unemployment rate (but this value cannot be published due to confidentiality). There were 13 regions across the EU that reported regional unemployment rates within the range of 2.0-2.5 %, a majority of which (eight different regions) were located in Germany — five of which were in Bayern — along with two further regions from the Czech Republic, two regions from Hungary, and a single region from the United Kingdom.

At the other end of the range, the highest regional unemployment rates — as shown by the darkest shade in **Map 5.3** — were grouped together in four clusters and included: all 13 regions in Greece; eight regions principally in southern Spain; the five French overseas regions; and four regions in southern Italy. The northern Greek region of Dytiki Makedonia had the highest unemployment rate in the EU among NUTS level 2 regions, at 29.1 %, while there were five further regions where more than one quarter of the labour force was without work: three of these regions were located in Spain — Extremadura, Andalucía and the overseas region of Ciudad Autónoma de Melilla; an additional Greek region — Dytiki Ellada; and a French overseas region — Mayotte.

In 2017, Italy and Belgium were characterised by some of the largest ranges in unemployment rates between NUTS level 2 regions. In Italy, there was a clear north-south divide, with unemployment rates ranging from 3.1 % in Provincia Autonoma di Bolzano/Bozen up to 21.6 % in Calabria; as such the highest rate was seven times as high as the lowest rate. In Belgium, the unemployment rate peaked at 14.9 % in the capital city region of Région de Bruxelles-Capitale / Brussels Hoofdstedelijk Gewest, which was 4.7 times as high as the unemployment rate in Prov. West-Vlaanderen (3.2 %). Aside from Belgium, there were two other cases where the highest regional unemployment rate was recorded in the capital city region, Austria and Germany. In the Austrian capital city region of Wien the unemployment rate of 10.4 % was 3.4 times as high as in Salzburg (which had the lowest rate among Austrian regions, at 3.1 %). In a similar vein, the unemployment rate in the German capital city region of Berlin (7.0 %) was 3.5 times as high as the rate recorded in the western region of Trier (2.0 %); note that a relatively high number of inhabitants in Trier commute each day to work across the border in Luxembourg.



**Map 5.3: Unemployment rate, by NUTS 2 regions, 2017**  
(% share of labour force aged 15-74)



(% share of labour force aged 15-74)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 04/2018

EU-28 = 7.6

- < 4
- 4 - < 8
- 8 - < 12
- 12 - < 16
- ≥ 16
- Data not available

0 200 400 600 800 km

Note: Corse (FR83), Cumbria (UKD1), Cornwall and Isles of Scilly (UKK3) and Highlands and Islands (UKM6), low reliability.

Source: Eurostat (online data code: [lfst\\_lfu3rt](#))



***The EU-28 youth unemployment rate was 16.8 %, more than double the total unemployment rate (7.6 %)***

One area of particular interest to policymakers is that of **youth unemployment**. The performance of youth labour markets is closely linked to education and training systems and reflects, at least to some degree, a mismatch between the skills obtained by young people and the skills that are required by employers (to fill job vacancies). Several EU Member States have in recent years enacted new employment law with the goal of liberalising labour markets, for example, by providing a wider range of possibilities for hiring staff through temporary, fixed-term or zero hours contracts. In some countries this has resulted in a clear division between people with a permanent, full-time post and those with possibly more 'precarious' employment; the latter are often young people or those with relatively low levels of educational attainment.

The youth unemployment rate is defined as the share of unemployed people aged 15-24 years, expressed in relation to the total labour force of the same age. It is important to note that a relatively high proportion of people aged 15-24 is outside the labour market as they study full-time (and are therefore not available to work and are consequently outside the calculation for unemployment). Note that the youth unemployment rate was relatively low in several regions and that this data cannot be published (due to small sample sizes) and has therefore been assimilated with data for those regions where no information is available.

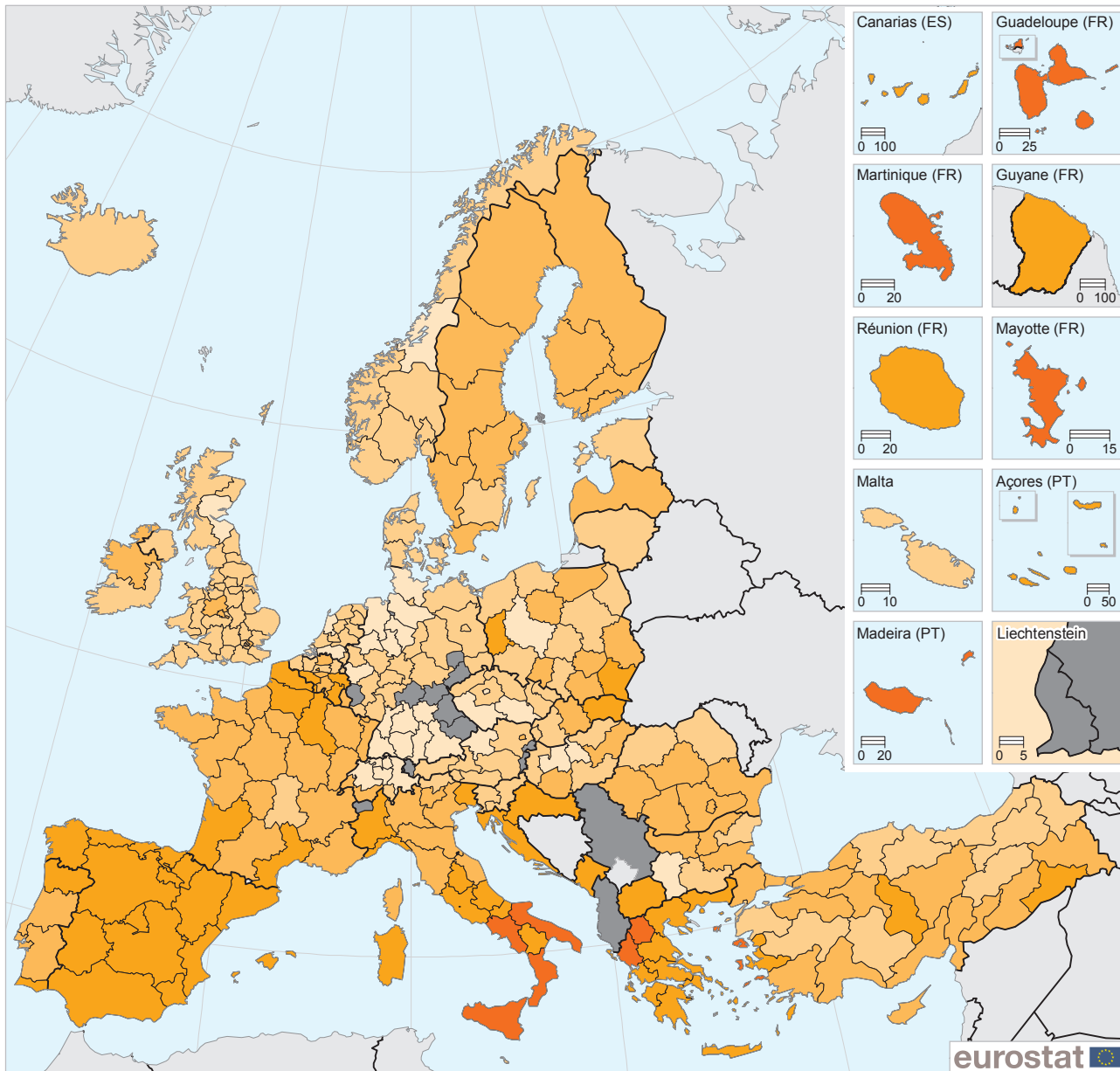
In 2017, the EU-28 youth unemployment rate was 16.8 %. The information that is presented for regional youth unemployment rates in **Map 5.4** duplicates many of the patterns already observed for the total unemployment rate, although these were often amplified insofar as youth unemployment rates were consistently higher than total unemployment rates for every NUTS level 2 region in the EU. Based on information for a common reference period, these differences were particularly notable in three Romanian regions — Nord-Vest, Bucuresti - Ilfov and Centru — where the youth unemployment rate was 4.1-5.7 times as high as the total unemployment rate; the ratio between youth and total unemployment rates was also 4.1 in Herefordshire, Worcestershire and Warwickshire (the United Kingdom).

***In the aftermath of the global financial and economic crisis, youth unemployment rates remained stubbornly high in several outermost and southern regions***

In 2017, the share of young persons aged 15-24 in the labour force who were unemployed remained above 50.0 % in 13 different regions of the EU-28. Four of these were located in southern Italy and three were in Greece, while this list also included two autonomous regions from Spain, a single autonomous region from Portugal, and three French overseas regions. Aside from the atypical case of Ciudad Autónoma de Melilla (Spain), the highest youth unemployment rates in the EU were recorded in the Greek regions of Voreio Aigaio (58.2 %) and Ipeiros (58.0 %). By contrast, the lowest youth unemployment rates were in Praha and the southern German region of Oberbayern (both of which had a rate of 3.8 %).



**Map 5.4: Youth unemployment rate, by NUTS 2 regions, 2017**  
(% share of labour force aged 15-24)



(% share of labour force aged 15-24)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 04/2018

EU-28 = 16.8

- < 7.5
- 7.5 - < 15
- 15 - < 25
- 25 - < 50
- ≥ 50
- Data not available

0 200 400 600 800 km

Note: includes data of low reliability for some regions. Prov. Luxembourg (BE34), Tübingen (DE14), Saarland (DEC0), Közép-Dunántúl (HU21), Kärnten (AT21), Salzburg (AT32), Vest (RO42) and North Eastern Scotland (UKM5): 2016. Mittelfranken (DE25), Mecklenburg-Vorpommern (DE80), Dresden (DED2), Opolskie (PL52), Algarve (PT15) and Cornwall and Isles of Scilly (UKK3): 2015. Kassel (DE73), Lubuskie (PL43), Região Autónoma dos Açores (PT20), Região Autónoma da Madeira (PT30), Cumbria (UKD1) and Highlands and Islands (UKM6): 2014.

Source: Eurostat (online data code: [lfst\\_r\\_lfu3rt](#))

### **Long-term unemployment in the EU-28 was more than double the overall unemployment rate**

The final section in this chapter provides an analysis of **long-term unemployment**, defined here as unemployed persons aged 15-74 years who had been without work for at least 12 months. As for youth unemployment, the long-term unemployment rate was relatively low in several regions and that this data cannot be published (due to small sample sizes) and has therefore been assimilated with data for those regions where no information is available.

Long-term unemployment may have a considerable impact on an individual's well-being, leading to self-doubt, anxiety or depression, while people in this predicament also have a far higher risk of falling into poverty or social exclusion. Furthermore, the longer somebody remains unemployed, the less attractive they are likely to be for potential employers; this could reflect employer discrimination that prevents the long-term unemployed from receiving fair consideration for a vacancy or a depreciation in the relative importance of their past work experience and skills.

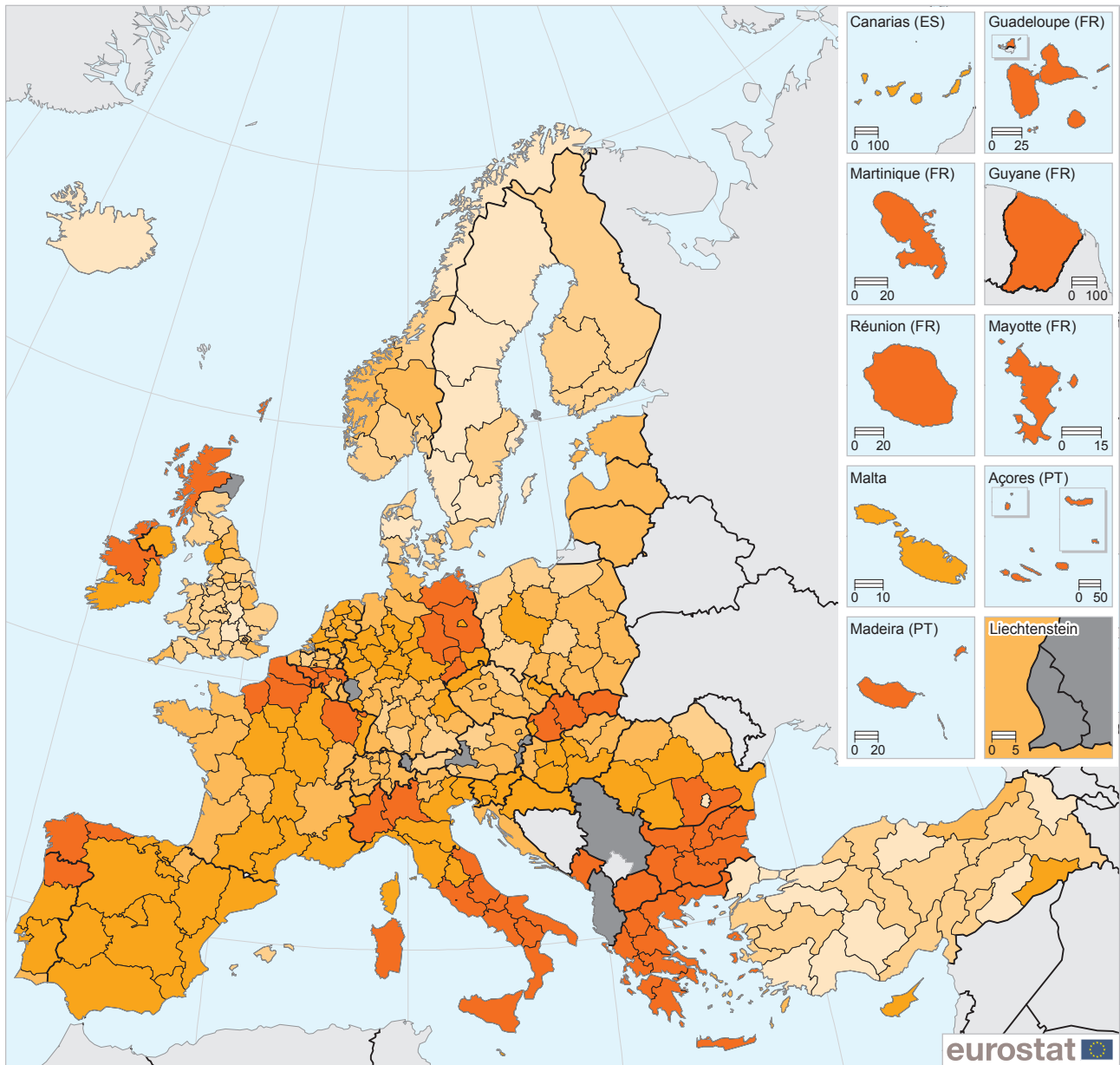
The continued high share of the long-term unemployed in total unemployment has prompted concerns about underlying levels of structural unemployment: in 2017, close to half (45.0 %) of all unemployed people in the EU-28 had been without work for at least a year. There were 61 NUTS level 2 regions in the EU where a majority of people without

work were long-term unemployed. This share was more than 70.0 % in: nine Greek regions — among which, the highest share of long-term unemployment in total unemployment was recorded in the capital city region of Attiki (77.3 %); three French overseas regions — including Mayotte, which had the highest share of long-term unemployment among any of the regions in the EU (83.8 %); and the Italian region of Molise (72.8 %). More generally, **Map 5.5** shows that some of the regions with the highest long-term unemployment shares were often depressed regions that may be characterised as former industrial heartlands — such as in northern and eastern France, southern Belgium, eastern Germany, northern Italy or northern Portugal — which may have suffered from Europe's manufacturing core moving eastwards.

At the other end of the range, there were 11 NUTS level 2 regions in 2017 where less than one fifth of all unemployed persons had been without work for at least a year. Six of these were located in Sweden — including Övre Norrland, which had the lowest long-term unemployment share of any region in the EU (12.8 %); three were located in the middle of England — including Berkshire, Buckinghamshire and Oxfordshire, which had the second lowest share (13.2 %); while the list was completed by single regions from each of Denmark and Romania — the latter being the capital city region of Bucuresti - Ilfov, which had the third lowest long-term unemployment share in the EU (13.8 %).



Map 5.5: Long-term unemployment share, by NUTS 2 regions, 2017  
(% share of unemployed persons aged 15-74)

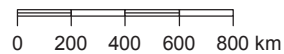


(% share of unemployed persons aged 15-74)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 04/2018

EU-28 = 45.0

- < 20
- 20 - < 30
- 30 - < 40
- 40 - < 50
- ≥ 50
- Data not available



Note: long-term unemployment refers to the number of people who are out of work and have been actively seeking employment for at least a year. Unterfranken (DE26), Tirol (AT33), Lubuskie (PL43), East Yorkshire and Northern Lincolnshire (UKE1), Herefordshire, Worcestershire and Warwickshire (UKG1) and Dorset and Somerset (UKK2): 2016. Opolskie (PL52), Cumbria (UKD1) and Cheshire (UKD6): 2015. Lincolnshire (UKF3), Cornwall and Isles of Scilly (UKK3) and Highlands and Islands (UKM6): 2014.

Source: Eurostat (online data code: [lfst\\_r\\_lfu2ltu](#))

# 6

## Economy



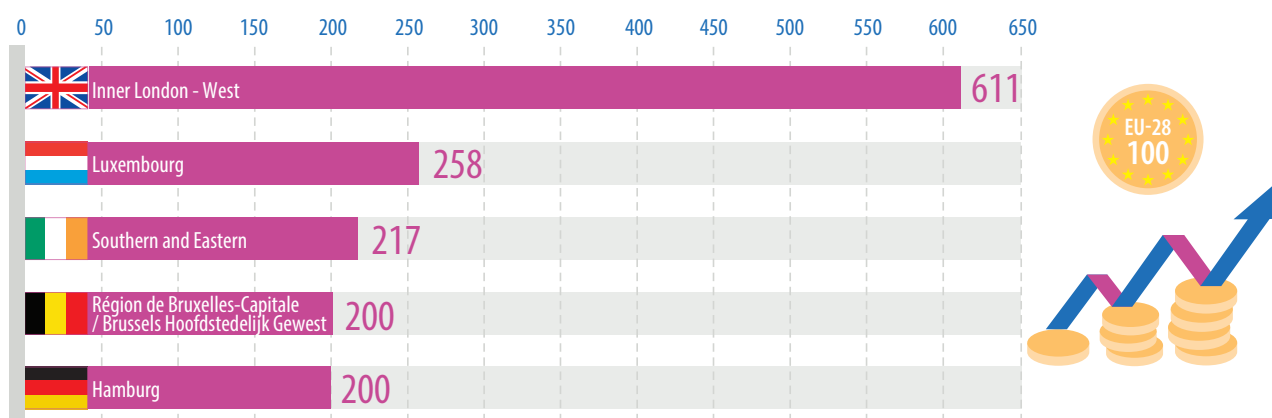
## Key findings

- Average GDP per capita in Inner London - West was 21 times as high as in the Bulgarian region of Severozapaden.
- The Irish capital city region of Southern and Eastern saw its GDP per capita rebound strongly after the global financial and economic crisis, recording the highest regional increase in wealth, relative to the EU-28 average, during the period 2007-2016.
- Some of the highest ratios of primary income per inhabitant in the EU were concentrated in the south of Germany, with a peak of 34.6 thousand PPCS per inhabitant in Oberbayern.

### TOP 5 REGIONS IN THE EU

#### GROSS DOMESTIC PRODUCT PER INHABITANT, 2016

(purchasing power standards in relation to the EU-28 average, EU-28=100)



The European Union (EU's) regional policy aims to support the broader Europe 2020 agenda. It is designed to foster solidarity, such that each region may achieve its full potential by alleviating economic, social and territorial disparities. During the period 2014-2020, almost one third of the EU's total budget is devoted to cohesion policy: national accounts and regional accounts are important in this context, insofar as they were used to determine the extent to which EU Member States should contribute to the EU's budget and they also serve as the basis for the allocation of cohesion policy expenditure. In May 2018, the European Commission presented a proposal for its multiannual financial framework covering the period 2021-2027. These proposals foresaw a modest reduction in budget allocations for cohesion policy, with commitment appropriations for economic, social and territorial cohesion during the whole programming period amounting to EUR 373 billion, or 29.2 % of the total budget.

This chapter uses regional economic accounts to analyse economic developments within the EU. The first section is based on regional GDP, the principal aggregate for measuring the economic output of an economy. It is followed by a regional analysis of primary income of households, which facilitates the removal of commuting effects. The final section, on economic growth and

productivity, presents information for the real growth rate of gross value added, investment (as measured by gross fixed capital formation) and labour productivity (as measured by gross value added per hour worked).

Gross domestic product (GDP) is the central measure of national accounts, summarising the economic position of a country or a region; this well-known aggregate has traditionally been divided by the total number of inhabitants to create a proxy measure for analysing overall living standards, namely, GDP per capita. While GDP continues to be used for monitoring economic developments, playing an important role in economic decision-making, it has been complemented by other indicators as a source of information for informing policy debates on social and environmental aspects of well-being. This is because GDP does not take account of externalities such as income distribution, social inclusion or environmental sustainability, which are increasingly seen as important drivers for the overall quality of life and sustainable development. A number of international initiatives have focused on this issue and in August 2009, the European Commission adopted a communication *GDP and beyond: measuring progress in a changing world* (COM(2009) 433 final), which outlined a range of actions to improve and complement GDP measures.



GDP continues to be used to analyse economic performance and cycles (such as recessions, recoveries and booms). GDP at market prices in the EU-28 was valued at EUR 15.3 trillion in 2017, equivalent to an average of EUR 29.9 thousand per capita. In order to compensate for price level differences across countries, GDP can be converted using conversion factors known as [purchasing power parities \(PPPs\)](#). The use of PPPs (rather than market [exchange rates](#)) results in the data being converted into an artificial common currency called a [purchasing power standard \(PPS\)](#). In broad terms, the use of PPS series rather than a euro-based series tends to have a levelling effect, as those countries with very high GDP per capita in euro terms also tend to have relatively high price levels (for example, the cost of living in Luxembourg is generally higher than the cost of living in Bulgaria).

## Regional gross domestic product (GDP) per inhabitant

Inequalities that exist between different regions of the EU can be attributed to a wide range of factors, including: changes brought about by globalisation (such as the relocation and outsourcing of manufacturing and service activities), the legacy of former economic systems, socioeconomic developments, geographic remoteness, and the availability of resources, including human resources. These manifest themselves, among others, in the form of social deprivation, poor-quality housing, healthcare or education, higher levels of unemployment, or inadequate infrastructure.

To redress such disparities, every part of the EU is covered by regional policy: the bulk of funding is concentrated on less developed regions, with the goal of helping them catch-up. The allocation of structural and investment funds is directed at less developed regions (GDP per capita <75 % of the EU average) and transition regions (GDP per capita of 75-90 % of the EU average). The allocation of cohesion funds was adapted during 2016 to focus support on those countries where [gross national income \(GNI\)](#) per inhabitant — averaged over the period 2012 to 2014 — was less than 90 % of the EU average.

### ***GDP per capita in Inner London - West was more 6.1 times as high as the EU-28 average***

**Map 6.1** presents information for regional GDP per capita across NUTS level 2 regions: values in PPS terms are expressed as a percentage of the EU-28 average which is set equal to 100 %. Regions which may be considered as relatively 'rich' — with GDP per capita above the EU-28 average — are shown in blue. Economic activity across the EU in 2016 was somewhat skewed insofar as 101 out of the 276 regions for which data are available recorded a level of GDP per capita above the EU-28 average; as such, wealth creation was concentrated in regional pockets, while a higher share of regions experienced below average levels of GDP per capita. The relatively rich regions were largely found in a band that ran from northern Italy, up through Austria and Germany before splitting in one direction towards several regions in the Benelux countries, southern England and southern Ireland, and in the other direction towards the [Nordic Member States](#).

One of the most striking details of the map is the presence of pockets of relatively high wealth creation that are apparent for almost every capital city region. Nowhere was this more apparent than in one of the two capital city regions of the United Kingdom, Inner London - West, where GDP per capita was more than six times as high as the EU-28 average in 2016 (611 %). The next highest ratios were recorded in Luxembourg (a single region at this level of detail; 258 %), Southern and Eastern (the Irish capital city region; 217 %) and Région de Bruxelles-Capitale / Brussels Hoofdstedelijk Gewest (the Belgian capital city region; 200%). These were the only four regions across the EU where GDP per capita was at least twice as high as the EU-28 average, although Hamburg (Germany) had a ratio that was only slightly lower and was atypical insofar as its GDP per capita was above that recorded for the German capital region of Berlin.

There were 14 other regions in the EU where the average level of GDP per capita was at least 50 % higher than the EU-28 average (as shown by the darkest shade of blue in the map). Among these were several other capital city regions, including: Bratislavský kraj (Slovakia), Praha (the Czech Republic), Île de France (France), Stockholm (Sweden), Inner London - East (the second

of the two capital city regions in the United Kingdom), Noord-Holland (the Netherlands), Hovedstaden (Denmark) and Wien (Austria). They were joined by Oberbayern, Stuttgart, Darmstadt and Bremen (four [metropolitan regions](#) in Germany), Salzburg (Austria) and Berkshire, Buckinghamshire and Oxfordshire (the United Kingdom).

While the highest levels of GDP per capita were recorded in the capital city regions of western Member States, the contrast between the economic performance of capital city regions and their surrounding regions was in some ways even more stark in eastern Europe (as most surrounding regions had levels of GDP per capita that were less than 75 % of the EU-28 average. This pattern was most apparent in Bratislavský kraj (the capital city region of Slovakia; 184 %) and Praha (the Czech Republic; 182 %), as they posted the sixth and seventh highest levels of GDP per capita among all NUTS level 2 regions in 2016. It was also observed for Bucuresti - Ilfov (Romania), Mazowieckie (Poland) and Közép-Magyarország (Hungary) — as each of these three capital city regions also recorded levels of GDP per capita that were above the EU-28 average.

***GDP per capita was lower than the EU-28 average in a majority of the regions in Spain, France and the United Kingdom***

The 'poorest' regions in the EU are shown in the darkest shade of purple in **Map 6.1**. They were primarily located in eastern parts of the EU, running from Latvia down into Greece and southern Italy, before extending across

the Mediterranean to southern regions of Spain and most of Portugal. GDP per capita was also less than 75 % of the EU-28 average in five regions of the United Kingdom — Lincolnshire, Tees Valley and Durham, South Yorkshire, Cornwall and Isles of Scilly, West Wales and The Valleys — as well as Prov. Luxembourg in southern Belgium.

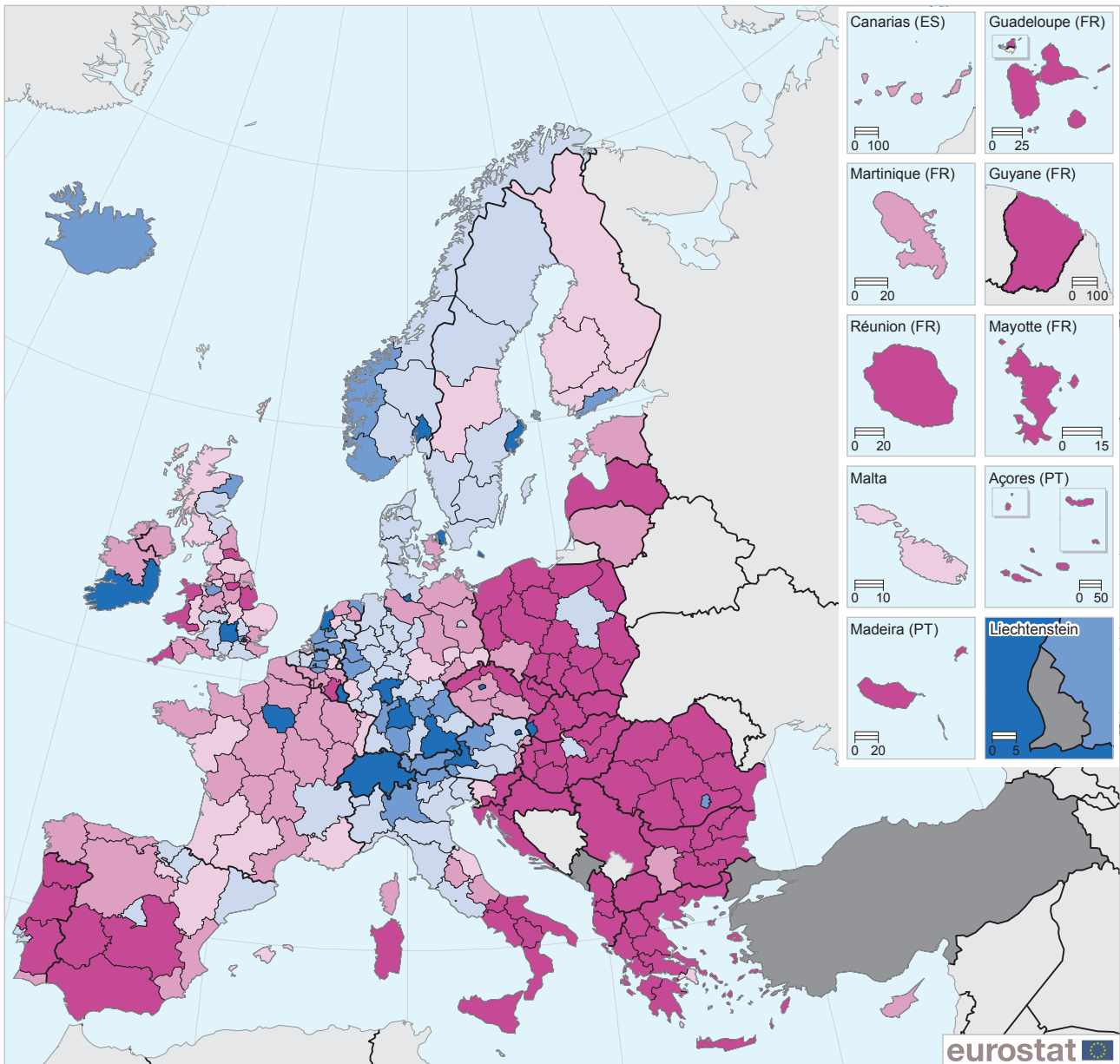
It is interesting to note that in 2016 a majority of the regions in Spain, France and the United Kingdom had levels of GDP per capita that were below the EU-28 average, while there was an almost equal split in Italy between regions that had GDP per capita above or below the EU-28 average. While the major metropolitan centres in these countries continued to record average levels of GDP per capita that were above the EU-28 average, their 'poorer' regions could generally be split into one of two groups, either sparsely-populated, rural regions characterised by net emigration, or post-industrial regions, stripped of their traditional industrial base by the consequences of globalisation, that are increasingly described as being 'left behind'.

An analysis of the regional distribution of GDP per capita reveals that Bulgaria, Croatia, Greece and Slovenia were the only multi-regional EU Member States where economic activity was below the EU-28 average in each and every region, while none of the multi-regional Member States was able to report that every one of its regions had an average level of GDP per capita above the EU-28 average. Austria and Sweden both reported just a single region with GDP per capita below the EU-28, with the exceptions being the easternmost region of Burgenland (in Austria) and the central region of Norra Mellansverige (in Sweden).





**Map 6.1: Gross domestic product (GDP) per inhabitant, by NUTS 2 regions, 2016**  
 (based on data in purchasing power standards (PPS) in relation to the EU-28 average, EU-28 = 100)

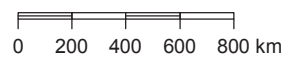


(based on data in purchasing power standards (PPS) in relation to the EU-28 average, EU-28 = 100)

EU-28 = 100

- < 75
- 75 - < 90
- 90 - < 100
- 100 - < 125
- 125 - < 150
- ≥ 150
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © INSTAT  
 © Turkstat  
 Cartography: Eurostat — GISCO, 04/2018



Note: Norway, 2015. Former Yugoslav Republic of Macedonia and Albania: 2014. Switzerland and Serbia: national data. Switzerland: provisional.

Source: Eurostat (online data codes: [nama\\_10r\\_2gdp](#), [nama\\_10\\_gdp](#), [nama\\_10r\\_3popgdp](#) and [nama\\_10\\_pe](#))

***The most rapid shift in wealth generation during the period 2007-2016 was towards capital city regions***

**Map 6.2** shows changes in regional GDP per inhabitant relative to the EU-28 average for 2007-2016; note that the comparison covers the period associated with the global financial and economic crisis which has had a lasting impact on several regions.

There were 117 NUTS level 2 regions that saw their relative wealth, as measured by GDP per capita, increase between 2007 and 2016, while a higher number (157) reported a relative decline. The biggest increase in wealth creation, in relation to the EU-28 average, was recorded in the Irish capital city region, whose level of economic activity rebounded at a rapid pace following the crisis. The four regions that followed with the next highest increases in their relative wealth were also capital city regions, namely: Inner London - West, Bucuresti - Ilfov, Mazowieckie and Bratislavský kraj.

Among the multi-regional EU Member States, GDP per capita grew at a faster pace than the EU-28 average in every region of Bulgaria, Hungary, Poland, Romania, Slovakia and all three of the Baltic Member States (each of which is a single region at this level of detail), as well as every region except one in Austria (the capital city region) and the Czech Republic (Severozápad). The

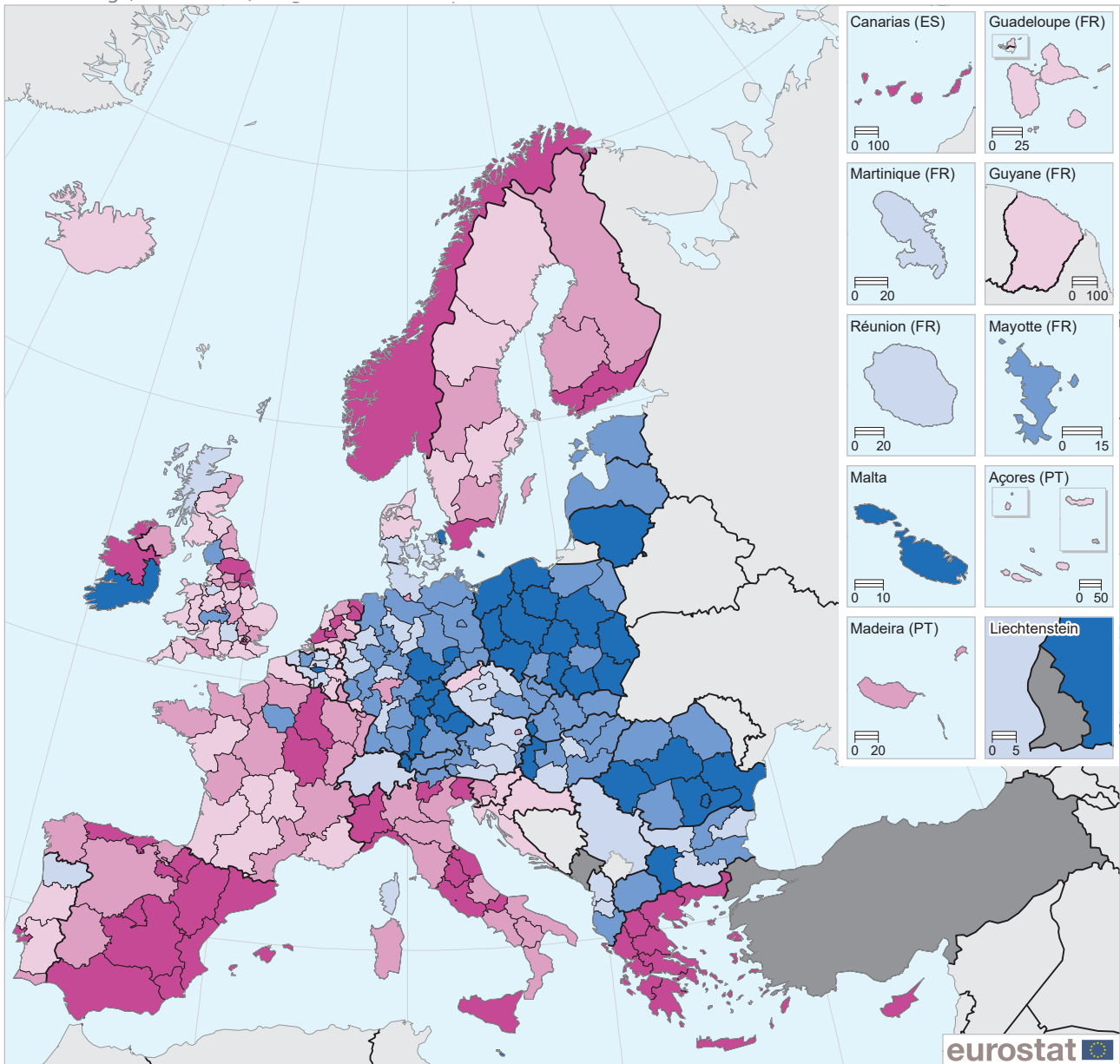
vast majority of regions in Germany also recorded an increase in their relative living standards, the exceptions being Saarland, Bremen, Hamburg and Darmstadt; note that GDP per capita in the last three of these was, nevertheless, at least 50 % higher than the EU-28 average in 2016.

By contrast, average GDP per capita grew at a slower pace than the EU-28 average in every region of Greece, Spain, Croatia, Italy, the Netherlands, Slovenia, Finland and Sweden, while a similar pattern was repeated in all but one region of mainland France (the capital city region, Île de France) and Portugal (Norte).

Although there remains an east-west divide in terms of wealth creation in the EU-28, this has become less pronounced, suggesting that the cohesion policy — among other influences — has had some impact on national and regional disparities. On the other hand, some western regions of the EU that were previously prominent industrial areas would appear to be falling behind. Examples include several regions in southern Belgium (for example, Prov. Hainaut and Prov. Luxembourg), northern and eastern France (Picardie, Champagne-Ardenne and Lorraine) or the United Kingdom (the Tees Valley and Durham, South Yorkshire, and West Wales and The Valleys).



**Map 6.2: Change of gross domestic product (GDP) per inhabitant, by NUTS 2 regions, 2007-2016**  
 (percentage points difference for 2016 minus 2007; based on data in purchasing power standards (PPS) in relation to the EU-28 average, EU-28 = 100)

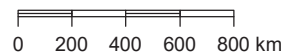


(percentage points difference for 2016 minus 2007; based on data in purchasing power standards (PPS) in relation to the EU-28 average, EU-28 = 100)

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 Cartography: Eurostat — GISCO, 04/2018

EU-28 = 0

- < -10
- 10 - < -5
- 5 - < 0
- 0 - < 5
- 5 - < 10
- ≥ 10
- Data not available



Note: Albania, 2008-2014. Norway, Switzerland and Serbia: national data. Switzerland: provisional. Bulgaria, Germany and Romania: break in series.

Source: Eurostat (online data codes: [nama\\_10r\\_2gdp](#), [nama\\_10\\_gdp](#), [nama\\_10r\\_3pogdp](#) and [nama\\_10\\_pe](#))

## Private household income

Many of the 'richest' regions in the EU have a relatively high share of their wealth generated by inflowing commuters; this pattern is particularly true in capital city regions, where the cost of living in central locations often forces people to consider moving to suburban areas that may be in neighbouring NUTS regions. Commuter flows between regions (or cross-border) lead employees to contribute to the wealth created in of one region (where they work), while their household income is classified to another region (where they live). Because of this circumstance, the high levels of GDP per capita that are recorded in some metropolitan regions characterised by large numbers of net incoming commuters overstate their true economic well-being. By contrast, the economic well-being of regions that surround capital city or metropolitan regions is likely to be understated when based on an analysis of average GDP per capita.

An alternative analysis is presented in **Map 6.3**, which provides information for primary income per inhabitant in NUTS level 2 regions; data are presented in purchasing power consumption standards (PPCS), which adjust for price differences between countries. The primary income of private households is that generated directly from market transactions: this generally includes income from paid work and self-employment, as well as income received in the form of interest, dividends and rents; interest and rents payable are recorded as negative items.

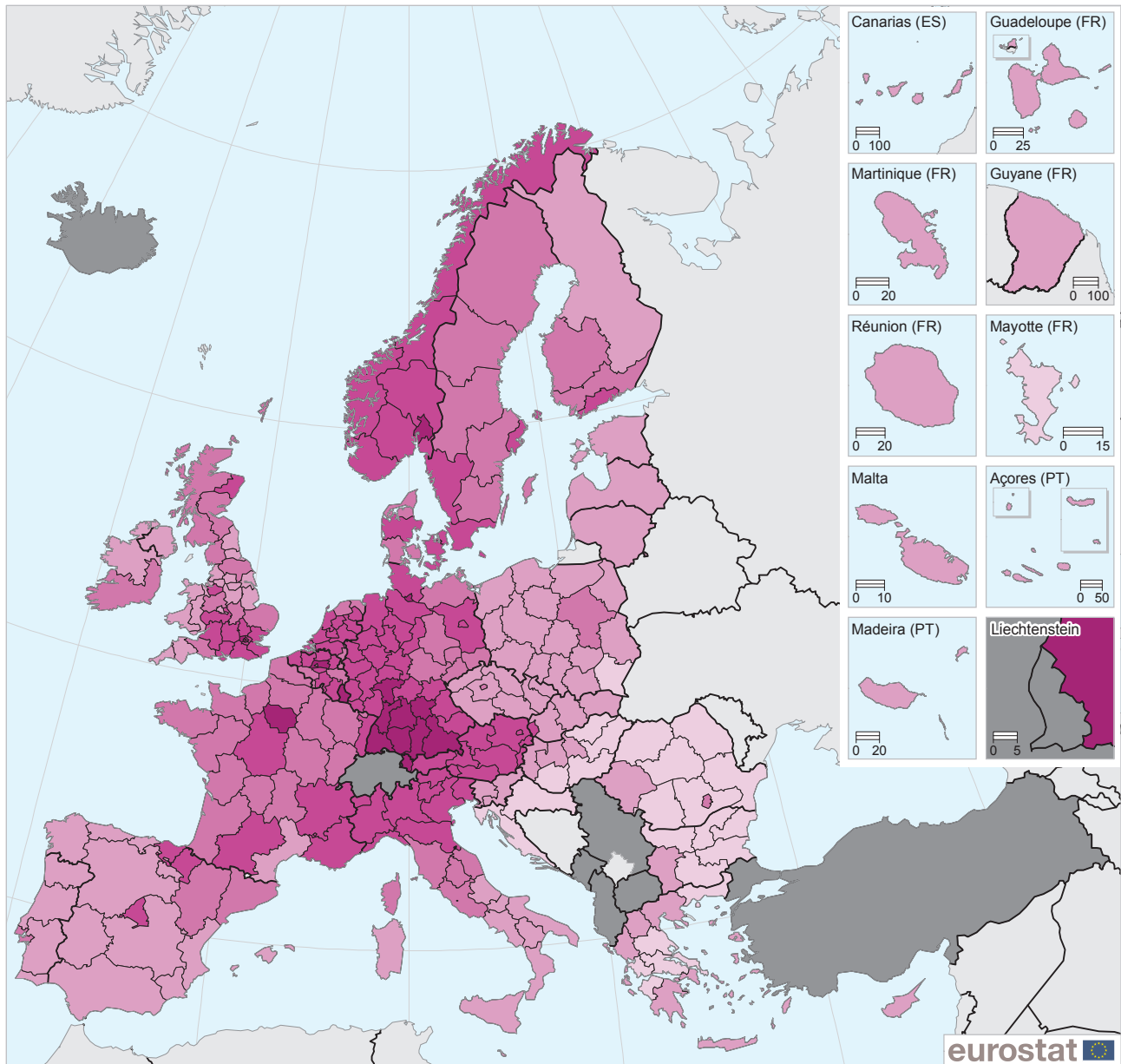
In 2015, the most recent reference period for which a complete set of regional data is available, primary income in the EU-28 averaged 19.0 thousand PPCS per inhabitant. It ranged from a high of 56.3 thousand PPCS per inhabitant in Inner London - West down to 4.5 thousand PPCS in Severozapaden, a factor of 12.5 to 1. As such, the highest and lowest ratios were recorded for the same regions as GDP per capita, where the difference between the two regions was 20.7 to 1.

There were 15 regions in the EU where primary income per inhabitant was at least 27.5 thousand PPCS in 2015. A majority of these — nine regions — were located in Germany, generally clustered together in southern Germany, as Hamburg the only exception (in the north). The six remaining regions were composed of: Luxembourg (a single region at this level of detail); the French capital city region of Île de France; the Belgian region of Prov. Vlaams-Brabant; the Austrian region of Vorarlberg; and the British regions of Inner London - West and Outer London - West and North West.

This alternative analysis displays a much narrower range in levels of income between different regions of the EU: taking account of commuter effects and looking at households, results in a more even distribution than that presented for GDP per capita.

The biggest differences in intra-regional levels of primary income per inhabitant were recorded in some of the largest EU Member States. For example, in the United Kingdom the highest level of primary income per inhabitant in Inner London - West was 3.8 times as high as the lowest level of primary income per inhabitant in the West Midlands (15.0 thousand PPCS per inhabitant). A similar analysis for Italy depicts the considerable differences in income levels between northern and southern regions, with primary income per inhabitant in Provincia Autonoma di Bolzano/Bozen (26.1 thousand PPCS) more than twice as high as that recorded in Calabria (11.3 thousand PPCS). If it was possible to take into account the redistributive role of government through the taxation system and the provision of public goods, the distribution of income between regions in the same country would (normally) display lower differences.

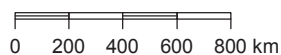
**Map 6.3: Primary income per inhabitant, by NUTS 2 regions, 2015**  
(purchasing power consumption standard (PPCS))



(purchasing power consumption standard (PPCS))

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 05/2018

- EU-28 = 19 000
- < 10 000
- 10 000 - < 17 500
- 17 500 - < 20 000
- 20 000 - < 27 500
- ≥ 27 500
- Data not available



Note: Belgium and Norway: 2014. EU-28: estimate (including 2014 data for Belgium).  
Source: Eurostat (online data codes: nama\_10r\_2hhinc, nama\_10r\_3pogdp and tec00133)

## Economic growth and productivity

### REAL RATE OF CHANGE FOR GROSS VALUE ADDED

Gross value added at basic prices is defined as output at basic prices minus intermediate consumption at purchaser prices. The sum of gross value added at basic prices over all activities plus taxes on products minus subsidies on products should equal GDP.

The information presented in **Map 6.4** looks at developments for total gross value added in real terms. In other words, the monetary value has been deflated to take account of price changes. Across the whole of the EU-28 the average real rate of change for total value added between 2012 and 2015 was an increase of 1.4 % per annum.

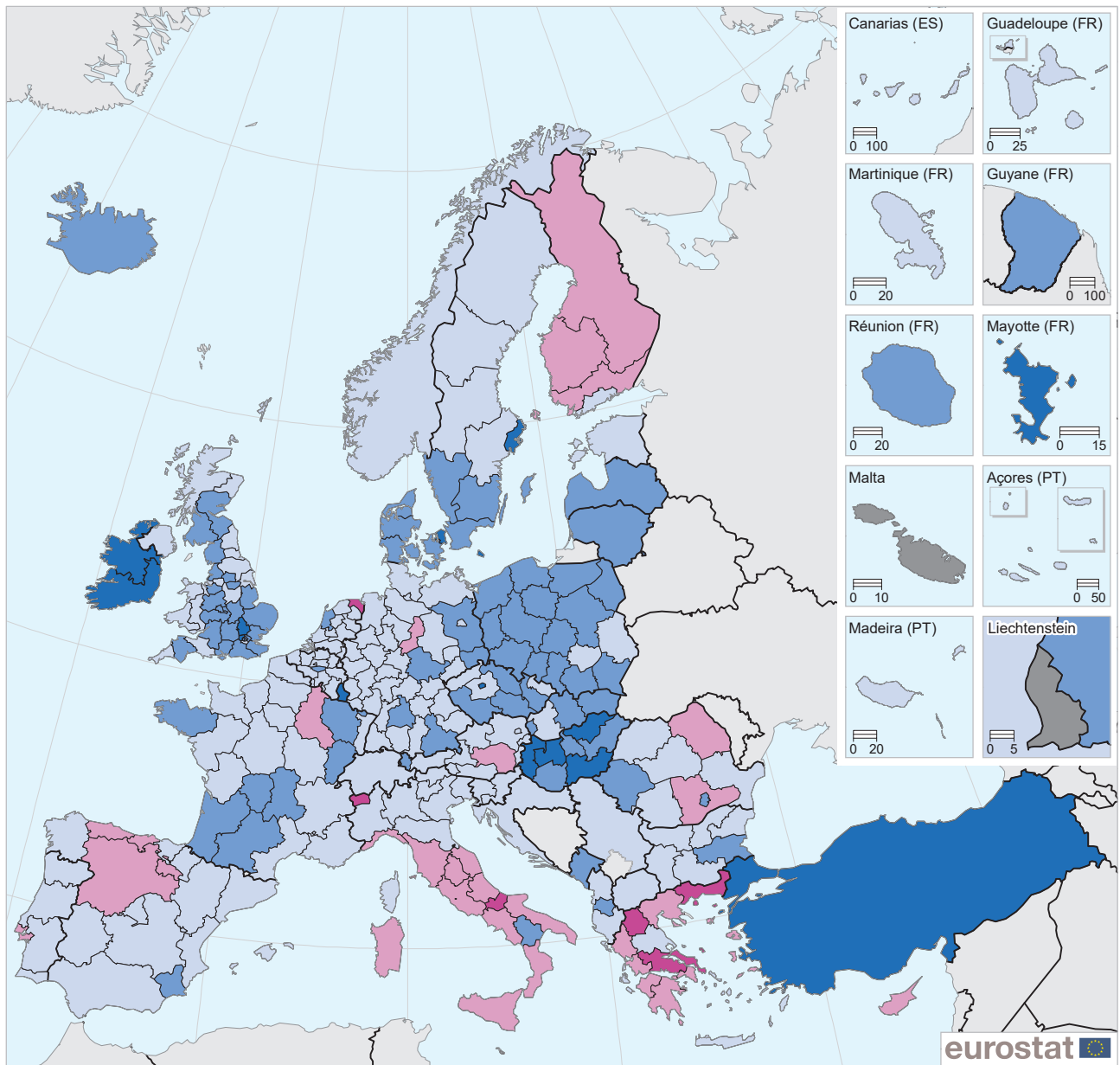
**Map 6.4** shows that the majority of the 38 regions in the EU where economic activity contracted between 2012 and 2015 were located in Greece, Spain, Italy or Finland. While these losses were usually no greater than 1.0 % per annum, there were six regions in the EU where total value added fell, on average, by more than 2.0 % per annum and these are shown by the darkest shade of purple in **Map 6.4**. The biggest contraction in economic activity was recorded in Dytiki Makedonia (northern Greece, bordering Albania; down 5.7 % per annum), while the five others included two more regions from Greece (Anatoliki Makedonia, Thraki and Sterea Ellada), two from Italy (Valle d'Aosta/Vallée

d'Aoste and Molise) and the northern Dutch region of Groningen.

The vast majority of regions in the EU saw their overall level of economic activity increase during the period 2012 to 2015, with total value added in real terms rising for 232 out of the 274 regions for which data are available. It is important to note that while these figures take account of price changes, the overall standard of living in each region is also impacted by changes in population numbers and if the population were to increase at a faster pace than economic activity then the net result would be an overall reduction in average living standards.

The highest annual average real rates of change for gross value added between 2012 and 2015 — as shown by the darkest shade of blue in **Map 6.4** — were concentrated in the two Irish regions and four out of the seven Hungarian regions. The Irish capital city region of Southern and Eastern recorded the highest growth rate as its value added rose, on average, by 12.7 % per annum. Aside from the Irish and Hungarian regions (Nyugat-Dunántúl, Észak-Magyarország, Dél-Alföld and Közép-Dunántúl), the remaining regions in the EU where economic activity increased by at least 4.0 % per annum between 2012 and 2015 included: Luxembourg (a single region at this level of detail), the capital city regions of Sweden (Stockholm), the Czech Republic (Praha) and Denmark (Hovedstaden), two neighbouring regions from the southern England in the United Kingdom (Bedfordshire and Hertfordshire and Outer London - West and North West) and the French overseas region of Mayotte.

**Map 6.4:** Annual average real rate of change for gross value added, by NUTS 2 regions, 2012-2015  
(% per annum)

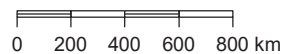


(% per annum)

EU-28 = 1.4

- < -2
- 2 - < 0
- 0 - < 2
- 2 - < 4
- ≥ 4
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © INSTAT  
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Cartography: Eurostat — GISCO, 04/2018



Note: Croatia, Norway, Switzerland, Serbia and Turkey, national data. Romania: 2014-2015.

Source: Eurostat (online data code: [nama\\_10r\\_2gvagr](#) and [nama\\_10\\_a10](#))

## INVESTMENT

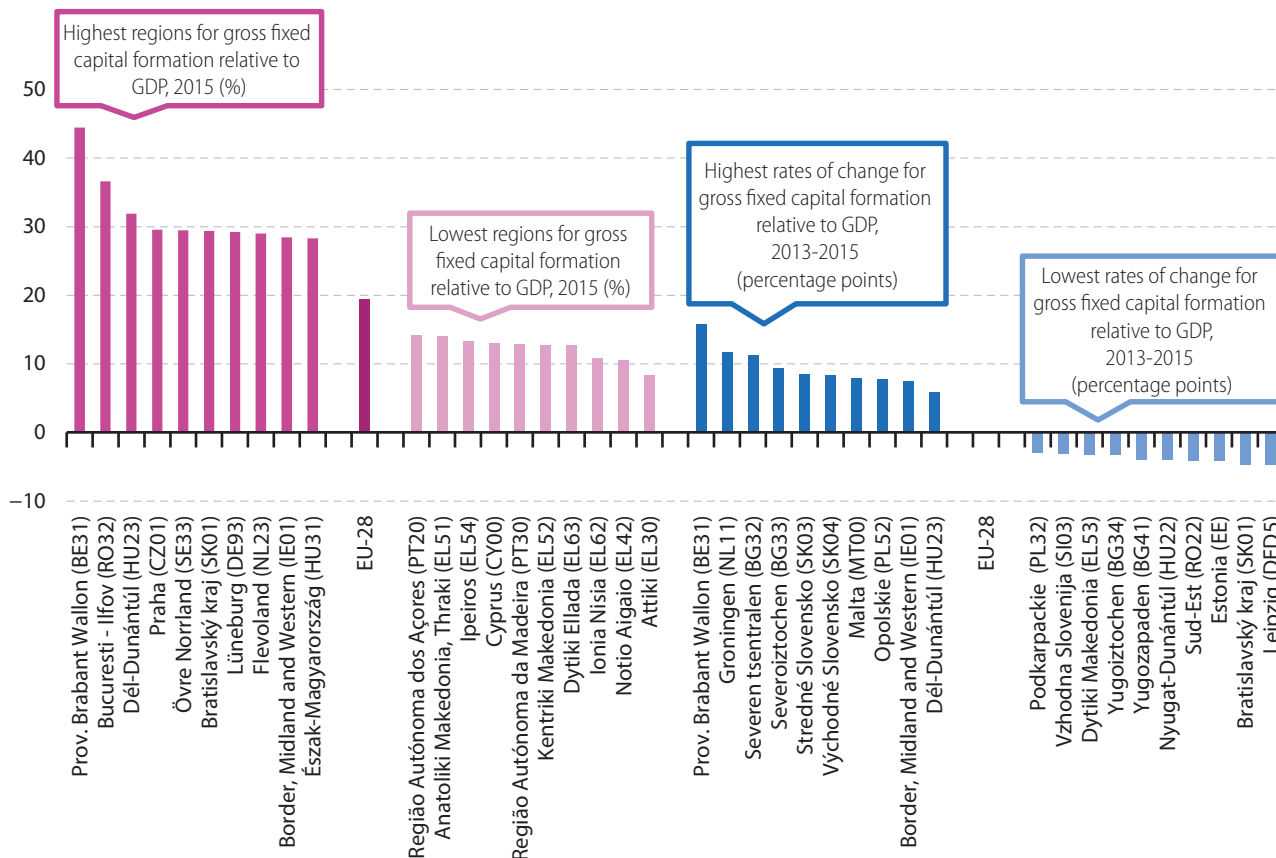
Overall levels of investment generally tend to mirror absolute levels of economic activity, as regions that generate considerable levels of wealth are likely to see some of it reinvested to maintain economic prosperity (both within the government sector and among private enterprises). On the other hand, regions seeking to speed-up their economic development may try to stimulate investment in infrastructure projects or alternatively attract foreign direct investment to encourage the catch-up process, and these actions may be supported by EU cohesion policy funds.

Gross fixed capital formation is a macroeconomic concept from national accounts that defines residents' investments in fixed assets during a given period, less disposals. Fixed assets are tangible or intangible assets produced as outputs from production processes that are used repeatedly, or continuously, for more than one year. Gross fixed capital formation expressed in relation to GDP is of interest to policymakers insofar as it shows the share of GDP that is invested, rather than being consumed, with investment rates tending to rise when business confidence is high. In the medium-term, higher investment rates may lead to accelerated

growth, improving the infrastructure, equipment and technology used by the regional labour force, thereby making them more productive (see below for more information on labour productivity).

**Figure 6.1** highlights the NUTS level 2 regions in the EU with the highest and lowest levels of investment, relative to GDP. In 2015, gross fixed capital formation relative to GDP was 19.5 % in the EU-28. The highest investment rates — according to this measure — were spread across a diverse set of regions, on one hand reflecting the lumpy nature of investment activity from one year to the next and the uneven regional distribution of investment. The highest investment rates in 2015 were recorded in Prov. Brabant Wallon (a region to the south of the Belgian capital; 44.4 %), followed by the Romanian capital city region of Bucuresti - Ilfov (36.6 %) and the south-west Hungarian region of Dél-Dunántúl (31.9 %). At the other end of the range, the lowest investment rates were more concentrated, as seven of the nine regions with the lowest rates were located exclusively in Greece. The lowest rate in the EU was recorded in the Greek capital city region of Attiki (8.4 %), the only region in the EU to report an investment rate below 10.0 %.

**Figure 6.1: NUTS 2 regions with the highest and lowest levels and rates of change for investment**



Note: Spain, national data. United Kingdom: not available.

Source: Eurostat (online data code: nama\_10r\_2gfcf, nama\_10\_gdp and nama\_10r\_2gdp)





The second half of **Figure 6.1** presents information for the regions with the highest and lowest percentage point changes for their investment rates during the period from 2013 to 2015. The biggest increase was recorded in the region with the highest investment rate, namely, Prov. Brabant Wallon, as its investment rate rose by 15.8 points during the period under consideration. There were two other regions in the EU that recorded increases above 10.0 %: Groningen in the north of the Netherlands and Severen tsentralen in the north of Bulgaria.

## LABOUR PRODUCTIVITY

Labour productivity may be defined as **gross value added** at basic prices expressed in relation to the number of persons employed or the total number of hours worked. Measures based on simple headcounts of labour input are, to some degree, a reflection of the structure of the employment market and may, for instance, be lowered by a shift from full-time to part-time working practices. As such, a derived indicator based on the number of hours worked generally provides a more revealing measure of labour input and this is the basis for the information presented in **Map 6.5**.

Across the EU-28, there was an average of EUR 35.40 of added value generated for each hour worked in 2015. Relatively high levels of labour productivity may be linked to an efficient use of labour (without using more inputs), or may result from the mix of activities within a local economy, as some activities — for example, business services and financial services — are characterised by higher levels of labour productivity than others.

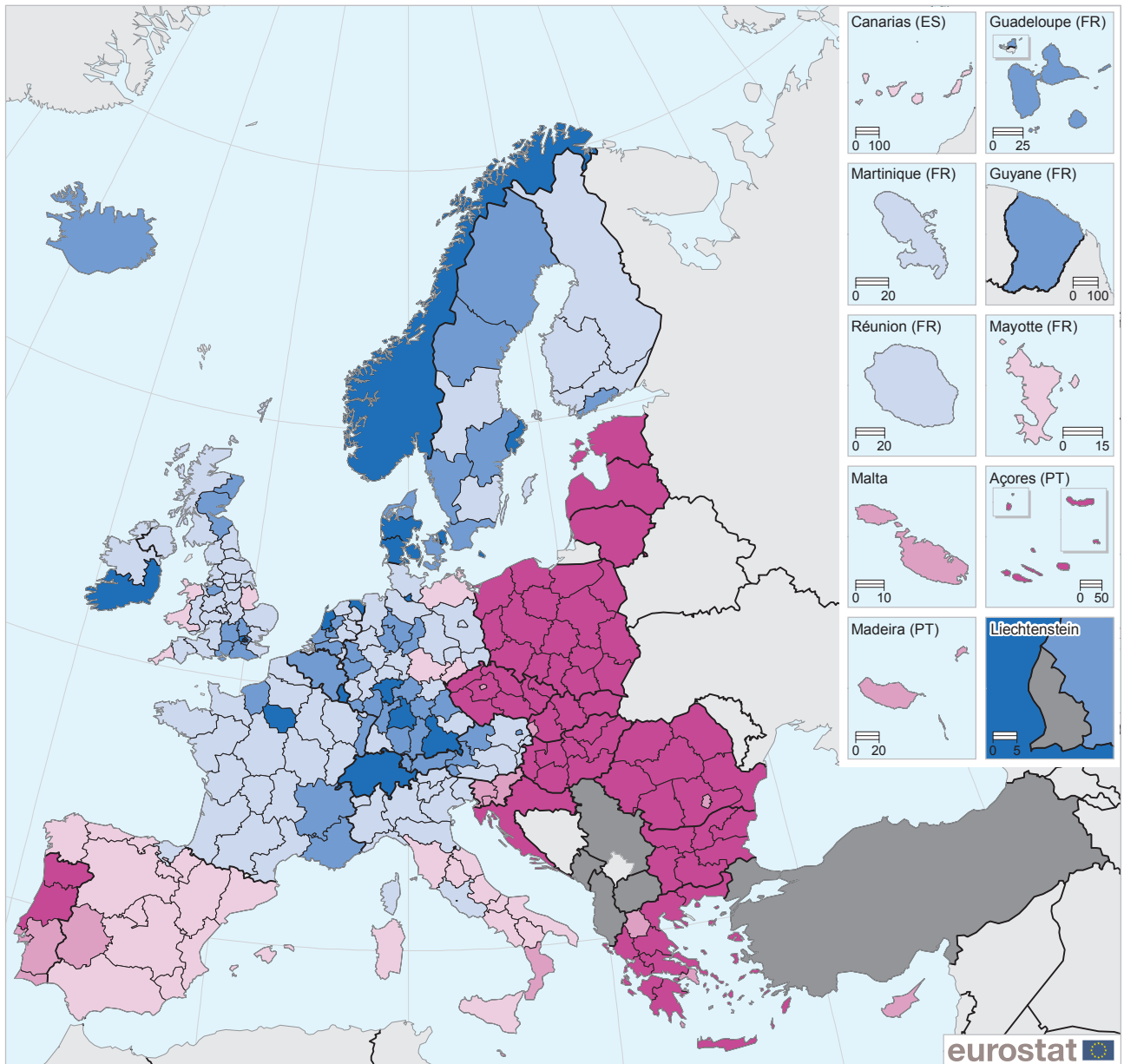
The highest labour productivity ratios among NUTS level 2 regions — note the results are expressed in relation to the EU-28 average (which is set equal to 100)

— were recorded in two regions that have a high level of specialisation in financial services: the Irish capital city region of Southern and Eastern (228 % of the EU-28 average) and Luxembourg (a single region at this level of detail; 216 %). Groningen (the Netherlands, 2014 data; 203 %) was the only other region in the EU to record a labour productivity ratio that was more than twice as high as the EU-28 average.

**Map 6.5** shows that there were 16 regions in the EU where labour productivity was at least 50 % higher than the EU-28 average (as shown by the darkest blue shade). Aside from the three regions mentioned above, the remainder were all located in western and northern regions of the EU, principally in Germany (four regions), Denmark and the United Kingdom (both three regions), with one additional region from the Netherlands (2014 data), and single regions from each of France and Sweden. Many of these were capital city regions and this pattern was repeated in most of the multi-regional EU Member States. There were however some exceptions where the highest level of labour productivity was recorded in a region other than the capital city region. Aside from Groningen (mentioned above), this was also the case in Hamburg (Germany), País Vasco (Spain), Lombardia (Italy) and Vorarlberg (Austria).

There were 64 NUTS level 2 regions where gross value added per hour worked was less than half the EU-28 average in 2015 (as shown by the darkest shade of purple in **Map 6.5**). These regions were principally from eastern regions of the EU and the three Baltic Member States (each one region at this level of detail), but also included a majority of the Greek regions and three regions from Portugal. There were six regions where labour productivity was less than one fifth of the EU-28 average: five of these were in Bulgaria — Yugoiztochen, Severoiztochen, Severen tsentralen, Severozapaden and Yuzhen tsentralen — while the other was Nord-Est in Romania.

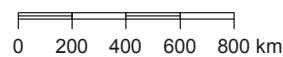
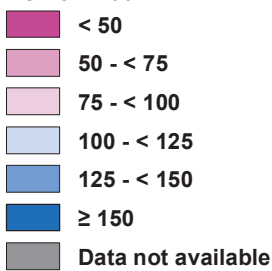
**Map 6.5: Gross value added per hour worked, by NUTS 2 regions, 2015**  
 (based on data in EUR per hour worked in relation to the EU-28 average, EU-28 = 100)



(based on data in EUR per hour worked in relation to the EU-28 average, EU-28 = 100)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
 Cartography: Eurostat — GISCO, 04/2018

EU-28 = 100



Note: Belgium, Croatia, Norway and Switzerland: national data. The Netherlands: 2014.

Source: Eurostat (online data codes: [nama\\_10r\\_3gva](#), [nama\\_10\\_a10](#), [nama\\_10r\\_2emhrw](#) and [nama\\_10\\_a10\\_e](#))

# 7

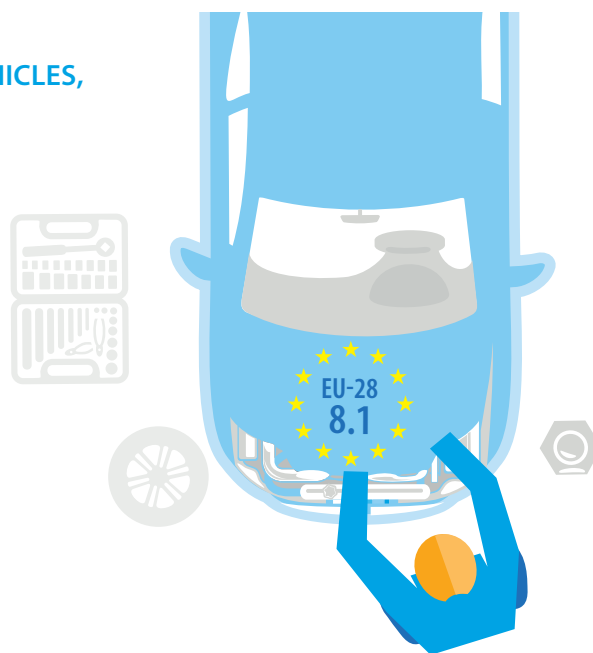
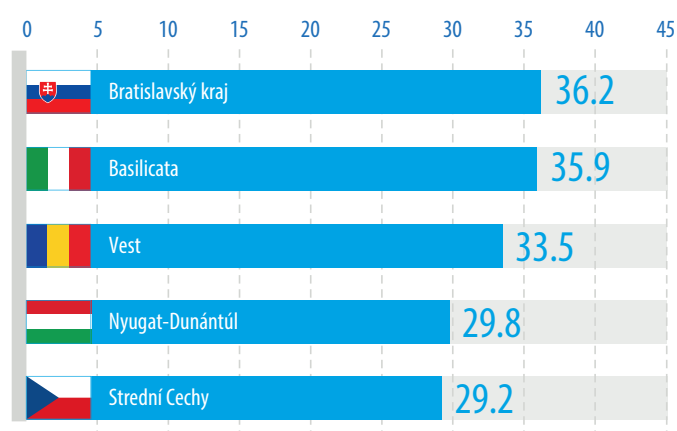
## Structural business statistics



## Key findings

- Non-financial services accounted for 95.5 % of the non-financial business economy workforce in Inner London - West.
- Almost one third (32.4 %) of the non-financial business economy workforce in Nord - Pas-de-Calais (France) was employed in the retail trade sector.
- In the Romanian region of Vest, 14.3 % of the non-financial business economy workforce was employed in the manufacture of motor vehicles, trailers and semi-trailers, the highest share in the EU.

### TOP 5 REGIONS IN THE EU EMPLOYMENT IN THE MANUFACTURE OF MOTOR VEHICLES, TRAILERS AND SEMI-TRAILERS, 2015 (% share of total employment in the manufacturing sector)



Presented according to the activity classification NACE, the first half of this chapter is based on a set of structural business statistics (SBS) which may be used to analyse patterns of specialisation and concentration within the regional business economies of the European Union (EU). Two special focuses are provided with detailed information for the retail trade sector and the manufacture of motor vehicles. The second half provides a selection of regional business demography statistics, presenting enterprise birth and death rates, as well as information related to high-growth enterprises.

SBS cover industry (NACE Sections B to E), construction (NACE Section F) and non-financial services (NACE Sections G to J and L to N and Division 95), collectively referred to as the non-financial business economy, defined here as NACE Sections B to J and L to N and NACE Division 95. This data set can be analysed at a very detailed sectoral level (several hundred economic activities), by enterprise size class and, as here, by region. Regional SBS provide harmonised statistics for the number of local units and persons employed, as well as the monetary value of wages and salaries.

According to estimates made using SBS, there were 23.5 million enterprises active in the EU-28's non-financial business economy in 2015. Together, they generated

EUR 7 033 billion of gross value added and employed some 137.4 million persons. On the basis of an analysis by value added, among NACE sections, the largest activity in the EU-28 was manufacturing (EUR 1 900 billion or 27.0 % of the non-financial business economy total), whereas distributive trades was the largest activity on the basis of an analysis by persons employed (33.0 million persons or 24.0 % of the non-financial business economy total).

Small and medium-sized enterprises (SMEs) are considered vital to the success of the EU-28 economy, accounting for almost all of its businesses and around two thirds of all jobs in the non-financial business economy. One of the 11 thematic objectives for the EU's cohesion policy during the period 2014-2020 is to improve the competitiveness of SMEs, while providing further investment for SMEs under thematic objectives. Cohesion policy investments are designed to help SMEs: access finance; benefit from targeted business support; improve their access to global markets and international value chains; exploit new sources of growth such as the green economy, sustainable tourism, the 'silver economy' or cultural/creative industries; invest in human capital; forge links with research centres and universities to promote innovation.



## Patterns of business specialisation and concentration

### NON-FINANCIAL SERVICES

The services sector is the largest component of the EU-28 economy, accounting for close to 74 % of total gross value added in 2015 (according to [national accounts](#)). Furthermore, the performance of the EU's manufacturing sector is increasingly linked to the competitiveness of services, insofar as manufactured goods increasingly contain a range of services inputs, from research and development or design, through computer services, to marketing. In January 2017, the [European Commission](#) made proposals for a [package](#) of new measures designed to make it easier for EU enterprises and business professionals to provide services to potential customers within the single market. It is hoped that this stimulus will provide a

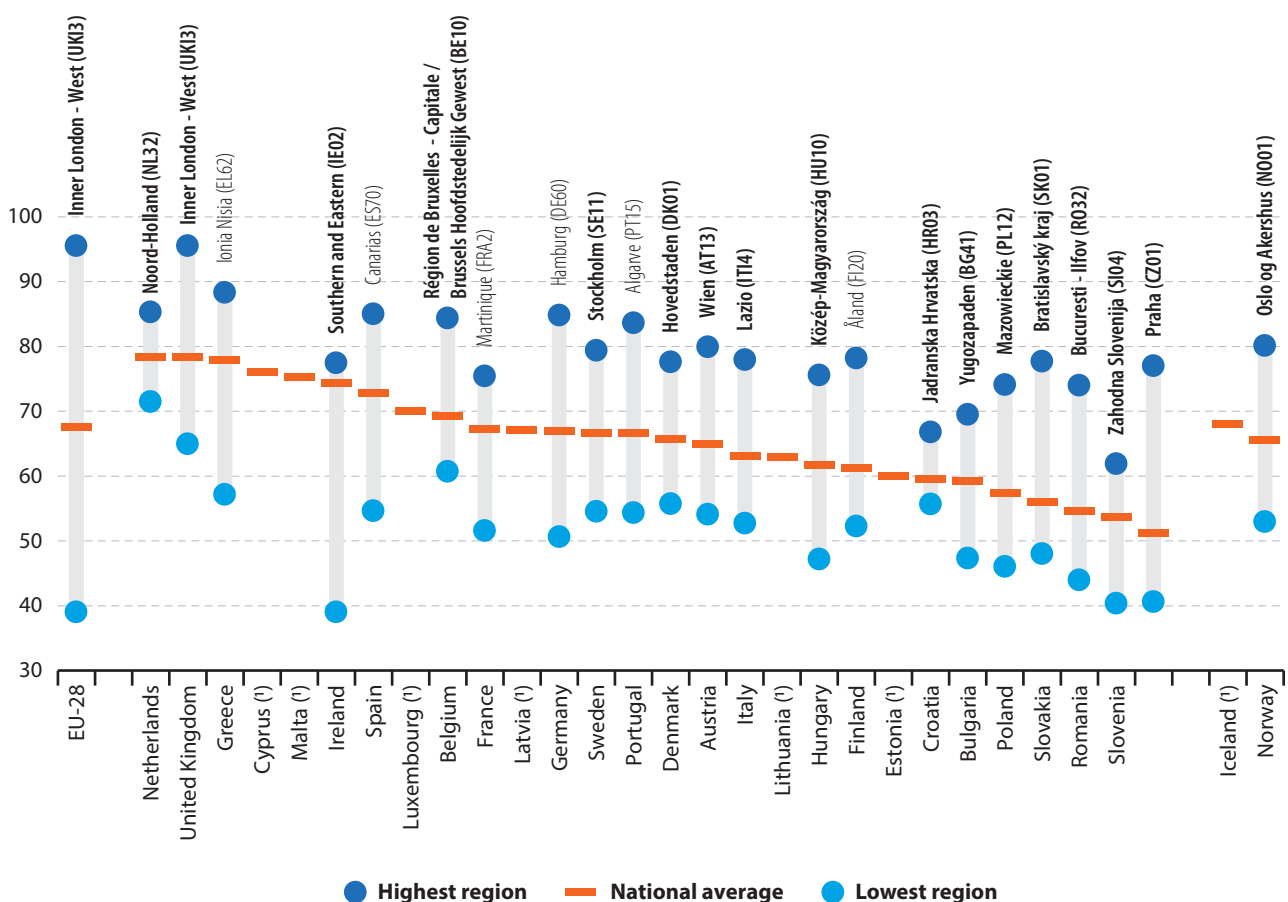
boost to growth within the services sector, to the benefit of consumers, job seekers and enterprises.

Non-financial services accounted for 67.5 % of the total number of persons employed in the EU-28 non-financial business economy in 2015; note that financial services (NACE Section K) are excluded from this standard set of structural business statistics because of their specific nature and the limited availability of most types of business statistics in this area.

#### *More than 19 out of every 20 people in the workforce of Inner London - West was employed in non-financial services*

The relative contribution of non-financial services to the total number of persons employed in the non-financial business economy ranged from a low of 39.0 % in Border, Midland and Western (Ireland) up to 95.5 % in the capital city region of Inner London - West

**Figure 7.1: Employment in the non-financial services economy, by NUTS 2 regions, 2015**  
(% share of employment in the non-financial business economy)



Note: the non-financial services economy is defined as NACE Sections G-N (excluding K) and NACE Division 95. Capital regions are shown with a **bold** font. Earlier reference periods have been used in some cases; the figure is based on non-confidential data (some activities are not available for a limited number of regions). The non-financial business economy is defined as NACE Sections B-N (excluding K) and NACE Division 95. Germany: non-financial business economy excluding NACE Sections D and E. Berlin (DE30), Mecklenburg-Vorpommern (DE80), Koblenz (DEB1), Trier (DEB2) and Mayotte (FRAS): not available. Iceland: provisional.

(1) A single region at NUTS/statistical region level 2.

Source: Eurostat (online data code: sbs\_r\_nuts06\_r2)

(the United Kingdom). Within most other multi-regional EU Member States, the employment share of non-financial services also reached a peak in the capital city regions (as shown in **Figure 7.1**), the only exceptions being Greece (where the highest share was in Ionia Nisia), Spain (Canarias), Portugal (Algarve) and Finland (Åland) — the first three of these regions are all popular tourist destinations, while the economy on the Finnish archipelago of Åland is dominated by transport services. Note that the service orientation of several capital city regions would be even higher if financial services were included, given that London and Paris are among the world's leading financial centres.

The analysis is extended in **Figure 7.2** to show, for each NACE division in the non-financial services economy, the NUTS level 2 region which was most specialised in that activity; the information is based on regional shares for each activity in the non-financial business economy workforce. There are considerable differences between regions, reflecting among others: access to skilled employees (for example, for scientific research and development); adequate provision of infrastructure (for example, transport or telecommunications); climatic and geographic conditions (particularly relevant in relation to tourism activities); proximity or access to markets; and legislative constraints. All of these may impact upon the considerable disparities that exist between EU regions as regards the importance of different activities within their respective business economies.

Some activities appear across all regions of the EU: this is the case for example for retail trade and wholesale trade. In 2015, these were the two largest service sectors in the EU-28 economy, together accounting for more than one fifth (21.2 %) of the non-financial business economy workforce. The northern French region of Nord - Pas-de-Calais had the highest employment share within the retail trade sector (32.4 %), which may reflect, at least to some degree, its location that provides ease of access to cross-border shoppers from Belgium or the United Kingdom. The highest employment share for wholesale trade was recorded in the south-eastern Spanish Región de Murcia (15.7 %), which may reflect this region being a major centre for agricultural production (particularly fruit and vegetables) which are subsequently processed and graded before being transported to supermarkets across the EU.

### ***Capital city regions were often relatively specialised in providing information, communication and business-oriented services***

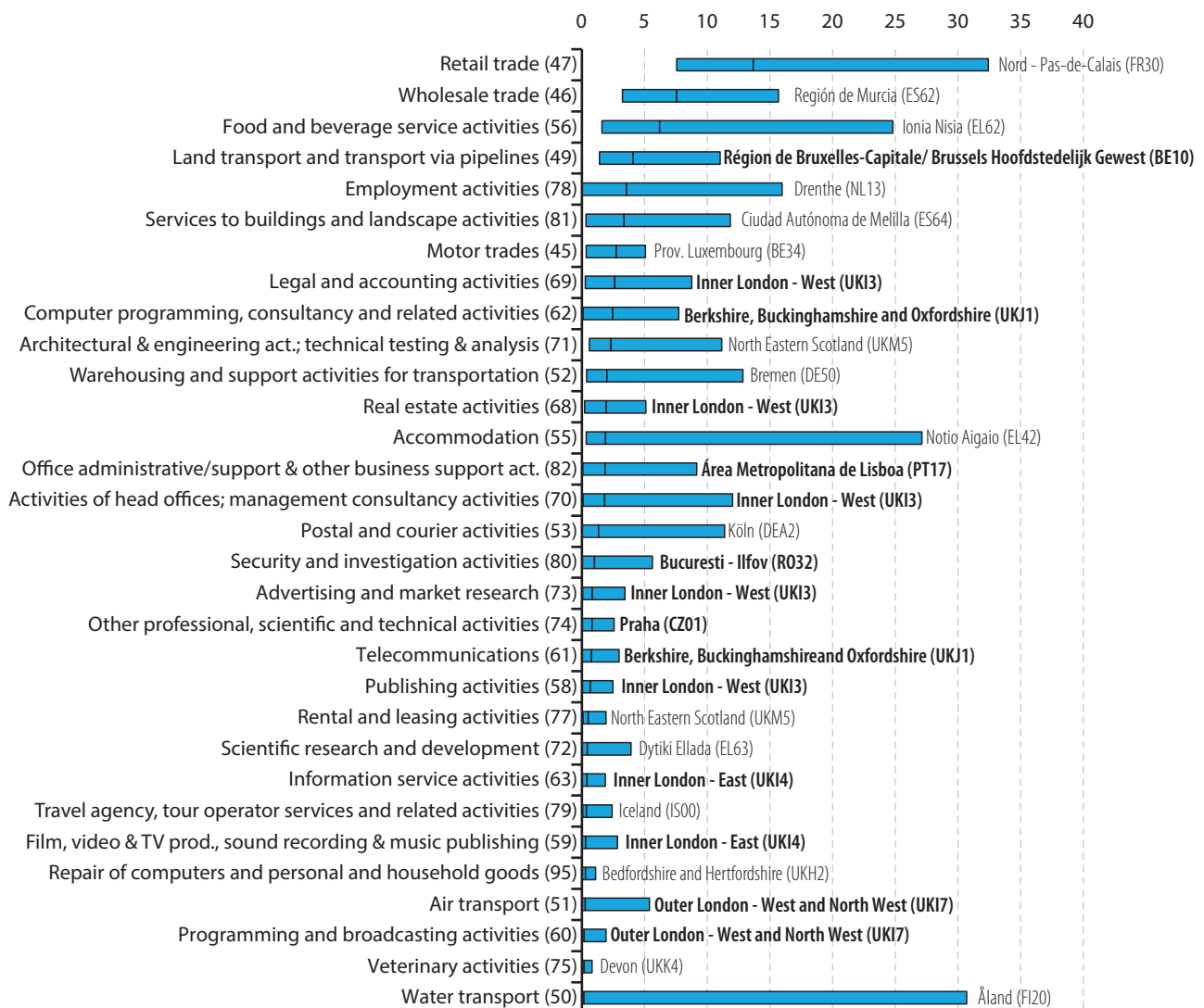
It was common to find that capital city regions were the most specialised regions for information, communication and business-oriented services, which may be linked, at least in part, to the high number of potential clients for such services. In 2015, Inner London - West was the most specialised region in the EU for: legal and accounting activities; activities of head offices and management consultancy activities; advertising and market research; or publishing activities. The other capital city region in the United Kingdom, Inner London - East recorded the largest employment share for information service activities and for film, video, TV production, sound recording and music publishing services, while the Czech capital city region of Praha was the most specialised region in the EU for other professional, scientific and technical activities and the Portuguese capital city region of Área Metropolitana de Lisboa was the most specialised for office administrative support and other business service activities.

For transport and tourism-related activities, a relatively small number of regions tend to be highly specialised, resulting in a particularly wide range between the employment shares of those regions with the highest and lowest ratios. The importance of water transport services as an employer was naturally relatively high in most coastal regions and islands, while air transport services provided a high share of employment in several regions close to major cities or in island regions (especially those focused on tourism). The island region of Åland (Finland) is a centre for ferry services between Sweden and Finland and other Baltic Sea traffic and it recorded the highest employment share for water transport services, while Outer London - West and North West was the most specialised region for air transport services; London Heathrow airport is located in this region.

In regions traditionally associated with tourism, it was commonplace to find that a relatively high share of the non-financial business economy workforce was employed within accommodation services or food and beverage service activities. The Greek region of Notio Aigaio (which includes, among others, the islands of Kos, Mykonos and Rhodes) had the highest share of its non-financial business economy workforce employed within accommodation services, while another Greek region, Ionia Nisia (which includes the islands of Corfu and Zante), had the highest employment share for food and beverage service activities.



**Figure 7.2: Regional specialisation within the non-financial services economy, by NUTS 2 regions, 2015**  
(% share of regional non-financial business economy employment)



Note: the range of regional values across NUTS 2 regions is shown by the bar; the EU-28 average is shown by the vertical line inside the bar; the figure is ranked on this share; the name of the region with the highest share is also shown. NACE division codes are given in parenthesis after each of the activity labels. Capital regions are shown with a **bold** font. Earlier reference periods have been used in some cases; the figure is based on non-confidential data (some activities are not available for a limited number of regions). Germany: non-financial business economy excluding NACE Sections D and E. Berlin (DE30), Mecklenburg-Vorpommern (DE80), Koblenz (DEB1), Trier (DEB2) and Mayotte (FRA5): not available. EU-28: estimates. Iceland: provisional.

Source: Eurostat (online data codes: [sbs\\_r\\_nuts06\\_r2](#) and [sbs\\_na\\_sca\\_r2](#))

### FOCUS ON RETAIL TRADE

As noted above, the retail trade sector was the largest employer within the EU-28's non-financial services economy in 2015. Retail trade has experienced considerable changes during several decades: a change in shopping preferences away from specialist towards more generalist retailers; the growth of supermarket chains and out-of-town shopping locations; or the more recent introduction of discounters and e-commerce. That said, the vast majority of retailers in the EU remain small, often family-run, businesses: many of these perform an important social function, strengthening local communities and providing proximity services.

**Map 7.1** shows the annual change in the total number of persons employed across NUTS level 2 regions within the retail trade sector. In 2015, the EU-28 retail trade workforce grew by 0.8 % compared with the previous year. Some of the highest employment growth rates were recorded in Germany, Spain and southern regions of Ireland and the United Kingdom, while the retail trade workforce contracted at a relatively rapid pace in most Greek and French regions. These changes may be linked to overall economic fortunes, as consumers may be expected to spend more when their regional economy is expanding and when they feel relatively

confident about future economic developments, thereby driving demand higher. Legislative changes may also have an impact on the number of persons employed by the retail trade sector: for example, changes to Sunday trading or opening hours impact on the labour market; note these jobs with atypical working hours can be of particular interest to young people who wish to supplement their income whilst continuing their (full or part-time) education.

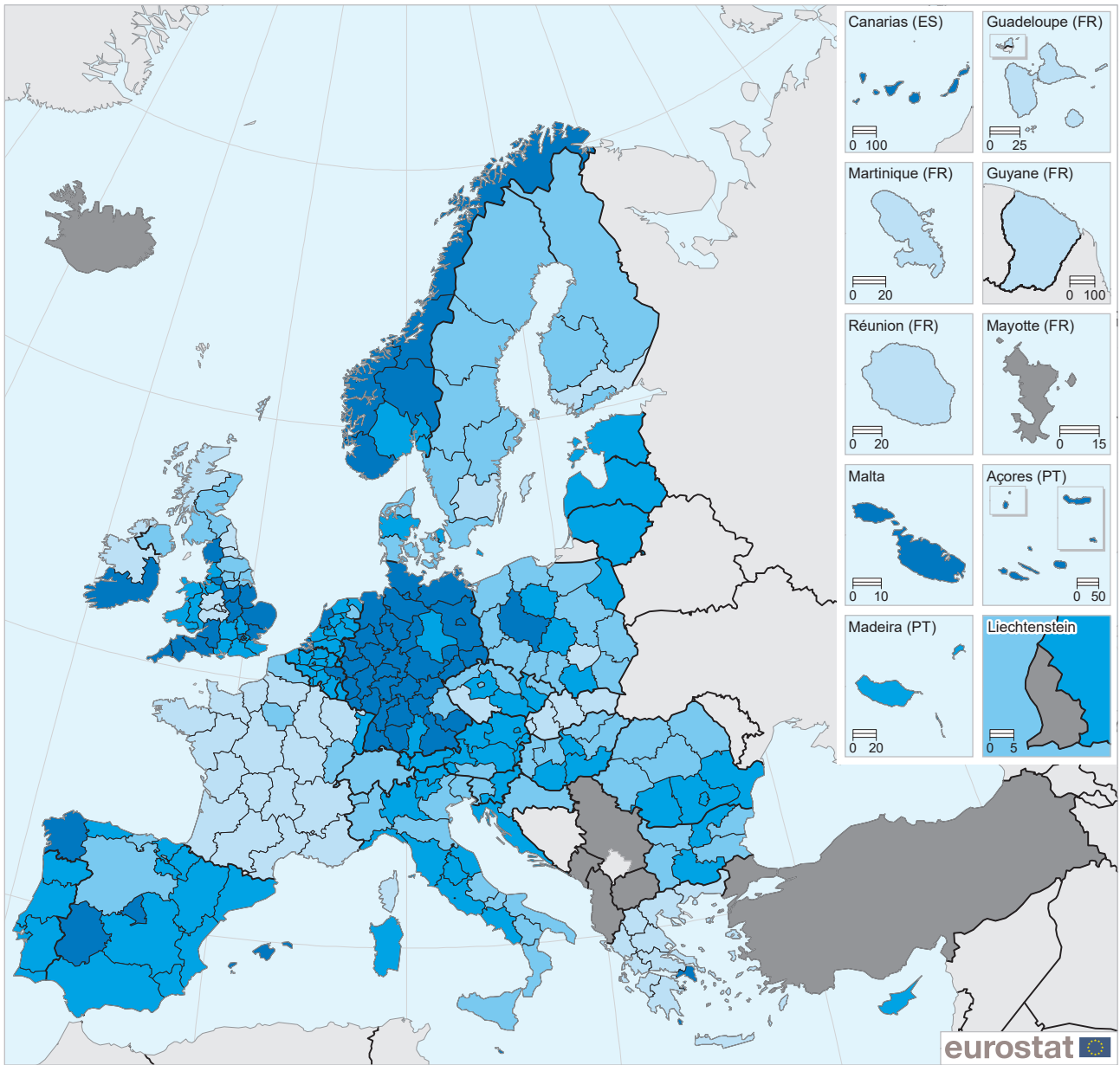
There were 62 NUTS level 2 regions where the number of persons employed in the retail trade sector rose by at least 4.0 % in 2015. More than half of these (35 different regions) were located in Germany, with the four highest growth rates among German regions recorded in the capital city region of Berlin (9.0 %), the metropolitan region of Köln (8.2 %), the western region of Rheinhausen-Pfalz which borders onto France, and the northern region of Weser-Ems which borders onto the Netherlands (both 7.9 %). Within Ireland and the United Kingdom, the most rapid regional growth rates for the number of persons employed in the retail trade sector were recorded in capital city regions, namely, Southern and Eastern and Inner London - East, while in Spain, excluding the atypical case of Ciudad Autónoma de Melilla, the highest growth rate was recorded for Canarias.





**Map 7.1: Annual growth rate of employment in retail trade (except of motor vehicles and motorcycles), by NUTS 2 regions, 2015**

(%)

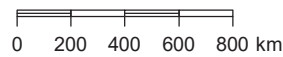


(%)

EU-28 = 0.8

- < -4.0
- 4.0 - < 0.0
- 0.0 - < 4.0
- ≥ 4.0
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 04/2018



Note: retail trade is defined as NACE Division 47. Switzerland: national data. Switzerland: estimate. Ireland, Greece and France: break in series.

Source: Eurostat (online data codes: sbs\_r\_nuts06\_r2 and sbs\_na\_sca\_r2)

## INDUSTRIAL ACTIVITIES

Industry provides goods for domestic consumption and for export; it has traditionally been considered a cornerstone of economic prosperity in the EU. However, the industrial economy has experienced various transformations in recent years, driven among others, by outsourcing, globalisation, changes to business paradigms, the growing importance of digital technologies, or concerns linked to sustainable production and the environment. Industrial activities generated close to one fifth of value added in the EU-28 economy (19.4 % in 2015).

In September 2017, the European Commission outlined a comprehensive renewal of its industrial policy strategy bringing together existing and new cross-cutting and sector-specific initiatives, with the goal of making European industry a world leader in innovation, digitisation and decarbonisation. [Investing in a smart, innovative and sustainable industry — A renewed EU industrial policy strategy](#) (COM(2017) 479 final) includes, among others: a package to reinforce industrial cybersecurity; a proposal for new rules on the free flow of non-personal business data, helping to create a common European data space; initiatives to modernise the EU's policy framework for intellectual property rights; an initiative to improve the functioning of public procurement in the EU; a strategy to help direct private capital flows towards more sustainable investments; and a new framework for the [screening foreign direct investment](#).

***Border, Midland and Western (in Ireland) was the only region in the EU where more than half of the non-financial business economy workforce was employed in the industrial economy***

**Figure 7.3** presents a similar analysis to that in **Figure 7.1**, focusing on the relative contribution of industrial activities to the non-financial business economy workforce. In 2015, this ratio ranged across the EU-28 from a low of just 1.8 % in the capital city region of Inner London - West (the United Kingdom) up to a peak of 58.1 % in Border, Midland and Western (Ireland). The high level of employment in the industrial economy of this Irish region may be attributed, at least in part, to a relatively large food manufacturing activity that exists alongside a strong presence of multinational enterprises, with a range of high-technology manufacturing activities having been established by foreign investors, for example, the medical devices industry located around Galway. Aside from this Irish

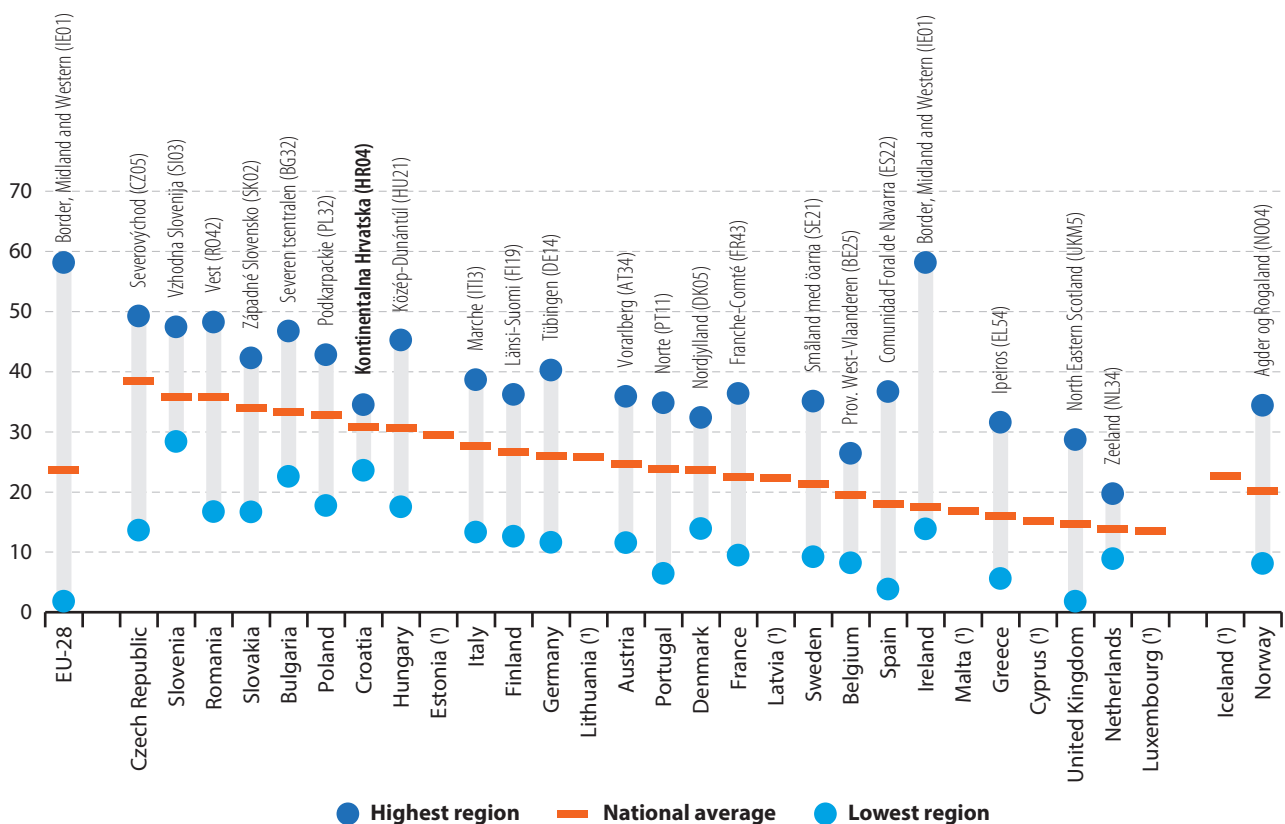
region, it is interesting to note that the regions with the highest industrial employment shares — all within the range of 40-50 % — were principally located in the eastern EU Member States, with regional shares peaking in Severovýchod (the Czech Republic), Vest (Romania), Vzhodna Slovenija (Slovenia), Severen tsentralen (Bulgaria), Közép-Dunántúl (Hungary), Podkarpackie (Poland) and Západoé Slovensko (Slovakia). This reflects an eastward shift of Europe's industrial activity, which may reflect, at least to some degree, relatively low labour costs, FDI inflows and (in some cases) natural resource endowments such as coal or wood. Along with Ireland, Germany was the only other western EU Member State to report the presence of a region with more than 40 % of its non-financial business economy workforce employed in the industrial economy — Tübingen in south-western Germany.

The analysis presented in **Figure 7.4** identifies patterns of regional specialisation within the manufacturing sector, showing the range between the highest and lowest regional employment shares (relative to total employment for the non-financial business economy); the name of the region with the highest share is also indicated. Furthermore, **Figure 7.4** shows the average employment share across the EU-28 for each of the 24 manufacturing subsectors, as shown by the vertical line within each of the bars. In 2015, the five manufacturing subsectors with the biggest workforces in the EU-28 included: the manufacture of food products (NACE Division 10; 3.0 % of the non-financial business economy workforce), the manufacture of fabricated metal products (NACE Division 25; 2.7 %), the manufacture of machinery and equipment (NACE Division 28; 2.1 %), the manufacture of motor vehicles, trailers and semi-trailers (NACE Division 29; 1.8 %) and the manufacture of rubber and plastic products (NACE Division 22; 1.2 %); none of the remaining manufacturing subsectors accounted for more than 1.0 % of the non-financial business economy workforce.

A wide variety of factors explain the relative concentration of specific manufacturing subsectors and relative specialisations of individual regions. These include, among others, scale economies, the relative cost and skills of a labour force, or other factor endowments (such as natural resources). Some of the most concentrated manufacturing subsectors in the EU include the manufacture of tobacco products (NACE Division 12), coke and refined petroleum products (NACE Division 19), or other transport equipment (NACE Division 30; including, among others, the manufacture of aircraft, trains or ships).



**Figure 7.3: Employment in the industrial economy, by NUTS 2 regions, 2015**  
(% share of employment in the non-financial business economy)



Note: the industrial economy is defined as NACE Sections B-E. Capital regions are shown with a **bold** font. Earlier reference periods have been used in some cases; the figure is based on non-confidential data (some activities are not available for a limited number of regions). Germany: industry and the non-financial business economy excluding NACE Sections D and E. Berlin (DE30), Mecklenburg-Vorpommern (DE80), Koblenz (DEB1), Trier (DEB2) and Mayotte (FRA5): not available. Iceland: provisional.

(<sup>1</sup>) A single region at NUTS/statistical region level 2.

Source: Eurostat (online data code: sbs\_r\_nuts06\_r2)

**The manufacture of motor vehicles accounted for approximately 1 out of every 7 persons working in the non-financial business economy of the Romanian region of Vest**

Looking in more detail, manufacturing activities involving the primary processing stages of agricultural, fishing or forestry products tended to be concentrated in areas close to the source of their raw materials. In 2015, the regions most specialised in food manufacturing were Border, Midland and Western (Ireland) and Bretagne (France), both of which had a high level of production for dairy products, while the highest employment share for the manufacturing of beverages (NACE Division 11) was in Champagne-Ardenne (France). Regions that are specialised in the manufacture of textiles (NACE Division 13) are often located close to an abundant supply of water, with the highest employment share recorded in Norte (Portugal). Heavily forested **Baltic** and **Nordic** regions were among the most specialised for the manufacture of wood and wood products (NACE Division 16), where

Estonia (a single region at this level of detail) recorded the highest employment share, while the highest share for the related activity of manufacturing paper and paper products (NACE Division 17) was in Norra Mellansverige (central Sweden).

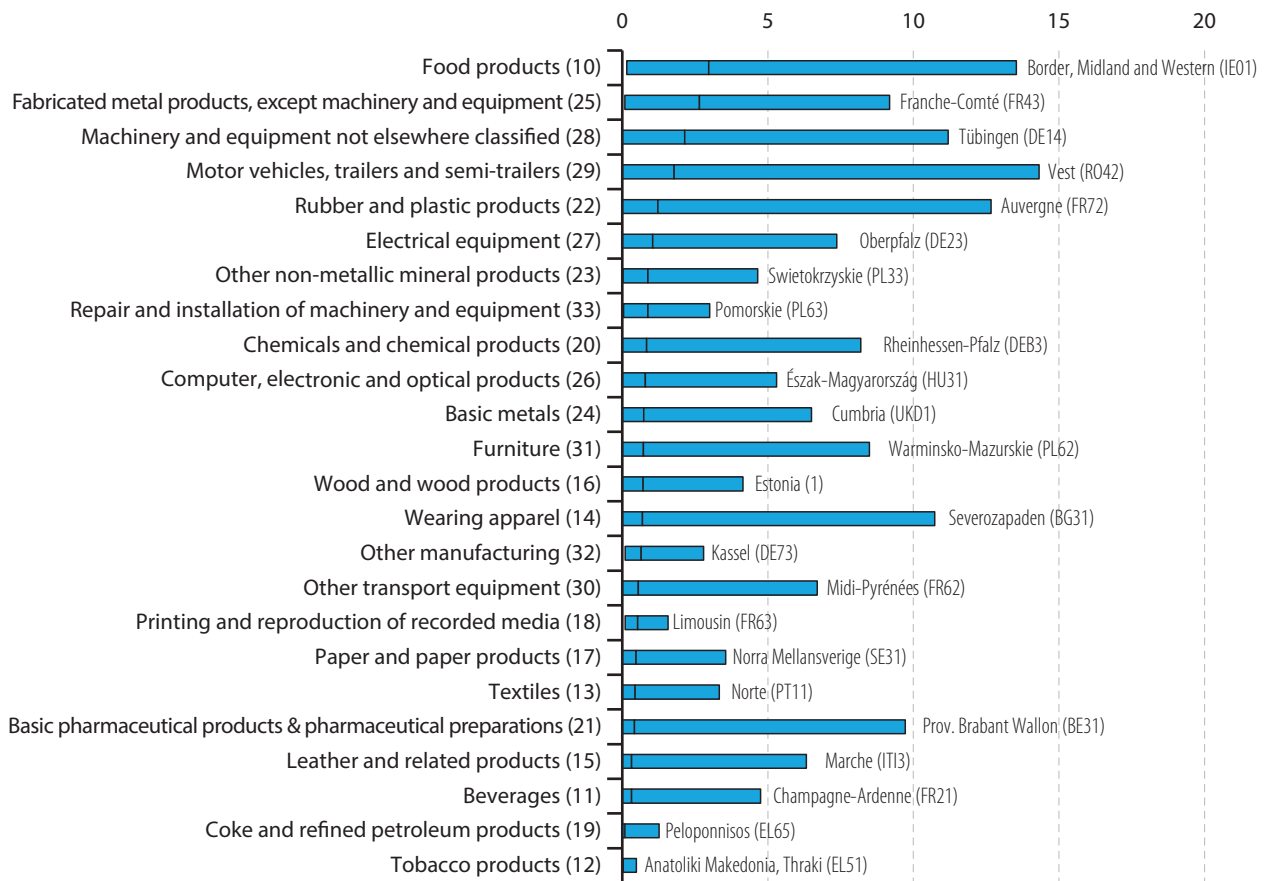
By contrast, several German and Belgian regions were relatively specialised in the production of chemicals and pharmaceuticals in 2015, as Rheinessen-Pfalz was the most specialised region for chemicals manufacturing (NACE Division 20) and the Prov. Brabant Wallon for pharmaceutical products and preparations (NACE Division 21). The highest regional specialisation for the manufacture of rubber and plastics (NACE Division 22) was in Auvergne (France), with activity centred on Clermont-Ferrand, while another French region, Franche-Comté, recorded the highest employment share for the manufacture of fabricated metal products (NACE Division 25). Several southern regions of Germany were prominent at the top of the rankings for the most specialised regions concerning electrical and mechanical engineering, with the highest employment share for the manufacture of electrical

equipment (NACE Division 27) in Oberpfalz and the highest employment share for the manufacture of machinery and equipment in Tübingen.

The manufacture of transport equipment is characterised by clusters of economic activity and highly-integrated production chains. In 2015, the westernmost Romanian region of Vest had the highest degree of specialisation for the manufacture of motor vehicles, trailers and semi-trailers, while the most specialised region for the manufacture of other transport equipment (NACE Division 30) was Midi-Pyrénées (south-west France), where there is a large cluster of enterprises related to aerospace.

It is interesting to note that in Vest, some 14.3 % of the non-financial business economy workforce was employed manufacturing motor vehicles, trailers and semi-trailers in 2015; this was the highest share across any of the regions and activities shown in **Figure 7.4**. Indeed, there were only four other manufacturing subsectors where the highest regional employment share (relative to the total non-financial business economy workforce) was in double-digits. This was the case for food manufacturing in Border, Midland and Western (13.5 %), for the manufacture of rubber and plastic products in Auvergne (12.7 %), for the manufacture of machinery and equipment in Tübingen (11.2 %) and for the manufacture of wearing apparel (NACE Division 14) in the Bulgarian region of Severozapaden (10.7 %).

**Figure 7.4: Regional specialisation within the manufacturing economy, by NUTS 2 regions, 2015**  
(% share of regional non-financial business economy employment)



Note: the range of regional values across NUTS 2 regions is shown by the bar; the EU-28 average is shown by the vertical line inside the bar; the figure is ranked on this share; the name of the region with the highest share is also shown. NACE division codes are given in parenthesis after each of the activity labels. Capital regions are shown with a **bold** font. Earlier reference periods have been used in some cases; the figure is based on non-confidential data (some activities are not available for a limited number of regions). Germany: non-financial business economy excluding NACE Sections D and E. Berlin (DE30), Mecklenburg-Vorpommern (DE80), Koblenz (DEB1), Trier (DEB2) and Mayotte (FRA5): not available. EU-28: estimates. Iceland: provisional.

(<sup>1</sup>) A single region at NUTS/statistical region level 2.

Source: Eurostat (online data codes: sbs\_r\_nuts06\_r2 and sbs\_na\_sca\_r2)

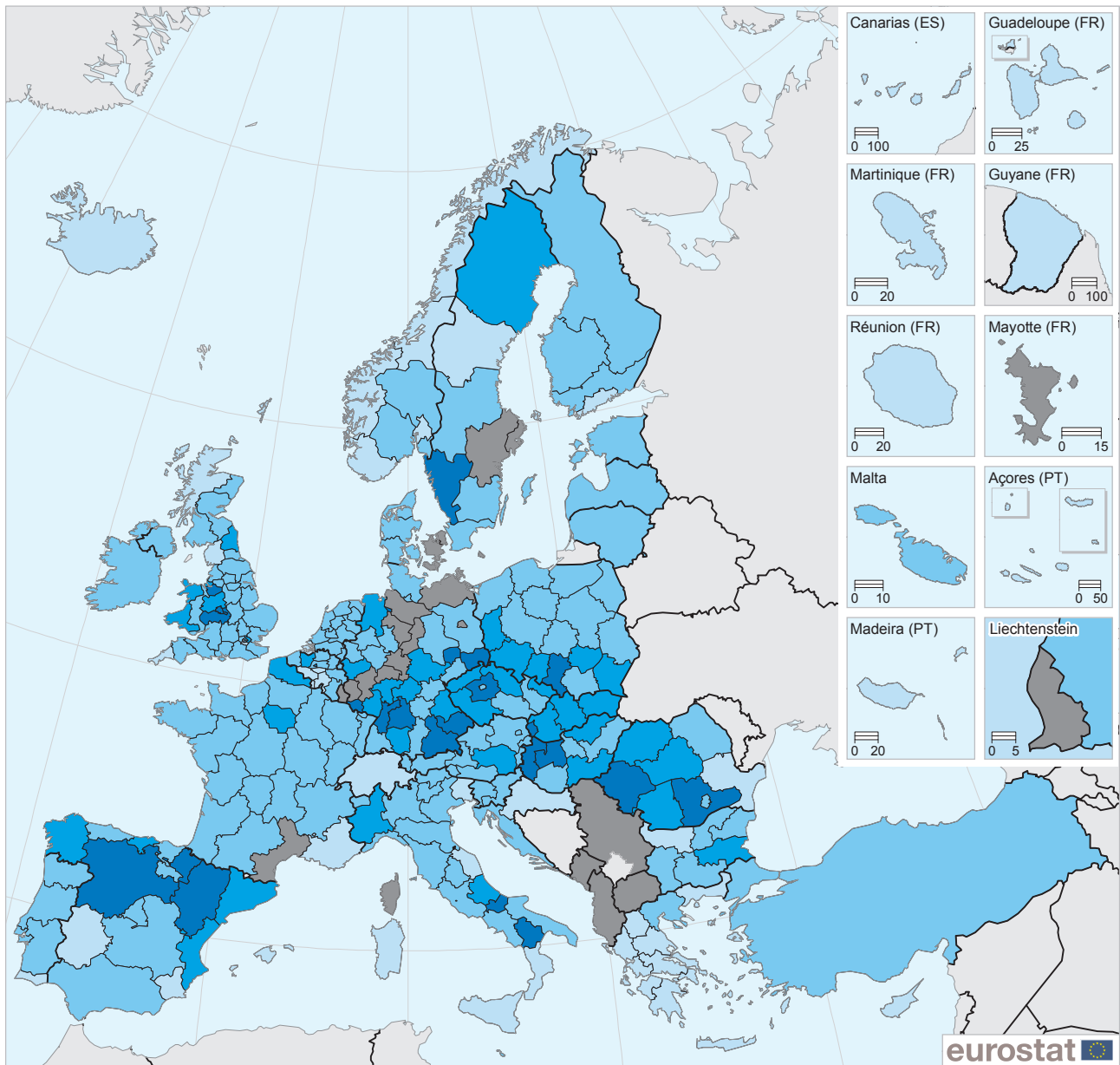


## FOCUS ON THE MANUFACTURE OF MOTOR VEHICLES

Motor vehicles manufacturing is often cited as being crucial for the EU's prosperity, providing a large number of jobs (2.4 million directly in 2015) and high levels of [research and development \(R & D\)](#) expenditure. Furthermore, this subsector has a considerable 'multiplier effect' given its impact on both upstream (for example, steel and textiles) and downstream activities (for example, motor trades and repair). The European Commission aims to preserve the EU's leadership in motor vehicles manufacturing through increasing funds that are available for R & D, with initiatives to encourage, among others, safety, green vehicles and the decarbonisation of engines, or information technology infrastructure.

In 2015, the manufacture of motor vehicles, trailers and semi-trailers accounted for 8.1 % of the total number of persons employed within the EU-28's manufacturing sector. **Map 7.2** shows there were 24 NUTS level 2 regions in the EU where the manufacture of motor vehicles, trailers and non-trailers accounted for at least 16.0 % of the manufacturing sector's workforce in 2015. The highest shares were recorded in Bratislavský kraj (the capital city region of Slovakia), Basilicata (in southern Italy) and Vest (Romania), where more than one third of the total manufacturing workforce were employed producing motor vehicles, trailers and semi-trailers. The next highest employment shares were recorded in Nyugat-Dunántúl (western Hungary) and Střední Čechy (which surrounds the Czech capital city), followed by three southern regions in Germany — Stuttgart, Oberbayern and Niederbayern — as well as the western Swedish region of Västsverige; the manufacture of motor vehicles, trailers and semi-trailers accounted for 25-30 % of total manufacturing employment in each of these regions.

**Map 7.2: Employment in the manufacture of motor vehicles, trailers and semi-trailers, by NUTS 2 regions, 2015**  
 (% share of total employment in the manufacturing sector)

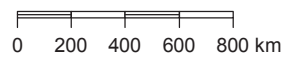


(% share of total employment in the manufacturing sector)

EU-28 = 8.1

- < 1.0
- 1.0 - < 8.0
- 8.0 - < 16.0
- ≥ 16.0
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
 Cartography: Eurostat — GISCO, 04/2018



Note: the manufacture of motor vehicles, trailers and semi-trailers is defined as NACE Division 29. Earlier reference periods have been used in some cases. Ireland, Switzerland and Turkey: national data. Switzerland: estimate. Iceland: provisional.

Source: Eurostat (online data codes: sbs\_r\_nuts06\_r2 and sbs\_na\_sca\_r2)



## Enterprise demography

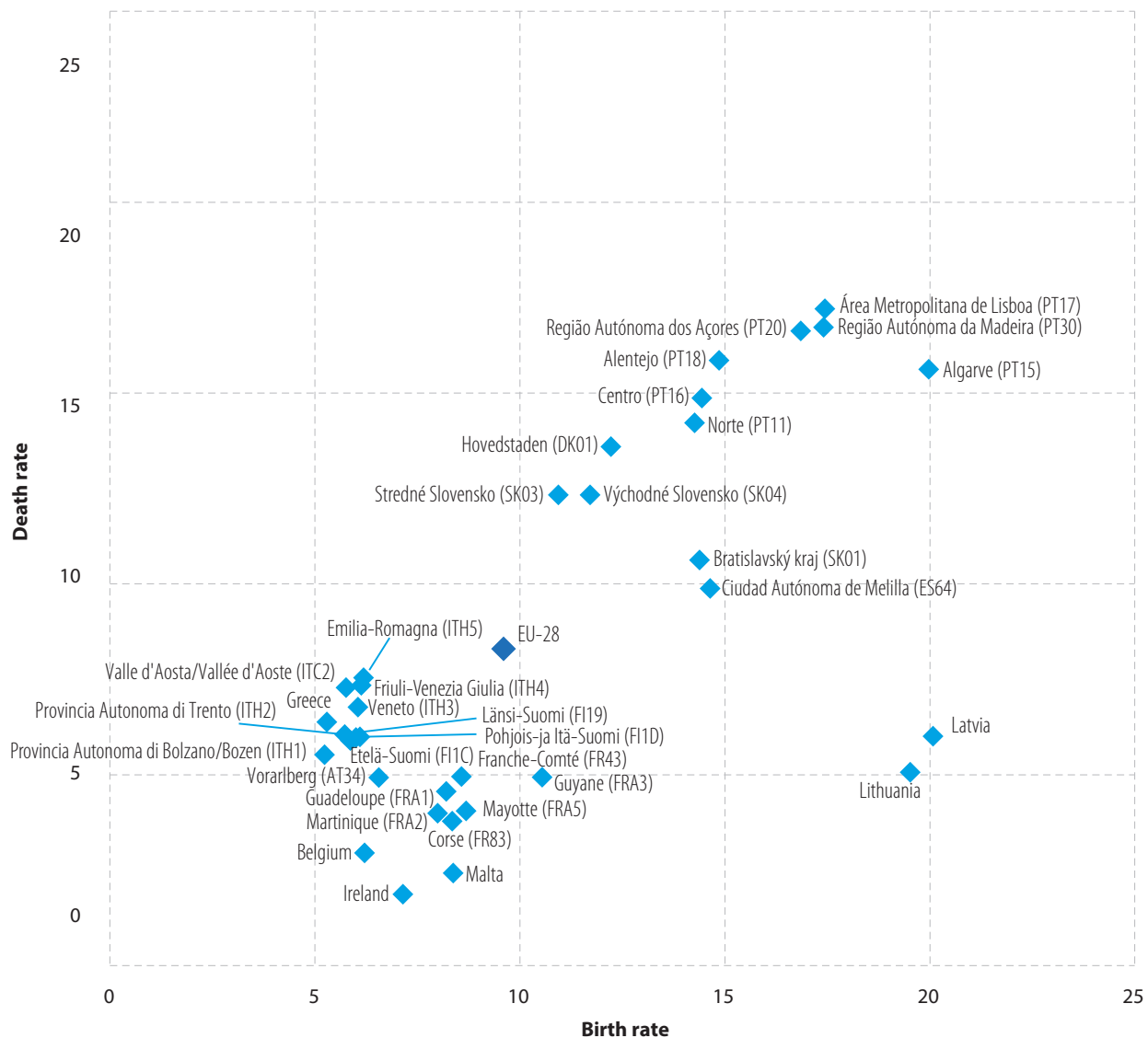
Business demography statistics describe the characteristics of enterprises within the business population. They cover, among others, the birth of new enterprises, the growth and survival of existing enterprises (with particular interest centred on their employment impact), and enterprise deaths. These indicators can provide an important insight into business dynamics, as new enterprises/fast-growing enterprises tend to be innovators that achieve efficiency gains and improve the overall competitiveness of an economy.

## BIRTHS AND DEATHS

The enterprise birth rate measures the number of new enterprises in relation to the total population of active enterprises. The birth rate in the EU-28's business economy (as defined by NACE Sections B to N, excluding Group 64.2) was estimated to be 9.6 % in 2015, while the death rate was estimated to be 8.3 %, indicating growth in the overall number of enterprises in the EU.

Figure 7.5 presents information for the 10 NUTS level 2 regions with the highest and lowest enterprise birth

**Figure 7.5: Enterprise birth and death rates in the business economy, by NUTS 2 regions, 2015**  
(% share of active enterprises)



Note: the figure shows the 10 NUTS regions with the highest and lowest birth rates and the 10 NUTS regions with the highest and lowest death rates (in some cases the same region may appear in more than one of these rankings). The business economy is defined as NACE Sections B-S (excluding Group 64.2). EU-28, Poland and Sweden: NACE Sections B-N (excluding Group 64.2). Belgium, Germany, Ireland, Greece, the Netherlands, Poland, Slovenia, Sweden and the United Kingdom: national data. Different reference periods have been used in some cases; the figure is based on non-confidential data. Birth rates for Ireland and Latvia: estimates. Austria: provisional. Death rates: provisional.

Source: Eurostat (online data codes: [bd\\_size\\_r3](#) and [bd\\_9bd\\_sz\\_cl\\_r2](#))

and death rates; note that for most of the EU Member States, information is available for NACE Sections B-S (excluding Group 64.2). In 2015, the enterprise birth rate peaked in Latvia (a single region at this level of detail; 20.1 %) and was also relatively high in Lithuania (a single region at this level of detail; 19.5 %), while there were six Portuguese regions that also featured among the top 10 regions with the highest enterprise birth rates, led by Algarve (20.0 %) and the capital city region of Área Metropolitana de Lisboa (17.5 %).

The highest enterprise death rates were also recorded across several regions of Portugal (2014 data), confirming a relatively high degree of business churn: large numbers of businesses entering and leaving the population of active enterprises. Indeed, **Figure 7.5** confirms that it was relatively common for those regions with relatively high enterprise birth rates to also be characterised by relatively high enterprise death rates. This is perhaps not surprising, as dynamic and innovative enterprises entering a market may be in a position to drive incumbents out of the market.

#### ***There was a rapid increase in the number of active enterprises in Latvia and Lithuania in 2015***

An analysis based on the difference between enterprise birth and death rates reveals that there was a net increase in enterprise numbers in a majority of the regions for which data are shown in **Figure 7.5**. The net growth was particularly strong for Latvia and Lithuania, as both of these Baltic Member States had relatively low death rates in 2015 (below the EU-28 average) in contrast to some of the highest enterprise birth rates in the EU, resulting in a rapid net increase in the number of active enterprises; this was also the case, to a lesser degree in Malta (a single region at this level of detail). Among the regions where the enterprise death rate was greater than the enterprise birth rate, differences between rates were less marked: the biggest gaps were recorded for Valle d'Aosta/Vallée d'Aoste (north-west Italy; 2014 data for the death rate), Hovedstaden (the Danish capital city region; 2013 data) and Stredné Slovensko (central Slovakia; 2014 data for the death rate) where the total number of active enterprises fell.

A closer analysis reveals that enterprise birth rates tend to be higher than average in capital city regions, which may reflect a range of factors, for example: capital city regions generally offer the largest potential market (but also the highest number of competitors), are often characterised by more highly-educated workforces and studies show that graduates are more likely to start a

new business, and generally have a high proportion of service-based enterprises (where barriers to entry are often quite low). **Figure 7.6** shows that the highest enterprise birth rates in Slovakia, Romania, Bulgaria, Hungary, France, the Czech Republic, Croatia and Finland were registered for their respective capital city regions. The only exceptions to this pattern among those multi-regional EU Member States for which data are available were Portugal, Spain, Austria and Italy. However, enterprise birth rates remained higher than the national average in three of these, with Comunidad de Madrid (Spain) the only capital city region to record an enterprise birth rate that was lower than the national average.

### **HIGH-GROWTH ENTERPRISES**

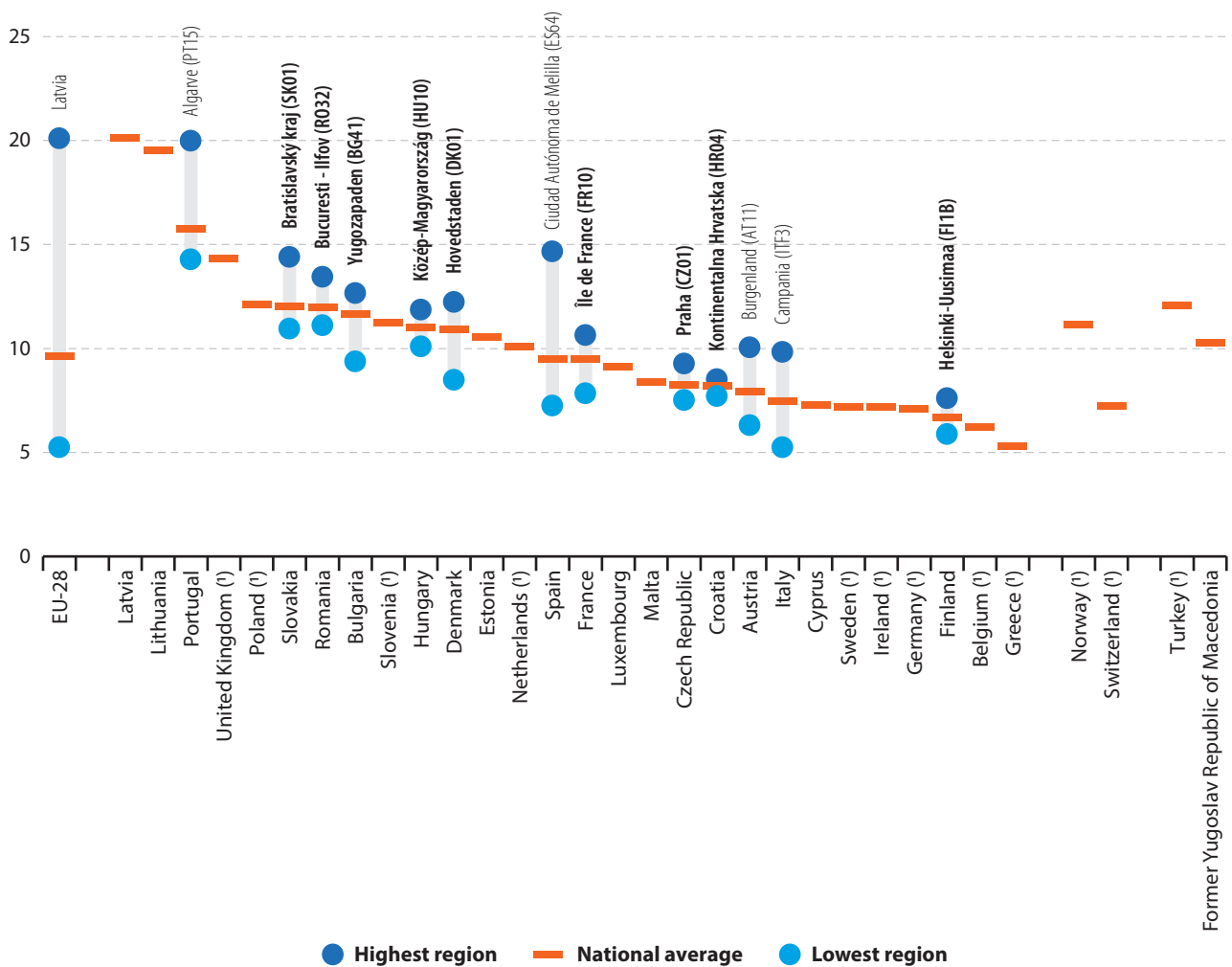
High-growth enterprises are defined as enterprises which have at least 10 employees at a fixed moment in time, which subsequently have average annual growth in their number of employees greater than 10.0 % during a three-year period. High-growth enterprises are of interest to policymakers because of their economic impact, particularly in creating employment opportunities. The use of a threshold of 10 employees is designed to avoid including very small enterprises where employment increases could be very high in relative terms, but with little economic impact in absolute terms, for example increasing from one employee to two employees. The share of high-growth enterprises that is shown in **Map 7.3** is calculated relative to the total number of enterprises with at least 10 employees in 2015.

It is estimated that high-growth enterprises made up 9.9 % of the EU-28's business enterprise population (with at least 10 employees) in 2015. Looking at the regional analysis presented in **Map 7.3**, high-growth enterprises made up 12 % or more of the business population (of enterprises with at least 10 employees) in 2015 in 12 of the 143 regions of the EU for which data are available; these regions are shown in the darkest shade of blue in the map. They included all but one of the Hungarian regions (the exception being Észak-Magyarország), two regions from Slovakia (Bratislavský kraj and Stredné Slovensko), as well as Latvia and Malta (each one region at this level of detail), Ireland and Sweden (only national data available). At the other end of the range, high-growth enterprises made up at most 3.0 % of the business population (of enterprises with at least 10 employees) in the French overseas region of Mayotte, Cyprus (one region at this level of detail) and all eight regions in Romania.





**Figure 7.6: Enterprise birth rate in the business economy, by NUTS 2 regions, 2015**  
(% share of active enterprises)

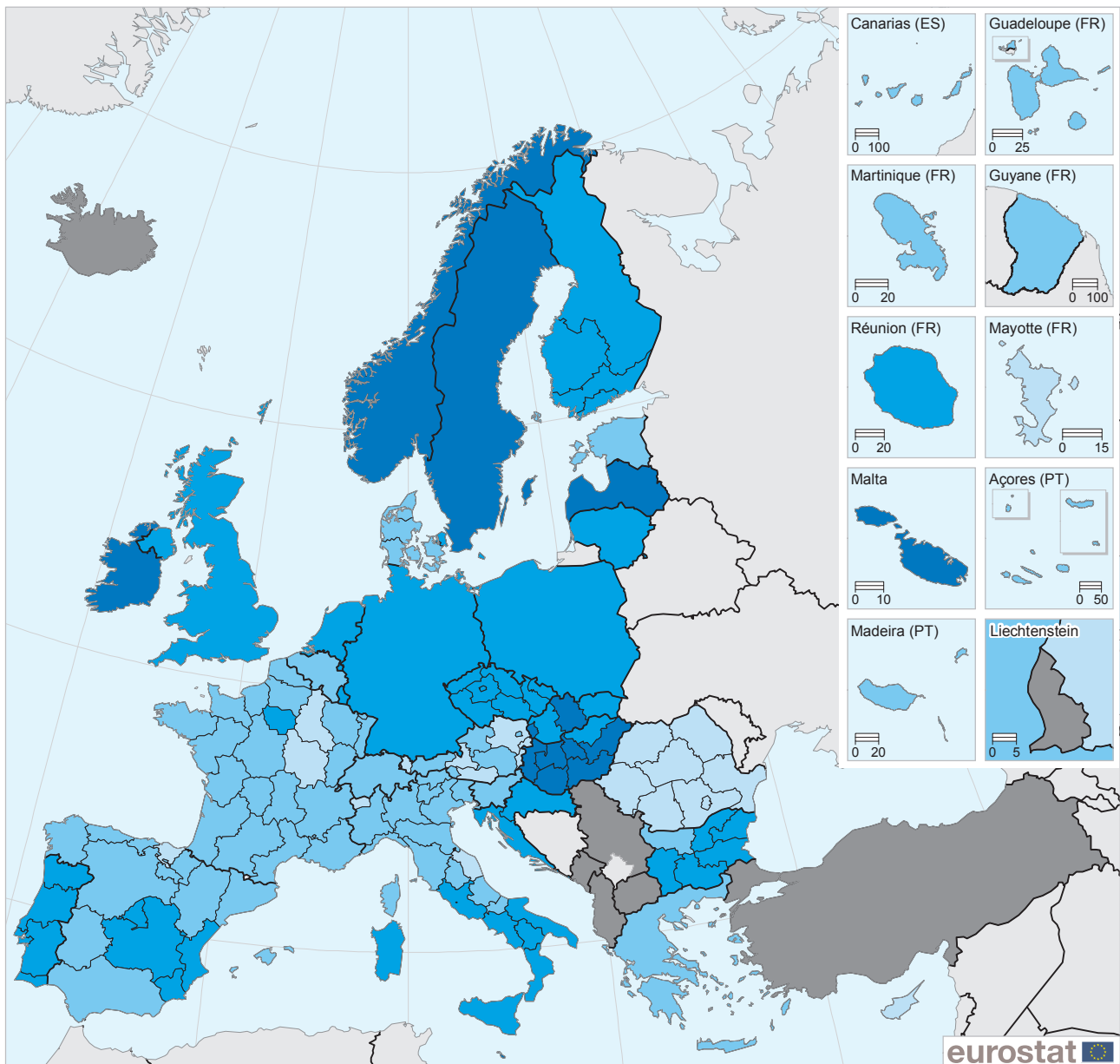


Note: the business economy is defined as NACE Sections B-S (excluding Group 64.2). EU-28, Poland and Sweden: NACE Sections B-N (excluding Group 64.2). Belgium, Germany, Ireland, Greece, the Netherlands, Poland, Slovenia, Sweden and the United Kingdom: national data. Spain and Cyprus: 2014. Denmark: 2013. Capital regions are shown with a **bold** font. The figure is based on non-confidential data. Ireland and Latvia: estimates. Austria: provisional.

(\*) No information available for NUTS/statistical regions level 2.

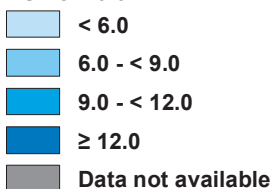
Source: Eurostat (online data codes: [bd\\_size\\_r3](#) and [bd\\_9bd\\_sz\\_cl\\_r2](#))

**Map 7.3: High-growth enterprises in the business economy, by NUTS 2 regions, 2015**  
 (% share of total number of enterprises in the business economy)

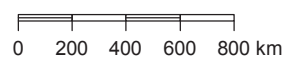


(% share of total number of enterprises in the business economy)

EU-28 = 9.9



Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
 Cartography: Eurostat — GISCO, 04/2018



Note: high-growth enterprises are defined as those enterprises meeting all three of the following criteria: i) born before 2012 and having survived to 2015 ii) with at least 10 employees in 2012 and iii) with an average employee growth rate of at least 10.0 % per annum for the period 2012-2015. The share of these enterprises is calculated relative to the total number of enterprises with at least 10 employees in 2015. The business economy is defined as NACE Sections B-S (excluding Group 64.2). EU-28, Belgium, Germany, Ireland, Greece, Cyprus, Latvia, Luxembourg, Malta, the Netherlands, Poland, Slovenia, Sweden, the United Kingdom, Norway and Switzerland: NACE Sections B-N (excluding Group 64.2). EU-28, Belgium, Germany, Ireland, Greece, the Netherlands, Poland, Slovenia, Sweden, the United Kingdom, Norway and Switzerland: national data. Spain, Cyprus and Switzerland: 2014. Denmark: 2013. Greece and Switzerland: provisional.

Source: Eurostat (online data codes: [bd\\_hgnace2\\_r3](#) and [bd\\_9pm\\_r2](#))

# 8

## Research and innovation



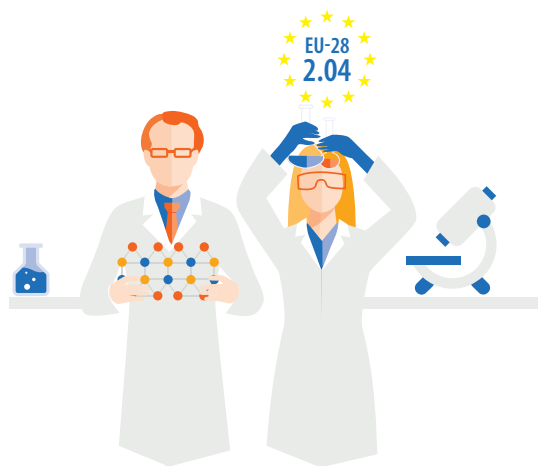
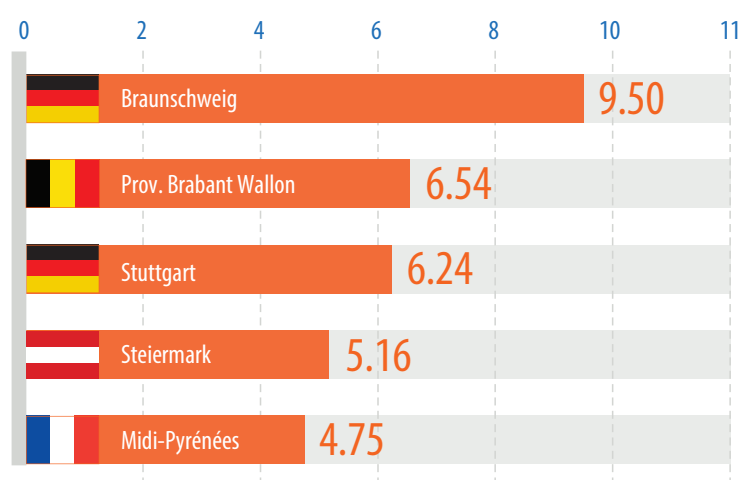
## Key findings

- Braunschweig in Germany had the highest level of R & D intensity in the EU, at 9.5 %.
- Researchers accounted for just over 1 in 20 persons who were employed in Inner London - West.
- Human resources in science and technology accounted for more than three out of every five persons who were economically active in the capital city regions of the Czech Republic, France, Finland, Sweden and the United Kingdom.

### TOP 5 REGIONS IN THE EU

#### RESEARCH AND DEVELOPMENT INTENSITY, 2015

(%, relative to GDP)



In modern societies, the benefits of research and innovation increasingly form a vital part of our everyday lives. They contribute to resolve environmental threats, make food safer, lead to the development of new medicines to prevent and fight illness and disease, and foster communication and entertainment. Indeed, science and technology can tackle successfully some of the major challenges facing society today, and by so doing, can act as a driving force for economic growth and job creation.

The [European Union \(EU\)](#) has a leading position in the production of scientific knowledge. However, many commentators claim that the EU too rarely succeeds in turning its research discoveries into innovations, in other words, moving on from an invention/discovery/theoretical framework and developing research in such a manner that its results may be directly materialised and commercialised. The [European Commission](#) has unveiled three main policy goals for EU to stimulate [research and development \(R & D\)](#):

- open innovation — opening-up the innovation process to people with experience in other fields (outside of academia and science) with the hope that this can be used to develop products and services that create new markets;

- open science — changing the way that scientific research is shared by introducing a new approach that is based on spreading knowledge and information as soon as it is available rather than publishing results in scientific journals after research is completed;
- open to the world — promoting international cooperation within the research community, such that Europe may access the latest knowledge, recruit the best talent and create business opportunities in emerging markets.

The [Europe 2020 strategy](#) is the EU's growth strategy to become a 'smart, sustainable and inclusive economy'. In 2010, the European Commission adopted a Communication launching a flagship initiative, the [Innovation union](#) (COM(2010) 546 final); this set out a strategic approach to a range of challenges like climate change, energy and food security, health and an ageing population. It is hoped that the promotion of innovation in these areas will lead to new ideas being transformed into new economic activities and products, which in turn will generate jobs, green growth and social progress. The innovation union seeks to use public sector intervention to stimulate the private sector, removing bottlenecks which may prevent ideas from reaching the market, such as access to finance, a lack of venture capital, fragmented research systems, the under-use of public procurement



for innovation, and speeding-up harmonised standards and technical specifications. To promote the innovation union, a range of [European innovation partnerships \(EIPs\)](#) have been setup, designed to act as a framework for addressing major societal challenges: active and healthy ageing; agricultural sustainability and productivity; smart cities and communities; use, re-use and management of vital water resources; raw materials.

The Europe 2020 strategy set a target in relation to [R & D intensity](#), namely that expenditure on R & D should be equivalent to at least 3.00 % of the EU-28's GDP. The [innovation union scoreboard](#) tracks a broad range of innovation indicators, including educational standards, R & D expenditure, patent production and business innovation. The results are used in the [annual growth survey](#), which helps EU Member States to determine their strengths and areas they need to focus more on.

Sustainable growth is increasingly related to the capacity of regional economies to innovate and transform, adapting to an ever-changing and more competitive environment. Promoting innovation is therefore a central feature of all cohesion policy programmes, alongside reducing the innovation differences that exist between EU regions. In the current budgetary period (2014-2020), investments under the [European Regional Development Fund \(ERDF\)](#) are concentrated on four key thematic priorities: innovation and research, the digital agenda, support for small and medium-sized enterprises (SMEs) and the low-carbon economy.

This chapter presents statistical information analysing regional developments for a range of research and innovation-related indicators within the EU, including the following topics: R & D expenditure, the number of R & D [researchers](#), and the share of [human resources in science and technology \(HRST\)](#), with a special focus on scientists and engineers.

## Research and development (R & D) expenditure

Research, knowledge and innovative capacity depend on a wide range of factors: business culture, workforce skills, education and training institutions, innovation support services, technology transfer mechanisms, regional infrastructure, the mobility of researchers, sources of finance or creative potential. Due to its nature, R & D tends to be concentrated physically, such that there are clusters of regions with relatively high R & D intensity. These are often situated around academic institutions or specific high-technology industrial activities and knowledge-based services, which foster a favourable environment, thereby attracting new start-ups and highly qualified personnel, such that the competitive advantage of these regions is further intensified. The EU has set-up mechanisms to share this know-how with surrounding regions that are lagging behind.

The Europe 2020 target for R & D expenditure in the EU-28 has been set at 3.00 % relative to GDP. This overall target is broken down into national targets that are based on the position of each EU Member State and commitments agreed between the European Commission and national administrations. The national targets range from 0.50 % of GDP in Cyprus to 3.76 % of GDP in Austria and 4.00 % of GDP in the traditionally R & D-intensive Member States of Finland and Sweden; there is no national target for the United Kingdom.

[Gross domestic expenditure on R & D \(GERD\)](#) includes expenditure on R & D by several sectors, namely: business enterprises, higher education institutions, as well as government and private non-profit organisations. It was valued at EUR 302.9 billion across the EU-28 in 2016; this equated to an average of EUR 594 of R & D expenditure per inhabitant. R & D expenditure in the EU-28 was 2.03 % relative to [gross domestic product \(GDP\)](#), which marked the third consecutive year with little or no change for this ratio.

### **About one third of all the regions in the EU where R & D intensity was greater than 3.00 % were located in Germany**

The highest ratios for R & D intensity were concentrated in Germany, Austria, the United Kingdom, Sweden and Belgium: in 2015, these were the only EU Member States to report more than a single region where R & D intensity reached the overall EU target of 3.00 %. The highest levels of expenditure on R & D relative to GDP were usually recorded in capital city regions or regions characterised by their highly skilled labour force, for example, areas with research institutes, science parks or close collaboration between universities and private enterprise.

In total, there were 31 regions across the EU where R & D intensity exceeded the Europe 2020 target of 3.00 % — these are shown by the darkest shade in **Map 8.1** — about one third of which were located in Germany (11 regions), including the northern region of Braunschweig, which had the highest ratio of R & D intensity among any of the [NUTS](#) level 2 regions in the EU, some 9.5 %. The second highest ratio in Germany — and the third highest ratio across the whole of the EU — was recorded in Stuttgart (6.2 %), while a ranking of the top six regions in Germany with the highest ratios was completed by Tübingen, Karlsruhe, Oberbayern and Dresden; each of these recorded R & D intensity within the range of 4.0-5.0 %.

In 2015, five Austrian regions and five regions from the United Kingdom had R & D intensities above the Europe 2020 target of 3.00 %. The highest ratio among the five regions in Austria was recorded in the southern region of Steiermark (5.2 %), while East Anglia (4.6 %) and Cheshire (4.0 %) in the United Kingdom both had relatively high R & D intensities. By contrast, the highest R & D intensities in Sweden were systematically within

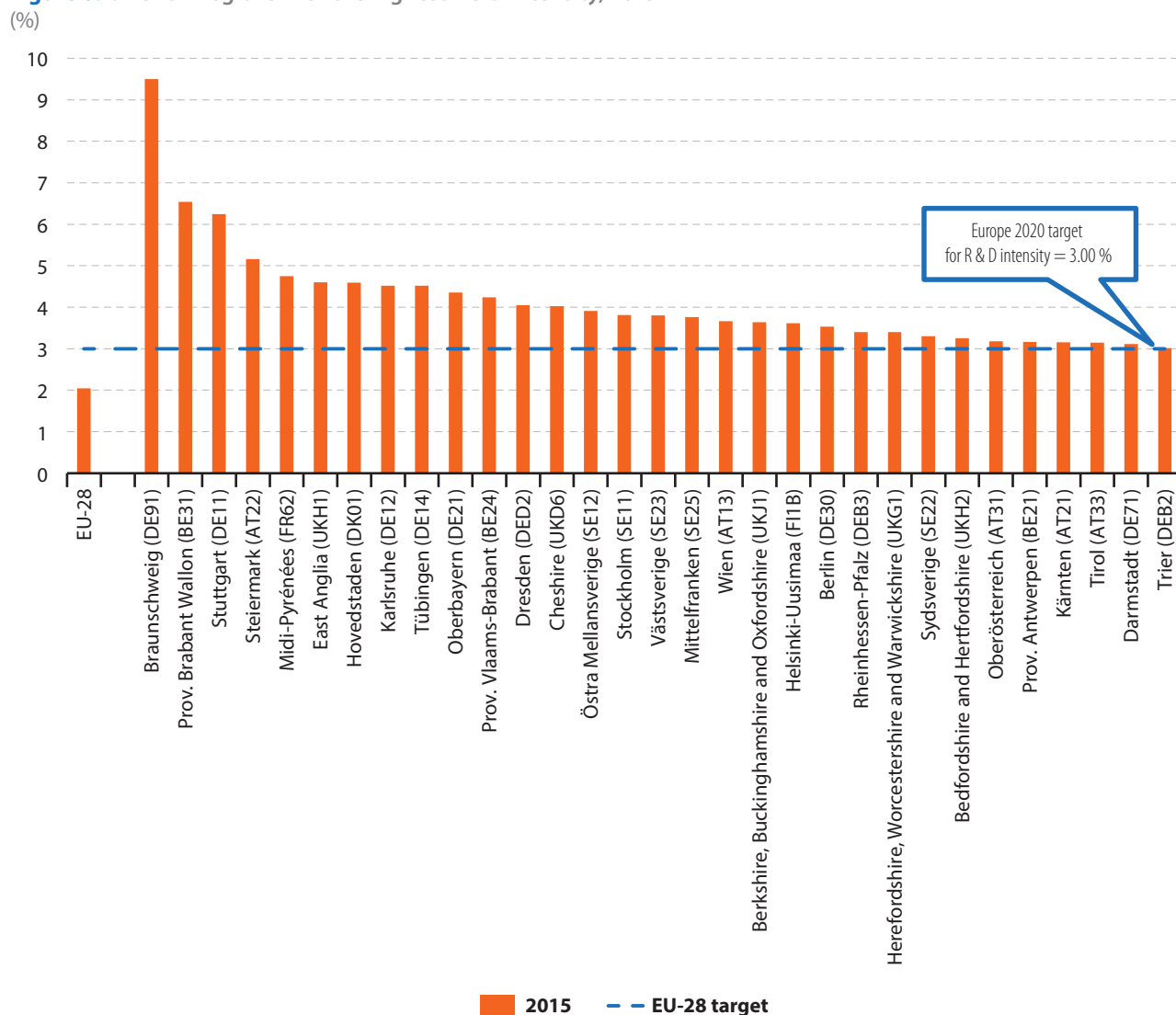
the range of 3.0-4.0 %, with the highest ratio in Östra Mellansverige (3.9 %); the Swedish capital city region was another region with high R & D intensity. Among the three regions in Belgium with R & D intensity above the Europe 2020 target, there were two which bordered onto each other and were within close vicinity of the capital, namely, Prov. Brabant Wallon (6.5 %) and Prov. Vlaams-Brabant (4.2 %). Finally, there were also three individual regions from different EU Member States, where R & D intensity was higher than 3.00 %. Two of these were capital city regions in the Nordic Member States: the latest intensity ratios for Hovedstaden (Denmark) and Helsinki-Uusimaa (Finland) were 4.6 % and 3.6 % respectively. The other single region was somewhat atypical insofar as it was not a capital city region: rather, the highest rate of R & D intensity in France was recorded

in the south-western region of Midi-Pyrénées (4.8 %; 2013 data), a region that has a particularly high level of research in aeronautics and aerospace.

**The highest level of R & D intensity was recorded in the German region of Braunschweig, followed by the Belgian region of Prov. Brabant Wallon and Stuttgart (also in Germany)**

Figure 8.1 also shows the 31 NUTS level 2 regions where R & D intensity was higher than 3.00 % in 2015. It is interesting to note that Braunschweig, Prov. Brabant Wallon and Stuttgart were the only regions where R & D intensity stood at a level that was more than twice as high as the Europe 2020 target. Otherwise, one of the

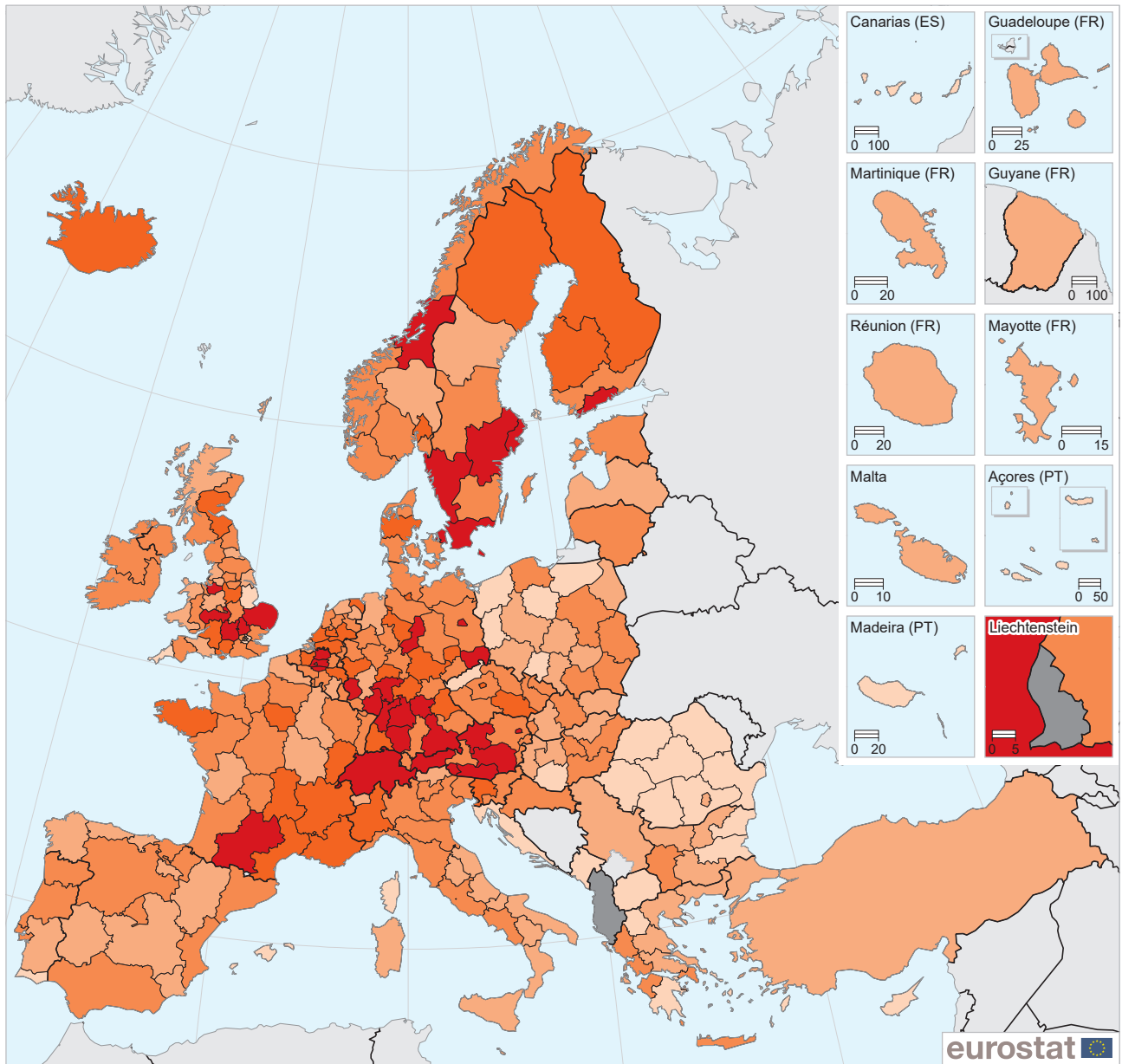
**Figure 8.1: NUTS 2 regions with the highest R & D intensity, 2015**



Note: R & D intensity is defined as gross domestic expenditure on R & D (GERD) relative to gross domestic product (GDP). The figure shows all EU regions with R & D intensity  $\geq 3.00\%$ . Départements d'outre-mer (FRA): NUTS level 1. Molise (ITF2) and Umbria (ITI2): 2014. Ireland and France: 2013. Molise (ITF2) and Umbria (ITI2): estimates. Denmark: provisional.

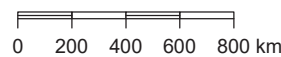
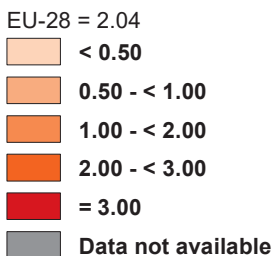
Source: Eurostat (online data code: [rd\\_e\\_gerdreg](#))

**Map 8.1: R & D intensity, by NUTS 2 regions, 2015**  
(%)



(%)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 04/2018



Note: R & D intensity is defined as gross domestic expenditure on R & D (GERD) relative to gross domestic product (GDP).  
Départements d'outre-mer (FRA): NUTS level 1. Switzerland, Serbia and Turkey: national data. Molise (ITF2), Umbria (IT12) and Norway: 2014. Ireland and France: 2013. Molise (ITF2) and Umbria (IT12): estimates. Denmark: provisional.  
Source: Eurostat (online data code: [rd\\_e\\_gerdreg](#))



most striking aspects of R & D expenditure is the way in which it is scattered in clusters across the EU. Indeed, there were considerable regional disparities, as relatively few regions recorded high levels of R & D intensity and a much larger number of regions had relatively low levels of R & D intensity. The skewed nature of this distribution is clear from the fact that 208 out of 272 NUTS level 2 regions recorded an R & D intensity that was below the EU-28 average of 2.04 %.

Looking in more detail at the lower end of the range, there were 98 regions across the EU where R & D intensity was less than 1.00 % in 2015. Among these, 34 regions had a ratio that was less than 0.50 %. These lowest levels of R & D intensity were principally located in eastern and southern regions of the EU, and included: all but one region from Romania (the exception was the capital city region of Bucuresti - Ilfov); five regions from Poland; four (outermost and island) regions from Spain; three regions from Portugal (including both island regions); three regions from Greece (including one island region); two regions from Bulgaria; and single regions from each of the Czech Republic, Croatia, Hungary and the island region of Cyprus (a single region at this level of detail). Aside from these 28 regions that were located in eastern and southern EU Member States, R & D intensity was also less than 1.00 % in four regions located in the United Kingdom, as well as the island regions of Corse (France; 2013 data) and Åland (Finland).

The analysis presented in **Map 8.2** is based on changes in R & D intensity between 2005 and 2015; these differences are measured in [percentage point](#) terms. R & D expenditure relative to GDP rose by 0.30 points during the period under consideration in the EU-28,

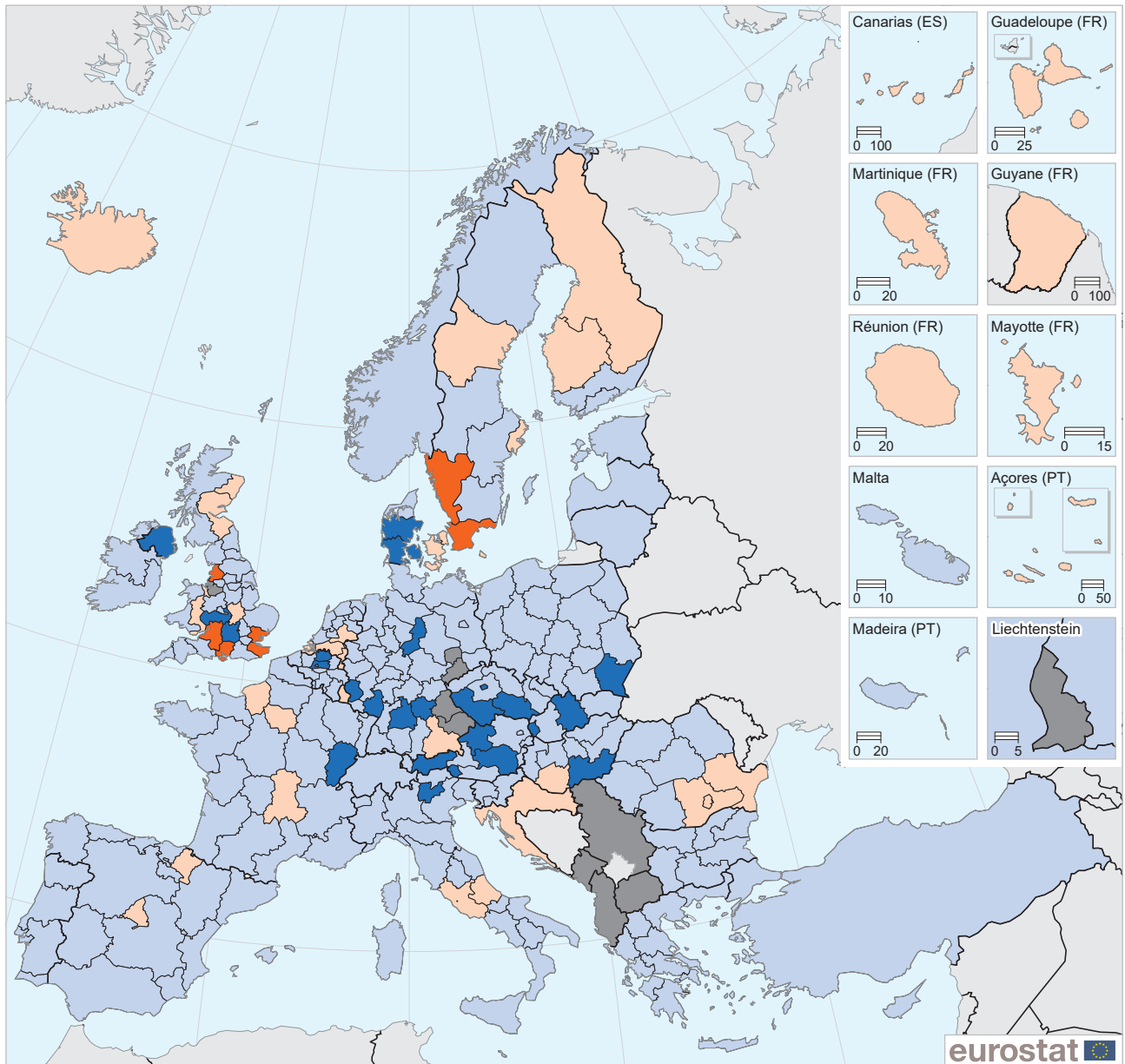
to reach 2.04 % by 2015. This development — namely, an increase in R & D intensity — was repeated in the vast majority of NUTS level 2 regions for which data are available — 216 out of 261 regions — as clearly shown by the predominance of blue shading in the map.

There were 24 regions in the EU where the ratio of R & D intensity rose by at least 0.75 points between 2005 and 2015 (as shown by the darkest shade of blue in **Map 8.2**): they were principally located in mainland Europe and included many of the regions that form the industrial heartlands of the EU, running from Franche-Comté in eastern France across to Podkarpackie in Poland and Dél-Alföld in Hungary. The biggest gain — an increase of 4.04 points — took place in Braunschweig (which had the highest level of R & D intensity in the EU in 2015), while the three next largest increases for R & D intensity were reported in Trier (Germany; up 2.36 points), Herefordshire, Worcestershire and Warwickshire (the United Kingdom; 2.08 points) and Steiermark (Austria; 1.87 points during the period 2006-2015); in 2015, all three of these had a level of R & D intensity that was higher than the Europe 2020 target of 3.00 %.

There were 40 regions in the EU where the importance of R & D expenditure relative to GDP declined between 2005 and 2015 (as shown by the orange shade in **Map 8.2**). The seven regions that reported a rapid decline of R & D intensity — a fall of more than 0.75 points (as shown by the dark orange shade) — were located exclusively in either the United Kingdom or Sweden. The biggest reduction was recorded in Essex (the United Kingdom), where R & D intensity fell by 1.64 points, dropping to 1.55 % by 2015.

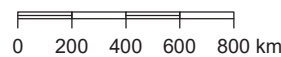
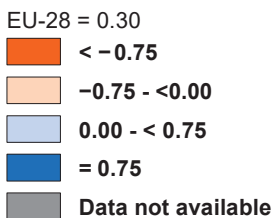


**Map 8.2: Change in R & D intensity, by NUTS 2 regions, 2005-2015**  
(percentage points difference, 2015 minus 2005)



(percentage points difference, 2015 minus 2005)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 04/2018



Note: R & D intensity is defined as gross domestic expenditure on R & D (GERD) relative to gross domestic product (GDP). Départements d'outre-mer (FRA) and London (UKI): NUTS level 1. Croatia, Norway, Switzerland and Turkey: national data. Belgium and Austria: 2006-2015. Denmark 2007-2015. Ireland: 2005-2013. France: 2004-2013. Molise (ITF2) and Umbria (IT12): 2005-2014. Switzerland: 2004-2015. Molise (ITF2) and Umbria (IT12), the Netherlands and the United Kingdom: estimates. Denmark: provisional. Austria and Iceland: break in series.

Source: Eurostat (online data code: [rd\\_e\\_gerdreg](#))



## Researchers

Researchers are directly employed within R & D activities and are defined as 'professionals engaged in the conception or creation of new knowledge, products, processes, methods and systems and in the management of the projects concerned'.

There were an estimated 2.85 million researchers active across the EU-28 in 2015. Their number — as a simple headcount — has grown at a steady pace in recent years, rising from 2.02 million in 2005; this was equivalent to an average increase of 3.5 % per annum. An alternative measure for labour input adjusts the number of researchers to take account of different working hours and working patterns. Based on this, there were 1.85 million **full-time equivalent (FTE)** researchers in the EU-28 in 2015, an increase of 471.1 thousand compared with a decade earlier (or an average increase of 3.0 % per annum).

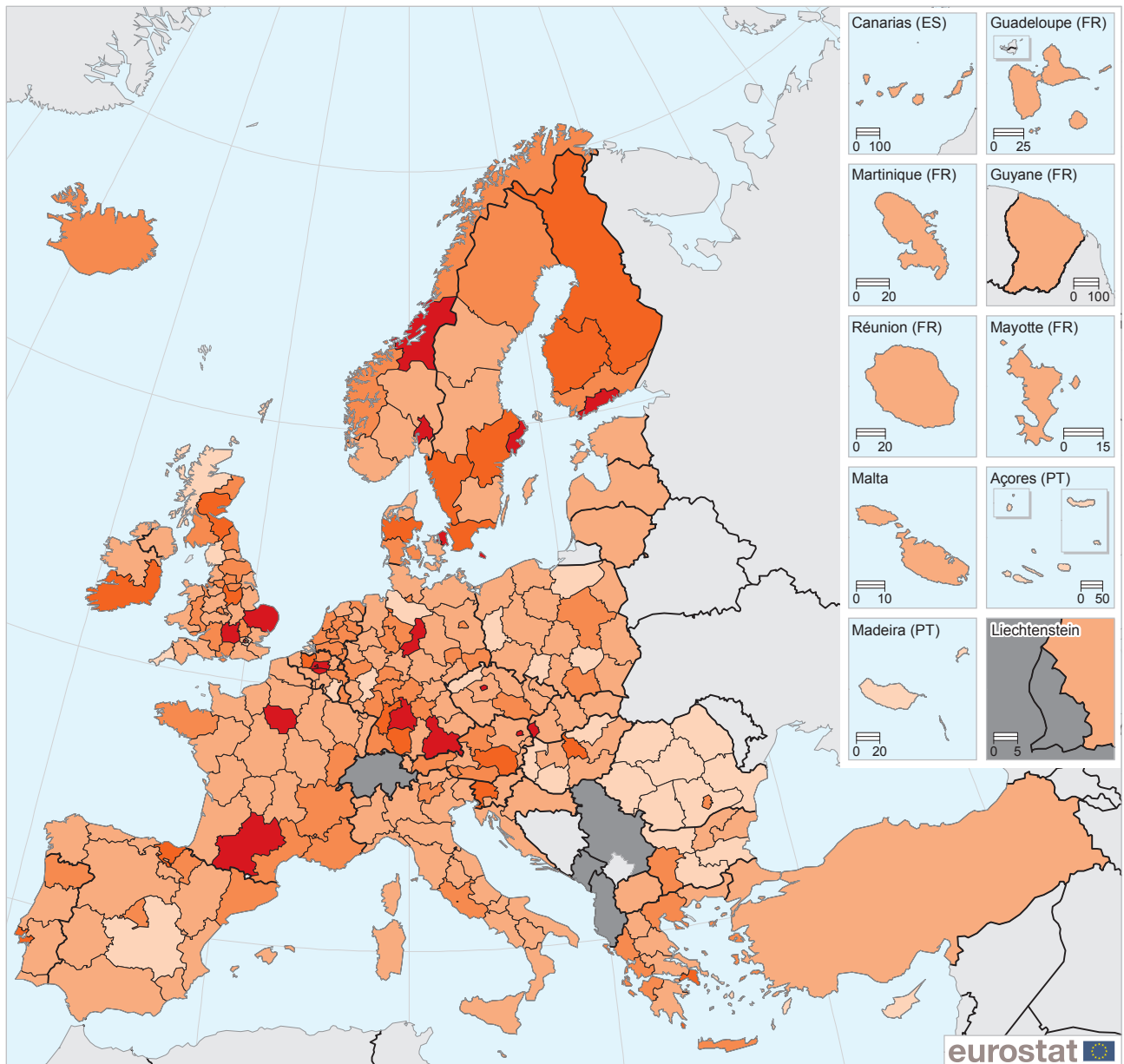
In 2015, the 1.85 million full-time equivalent workers who were employed as researchers across the EU-28 represented 0.86 % of its total workforce. The distribution of researchers was highly skewed across the regions of the EU: the relative weight of researchers in the total number of persons employed was higher than the EU-28 average in 81 NUTS level 2 regions, while there were 190 regions that recorded shares below the EU-28 average (see **Map 8.3**).

Unsurprisingly, those regions where researchers accounted for a relatively high proportion of the total number of persons employed were often the same as those which were characterised by high R & D intensity; they were joined by several capital city regions. This was particularly the case for Inner London - West (one of the capital city regions in the United Kingdom), where the share of researchers in the total number of persons employed peaked at 5.1 %, considerably higher than in any other region as the second highest share was in the Belgian region of Prov. Brabant Wallon (2.8 %).

There were 11 regions in the EU-28 where researchers accounted for more than 2.00 % of the total number of persons employed in 2015. Seven of these were capital city regions: along with Inner London – West, the others included Hovedstaden (Denmark), Helsinki-Uusimaa (Finland), Bratislavský kraj (Slovakia), Praha (the Czech Republic), Île de France (France) and Région de Bruxelles-Capitale / Brussels Hoofdstedelijk Gewest (Belgium). The relatively high number of researchers in capital city regions may be attributed, at least in part, to research and academic institutions often being located in these capital cities. By contrast, the four non-capital city regions where researchers accounted for more than 2.00 % of the workforce were all characterised by their high levels of R & D intensity and were Braunschweig, Prov. Brabant Wallon, Stuttgart and Prov. Vlaams-Brabant — the first three of these had the highest levels of R & D intensity among any of the regions in the EU.

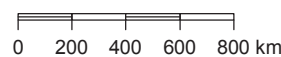
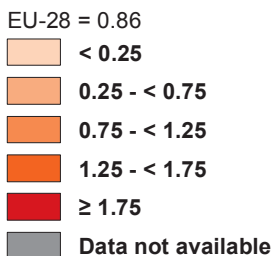


**Map 8.3: R & D researchers, by NUTS 2 regions, 2015**  
 (% share of total number of persons employed)



(% share of total number of persons employed)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
 Cartography: Eurostat — GISCO, 04/2018



Note: the numerator for researchers is presented in full-time equivalents (FTE). Départements d'outre-mer (FRA): NUTS level 1. Turkey: national data. Molise (ITF2) and Umbria (ITI2): 2014. France: 2013. Sweden and the United Kingdom: estimates. Denmark: provisional.

Source: Eurostat (online data code: [rd\\_p\\_persreg](#))

## Human resources in science and technology (HRST)

Human resources in science and technology (HRST) are defined as persons who fulfil at least one of the following two criteria:

- have completed a [tertiary level of education](#);
- are employed in a science and technology occupation (defined here as those who work as science and engineering professionals, health professionals, or information and communications technology professionals).
- HRST contributed 128.6 million persons to the EU-28's workforce in 2017. One interesting feature of this workforce was that a majority of the persons employed were women (66.6 million). Combining the two HRST criteria, there were 52.0 million people who met both the educational and occupational criteria across the EU-28 in 2017.

**Map 8.4** shows the share of HRST in the [economically active population](#): in 2017, across the whole of the EU-28 this figure stood at 44.8 %. The regional distribution of HRST among NUTS level 2 regions reveals that the regions with the highest shares were often characterised by having a high degree of R & D intensity or a high share of researchers. There was an almost equal split between those with shares above and below the EU-28 average: 135 of the 276 regions for which data are available had a share of HRST in the economically active population that was higher than the EU-28 average.

At the top end of the distribution, there were 12 regions where the share of HRST was higher than 60.0 % (as shown by the darkest shade in **Map 8.4**). Among these, the highest proportions were recorded in the two capital city regions of the United Kingdom, as the share of HRST in the active population was more than four out of every five persons (80.8 %) in Inner London - West, and was 71.7 % for Inner London - East. This high concentration of HRST in the capital of the United Kingdom was reinforced by many of the regions clustered around Inner London also reporting that HRST accounted for a majority of their active populations, notably in: Outer London - South (66.4 %; the third highest share in the EU), Outer London - West and North West (63.3 %) and Berkshire, Buckinghamshire and Oxfordshire (62.4 %).

The seven other regions in the EU where the share of HRST in the economically active population rose above 60.0 % included four other capital city regions, namely: Stockholm (64.9 %), Helsinki-Uusimaa (61.8 %), Île de France (60.5 %) and Praha (60.2 %). The final three regions were located in the [Benelux](#) Member States, with two regions surrounding the Belgian capital — Prov. Brabant Wallon (66.2 %) and Prov. Vlaams-Brabant (61.9 %) — while the third was the central Dutch region of Utrecht (60.1 %).

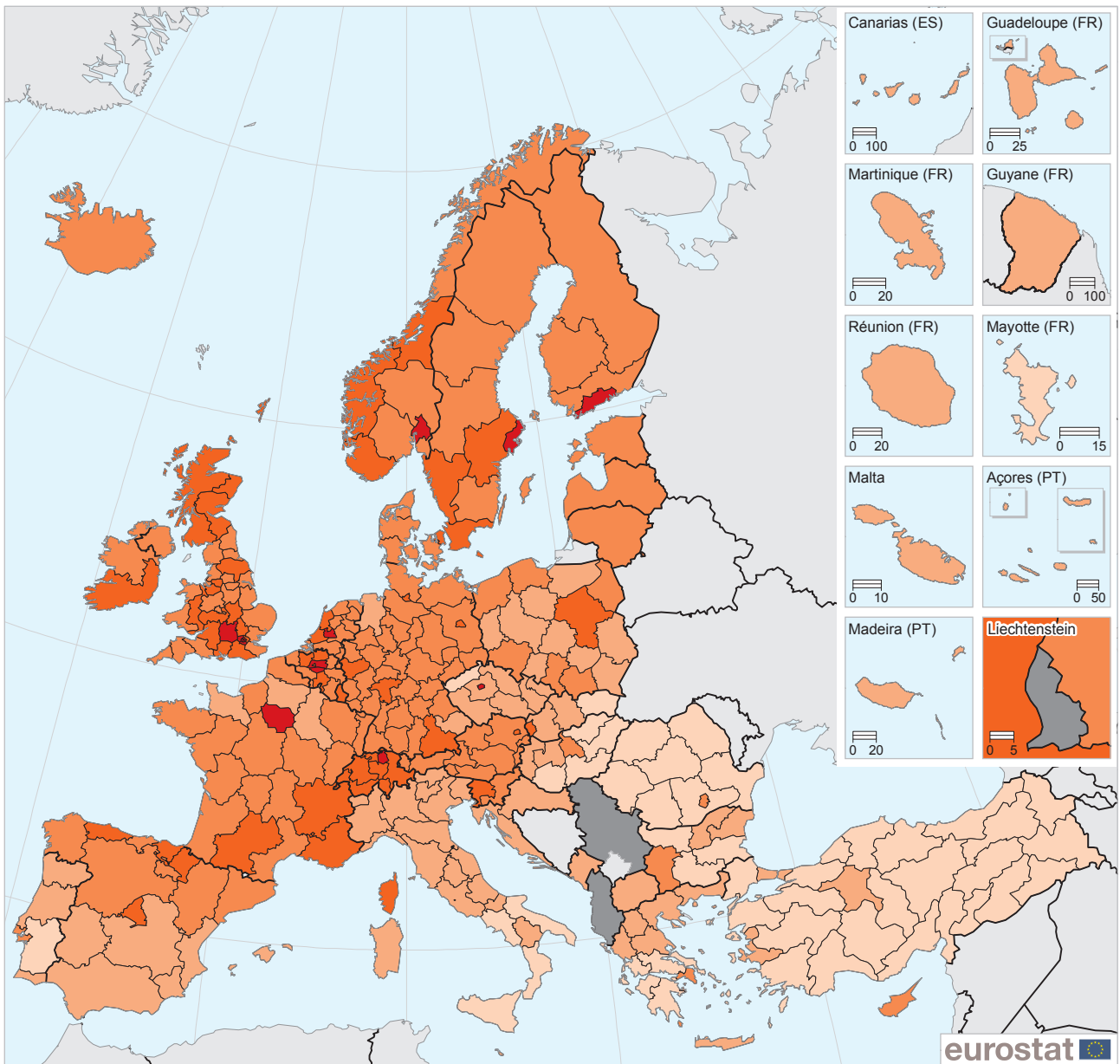
There were a further 44 regions across the EU-28 where HRST accounted for at least half of the economically active population in 2017. These were principally located in western or northern regions of the EU and included the capital city regions of Belgium, Denmark, Germany, Ireland, Luxembourg (a single region at this level of detail), the Netherlands and Austria. This list was completed by four regions from Spain (the capital city region and three northern regions) as well as the capital city regions of three eastern EU Member States, namely, Bratislavský kraj (Slovakia), Mazowieckie (Poland) and Zahodna Slovenija (Slovenia).

### *Human resources in science and technology accounted for almost 7 out of every 10 economically active women in London*

In the EU-28, almost half (49.2 %) of the female economically active population were classified as HRST in 2017; the corresponding share for men was 8.2 percentage points lower, at 41.0 %. **Figure 8.2** provides an analysis by sex for the share of HRST within the economically active population, with the regional analysis for NUTS level 1 regions. The information presented is split into two parts, showing the top 20 regions for each sex with the highest shares of HRST in their economically active populations; note that the same region may appear in both rankings. Overall, there were 50 NUTS level 1 regions across the EU where the female share of HRST accounted for at least half of the economically active population in 2017, while the corresponding count for men was 13 regions.

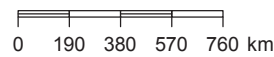
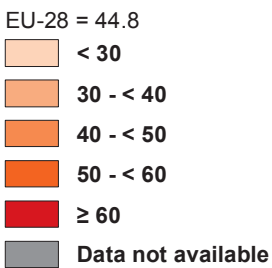
In 2017, London recorded the highest shares of HRST for both sexes: 69.0 % for women and 66.2 % for men. The latter figure was 8.0 percentage points higher than in any other region of the EU, as the second highest male share of HRST was 58.2 % in the French capital city region of Île de France. A similar comparison for women reveals a somewhat smaller gap, 5.0 points, with the second highest share for female HRST recorded in the German capital city region of Berlin (64.0 %).

**Map 8.4: Human resources in science and technology, by NUTS 2 regions, 2017**  
 (% share of economically active population)



(% share of economically active population)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
 Cartography: Eurostat — GISCO, 04/2018



Source: Eurostat (online data code: hrst\_st\_rcat)

A closer analysis reveals that there was a gender gap in favour of women for every region presented in **Figure 8.2**. Among those with the highest male shares of HRST (the left-hand side) the largest gap was recorded in Berlin — where the female share of HRST was 64.0 %, some 10.5 points higher than for men. The next largest gaps were recorded in two Belgian regions, as the female share of HRST was 8.6 points higher than the male share in Vlaams Gewest, while the difference between the sexes was 7.9 points for the capital city Région de Bruxelles-Capitale/Brussels Hoofdstedelijk Gewest.

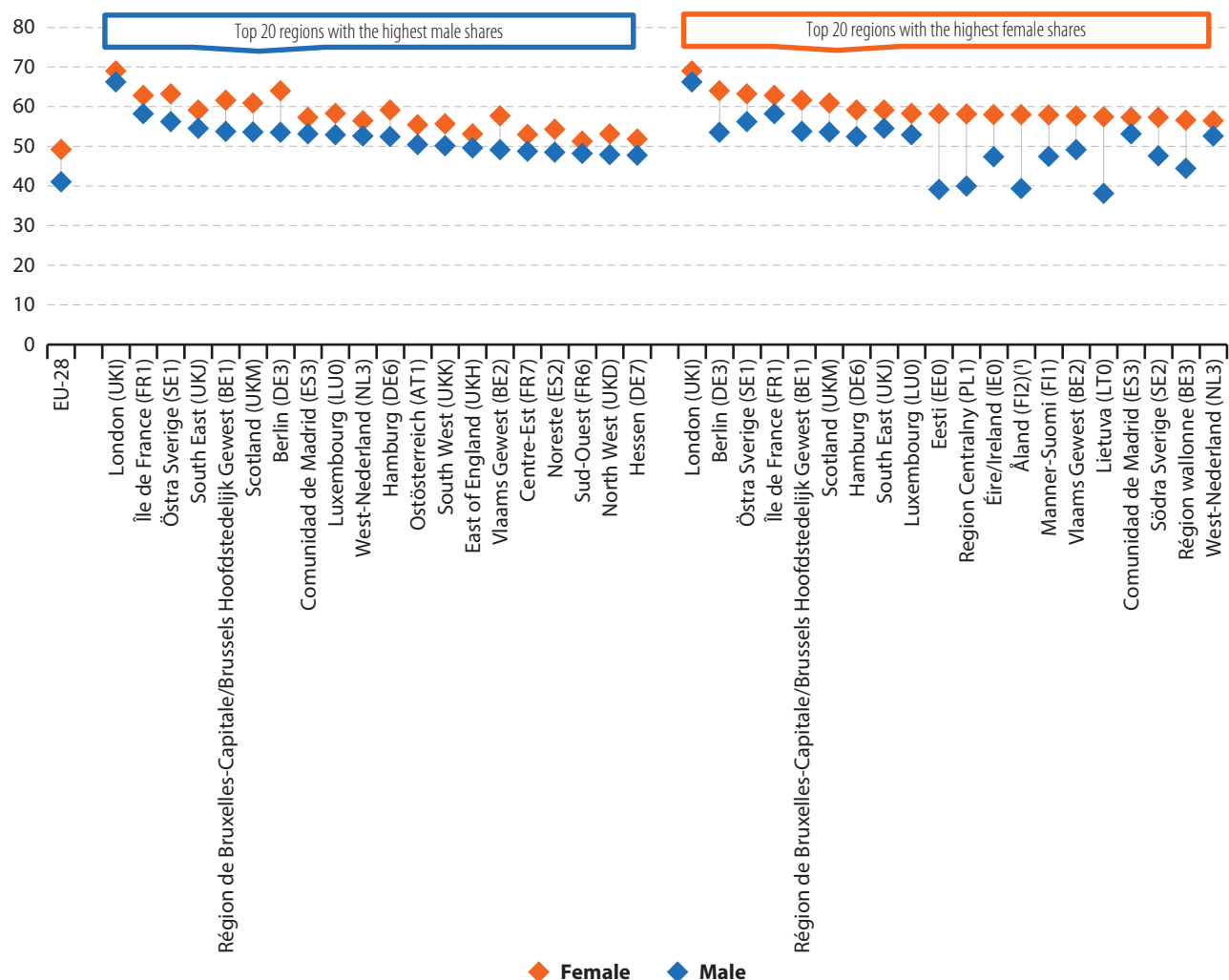
A similar comparison for the top 20 regions with the highest female shares of HRST (the right-hand side of **Figure 8.2**) reveals that the gender gaps were often larger. The gaps were particularly large in Lithuania and Estonia (both single regions at this level of detail),

Region Centralny (Poland) and Åland (Finland), where the female shares of HRST were close to 20.0 points above the male shares.

**Most regions in the EU were characterised by relatively low levels of female participation in science and engineering**

The existence of a gender gap in favour of women for HRST does not extend to all aspects of science and technology. For example, boys continue to account for a higher share of pupils/students in several scientific domains. Such gender differences are often established at an early age, as boys are more likely than girls to envisage a career as ICT professionals, scientists or engineers. To redress the relatively low levels of female participation in science and engineering, there have

**Figure 8.2: NUTS 1 regions with the highest shares of human resources in science and technology, by sex, 2017**  
(% share of economically active population)



(1) Male: low reliability.

Source: Eurostat (online data code: hrst\_st\_rsex)



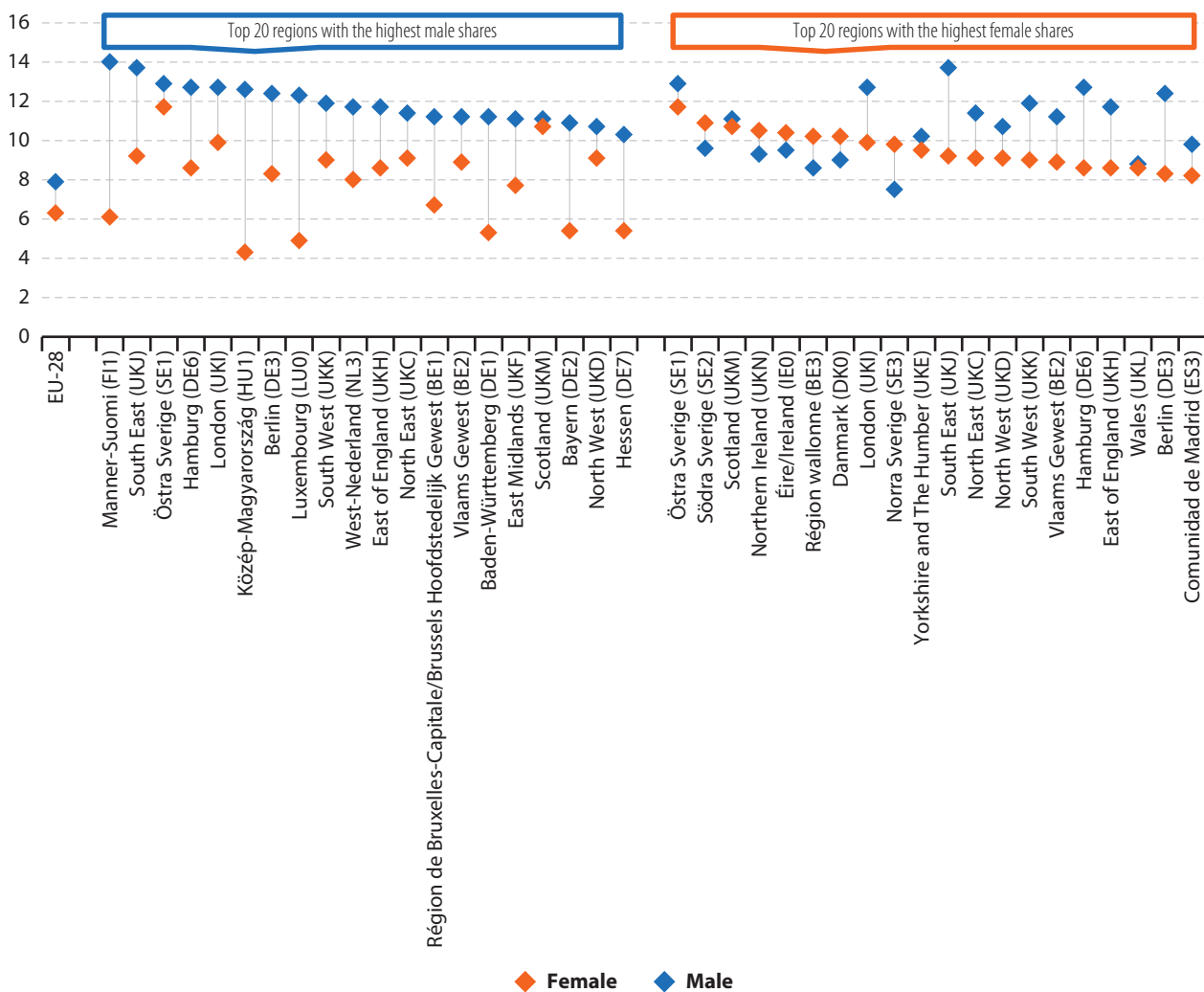
been a number of global, European and national initiatives to: promote positive female role models; set-up programmes to encourage girls to pursue careers in science; highlight the obstacles that prevent women from moving up the career ladder in science. A United Nations decision established 11 February as the [International day of women and girls in science](#).

**Figure 8.3** provides a more detailed analysis in relation to one of the two HRST criteria, looking at the number of persons employed in science and technology occupations, with specific information for the number of professional scientists and engineers. In 2017, there were 17.6 million scientists and engineers in the EU-28: 10.5 million were men, equivalent to 59.5 % of the total. This gender distribution in favour of men was repeated in most of the EU Member States, although Lithuania, Bulgaria, Latvia, Portugal and Denmark were exceptions,

each recording a higher number of female rather than male scientists and engineers.

In 2017, scientists and engineers accounted for a 7.9 % share of the male labour force in the EU-28; this figure was 1.6 percentage points higher than the corresponding share for women (6.3 %). Across NUTS level 1 regions, the highest share of scientists and engineers in the male labour force was recorded in Manner-Suomi (mainland Finland) at 14.0 %, while the highest female share was in Östra Sverige (eastern Sweden) at 11.7 %. There were only seven NUTS level 1 regions across the EU where the female share of scientists and engineers was in double-digits which could be contrasted with a count of 24 regions where the male share of scientists and engineers was at least 10.0 %.

**Figure 8.3: NUTS 1 regions with the highest shares for scientists and engineers, by sex, 2017**  
(% share of economically active population)



Note: Região Autónoma dos Açores (PT2), Região Autónoma da Madeira (PT3) and Åland (FI2), not available.  
Source: Eurostat (online data code: hrst\_st\_rsex)





# 9

## Digital economy and society



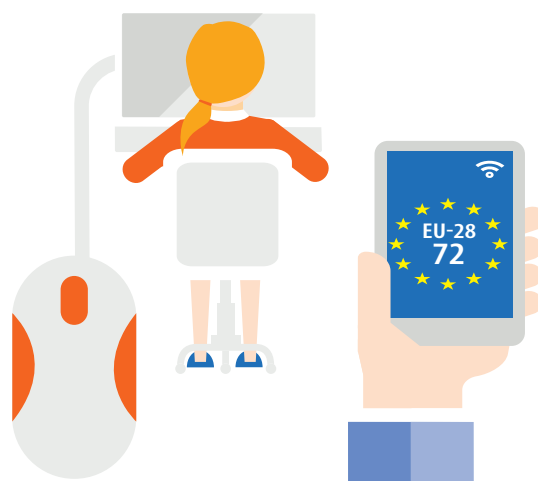
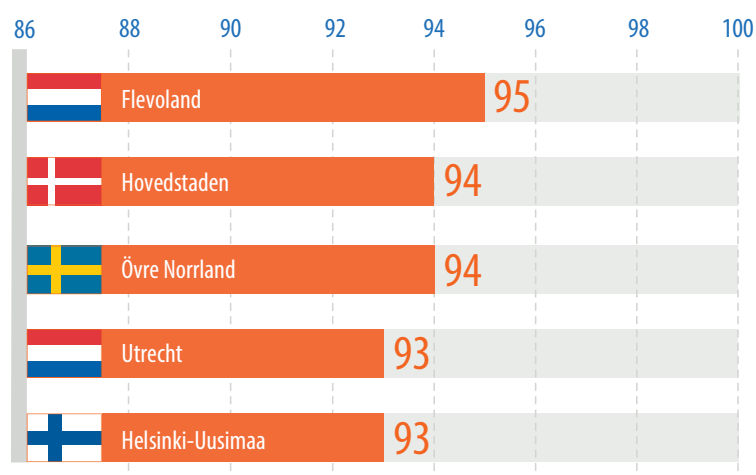
## Key findings

- All households in Flevoland (the Netherlands) and Mellersta Norrland (Sweden) had broadband access at home.
- More than three quarters of all adults (aged 16-74 years) living in Hovedstaden (Denmark), Prov. West-Vlaanderen (Belgium), Stockholm and Mellersta Norrland (Sweden) and Wales (the United Kingdom) used social media.
- More than 9 out of every 10 adults (aged 16-74 years) living in the capital city regions of Hovedstaden, Noord-Holland (the Netherlands) and Helsinki-Uusimaa (Finland) used internet banking; this was also true in Syddanmark (Denmark) and Drenthe (the Netherlands).

### TOP 5 REGIONS IN THE EU

#### DAILY INTERNET USERS, 2017

(% of people aged 16-74)



Information and communication technology (ICTs) affect people's everyday lives in many ways, both at work and in the home, for example, when communicating, keeping abreast of the news, interacting with public authorities, buying goods online or being entertained. However, to be able to benefit from technological changes, people need a fast and reliable internet connection (whether fixed or mobile).

Access to ICTs is considered, by many, as fundamental for improving both productivity levels and the competitiveness of regions. ICTs are credited with delivering greater flexibility in work environments (for example, permitting people to work from home or from other remote locations), while offering a broad range of options for staying in contact with colleagues, family and friends. These developments have created new dimensions of not only economic, but also social and political participation, which allow completely new ways of working, socialising and sharing information, irrespective of geographical location.

As the internet and digital technologies transform the world, ICT innovations provide a stream of new business opportunities that are likely to underpin

competitiveness, jobs and future economic growth. It is hoped that this new digital world, the internet of things — which is working its way into almost all aspects of society — will provide tools that may be applied to a range of European Union (EU) policy objectives in fields as diverse as health, security, climate, transport, energy, or modernisation of the public sector.

Although the internet is an almost constant part of the daily lives of many Europeans, some parts of the population continue to be excluded from the digital world. As a growing share of tasks are carried out exclusively online, digital skills and access to technology become increasingly important as a means of allowing everyone to participate in the digital society.

This chapter emphasises the geographic aspects of this digital divide, presenting statistics for NUTS level 2 regions and by degree of urbanisation. The information shown includes the following topics: the proportion of households that have broadband access at home; the share of the population that makes daily use of the internet, participates in social networks, uses internet banking, or online telephone and video calls. The chapter closes with information on e-commerce.



### For more information:

Eurostat's online publication, *Digital economy & society in the EU* — a browse through our online world in figures — 2018 edition, may be found at: <http://ec.europa.eu/eurostat/cache/infographs/ict/2018/index.html>

## Broadband access

The most popular types of broadband access to the internet are via a [digital subscriber line \(DSL\)](#) or cable: the first of these is almost universally available across the EU, whereas (high-speed) cable services are less widespread and are sometimes restricted to more densely-populated areas — explaining, at least in part, why the use of the internet is lower in [rural areas](#).

The [Digital Agenda for Europe](#) set two targets for broadband access speeds, namely that everybody in the EU should have a 30 Mbps connection by 2020, while half of all households should be in a position to subscribe to a 100 Mbps service by the same date. The share of households with broadband access is closely linked to infrastructure investment and in some cases market forces do not always lead to socially desirable outcomes, with public funding initiatives sometimes being needed to ensure that fast and ultra-fast broadband services are extended to rural and peripheral regions. With this in mind, the [European Commission](#) published a set of [guidelines for the application of State aid rules in relation to the rapid deployment of broadband networks](#) in 2013.

### ***In every region of the EU, more than half of all households had broadband access at home***

**Map 9.1** shows the share of households with broadband access at home in 2017; across the whole of the EU-28, this averaged 85 %. Broadband access rates ranged between 55 % and 100 % when analysing the results by NUTS level 2 regions. Note that the data presented for Germany, Greece, Poland and the United Kingdom relate to NUTS level 1 regions.

In 2017, the lowest share of households with broadband access was recorded in the French overseas region of La Réunion, with access rates some two [percentage points](#) higher in Severozapaden (which had the lowest GDP per capita in the EU). At the other end of the range, the highest broadband access rates were in Mellersta Norrland (Sweden; data are of low reliability) and Flevoland (the Netherlands), both of which had complete broadband coverage, while rates of 98 % or 99 % were recorded in seven more Dutch regions and the Finnish capital city region of Helsinki-Uusimaa.

At least 9 out of every 10 households had broadband access in a total of 50 different regions across the EU in 2017 (as shown by the darkest shade in **Map 9.1**). These regions were concentrated in the [Nordic Member States](#), the Netherlands, Germany, the United Kingdom

and Luxembourg (a single region at this level of detail), although there were two other regions with rates of at least 90 %: Southern and Eastern (Ireland) and Steiermark (southern Austria). The highest shares of households with broadband access in the eastern regions of the EU were recorded in the capital city regions of Közép-Magyarország (Hungary) and Praha (the Czech Republic), both with shares of 89 % which was identical to the share recorded in Comunidad de Madrid, which had the highest share among southern regions of the EU.

## Internet use and activities

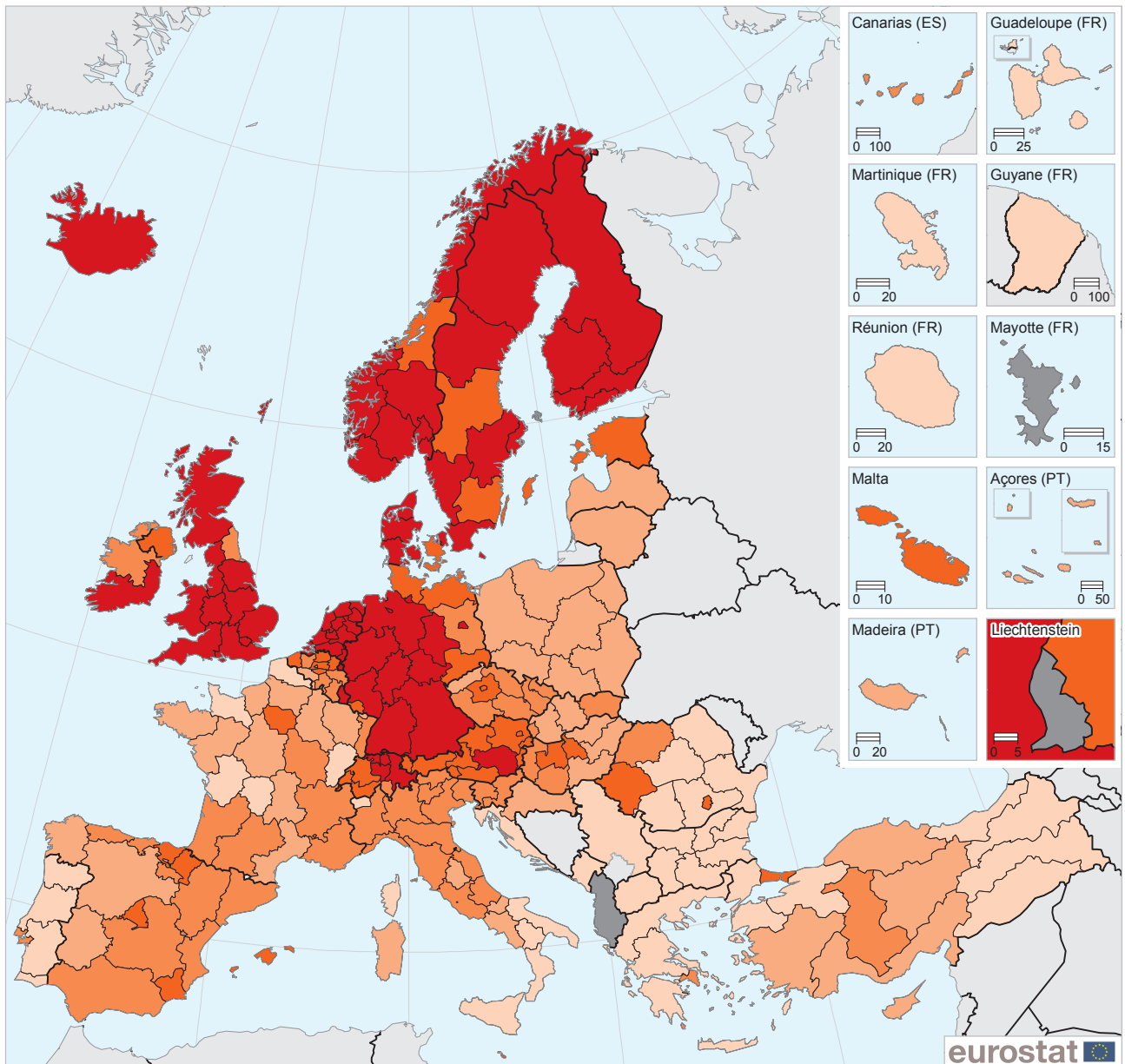
Although internet access was initially confined largely to persons who worked with or owned a desktop computer, subsequent technological (and commercial) developments led to a broader range of devices that could be used to go online. These developments meant that people were no longer tied to a desktop computer and that internet access on the move became a norm, resulting in an expansion of internet use.

### ***The highest shares of people making daily use of the internet were recorded in regions across the Netherlands and the Nordic Member States***

An [internet user](#) is defined as a person making use of the internet in whatever way: whether at home, at work, or anywhere else; whether for private or professional purposes; regardless of the device (desktop computer, laptop, netbook or tablet, smart phone, games console or e-book reader) or type of connection being used. In 2017, just less than three quarters (72 %) of the EU-28 population (aged 16-74 years) used the internet on a daily basis, during the three months prior to being surveyed. The proportion of the population that made daily use of the internet ranged from 40 % up to 95 % when analysing the results by NUTS level 2 regions. Note again that the data presented for Germany, Greece, Poland and the United Kingdom relate to NUTS level 1 regions.

Looking in more detail at individuals' daily use of the internet, there were widespread disparities between the EU Member States. These differences are often along broad geographical lines with northern and western Member States generally recording higher levels of internet use than the Member States located in the south or east (thereby repeating the patterns already observed for household broadband access). In 2017, there were 30 regions in the EU where fewer than 60 % of adults (aged 16-74 years) made daily use of the internet (as shown by the lightest shade in **Map 9.2**). These regions were predominantly located in Romania, Bulgaria, Greece, France, southern Italy and Portugal. The five lowest shares of daily internet users in the EU regions were all located in Romania, with the lowest proportion in Nord-Est (40 %). The capital city regions of Yugozapaden and Bucuresti - Ilfov were the only regions in Bulgaria and Romania where at least 60 % of all adults made daily use of the internet. All but one

**Map 9.1: Proportion of households with broadband access at home, by NUTS 2 regions, 2017**  
(% share of all private households)



(% share of all private households)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 04/2018

EU-28 = 85

< 75

75 - < 80

80 - < 85

85 - < 90

≥ 90

■ Data not available

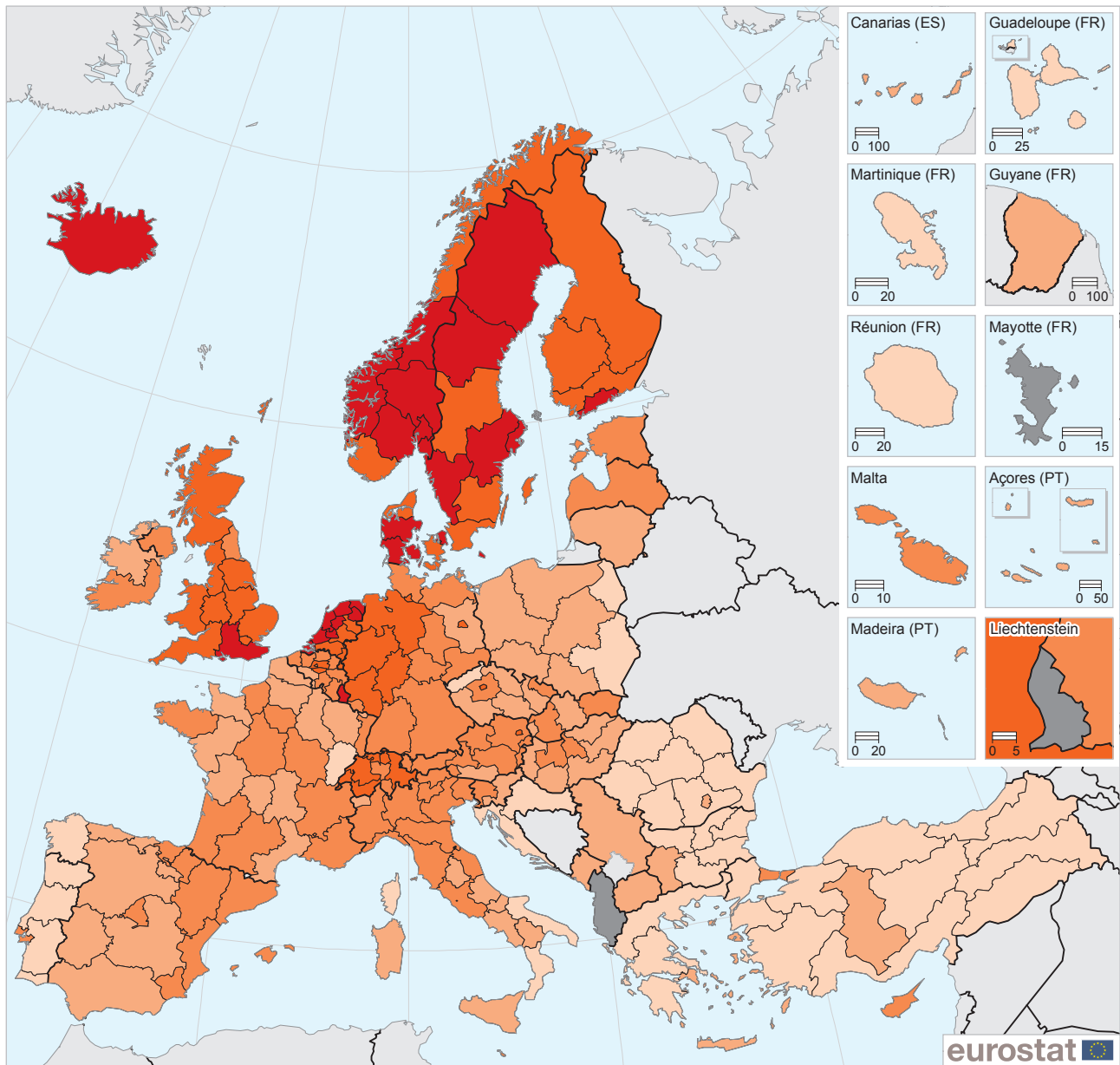
0 200 400 600 800 km

Note: Germany, Greece, Poland, the United Kingdom and Turkey: NUTS level 1. Serbia: national data. Corse (FR83) and Mellersta Norrland (SE32): low reliability.

Source: Eurostat (online data codes: [isoc\\_r\\_broad\\_h](#) and [isoc\\_ci\\_it\\_h](#))

**Map 9.2: Proportion of daily internet users, by NUTS 2 regions, 2017**

(% share of people aged 16-74; based on frequency of use during the three months prior to the survey)

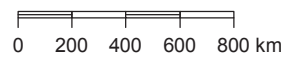


(% share of people aged 16-74; based on frequency of use during the three months prior to the survey)

EU-28 = 72

- < 60
- 60 - < 70
- 70 - < 80
- 80 - < 90
- ≥ 90
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 04/2018



Note: Germany, Greece, Poland, the United Kingdom and Turkey: NUTS level 1. Serbia: national data. Corse (FR83) and Mellersta Norrland (SE32): low reliability.

Source: Eurostat (online data codes: [isoc\\_r\\_iuse\\_i](#) and [isoc\\_ci\\_ifp\\_fu](#))

of the French regions with relatively low shares of daily internet users were island regions (Corse, Martinique, La Réunion and Guadeloupe); the exception was the eastern mainland region of Franche-Comté. By contrast, all but one of the mainland regions in Portugal had a share of daily internet users that was less than 60 %; aside from the capital city region of Área Metropolitana de Lisboa, the other two Portuguese regions with higher shares of daily internet users were the Regiões Autónomas dos Açores e da Madeira.

At the other end of the ranking, there were 19 regions in the EU where at least 9 out of every 10 adults were daily internet users. In 2017, the highest proportion of daily internet users (95 %) was in the Dutch region of Flevoland (where all households had broadband access). Flevoland was one of eight regions in the Netherlands to report at least 90 % of its adults made daily use of the internet, while the same was true for five different regions in Sweden, three in Denmark and one in Finland, confirming the relatively high propensity to make use of the internet in the Nordic Member States. This group of 19 regions was completed by Luxembourg (a single region at this level of detail) and South East (United Kingdom — a NUTS level 1 region).

## SOCIAL NETWORKS

As the share of the EU-28 population that makes regular use of the internet approaches saturation, policymakers have turned their attention towards the types of activities that Europeans carry out on the internet. The use of mobile devices (such as smart phones and tablets) to access the internet away from home or work has increased greatly, complementing or replacing more traditional fixed connections. This development has resulted in changes to the ways in which people use the internet. It should be remembered that it is only a decade since the first commercially successful application stores were launched on the internet.

One of the most popular pastimes for many people who use the internet is to participate in social networks. More than half (54 %) of the EU-28 adult population (aged 16-74 years) took part in social networking during the three months prior to the latest survey in 2017, for example using sites such as Instagram, Facebook or Twitter. The propensity to make use of such services is closely linked to age, with a much higher proportion of younger people using social media. Younger people are also more prone to changing service, as their peers adopt new Apps and ways of exchanging information with each other.

***The EU regions with the highest use of social media were principally located in Belgium, the Nordic Member States and the United Kingdom***

**Map 9.3** shows regional patterns for participation in social networks. Note once again that the information

for Germany, Greece, Poland and the United Kingdom relates to NUTS level 1 regions. In 2017, there were 28 regions in the EU where at least 70 % of the adult population used social media. Most of these regions were concentrated in Belgium, the Nordic Member States and the United Kingdom, with Malta (a single region at this level of detail) and the Dutch capital city region of Noord-Holland the only two exceptions. The highest proportion of adults participating in social networks was in Mellersta Norrland (85 %; data are of low reliability) — one of the two regions in the EU where all households had broadband access — followed by the Danish capital city region of Hovedstaden (79 %) and three regions that each recorded a 76 % share, namely, Prov. West-Vlaanderen (Belgium), Stockholm (Sweden) and Wales (the United Kingdom). It is interesting to note that in the United Kingdom the highest shares of people making use of social networks were recorded in Wales, Scotland, Yorkshire and the Humber and North West, whereas in the south-east of England and in Northern Ireland somewhat lower shares of the population made use of social networks, although these remained higher than the EU-28 average.

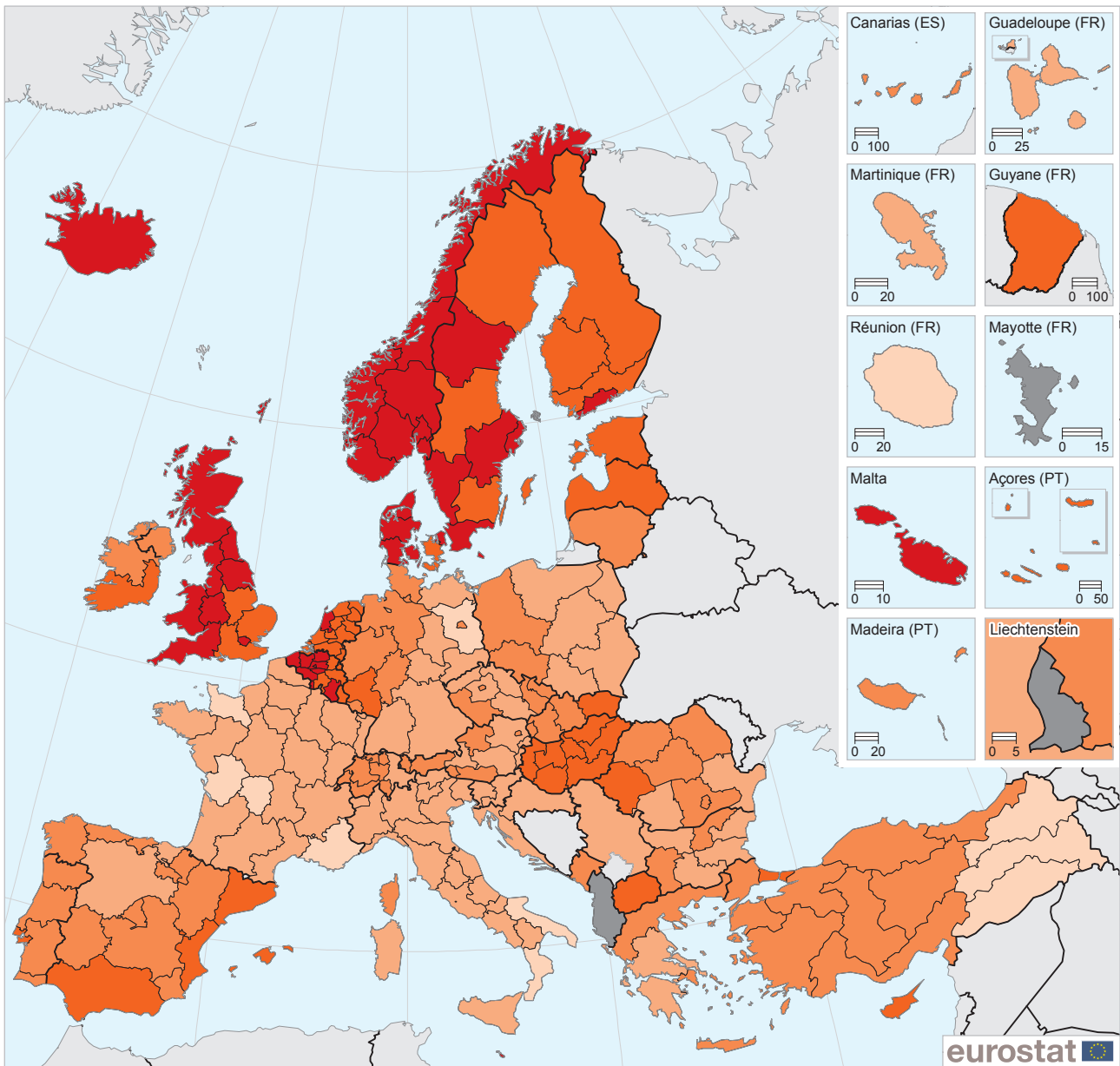
Contrary to the information presented in the first two maps, some of the highest levels of participation for social networking were recorded in eastern and southern Europe, for example, Malta (already mentioned above), or the regions of Közép-Dunántúl and Közép-Magyarország (in Hungary) and Área Metropolitana de Lisboa (in Portugal); all four of these regions reported at least 65 % of their adult populations making use of social media in 2017.

At the other end of the range, the incidence of participation in social networks fell to less than 40 % in several regions of France, two regions of Italy and one German region. Alongside the French overseas region of La Réunion (which had the lowest share in the EU, at 34 %), there were four mainland French regions where fewer than two out of every five adults participated in social networks in 2017 — the largely rural areas of Basse-Normandie, Poitou-Charentes and Limousin, as well as Provence-Alpes-Côte d'Azur — all of these regions are retirement destinations. The only other regions in the EU where less than 40 % of the adult population participated in social networks were Calabria and Puglia in southern Italy, and Brandenburg (which encircles Berlin) in Germany.

## INTERNET BANKING

Internet banking is defined as accessing online account information or making electronic transactions to a bank, payments or transfers. The share of people using internet banking may reflect, among others: the availability of internet banking platforms; consumer trust in internet banking; the ease with which consumers can visit a local bank branch.

**Map 9.3: Proportion of people participating in social networks, by NUTS 2 regions, 2017**  
 (% share of people aged 16-74; based on use during the three months prior to the survey)

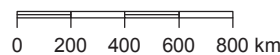


(% share of people aged 16-74; based on use during the three months prior to the survey)

EU-28 = 54

- < 40
- 40 - < 50
- 50 - < 60
- 60 - < 70
- ≥ 70
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
 Cartography: Eurostat — GISCO, 04/2018

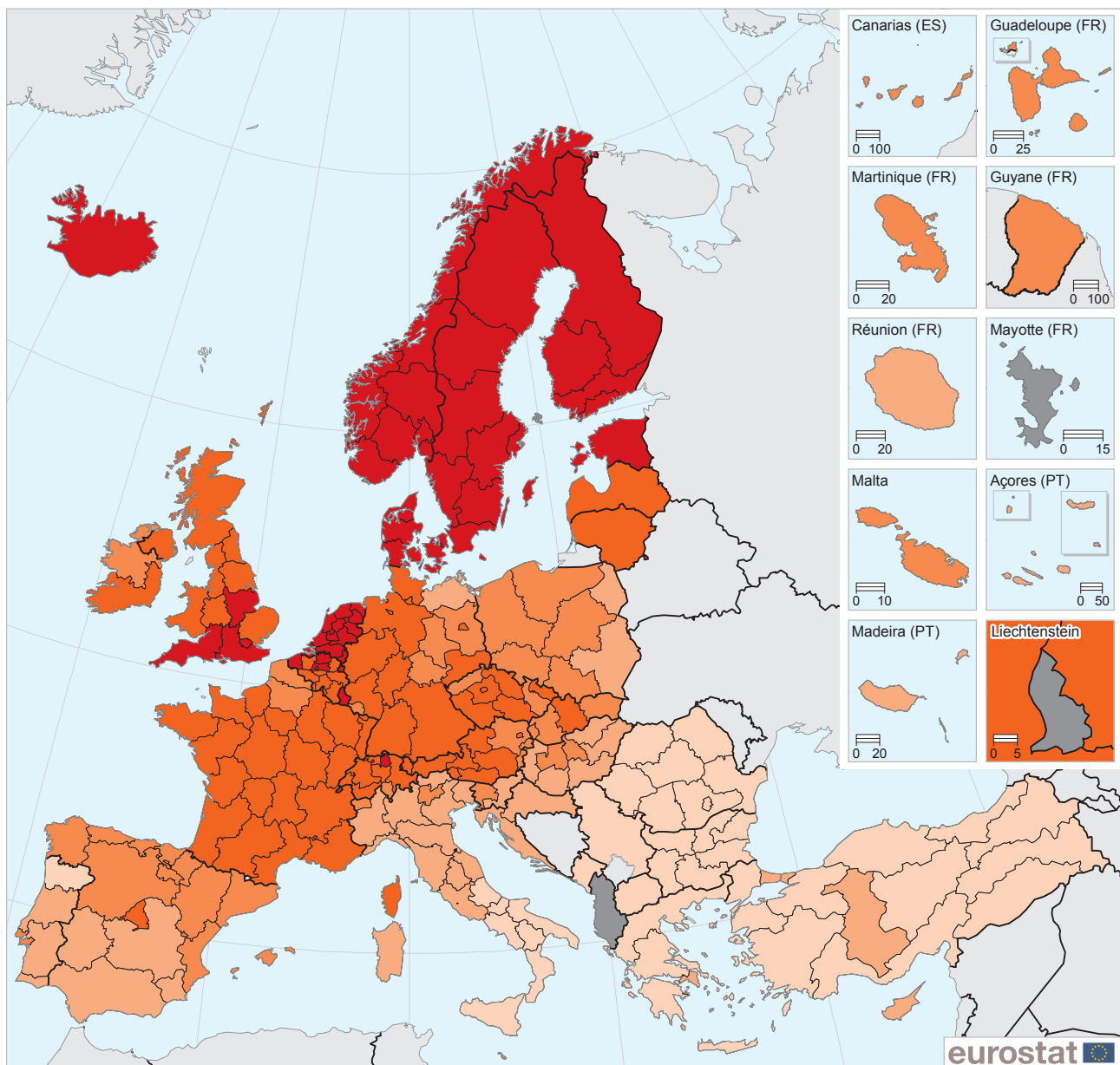


Note: Germany, Greece, Poland, the United Kingdom and Turkey: NUTS level 1. Serbia: national data. Corse (FR83) and Mellersta Norrland (SE32): low reliability.

Source: Eurostat (online data codes: [isoc\\_r\\_iuse\\_i](#) and [isoc\\_bde15cua](#))

**Map 9.4: Proportion of people using internet banking, by NUTS 2 regions, 2017**

(% share of people aged 16-74; based on frequency of use during the three months prior to the survey)



(% share of people aged 16-74; based on frequency of use during the three months prior to the survey)

EU-28 = 51

&lt; 25

25 - &lt; 40

40 - &lt; 55

55 - &lt; 70

≥ 70

Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 04/2018

0 200 400 600 800 km

Note: Germany, Greece, Poland, the United Kingdom and Turkey: NUTS level 1. Serbia: national data. Corse (FR83) and Mellersta Norrland (SE32): low reliability.

Source: Eurostat (online data codes: [isoc\\_r\\_iuse\\_i](#) and [isoc\\_bde15cbc](#))



**Internet banking was particularly popular among people living in the capital city regions of Denmark, Finland and Sweden**

The share of people who made use of internet banking was slightly lower than the share using social media, as the proportion of adults (aged 16-74 years) in the EU-28 who used internet banking during the three months prior to being surveyed in 2017 was 51 %. **Map 9.4** shows some quite clear patterns insofar as there was a very high share of people making use of internet banking in the Nordic and Benelux Member States, as well as Estonia (a single region at this level of detail) and several regions in the south of the United Kingdom (note the information is presented for NUTS level 1 regions). The three highest proportions were recorded in the Nordic capital city regions: Hovedstaden (93 %), Helsinki-Uusimaa (92 %) and Noord-Holland (91 %). Syddanmark in Denmark, Drenthe and Groningen in the Netherlands, and Övre Norrland in Sweden were the only other regions in the EU where at least 9 out of 10 persons made use of internet banking in 2017.

By contrast, there were 11 regions in the EU where less than 1 in 10 adults used internet banking in 2017, all of which were located in Bulgaria or Romania. The lowest shares were recorded in Yuzhen tsentralen (Bulgaria) and Sud-Vest Oltenia (Romania), with no more than 1 in 50 adults making use of internet banking in both of

these regions. Aside from the Bulgarian and Romanian regions, the share of the adult population using internet banking was also relatively low — less than 25 % — in all but one of the Greek regions (the exception was the capital city region of Attiki; note that information is presented for NUTS level 1 regions) and in the Norte region of Portugal.

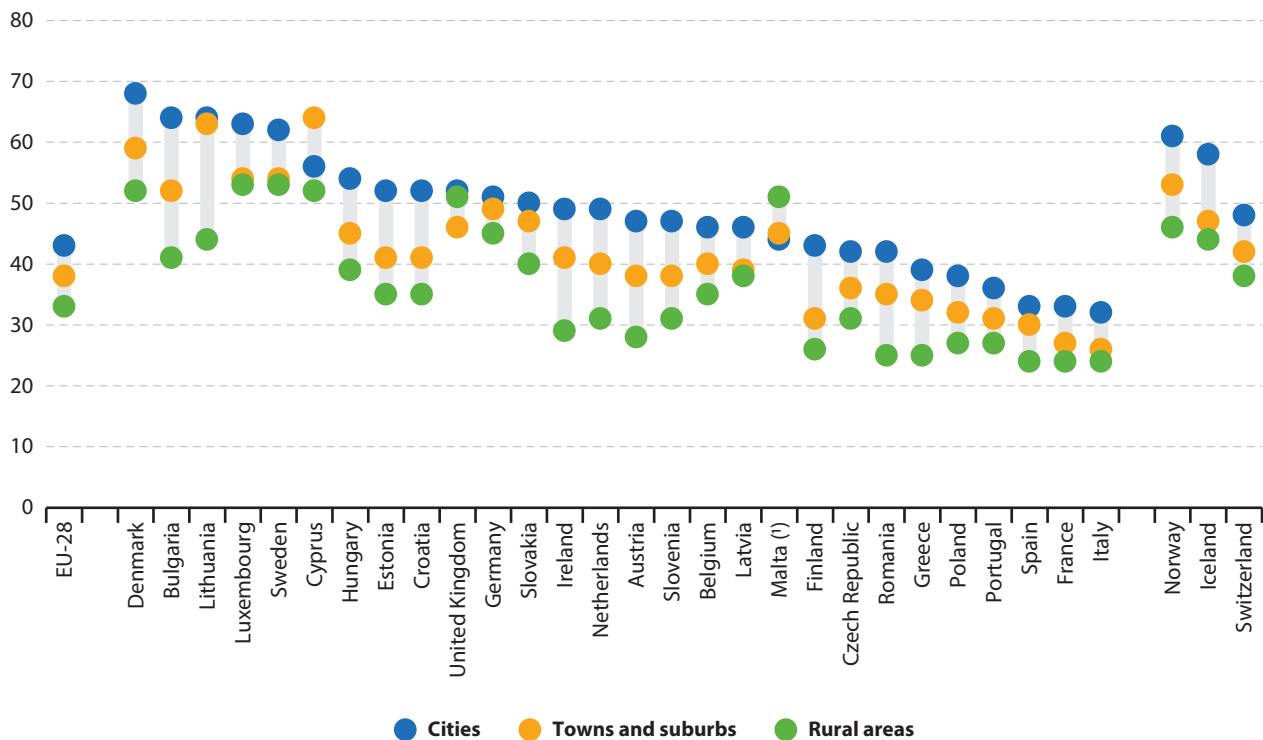
**ONLINE TELEPHONE OR VIDEO CALLS**

Telephoning over the internet is a relatively inexpensive method to communicate. Voice-over-Internet Protocol (VoIP) and peer-to-peer telephony have become important methods for making (free) calls over the internet (or to fixed/mobile lines via a pre-paid credit). These services subsequently developed to offer visual communication too, often taking advantage of built-in web cameras to deliver video calls. These features are usually made accessible by installing a program/application (such as Skype, Facetime, or WhatsApp).

**Almost two thirds of people living in the cities of Bulgaria and Lithuania made use of online telephone or video calls**

**Figure 9.1** shows the proportion of people using online telephone or video calls, by degree of urbanisation. Across the EU-28, almost 4 out of every 10 adults (aged

**Figure 9.1: Proportion of people using online telephone or video calls, by degree of urbanisation, 2017**  
(% share of people aged 16-74; based on frequency of use during the three months prior to the survey)



Note: ranked on cities.

(\*) Rural areas: low reliability.

Source: Eurostat (online data code: isoc\_ci\_ac\_i)

16-74 years) made use of online telephony or video calls during the three months prior to the survey in 2017. The use of these services was higher among people living in cities (43 %) than it was for people in towns and suburbs (38 %) or rural areas (33 %).

This pattern was repeated in the vast majority of the EU Member States, with people living in cities accounting for the highest use of online telephone or video calls and people living in rural areas for the lowest shares. In the United Kingdom, a relatively high proportion of people living in rural areas (compared with people living in towns and suburbs) made use of these services, while the Mediterranean islands of Cyprus and Malta both had different patterns: for the former, the highest propensity to use online telephone or video calls was recorded for people living in towns and suburbs, whereas for the latter, these services were most often used by people living in rural areas.

Although the take-up of many internet-based services and activities was quite low in eastern EU Member States, a different pattern emerges in relation to the use of online telephony or video calls. Almost two thirds of people living in the cities of Bulgaria made use of these services (both 64 %), which was the joint second highest share (with Lithuania) among the EU Member States, behind Danish city-dwellers (68 %). By contrast, the use of online telephone or video calls was particularly low in Italy, France and Spain (irrespective of where people were living).

## E-commerce

E-commerce makes it easier for consumers to compare different retail offers and make purchases without leaving home. Indeed, some traditional retail formats/sectors are coming under increasing pressure, as witnessed through a series of high-profile store closures.

For the purpose of this publication, e-commerce is defined as the sale or purchase of goods or services through electronic transactions, including the placing of orders for goods or services over the internet (payment and the ultimate delivery of the goods or service may be conducted either online or offline; orders via manually typed e-mails are excluded). Statistics on e-commerce include purchases of goods such as books, DVDs, groceries, clothes and electrical/electronic goods, as well as purchases of services such as music and video streaming services, reservations for accommodation and travel, or lottery tickets.

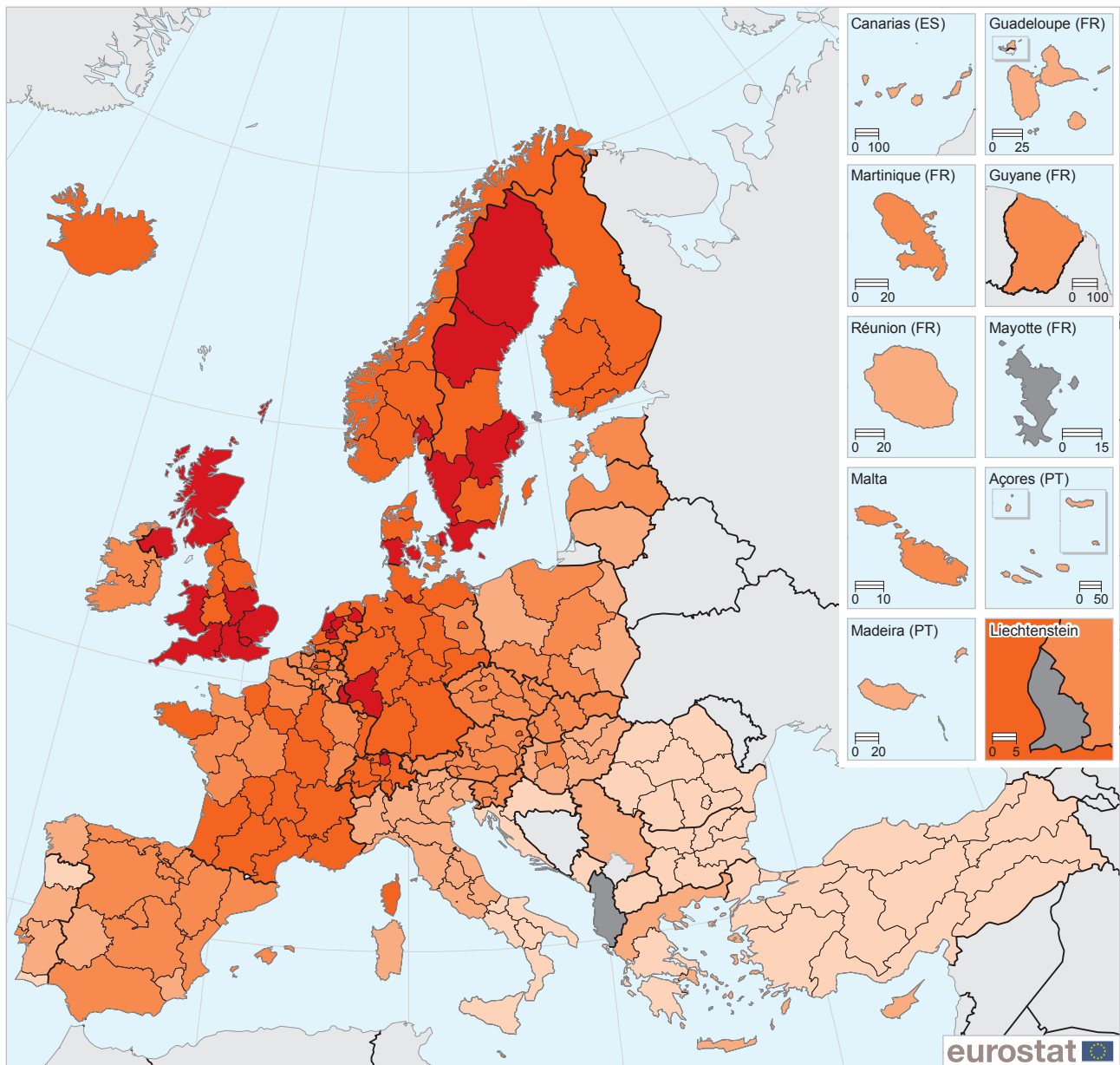
### *People living in East of England, South West and South East — three regions in the south of the United Kingdom — had the greatest propensity to use e-commerce*

As for internet banking, an individual's choice as to whether or not they use e-commerce often comes down to a matter of trust. In 2017, 57 % of the EU-28 population aged 16-74 years, reported that they had made online purchases of goods or services in the 12 months prior to the survey.

Based on an analysis of the 2017 survey results by NUTS level 2 region, the propensity of people to use e-commerce ranged between 11 % and 88 %. Note that the data presented for Germany, Greece, Poland and the United Kingdom relate to NUTS level 1 regions. There were 23 regions in the EU where at least four out of every five adults made use of e-commerce in the 12 months preceding the 2017 survey (as shown by the darkest shade in **Map 9.5**). Among these, the highest use of e-commerce was in southern regions of the United Kingdom, as at least 85 % of people used e-commerce in the East of England, South West and South East (where a peak of 88 % was recorded). Aside from eight regions in the United Kingdom, the propensity to use e-commerce also covered at least 80 % of the adult population in six out of the eight regions in Sweden, four regions in the Netherlands, two regions in each of Denmark and Germany, as well as in Luxembourg (a single region at this level of detail). By contrast, all regions in Bulgaria and Romania reported that less than 30 % of their adult populations made online purchases of goods and services (as shown by the lightest shade in **Map 9.5**). They were joined by 11 additional regions, a majority of which — six regions — were located in southern Italy, while there were also two regions in each of Croatia and Portugal, and a single region in Greece.

E-commerce has the potential to reconfigure the geography of consumption, for example, extending consumer choice and reducing prices in remote regions of the EU, while removing the burden of travelling considerable distances to shop for specific items. It is interesting to note that a relatively high share of the population made use of e-commerce in several rural, island and sparsely-populated regions of the EU. For example, in Sweden (where e-commerce was generally common), some of the highest shares of people making use of e-commerce were recorded in Mellersta Norrland (data are of low reliability) and Övre Norrland.







**Map 9.5: Proportion of people using e-commerce, by NUTS 2 regions, 2017**  
 (% share of people aged 16-74)

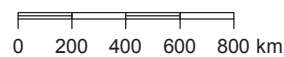


(% share of people aged 16-74)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
 Cartography: Eurostat — GISCO, 06/2018

EU-28 = 57

-  < 30
-  30 - < 45
-  45 - < 65
-  65 - < 80
-  ≥ 80
-  Data not available



Note: Germany, Greece, Poland, the United Kingdom and Turkey: NUTS level 1. Serbia: national data. Corse (FR83) and Mellersta Norrland (SE32): low reliability.

Source: Eurostat (online data codes: [isoc\\_r\\_blt12\\_i](#) and [isoc\\_ec\\_ibuy](#))

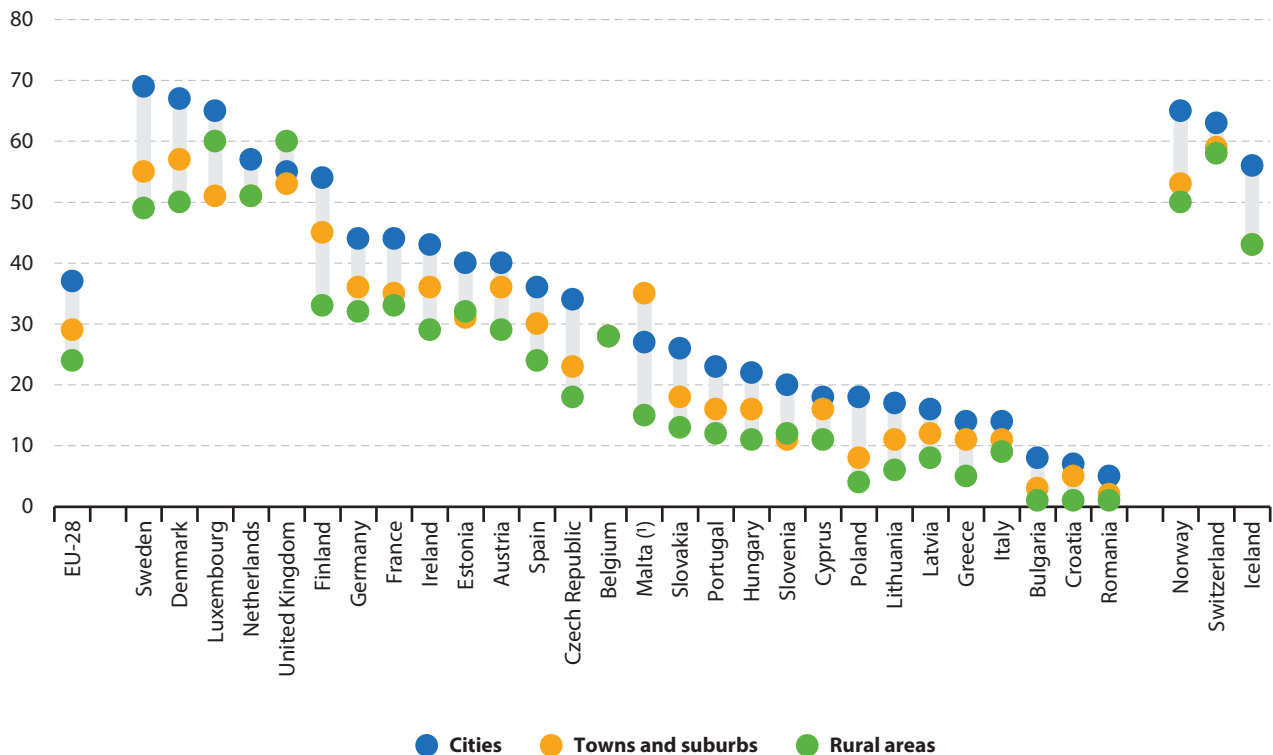
In a similar vein, in Greece and Portugal (where e-commerce was generally less common), some of the highest shares of people making use of e-commerce were recorded in Nisia Aigaiou and Kriti or in Alentejo and Região Autónoma da Madeira, again regions with large rural areas.

According to the 2017 survey, just less than one third (31 %) of the EU-28's adult population (aged 16-74 years) made use of internet-based services to book travel and/or holiday accommodation online during the 12 months prior to the survey. **Figure 9.2** shows that the share of people using these services was considerably higher in cities (37 %), than it was in either towns and suburbs (29 %) or rural areas (24 %).

The market for these services was particularly developed in western parts of the EU, with more than half the adult populations of Denmark, Luxembourg, Sweden, the United Kingdom and the Netherlands making use of such services. An analysis by degree of urbanisation reveals that city-dwellers recorded the highest propensity to make use of internet-based services to book travel and/or holiday accommodation online in the vast majority of the EU Member States; the only exceptions were the United Kingdom (where the highest share was recorded for people living in rural areas) and Malta (where the highest share was recorded for people living in towns and suburbs).

**Figure 9.2: Proportion of people using internet-based services to book travel and/or holiday accommodation, by degree of urbanisation, 2017**

(% share of people aged 16-74)



Note: ranked on cities.

(\*) Rural areas: low reliability.

Source: Eurostat (online data code: isoc\_ec\_ibuy)

# 10

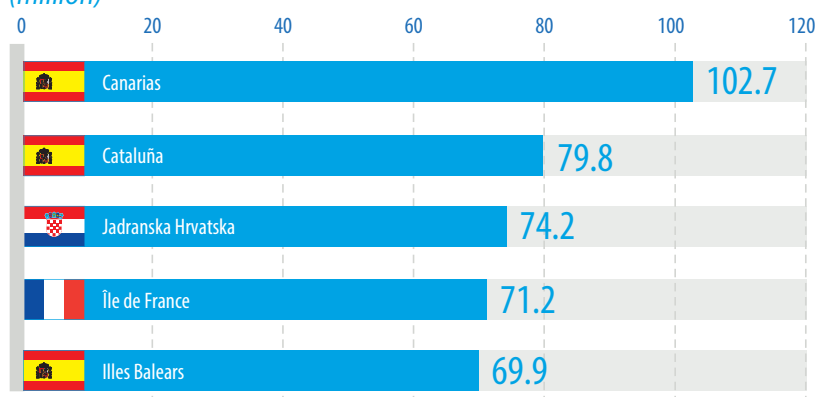
## Tourism



## Key findings

- Europe was the most frequently visited region in the world in 2017, accounting for just over half (51 %) of the 1.32 billion international tourist arrivals.
- The most popular tourist region in the EU was Canarias in Spain — with almost 103 million nights spent in tourist accommodation.
- Canarias also had the highest regional occupancy rate for bedrooms, while the second highest rate was recorded in Illes Balears, also in Spain.

### TOP 5 REGIONS IN THE EU NIGHTS SPENT IN TOURIST ACCOMMODATION, 2016 (million)



According to the United Nations World Tourism Organisation (UNWTO) publication *Tourism highlights*, several European Union (EU) Member States are among the world's leading tourist destinations. The wealth of European cultures, the variety of its landscapes and the quality of its tourist infrastructure are likely to be among the varied reasons why tourists choose to take their holidays in Europe. In 2016, France had more *tourist arrivals* than any other country in the world, while Spain (3rd), Italy (5th), the United Kingdom (6th) and Germany (7th) also featured among the world's top 10 tourist destinations.

Some of the main challenges facing *tourism* in the EU include:

- economic competitiveness — for example, regulatory and administrative burden, staff retention, or keeping up-to-date with information technology developments;
- markets and competition — growing demand for customised experiences, new products, growing competition from other destinations;
- security and safety — for example, the environment and sustainability, personal security or food safety.

Indeed, tourism has the potential to play a significant role in the economic aspirations of many EU regions and can be of particular importance in remote/peripheral regions, such as the EU's island, coastal or mountainous regions. Infrastructure that is created

for tourism purposes contributes to local and regional development, while jobs that are created or maintained can help counteract industrial or rural decline. Sustainable tourism is an alternative area which provides considerable potential for growth: it involves the protection and enhancement of cultural and natural heritage, ranging from the arts to local gastronomy, or the preservation of biodiversity.

Characteristics such as these drive the demand for reliable and harmonised statistics within the field of tourism, as well as within the wider context of regional policy and sustainable development policy. Tourism, in a statistical context, refers to the activity of visitors taking a trip to a destination outside their usual environment, for less than a year. It is important to note that this definition is wider than the common everyday definition, insofar as it encompasses not only private, leisure trips but also visits to family and friends and business trips. This is primarily because tourism is viewed from an economic perspective, whereby holidaymakers and people making business trips have broadly similar consumption patterns, for example, transport, accommodation and restaurant/catering services.

This chapter presents regional patterns of tourism across the EU. Its main focus is the provision of *tourist accommodation*, as measured by the number of *nights spent* and *bedroom occupancy rates*.

## Number of overnight stays

The number of *tourist nights spent/overnight stays* provides information relating to the total number of nights all guests/tourists actually spend (sleeps or stays) in a tourist accommodation establishment. It therefore reflects both the length of stay and the number of visitors and is considered a key indicator for analysing the tourism sector.

According to initial Eurostat estimates, there were approximately 3.2 billion nights spent in EU-28 tourist accommodation in 2017. This figure marked a 5.1 % increase when compared with a year before (when there were an estimated 3.1 billion nights spent), continuing a pattern of steady annual increases since 2009. These recent increases in the number of nights spent were driven by a particularly rapid increase in the number of nights spent by non-residents.

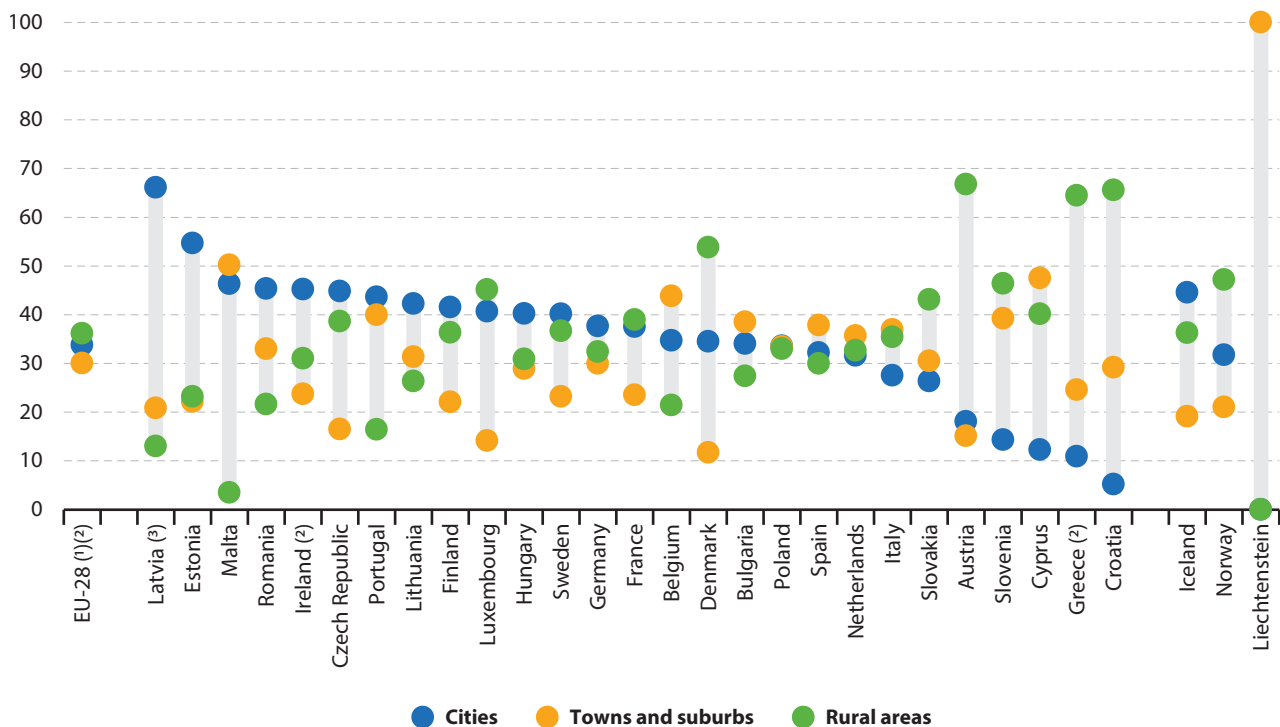
**The total number of nights spent in EU-28 tourist accommodation was evenly divided between rural areas, towns and suburbs, and cities**

**Figure 10.1** provides an analysis of the number of nights spent in tourist accommodation, by degree

of urbanisation. The information presented covers both domestic (resident) and inbound international (non-resident) tourists staying in all types of tourist accommodation. Across the whole of the EU-28, there was a relatively even distribution of the total number of nights spent in tourist accommodation, as the highest share was recorded for rural areas (36.1 %), followed by cities (33.8 %) and towns and suburbs (30.0 %); note that these statistics refer to 2014.

More recent data are available for most of the EU Member States, but not for the United Kingdom. In 2016, cities were the most popular destination for tourists in 12 of the 27 Member States for which data are presented in **Figure 10.1**. In two of the *Baltic Member States* — Latvia (66.1 %; 2015 data) and Estonia (54.7 %) — cities accounted for more than half of the total nights spent by tourists. By contrast, more than half of the total nights spent in tourist accommodation in Malta were in towns and suburbs (50.2 %), while in excess of 50 % of the nights spent in Denmark (53.8 %), Greece (64.5 %), Croatia (65.6 %) and Austria (66.8 %) were in rural areas; these were predominantly coastal regions in Denmark, Greece and Croatia, and predominantly alpine regions in Austria.

**Figure 10.1: Distribution of nights spent in tourist accommodation, by degree of urbanisation, 2016**  
(% share of total nights spent)



Note: ranked on cities. The United Kingdom: not available.

(1) 2014.

(2) Estimates.

(3) 2015.

Source: Eurostat (online data code: [tour\\_occ\\_ninatd](#))

**A relatively high share of the total nights spent by non-residents in tourist accommodation were concentrated in coastal destinations**

Many coastal areas are characterised by considerable building activity as an increasing number of people choose to live near the sea and coastal tourism expands its footprint; a high level of activity can potentially have serious implications in relation to sustainable development. Coastal areas, in a statistical context, are defined on the basis of and consist of local administrative units or municipalities that border the sea, or have at least half of their total surface area within a distance of 10 km from the sea.

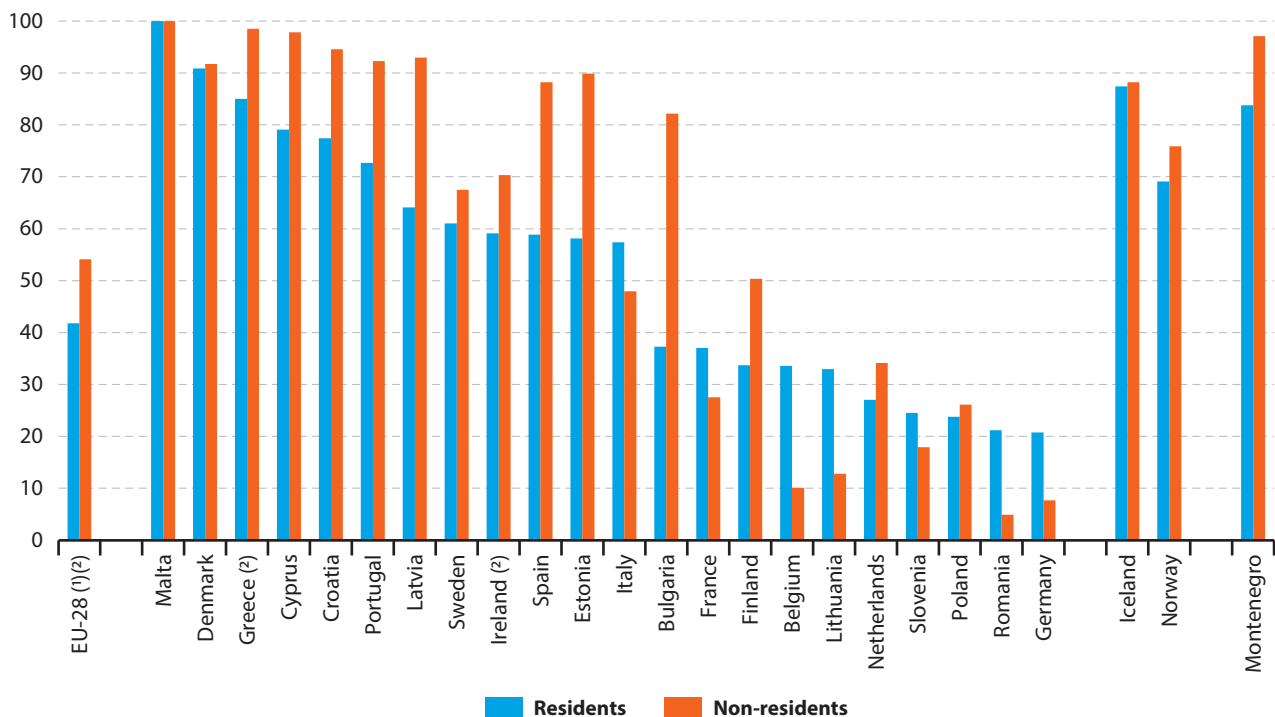
Almost half (47.4 %) of the total nights spent in EU-28 tourist accommodation in 2014 were in coastal areas. In 2016, more than 9 out of every 10 nights spent in the tourist accommodation of Malta, Cyprus, Greece, Croatia and Denmark were located in coastal areas, while coastal areas also accounted for at least three quarters of the total number of nights spent in Portugal, Latvia, Estonia and Spain and for a majority of the nights spent in a further four Member States. Note that five of the EU Member States — the Czech Republic, Luxembourg, Hungary, Austria and Slovakia — are landlocked and are therefore did not have any nights spent in coastal areas.

While the overall inclination to stay in coastal areas was usually higher in southern EU Member States that are characterised by climatic conditions conducive to beach holidays, **Figure 10.2** presents an alternative analysis with information for residents and non-residents. In 2014, more than half (54.1 %) of all the nights spent by non-residents in the EU-28 were in coastal areas, while a greater proportion (58.2 %) of the nights spent by residents were in non-coastal areas; these figures probably reflect, at least to some degree, a higher proportion of resident nights being for business travel.

In the popular holiday destinations of Greece, Cyprus, Croatia, Portugal and Spain, non-residents were more likely (than residents) to spend a higher proportion of nights in coastal areas. For example, in Spain — the most popular tourism destination in the EU in terms of nights spent, with 455 million nights in 2016 — almost 9 out of every 10 nights spent by non-residents were in coastal areas, whereas the corresponding share for residents was 58.8 %. It is interesting to contrast this pattern with the situation in France and Italy, where residents were more inclined (than non-residents) to spend their time in coastal areas.

**Figure 10.2: Distribution by residents and non-residents of nights spent in tourist accommodation in coastal areas, 2016**

(% share of total nights spent in coastal and non-coastal areas)



Note: the United Kingdom, not available. The Czech Republic, Luxembourg, Hungary, Austria and Slovakia: landlocked countries and therefore not shown.

(1) 2014.

(2) Estimates.

Source: Eurostat (online data code: [tour\\_occ\\_ninatc](#))



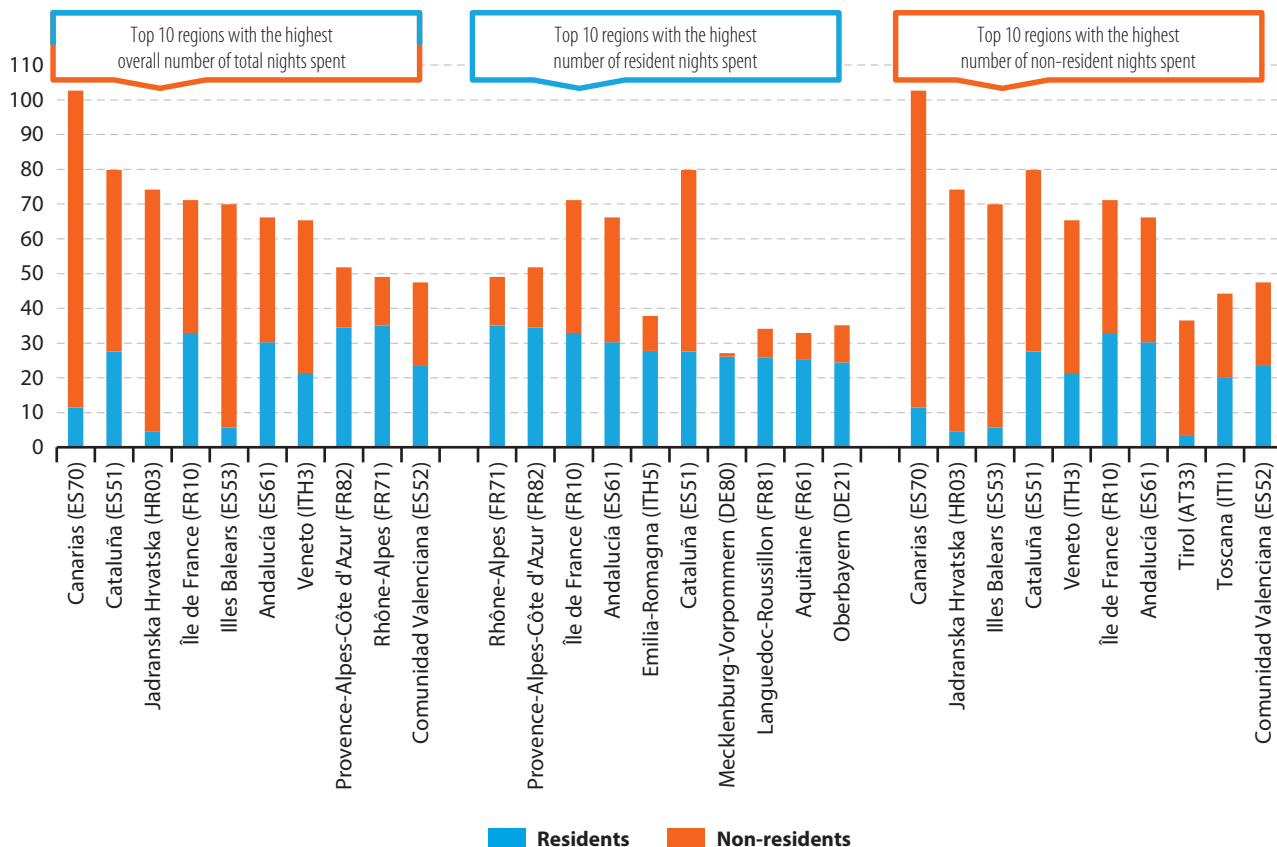
**The three most popular tourist destinations in the EU were Canarias and Cataluña in Spain and the Adriatic coastal region of Jadranska Hrvatska (Croatia)**

The top 10 tourist regions in the EU — in terms of nights spent in tourist accommodation by domestic and international tourists in NUTS level 2 regions — are shown in **Figure 10.3**. In 2016, almost 103 million nights were spent in the Spanish island region of Canarias, the vast majority of which were accounted for by non-residents (91.3 million nights spent). The second most popular region was also in Spain, namely, Cataluña, while three more Spanish regions featured in the top 10: Illes Balears, Andalucía and Comunidad Valenciana. More generally, this ranking was dominated by coastal regions, as the five Spanish regions mentioned above were joined by Jadranska Hrvatska (Croatia; the third most popular region in the EU), Veneto (Italy) and Provence-Alpes-Côte d'Azur (France). As such, the only non-coastal regions that appeared in the top 10 were two regions in France, the capital city region of Île de France and Rhône-Alpes (which provides opportunities for both summer and winter tourism). It is interesting to note that non-nationals accounted for a majority of

the total nights spent in 8 out of the 10 most popular regions in the EU, including the top seven regions, with this pattern only reversed in Provence-Alpes-Côte d'Azur and Rhône-Alpes.

The second part of **Figure 10.3** shows the top 10 regions with the highest number of nights spent in tourist accommodation by residents. The three most popular destinations — in terms of the absolute number of nights spent — were all in France, confirming that a relatively high proportion of French tourists chose to holiday in their own country. The number of nights spent by French residents in Rhône-Alpes was 2.5 times as high as the number of nights spent by non-residents, while French residents spent twice as many nights as non-residents in Provence-Alpes-Côte d'Azur. Although these two regions and Île de France had the highest absolute number of nights spent by residents, the relative share of residents in the total number of nights spent was higher in two other French regions — Languedoc-Roussillon and Aquitaine — where in both cases the number of nights spent by French residents was 3.2 times as high as the number spent by non-residents. This pattern was repeated in Emilia-Romagna (Italy) where the number of nights spent by residents was 2.7 times as high as

**Figure 10.3: NUTS 2 regions with the highest number of nights spent, 2016** (million nights spent in tourist accommodation)



Note: Champagne-Ardenne (FR21), Picardie (FR22), Haute-Normandie (FR23), Bourgogne (FR26), Nord - Pas-de-Calais (FR30), Limousin (FR63) and Guadeloupe (FRA1): 2015. Mayotte (FRA5) and the United Kingdom, not available. Ireland and Greece: estimates.

Source: Eurostat (online data code: [tour\\_occ\\_nin2](#))

for non-residents and most notably in Mecklenburg-Vorpommern (northern Germany) where the number of nights spent by residents was 25.3 times as high as for non-residents.

The final part of **Figure 10.3** presents the 10 regions with the highest number of nights spent by non-residents. As noted above, non-residents accounted for the vast majority (88.9 % in 2016) of the total nights spent in Canarias, the most popular regional destination in the EU. The relative weight of non-residents was even higher in Tirol (Austria; where non-residents accounted for 90.3 % of the total nights spent), Illes Balears (91.8 %) and Jadranska Hrvatska (93.7 %). These regions characterised by a high number and share of international tourists may face considerable pressures from sustainability issues, given that most non-resident tourists tend to travel during high/peak seasons — the summer months for coastal regions or the period between Christmas and Easter for Alpine regions.

***Aside from coastal regions, the wide range of tourism opportunities in the EU extended to Alpine destinations and a number of popular cities***

**Map 10.1** confirms that tourism in the EU was concentrated in coastal regions (principally, but not exclusively, in the Mediterranean), Alpine regions, and some of the EU's capital cities. There were 46 NUTS level 2 regions which recorded at least 15.0 million nights spent by residents and non-residents in tourist accommodation (as shown by the darkest shade), among which 20 regions recorded at least 30.0 million nights. These top 20 tourist destinations included six regions from Italy, five regions from each of Spain and France, two regions from Germany, and a single region from each of Croatia and Austria; note there is no recent information available for the United Kingdom. Within the top 20 most popular regions there were three capital city regions, namely those of Germany,

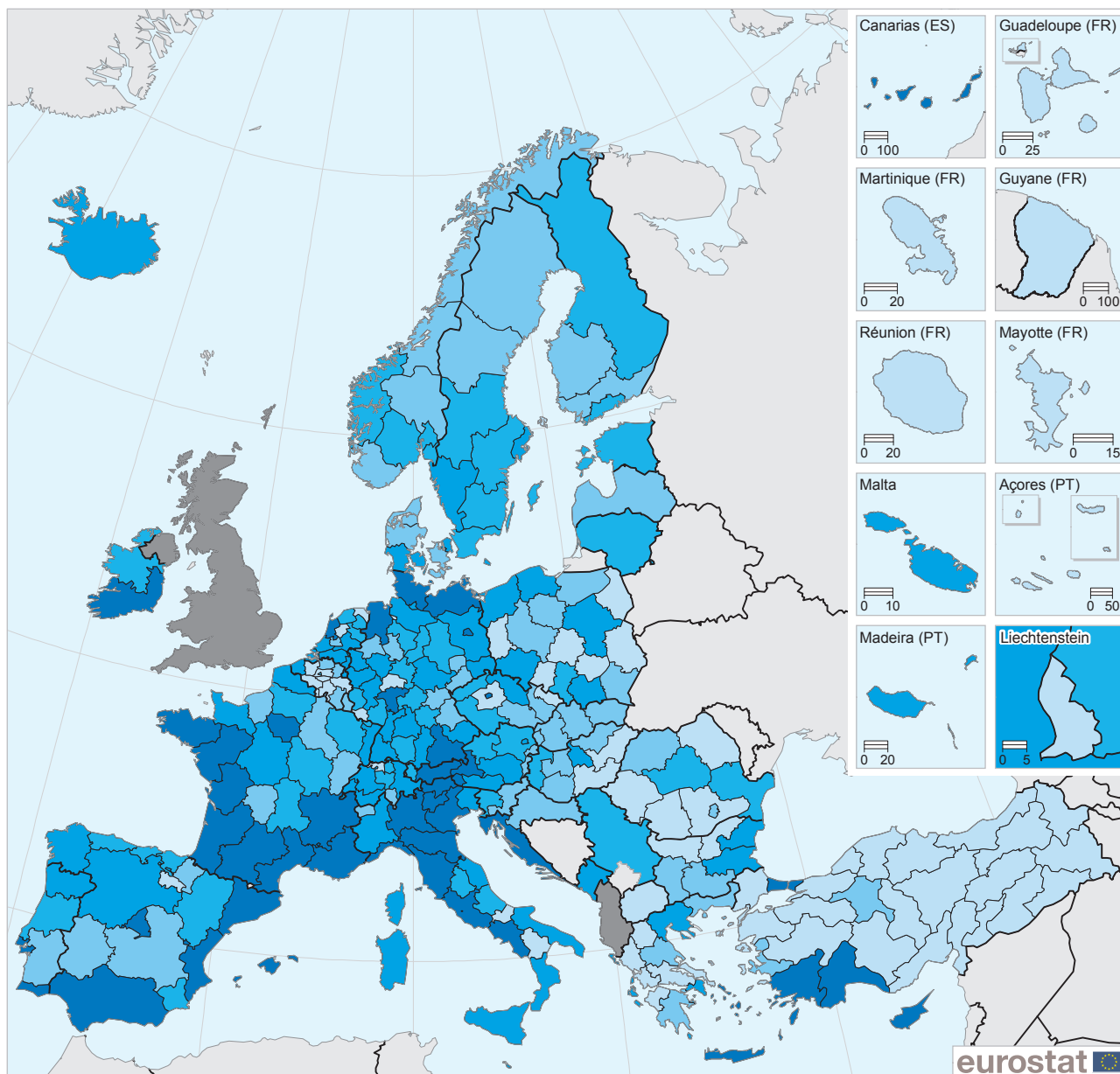
France and Italy; based on historical data it is likely that they would have been joined by London (the United Kingdom).

At the other end of the range there were 44 NUTS level 2 regions where fewer than 2.5 million nights were spent by residents and non-residents in tourist accommodation during 2016. These regions were widely dispersed across the EU and included several outermost regions, one of which was Mayotte (which had the lowest number of nights spent, at 0.1 million). Many of the regions with relatively low numbers of tourists could be characterised as rural regions (for example, in mainland Greece, southern Italy or eastern Poland). There were also low numbers of tourists in eight relatively densely populated regions across Belgium and the Netherlands (for example, Prov. Brabant Wallon or Groningen); this pattern may reflect, at least to some degree, the relatively short distances involved for resident tourists visiting these regions with preference being given to day-trips, rather than overnight stays.

***The local economies of many island regions in the EU are heavily dependent on non-resident tourists***

The analysis presented in **Map 10.2** provides more detailed information concerning the relative importance of non-residents to regional tourism. In 2014, non-residents accounted for 45.1 % of the total number of nights spent in EU-28 tourist accommodation. These figures are in contrast to the results presented above in **Figure 10.3**, where non-residents were seen to account for a majority of the total nights spent in many of the EU's most popular tourist regions. As such, the distribution was heavily skewed: in 2016, non-residents accounted for at least half of the total number of nights spent by all tourists in just 56 out of the 235 NUTS level 2 regions for which data are available.

**Map 10.1: Nights spent in tourist accommodation, by NUTS 2 regions, 2016**  
(million nights spent by residents and non-residents)

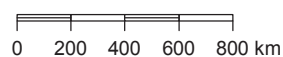


(million nights spent by residents and non-residents)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 04/2018

EU-28 = 2 682

- < 2.5
- 2.5 - < 5.0
- 5.0 - < 7.5
- 7.5 - < 15.0
- ≥ 15.0
- Data not available



Note: Serbia, national data. EU-28: 2014. EU-28, Ireland and Greece: estimates. Île de France (FR10), Centre (FR24), Basse-Normandie (FR25), Lorraine (FR41), Alsace (FR42), Franche-Comté (FR43), Poitou-Charentes (FR53), Auvergne (FR72), Guadeloupe (FRA1), Martinique (FRA2), Guyane (FRA3) and Zürich (CH04): low reliability.

Source: Eurostat (online data code: [tour\\_occ\\_nin2](#))

In 2016, the relative importance of non-resident tourists was particularly high — over 90.0 % of the total number of nights spent in tourist accommodation — in six different NUTS level 2 regions of the EU, all but one of which were located around the Mediterranean. The relatively small, island region of Malta (one region at this level of detail) had the highest share of non-residents in its total number of nights spent in tourist accommodation (96.1 %) and was followed by two more island regions, namely, the Greek island of Kriti (95.5 %) and Cyprus (94.5 %; also one region at this level of detail); the two other regions in the Mediterranean included the Adriatic coastal and island region of Jadranska Hrvatska (Croatia) and Illes Balears (Spain), which includes the popular tourist destinations of Mallorca, Menorca and Ibiza. The mountainous, western Austrian region of Tirol was the only non-coastal region in the EU where non-residents accounted for more than 9 out of every 10 nights spent in tourist accommodation.

The darkest shade in **Map 10.2** shows those regions where non-residents accounted for at least three quarters of the total number of nights spent in tourist accommodation. Aside from the six regions mentioned above, there were 16 other regions which met this criterion in 2016, including: three island regions from Greece (Ionia Nisia, Notio Aigaio and Voreio Aigaio), the Spanish island region of Canarias, and the Portuguese island Região Autónoma da Madeira; the five capital city regions of the Czech Republic, Luxembourg (a single region at this level of detail), Hungary, Austria and Slovenia; the Bulgarian Black Sea coastal regions of Severoiztochen and Yugoiztochen, and the Portuguese coastal region of Algarve; as well as two more Alpine regions in Austria (Vorarlberg and Salzburg).

By contrast, there were 16 regions across the EU where non-resident tourists accounted for less than 10.0 % of the total number of nights spent in tourist accommodation in 2016. A majority of these (nine regions) were located in Germany, including the region with the lowest share of non-resident tourists, namely, the northern Baltic Sea coastal region of Mecklenburg-Vorpommern (3.8 %), while the next lowest shares among German regions were recorded in Chemnitz (5.6 %; an industrialised region in eastern Germany) and Weser-Ems (6.8 % which has a North Sea coastline and borders onto the Netherlands). Aside from these nine German regions, there were also very low shares of non-resident tourists nights in four Polish regions, three of which were in the south-eastern corner of the

country, including Swietokrzyskie (to the north-east of Kraków) which had the second lowest share in the EU (4.5 %). There were also two regions from Romania (Sud-Est and Sud-Vest Oltenia) and a single region from Italy (Molise).

***As well as being the third most popular tourist destination in the EU, the Adriatic coastal region of Jadranska Hrvatska also had one of the fastest growth rates for total number of nights spent***

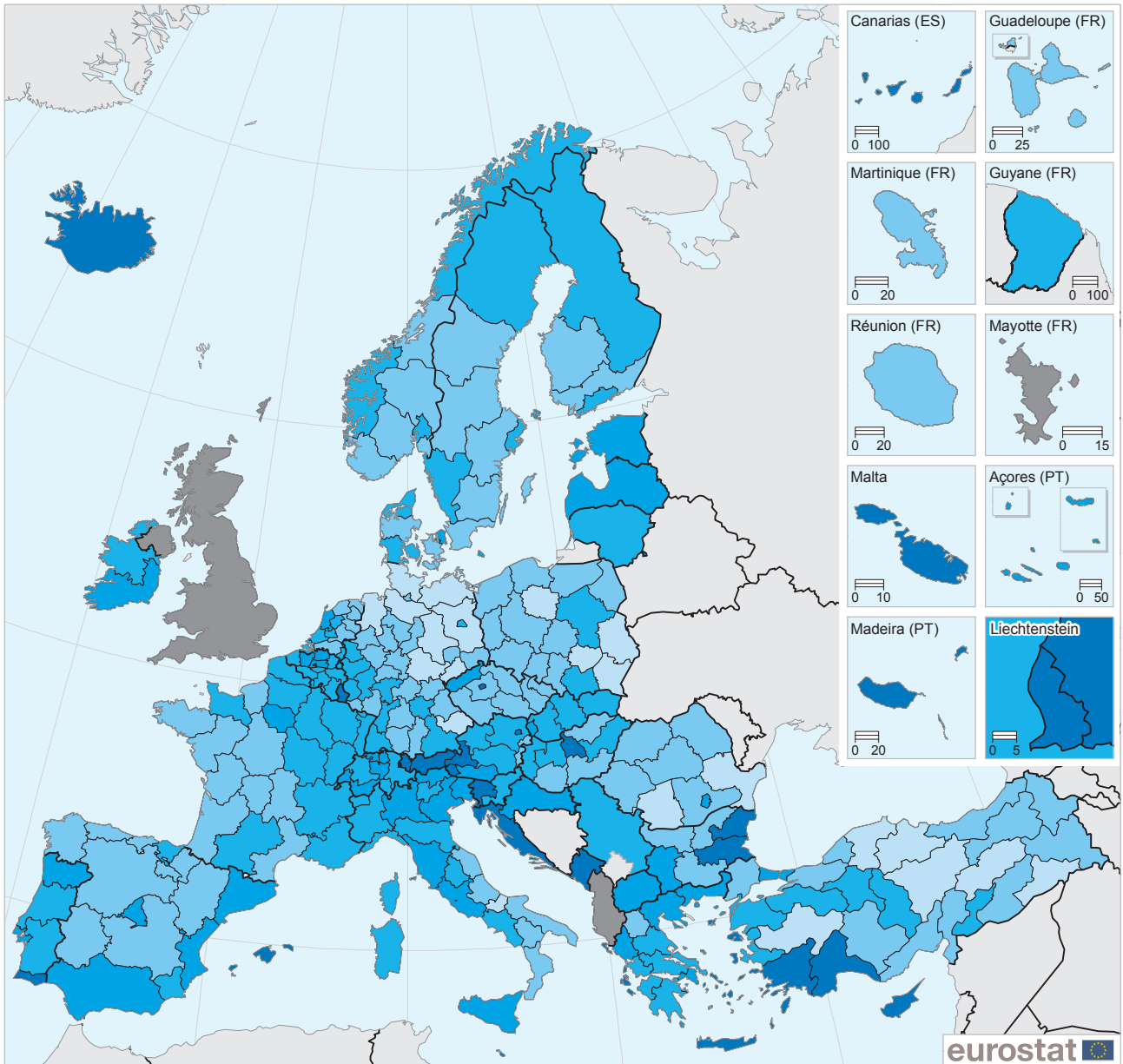
**Map 10.3** presents an analysis for the average annual change in the total number of nights spent in tourist accommodation. Across the EU-28, the total number of nights spent by residents and non-residents rose, on average, by 1.7 % per annum between 2006 and 2014.

There were 29 NUTS level 2 regions where the total number of nights spent in tourist accommodation grew by at least 5.0 % per annum during the period 2006-2016 (as shown by the darkest shade of blue in the map). It is interesting to note that two of these fastest growing regions were also present in the top 10 ranking of the most popular tourist destinations in 2016, namely, Jadranska Hrvatska (Croatia; 7.7 % growth per annum) and Rhône-Alpes (France; 6.7 % per annum). Otherwise, the regions characterised by some of the fastest growth rates for nights spent in tourist accommodation were often located around the periphery of the EU, perhaps suggesting that tourists were seeking alternative destinations. The most rapid increases were recorded across Greece, Croatia, Poland and Portugal, while there was also high growth in the number of nights spent in the capital city regions of Bulgaria, Germany, Croatia, Lithuania (one region at this level of detail), Poland, Portugal, Romania and Slovakia.

Approximately one in nine NUTS level 2 regions in the EU experienced an overall reduction in their total number of nights spent in tourist accommodation between 2006 and 2016 (as shown by the orange shade). In 14 of these 25 regions that experienced a decline in the number of nights spent, the reduction was less than 1.0 % per annum. However, there were eight regions in Germany — principally running in a band across the centre of the country — where the total number of nights spent in tourist accommodation fell by at least 1.0 % per annum; this was also the case in the Danish region of Sjælland and two Italian regions — Abruzzo and Molise — the latter recording the biggest contraction in the number of nights spent for any region in the EU (down 5.2 % per annum).



**Map 10.2: Proportion of nights spent in tourist accommodation by non-residents, by NUTS 2 regions, 2016**  
 (% share of total nights spent by all tourists)

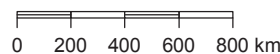


(% share of total nights spent by all tourists)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
 Cartography: Eurostat — GISCO, 04/2018

EU-28 = 45.1

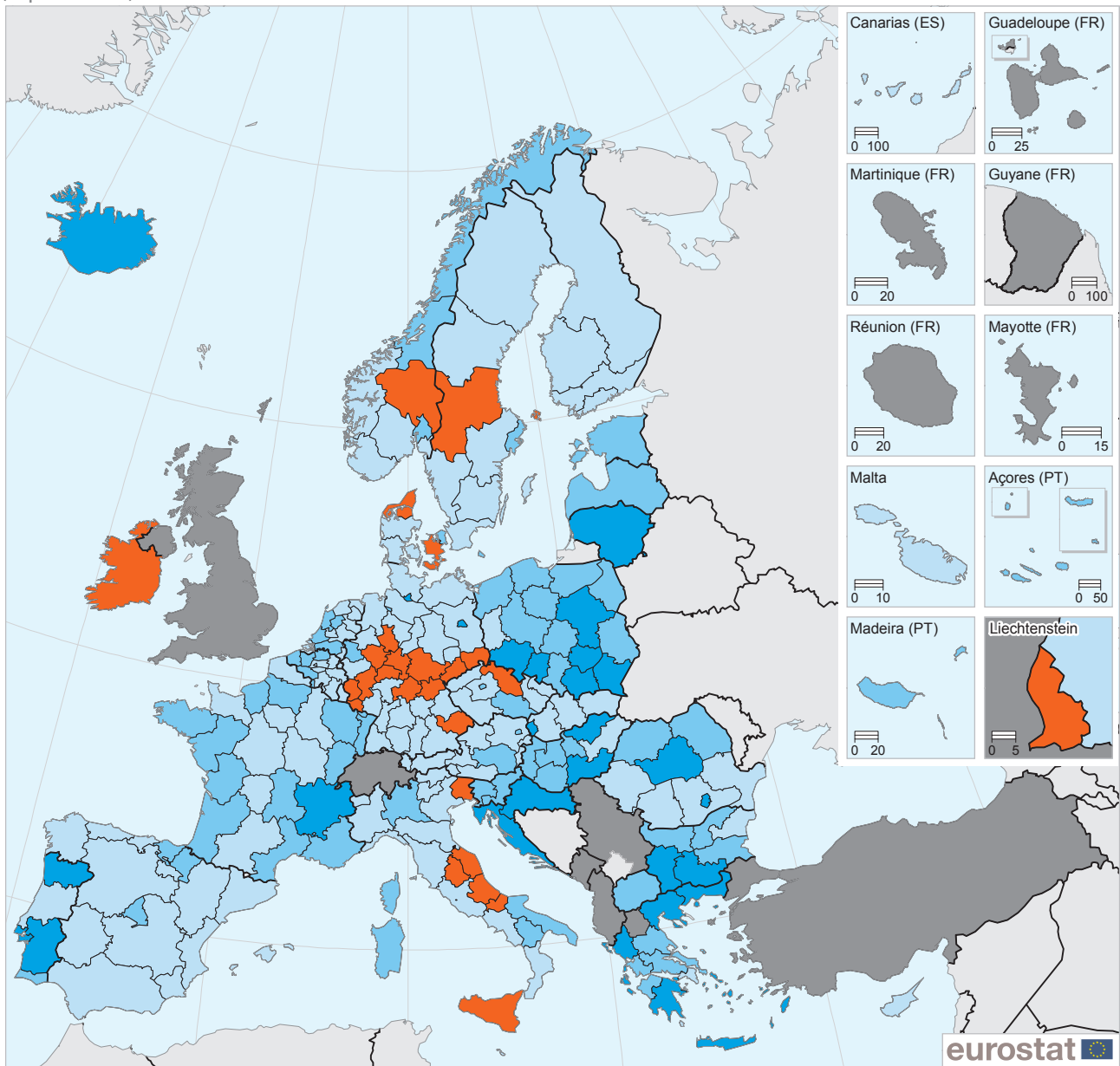
- < 10
- 10 - < 25
- 25 - < 50
- 50 - < 75
- ≥ 75
- Data not available



Note: Serbia, national data. Champagne-Ardenne (FR21), Picardie (FR22), Haute-Normandie (FR23), Bourgogne (FR26), Nord - Pas-de-Calais (FR30), Limousin (FR63), Guadeloupe (FRA1), Serbia and Turkey: 2015. EU-28: 2014. EU-28, Ireland and Greece: estimates. Île de France (FR10), Centre (FR24), Basse-Normandie (FR25), Lorraine (FR41), Alsace (FR42), Franche-Comté (FR43), Poitou-Charentes (FR53), Auvergne (FR72), Guadeloupe (FRA1), Martinique (FRA2), Guyane (FRA3) and Zürich (CH04): low reliability.

Source: Eurostat (online data code: tour\_occ\_nin2)

**Map 10.3:** Average annual change in the total number of nights spent in tourist accommodation, by NUTS 2 regions, 2006-2016 (% per annum)

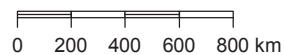


(% per annum)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 04/2018

EU-28 = 1.7

- < 0.0
- 0.0 - < 2.5
- 2.5 - < 5.0
- ≥ 5.0
- Data not available



Note: Serbia, national data. Montenegro: 2008-2016. EU-28: 2006-2014. EU-28, Ireland and Greece: estimates. Île de France (FR10), Centre (FR24), Basse-Normandie (FR25), Lorraine (FR41), Alsace (FR42), Franche-Comté (FR43), Poitou-Charentes (FR53) and Auvergne (FR72): low reliability.

Source: Eurostat (online data code: [tour\\_occ\\_nin2](#))



## Bedroom occupancy rates

Approximately one third of the tourist accommodation in the EU-28 is composed of hotels and similar establishments. In 2014, there were 202 thousand hotels and similar establishments that provided a total of 6.6 million bedrooms and 13.7 million bed places, equivalent to an average of approximately 33 bedrooms and 68 bed places per establishment; note these average ratios per establishment are likely to be overstated as many national statistical authorities apply a threshold (for example, only collecting data from establishments with at least 10 bed places) to exclude the smallest establishments.

While a count of the total number of bed places may be of interest in relation to the capacity of different regions to respond to tourism demand, those providing accommodation services are more likely to be interested in net occupancy rates for bedrooms or beds. While hotels and similar establishments in prestigious or city-centre locations often need relatively high occupancy rates to remain financially viable, others may choose to close during the off-season in order to reduce variable costs, or alternatively seek to keep their occupancy rates high by providing special offers which may, for example, encourage pensioners (typically from northern and western EU Member States) to spend longer periods on vacation in warmer climates during the winter months.

***Canarias — the most popular tourist destination in the EU — had the highest bedroom occupancy rate***

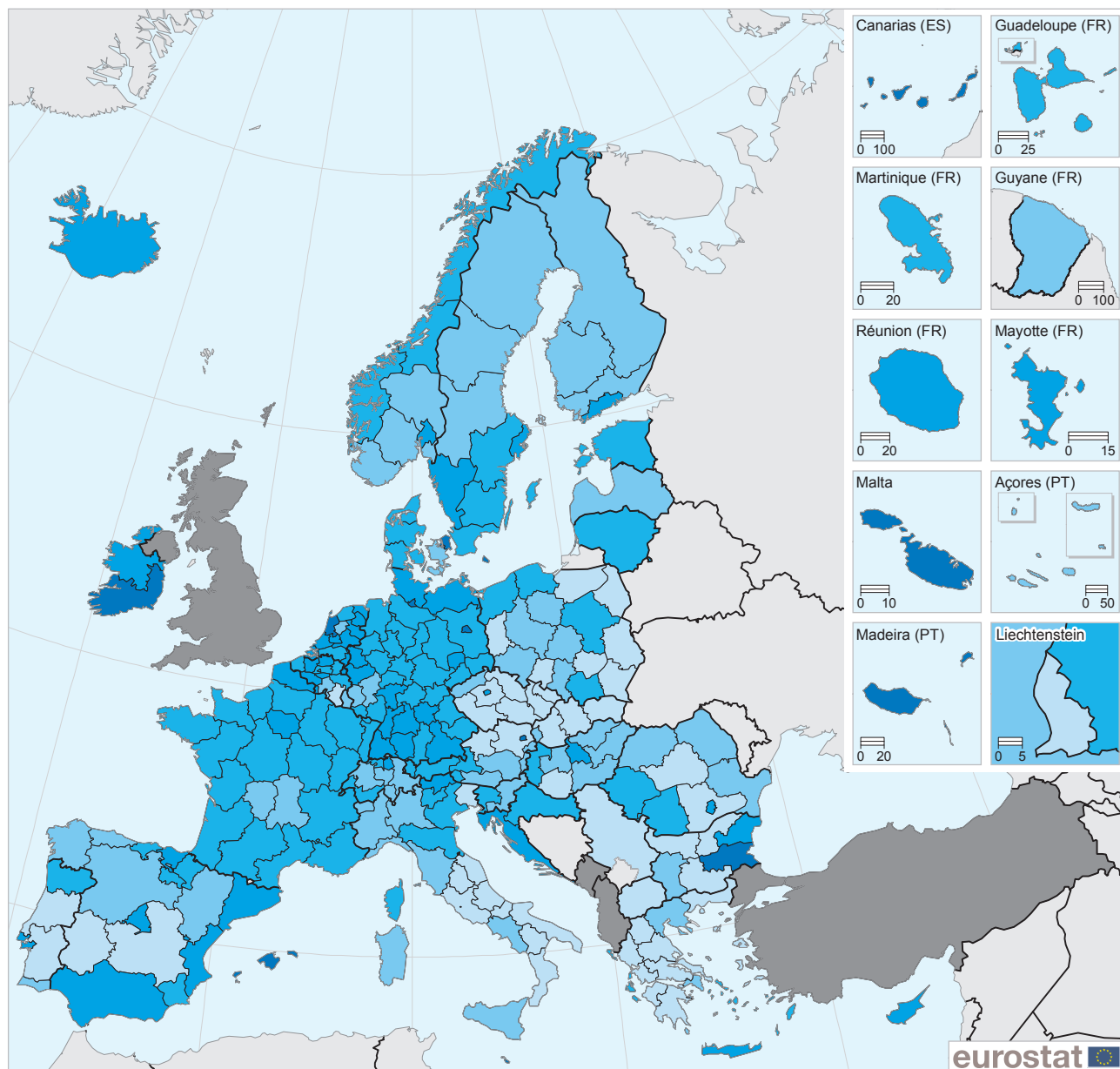
**Map 10.4** provides a regional analysis of bedroom occupancy rates in hotels and similar establishments

for 2016. It reveals that of the 236 NUTS level 2 regions for which data are available, a majority (138) reported bedroom occupancy rates of at least 50 %, while there were 98 regions with rates below 50 %.

In 2016, the highest bedroom occupancy rate was recorded in Canarias (Spain), the most popular tourist destination in the EU. Looking at the remainder of the top 10 most popular tourist regions in the EU, there was only one other which featured among the 11 regions with the highest occupancy rates, namely, Illes Balears also in Spain. Aside from these two Spanish regions, the remaining regions where bedroom occupancy rates were at least 70.0 % (as shown by the darkest shade in the map) were often capital city regions, as was the case in the capital city regions of Denmark, Germany, Ireland, Malta (a single region at this level of detail), the Netherlands and Austria. The three other regions with high occupancy rates included the metropolitan region of Hamburg (Germany), the Black Sea coastal region of Yugoiztochen (Bulgaria) and the island Região Autónoma da Madeira (Portugal).

At the other end of the range, there were 47 regions in the EU where the net occupancy rate for bedrooms was below 40 % in 2016 (as shown by the lightest shade of blue in **Map 10.4**). These were principally concentrated in southern and eastern regions of the EU and were often rural, inland regions. The lowest rate of 16.2 % was recorded in the northern Greek region of Dytiki Makedonia. The only regions in western and northern parts of the EU with bedroom occupancy rates that were less than 40 % were: Prov. Luxembourg (Belgium), Niederösterreich and Oberösterreich (both Austria) and Åland (Finland).

**Map 10.4:** Bedroom occupancy rates in hotels and similar establishments, by NUTS 2 regions, 2016 (%)



(%)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 04/2018

- < 40
- 40 - < 50
- 50 - < 60
- 60 - < 70
- ≥ 70
- Data not available

0 200 400 600 800 km

Note: Serbia, national data. Serbia: 2015. Ireland: estimates. The Netherlands: low reliability.

Source: Eurostat (online data code: tour\_occ\_anor2)



# 11

## Transport

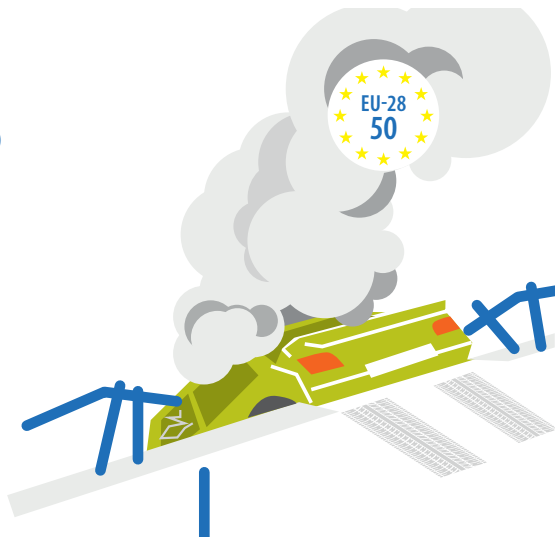
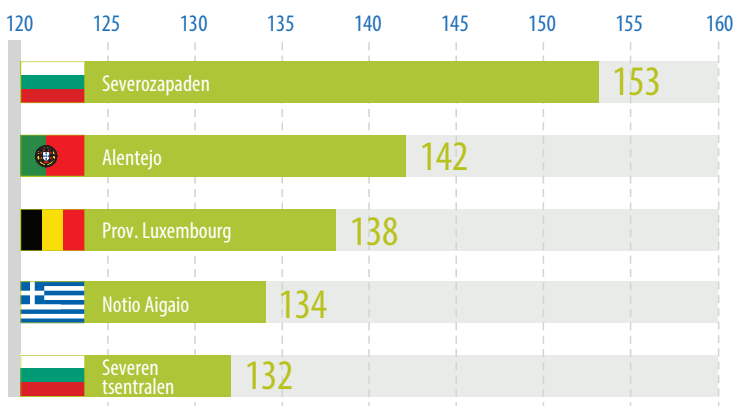


## Key findings

- The north-western Italian region of Valle d'Aosta/Vallee d'Aoste had the highest levels of car ownership in the EU, although this may, at least in part, be attributed to specific taxation rules.
- The risk of dying in a road traffic accident was 15 times higher in the Bulgarian region of Severozapaden compared with Wien in Austria.
- The three regions in the EU with the highest levels of road freight loaded and transported within the EU-28 were all situated in Spain — Barcelona, Valencia / València and Madrid.

### 5 REGIONS IN THE EU WITH THE HIGHEST RATES

#### FATAL ROAD ACCIDENTS, 2016 (per million inhabitants)



Transport and mobility play a fundamental role in the [European Union \(EU\)](#) by linking regions together. The EU's transport policy endeavours to foster clean, safe and efficient travel throughout Europe, underpinning the right of citizens, goods and services to circulate freely within the single market.

The EU's transport sector is considered essential for delivering the overarching goals of smart, sustainable and inclusive growth. It is hoped that the promotion of more efficient and interconnected transport networks will, among other benefits, lead to advanced mobility, carbon reductions, improved competitiveness and productivity gains. Policy initiatives within the transport domain touch on everyday lives: for example, the [European Commission](#) has proposed legislation relating to:

- the protection of [passenger rights](#);
- security measures, such as a list of airlines banned from EU skies;
- [road safety](#) measures to reduce road fatalities and serious road accidents;
- funding to deliver a modern [trans-European transport network \(TEN-T\)](#) with [multimodal transport solutions](#) and traffic management systems to facilitate the mobility of goods and passengers across the EU;
- a range of policies designed to reduce greenhouse gas emissions from transport;
- sustainable urban mobility measures to improve individual's quality of life;

- funding for research and innovation, for example, to encourage the development of cleaner and more energy-efficient vehicles.

Regional transport statistics are collected for a number of [transport modes](#), covering a broad range of indicators, for example, transport infrastructure (the length of transport networks) or equipment rates (the number of vehicles per inhabitant). The other main area of transport statistics concerns flows of passenger and freight traffic between, within and through regions, with differences across regions often closely related to the level and structure of their economic activity, their number of inhabitants, or their geographical location in relation to key transport infrastructure (such as ports, airports, and road and rail networks).

This chapter focuses on regional statistics for road transport; note that information on other transport modes, such as air or maritime services, were covered in the [previous edition](#) and will feature again in the 2019 edition. The first half of the chapter provides a regional analysis for the number of passenger cars relative to the total number of inhabitants (the motorisation rate) and a similar analysis for public transport equipment (covering motor coaches, buses and trolley buses). This is followed by information on road fatalities, while the chapter closes with an analysis of road freight transport.



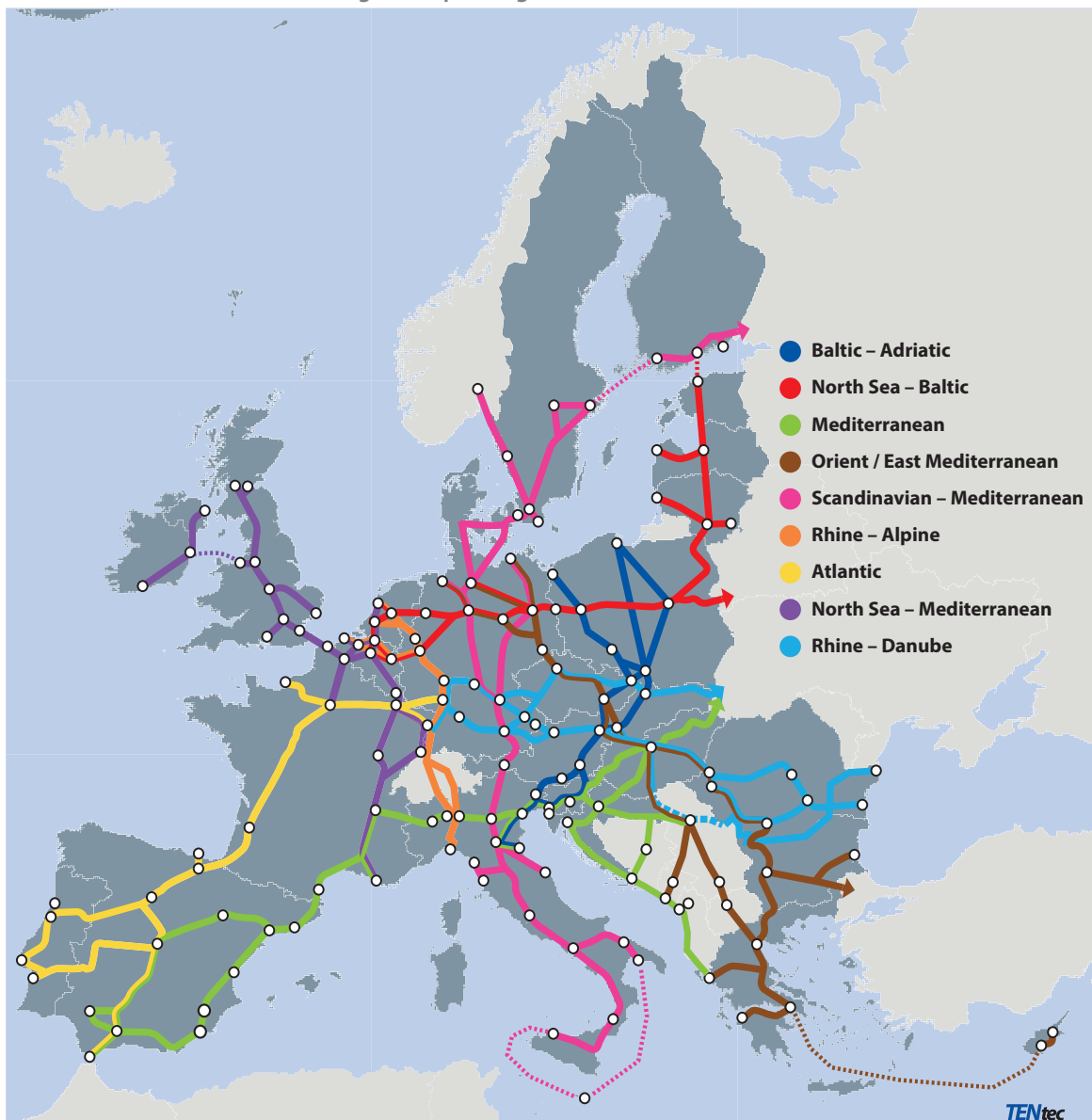
## TRANS-EUROPEAN TRANSPORT NETWORK (TEN-T)

At the beginning of the 1990s, the EU agreed to set-up an infrastructure policy to support the development of efficient networks in the fields of transport, energy and telecommunications. A substantial policy review was launched in 2009 and this led to a new legislative framework that came into force in January 2014: [Union guidelines for the development of the trans-European transport network](#) (Regulation (EU) No 1315/2013).

Under the [Connecting Europe Facility \(CEF\)](#) for transport, EUR 22.4 billion are made available during the

period 2014-2020 to co-fund trans-European transport network (TEN-T) projects. Through its investment plan for Europe, the EU seeks new and innovative ways to finance these infrastructure developments, with financing from public financial institutions, the private sector, or the [European Fund for Strategic Investments \(EFSI\)](#). The TEN-T programme consists of hundreds of projects: their ultimate purpose is to ensure the interconnectedness and interoperability of the EU's transport network. At its core are [nine multimodal transport corridors](#) that are spread across Europe that are due to be completed by 2030.

### TEN-T core network corridors (freight and passenger)



Note: the nine TEN-T core network corridors are based on the CEF and TEN-T Regulations (1316/2013 & 1315/2013); they have been created as a coordination instrument to facilitate the completion of major parts of the core network of strategic importance.

Source: European Commission, Directorate-General for Mobility and Transport, TENtec Information System

## Road transport equipment rates

To set the scene for the statistics that follow, it is perhaps useful to first underline the essential role that is played by road transport in both passenger and freight transport markets. Road freight transport is an important component of modern economic systems, providing services that connect producers, traders and consumers. In a similar vein, road passenger transport is also important, with many individuals and families — especially those living in suburban or more rural regions — becoming (highly) dependent on the use of a car.

In 2015, the modal split of inland passenger transport was dominated by passenger cars, which accounted for more than four fifths (83.1 %) of all passenger-kilometres within the EU-28; motor coaches, buses and trolley buses, and trains both accounted for single-digit shares, at 9.2 % and 7.7 % respectively. A comparison between 2005 and 2015 reveals that there was little change in the modal split for inland passenger transport during the last decade, with an increase of 0.8 percentage points in the share of trains being largely offset by a decline in the use of motor coaches, buses and trolley buses (−0.6 points), while there was a slight reduction in the relative use of cars (−0.2 points).

This section examines equipment rates for passenger cars and for public road transport vehicles. The availability/use of these two different categories of vehicles might be expected, at least to some degree, to be inversely related, insofar as people living in regions characterised by a low number of public transport options may be more inclined to own their private vehicle, while people living in regions with efficient public transport systems may be less inclined to own a vehicle, especially when the regions where they live/work are characterised by congestion and/or difficulties to find a place to park.

### MOTORISATION RATES

Passenger cars are road motor vehicles, other than mopeds or motor cycles, intended for the carriage of passengers and designed to seat no more than nine persons (including the driver). This category includes vans designed and used primarily for the transport of passengers, as well as ambulances and motor homes. The number of passenger cars per inhabitant — also referred to as the motorisation rate — is calculated on the basis of the stock of vehicles as of 31 December and population figures as of 1 January of the following year.

There were approximately 258 million passenger cars circulating on the roads of the EU-28 in 2016, with the largest stocks of vehicles in Germany (45.8 million), Italy (37.9 million), France (32.1 million) and the United Kingdom (30.9 million). Relative to population size,

there were, on average, 506 passenger cars per 1 000 inhabitants in the EU-28 in 2016; in other words, there was slightly more than one car for every two persons.

### *The motorisation rate in the Italian region of Valle d'Aosta/Vallee d'Aoste was 6.6 times as high as the rate in the Greek region of Peloponnisos*

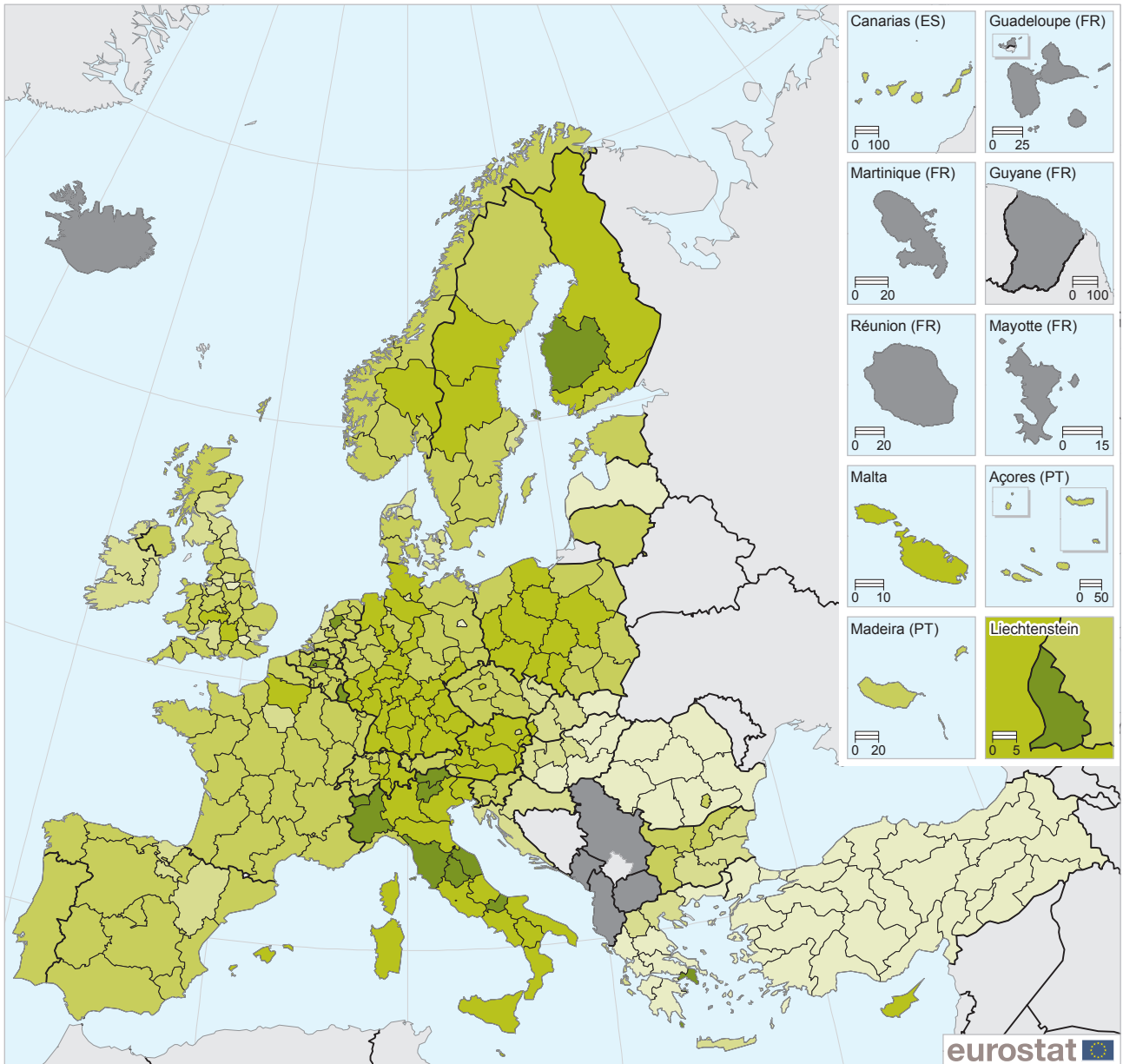
The distribution of motorisation rates across the 261 NUTS level 2 regions for which data are available was relatively balanced insofar as 124 regions had rates that were below the EU-28 average, 136 regions had rates that were above the average, and a sole region, Utrecht in the Netherlands, had a rate that was identical to the EU-28 average.

Regional motorisation rates in the EU ranged from a high of 1 173 passenger cars per 1 000 inhabitants in Valle d'Aosta/Vallée d'Aoste (north-western Italy) down to 178 passenger cars per 1 000 inhabitants in Peloponnisos (southern mainland Greece). As such, relative to population size, the availability of passenger cars in Valle d'Aosta/Vallee d'Aoste was 6.6 times greater than in Peloponnisos. While these statistics on motorisation rates can be linked to the economic fundamentals of each region, they may also reflect specific circumstances: for example, the highest equipment rates in Valle d'Aosta/Vallee d'Aoste may, at least in part, be attributed to lower taxation on new vehicle registrations. A closer analysis of the results reveals that alongside Valle d'Aosta/Vallée d'Aoste both the second and third highest motorisation rates in the EU were also recorded in northern Italy — Provincia Autonoma di Trento (925 passenger cars per 1 000 inhabitants) and Provincia Autonoma di Bolzano/Bozen (876) — while the only other region to record a rate above 800 passenger cars per 1 000 inhabitants was Flevoland in the Netherlands (836).

The darkest shade in **Map 11.1** identifies all those regions where the motorisation rate was at least 650 passenger cars per 1 000 inhabitants in 2016. Aside from the four regions mentioned above, 10 more regions across the EU met this criterion: five additional Italian regions (Umbria, Molise, Piemonte, Toscana and Marche), Åland and Länsi-Suomi (both in Finland), Attiki (the Greek capital city region), Luxembourg (a single region at this level of detail) and Prov. Vlaams-Brabant (just to the north of the Belgian capital city region).

It is interesting to note that several island regions reported relatively high motorisation rates, including Åland (799, the highest rate in Finland), the Illes Balears (595, the highest rate in Spain), Corse (558, the second highest rate in France), Cyprus (595) and Malta (615), both of which are single regions at this level of detail. These relatively high figures may, at least in part, be explained by a lack of alternative modes of transport for inland passenger travel; for example, most of

**Map 11.1: Motorisation rate, by NUTS 2 regions, 2016**  
(number of passenger cars per 1 000 inhabitants)

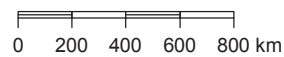


(number of passenger cars per 1 000 inhabitants)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 04/2018

EU-28 = 506

- < 350
- 350 - < 450
- 450 - < 550
- 550 - < 650
- ≥ 650
- Data not available



Note: London (UKI), NUTS level 1. Portugal: national data. EU-28: provisional.

Source: Eurostat (online data codes: tran\_r\_vehst and demo\_r\_d2jan)

these islands had relatively underdeveloped rail infrastructures or no rail services at all. Equally, these islands are all tourist destinations and experience a high demand from non-residents for rental vehicles, the inclusion of which inflates this ratio which is calculated relative to the resident population.

### **Metropolitan and capital city regions in western and northern Europe often had relatively low motorisation rates**

At the lower end of the range, there were 24 regions in the EU where the motorisation rate was less than 350 passenger cars per 1 000 inhabitants in 2016 (these are shown in the lightest shade). They were principally located in Greece (eight regions), which may be contrasted with the relatively high motorisation rate for the Greek capital city region of Attiki, as well as in Romania (seven out of eight regions, the exception being the capital city region of Bucuresti - Ilfov) and Hungary (four regions). The other regions with a motorisation rate that was less than 350 passenger cars per 1 000 inhabitants included Východné Slovensko (eastern Slovakia), Latvia (a single region at this level of detail), the German capital city region of Berlin and two

regions from the United Kingdom — South Yorkshire (a metropolitan region that includes the city of Sheffield) and London (a NUTS level 1 region).

Some of the highest motorisation rates in eastern and southern parts of the EU were recorded in capital city regions, whereas the opposite was quite often the case in western and northern parts of the EU. Aside from Berlin and London (mentioned above), each of the following western and northern capital city regions recorded motorisation rates that were considerably below the EU-28 average in 2016: Région de Bruxelles-Capitale / Brussels Hoofdstedelijk Gewest (Belgium), Hovedstaden (Denmark), Île de France (France), Noord-Holland (the Netherlands), Wien (Austria) and Stockholm (Sweden). A closer analysis reveals that these capital city regions had the lowest motorisation rates in each of these countries; this was also the case for Berlin in Germany, while London had the second lowest motorisation rate in the United Kingdom (as the rate in South Yorkshire was slightly lower). These low motorisation rates for capital city regions may be linked, among others, to congestion, having difficulty to find a place to park, a greater availability of public transport (such as bus, tram, trolley-bus, and over- or underground rail networks), or concerns

**Figure 11.1: NUTS 2 regions with the highest and lowest motorisation rates, 2016**  
(number of passenger cars per 1 000 inhabitants)



(1) Provisional.

(2) NUTS level 1.

Source: Eurostat (online data codes: [tran\\_r\\_vehst](#) and [demo\\_r\\_d2jan](#))



over sustainable development issues. This may lead households in some of the EU's largest cities choosing to own just one car rather than multiple cars, or to have no car at all, and as a consequence to rely more or exclusively on public transport.

By contrast, the capital city regions of Praha (the Czech Republic), Attiki (Greece), Mazowieckie (Poland), Zahodna Slovenija (Slovenia) and Bratislavský kraj (Slovakia) recorded the highest motorisation rates in each of these eastern and southern EU Member States; furthermore, motorisation rates in each of these regions were systematically higher than the EU-28 average. The motorisation rate in the Spanish capital city region of Comunidad de Madrid was also above the EU-28 average, although higher motorisation rates were recorded by two other Spanish regions, Galicia and Illes Balears.

The first part of **Figure 11.1** emphasises the generally high number of passenger cars in Italy (relative to population numbers), as half (10) of the 20 regions with the highest motorisation rates in the EU were Italian. The ranking also features four out of the five NUTS level 2 regions in Finland (the exception being the capital city region of Helsinki-Uusimaa, which had a motorisation rate just above the EU-28 average). The second part of **Figure 11.1** provides information on the 20 regions with the lowest motorisation rates in the EU, these were principally in Greece, Hungary and Romania.

## EQUIPMENT RATES FOR PUBLIC ROAD TRANSPORT

Remote and rural regions of the EU are generally characterised by low population density: with a relatively low number of potential passengers, it may not be financially viable to provide frequent and widespread public transport services. However, well-organised public transport services have the potential to stimulate economic growth and social inclusion through improving accessibility and mobility, which may be of particular importance to disadvantaged groups (such as the young, the elderly, those at risk of poverty, or the disabled). As a result, some governments and regional/local authorities choose to subsidise public transport services in remote areas, or alternatively to bundle minimum service provisions on such routes with the operation of more lucrative routes.

The term public transport road passenger vehicle is used to cover minibuses, mini-coaches, buses, motor coaches and trolleybuses used to convey more than nine passengers by road. Latest estimates suggest that in 2016 there were almost 900 thousand public road transport passenger vehicles (motor coaches, buses and trolleybuses) circulating on the roads of the EU-28. The largest stocks of vehicles were in the United Kingdom (162 thousand), Poland (113 thousand) and France (100 thousand).

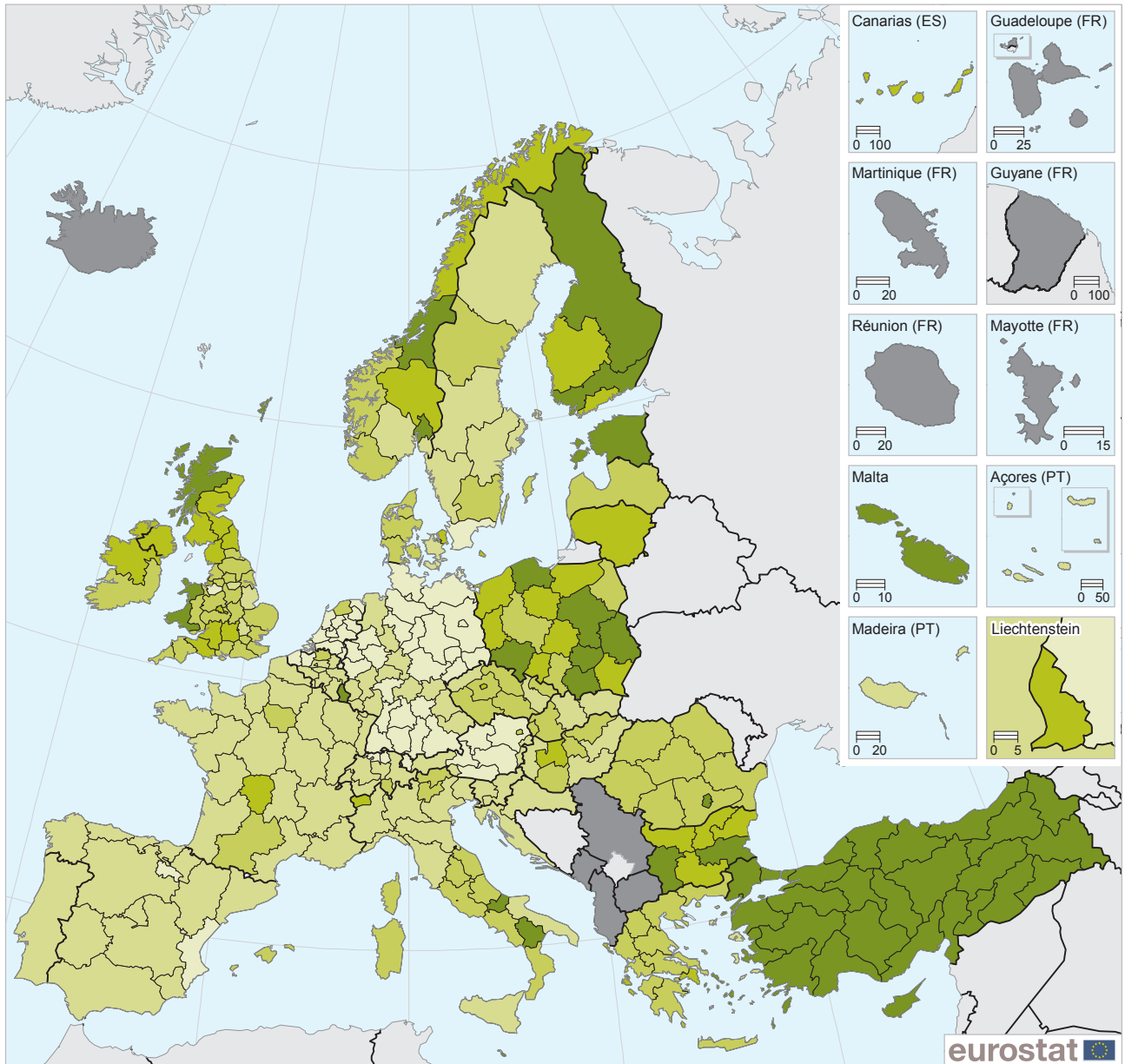
The equipment rate for public road transport passenger vehicles is calculated in the same manner as for passenger cars; it is based on the stock of vehicles as of 31 December and population figures as of 1 January of the following year. The statistics presented in **Map 11.2** on equipment rates for public road transport passenger vehicles mirror, to some extent, those for passenger cars (as shown in **Map 11.1**); insofar as in regions where car ownership is relatively low one might expect a higher demand for public transport services. Note however that the data presented only concern road transport services and are therefore also influenced, to some degree, by the availability of alternative means of public transport, principally the provision of rail and metro services, the supply of which is often widespread in many of the EU's larger cities, as well as ferry services.

**Malta — which does not have a rail system — recorded the highest equipment rate for public road transport passenger vehicles**

**Map 11.2** presents equipment rates for public road transport passenger vehicles by NUTS level 2 region: in 2016, the average rate for the EU-28 was 1.8 vehicles per 1 000 inhabitants. A closer analysis by region suggests there was a relatively even distribution, insofar as regional equipment rates were lower than the EU-28 average in 136 out of the 261 regions for which data are available. Some of the lowest rates were recorded in parts of Germany, Austria and the Netherlands, where equipment rates often fell to below an average of 1.0 vehicle per 1 000 inhabitants (as shown by the lightest shade in the map). The seven lowest equipment rates for public road transport passenger vehicles were all located in the Netherlands, with the bottom 10 regions completed by two largely urban German regions — Berlin and Bremen — and the Spanish region of Ciudad Autonoma de Ceuta.

By contrast, the darkest shade in the map shows the 20 EU regions with the highest equipment rates for public road transport passenger vehicles, where the equipment rate was at least 3.25 vehicles per 1 000 inhabitants in 2016. The highest rate was recorded in Malta (a single region at this level of detail), where there were, on average, 4.4 vehicles per 1 000 inhabitants; this densely populated holiday destination is famous for its diverse and often customised buses. The second highest rate (4.2 vehicles per 1 000 inhabitants) was recorded in the Romanian capital city region, Bucuresti - Ilfov, the only other region in the EU to have a rate above 4.0. However, these two regions with the highest equipment rates were somewhat atypical, insofar as most of the regions with relatively high equipment rates were either rural or peripheral regions, as was the case for the next five regions that followed in the ranking of equipment rates, namely: Highlands and Islands (the United Kingdom; 3.9 vehicles per 1 000 inhabitants), Swietokrzyskie (Poland; 3.8), Yugoiztochen (Bulgaria; also 3.8), Molise (Italy; 3.7) and Estonia (a single region at this level of detail; also 3.7).

**Map 11.2: Equipment rate for public transport vehicles, by NUTS 2 regions, 2016**  
(number of motor coaches, buses and trolleybuses per 1 000 inhabitants)

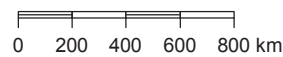


(number of motor coaches, buses and trolleybuses per 1 000 inhabitants)

EU-28 = 1.8

- < 1.00
- 1.00 - < 1.75
- 1.75 - < 2.50
- 2.50 - < 3.25
- ≥ 3.25
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 04/2018



Note: London (UKI), NUTS level 1. Portugal: national data. Portugal and the United Kingdom: estimates. EU-28 and France: provisional.

Source: Eurostat (online data codes: tran\_r\_vehst, road\_eqs\_busveh and demo\_r\_d2jan)





## Road accidents

The incidence of road accidents can be linked to a wide range of different factors, including: the propensity to own a vehicle (the motorisation rate), the type of motor vehicle (car, motor cycle or moped), the characteristics of the vehicle stock (such as average age and engine power), the number of kilometres driven, the average speed, population density, the extent and quality of the road infrastructure, climatic and geographic conditions, national regulations that apply to vehicles and drivers, or driver conduct, for example, inadequate training/experience, a lack of concentration, dangerous driving, speeding, or driving under the influence of alcohol or drugs. The EU works closely with authorities in the EU Member States on road safety. It seeks to build on national initiatives, addressing all factors that play a role in crashes ([infrastructure](#), [vehicle safety](#), [driver behaviour](#), [emergency response](#)), while setting targets — such as [Vision Zero](#) — to eliminate deaths and serious injuries on European roads by 2050.

Road safety is a major societal issue: in 2016, more than 25 thousand people died on EU-28 roads, while no fewer than 1.45 million were injured. When expressed relative to population size, there were, on average, 50 road fatalities in the EU-28 per million inhabitants.

Regional statistics for road accidents should be interpreted with care as the data presented may involve vehicles which are in transit through a region or non-residents staying in a region on holiday. As such, and other things being equal, regions that have transit corridors or regions with high numbers of tourists may well experience a higher incidence of injuries and fatalities. Among the 267 NUTS level 2 regions for which data are available, the incidence of road fatalities was somewhat skewed, as there were 118 regions with ratios below the EU-28 average, compared with 148 regions that had ratios above the average; one region, Lorraine in eastern France, had a rate that was identical to the EU-28 average. This skewed nature reflects, at least to some degree, a lower incidence of road fatalities in metropolitan regions (where average speeds are generally much lower), in contrast to higher rates in the more numerous rural regions.

***By moving just over a thousand kilometres from the Austrian capital of Wien to the Bulgarian region of Severozapaden, the risk of dying in a road traffic accident was 15 times as high in the destination region than in the starting region***

There were 21 regions across the EU where the number of road fatalities was at least 100 deaths per million inhabitants in 2016. Regions with the highest incidence rates for road fatalities were concentrated in eastern and southern parts of the EU, with five regions in Greece and four regions from each of Bulgaria, Poland and Romania.

Relatively high ratios were also recorded in two regions of southern Belgium — Prov. Luxembourg and Prov. Namur — the French island region of Corse, and the rural Portuguese region of Alentejo.

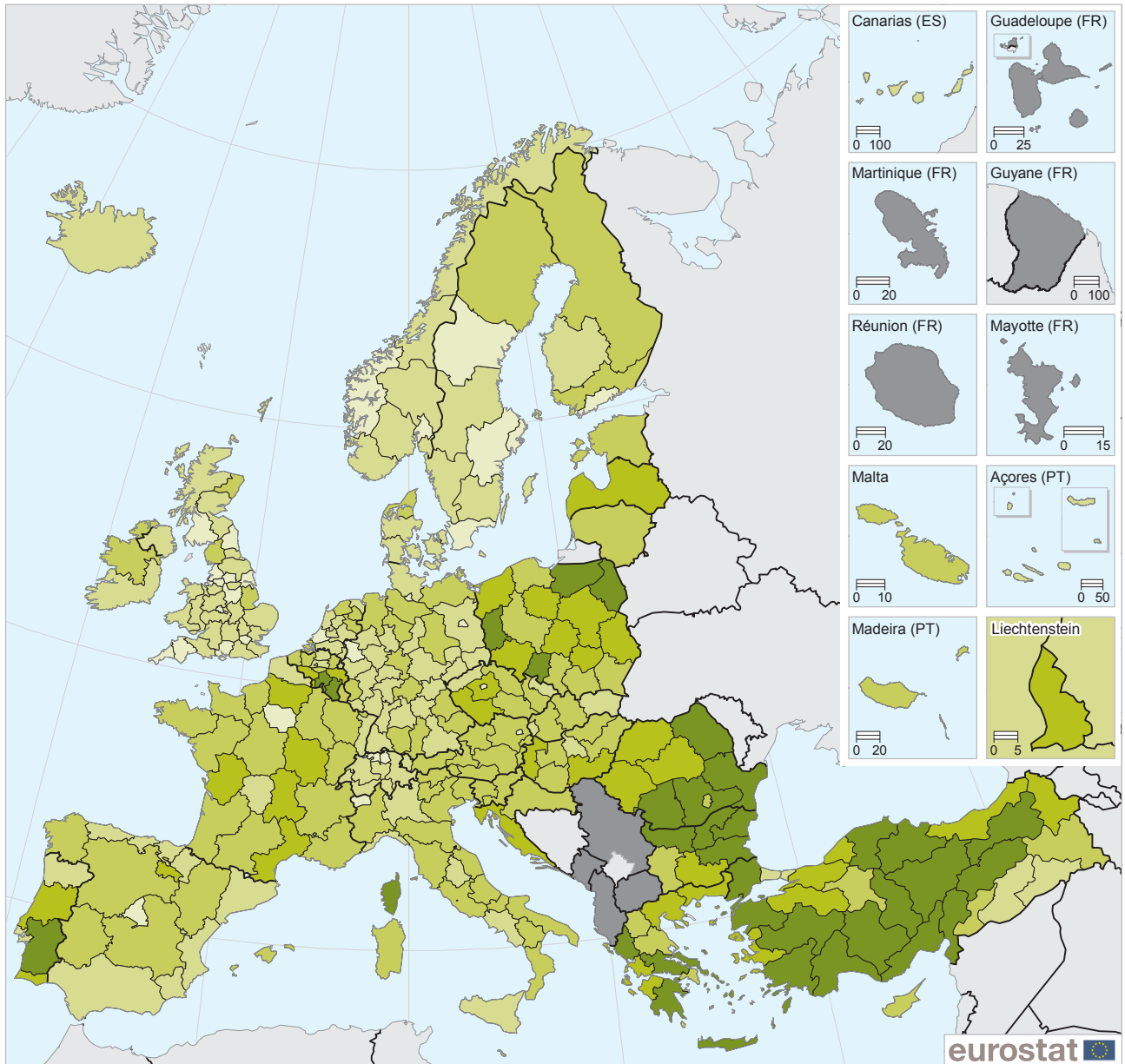
The highest incidence rate for road fatalities in the EU — across NUTS level 2 regions — was recorded in the Bulgarian region of Severozapaden (note this region also had the lowest level of economic activity per inhabitant in the EU), where there were 153 fatalities per million inhabitants in 2016. It was followed by Alentejo (142 fatalities per million inhabitants) and Prov. Luxembourg (138). The Greek region of Notio Aigaio (134) and another Bulgarian region, Severen tsentralen (132), were the only other regions in the EU to record incidence rates that were higher than 125 deaths per million inhabitants in 2016.

In 2016, the lowest incidence rate for road fatalities was recorded in the Austrian capital city region of Wien (10 deaths per million inhabitants). Including Wien, there were 31 regions across the EU where the incidence of road fatalities was less than half the EU-28 average, in other words, below 25 deaths per million inhabitants (as shown by the lightest shade in the map). Among these, there were 13 regions where the number of road fatalities was less than 20 per million inhabitants, the vast majority of which were urban areas, including: the capital city regions of Belgium, Germany, Spain, Austria, Sweden and the United Kingdom (NUTS level 1) and the metropolitan regions of Bremen and Hamburg (both Germany), Merseyside and Greater Manchester (both in the United Kingdom), Zuid-Holland (which includes the cities of the Hague and Rotterdam), and two atypical regions — Ciudad Autónoma de Melilla (Spain) and Cornwall and Isles of Scilly (the south-west of the United Kingdom).

This section closes with a short complementary analysis for road transport injuries. In 2016, the highest overall numbers of road transport accidents resulting in injuries — among NUTS level 2 regions — were recorded in the densely-populated regions of Lombardia (Italy; 45.4 thousand injuries), Cataluña (Spain; 36.0 thousand), Lazio (the capital city region of Italy; 27.8 thousand), Oberbayern (Germany; 25.4 thousand) and Emilia-Romagna (Italy; 23.6 thousand).

Relative to their number of inhabitants, the highest incidence rates for road injuries were principally reported in more rural German, Italian and Austrian regions. Leaving aside the atypical case of Ciudad Autónoma de Melilla (Spain), which had the highest rate in the EU, there were 12 regions where the incidence rate for road injuries was within the range of 5 750–7 000 injuries per million inhabitants in 2016: Niederbayern, Schwaben, Schleswig-Holstein and Oberpfalz (Germany); Liguria and Toscana (Italy); Salzburg, Tirol, Vorarlberg, Kärnten, Oberösterreich and Steiermark (Austria).

**Map 11.3: Number of fatal road accidents relative to population size, by NUTS 2 regions, 2016**  
(per million inhabitants)

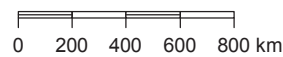


(per million inhabitants)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 04/2018

EU-28 = 50

- < 25
- 25 - < 50
- 50 - < 75
- 75 - < 100
- ≥ 100
- Data not available



Note: London (UKI), NUTS level 1. United Kingdom and Iceland: 2015. Liechtenstein: 2014. EU-28: estimate made for the purpose of this publication (including data for the United Kingdom for 2015).

Source: Eurostat (online data codes: tran\_r\_acci, tran\_sf\_roadse and demo\_r\_d2jan)



## Road freight

Road freight transport is crucial for economic activity, carrying goods to where they are needed, as part of the deepening integration of the EU's single market: whether as part of seamless production chains within manufacturing, acting as an interface between manufacturers and wholesalers/retailers, or delivering goods to customers (other businesses or households). The ability to move goods safely, quickly and efficiently to markets is important for international trade, national distributive trades and economic development. Strains on transport infrastructure (such as congestion) and the environmental impact of transport are two of the issues faced by road freight service providers.

As for passenger transport, roads are by far the most popular transport mode in the EU for inland freight transport, accounting for more than three quarters (76.4 %) of all tonne-kilometres in 2016, while the share of inland freight transported by rail (17.4 %) was almost three times as high as the share for inland waterways (6.2 %). There was only a small shift in EU-28 inland freight developments between 2006 and 2016, as the quantity of goods transported by rail fell by 0.9 points, while the relative share transported by road rose by the same amount, with no change in the share for inland waterways.

***The highest quantity of road freight loaded was in Barcelona (Spain), both for road freight transported within national boundaries or elsewhere within the EU-28***

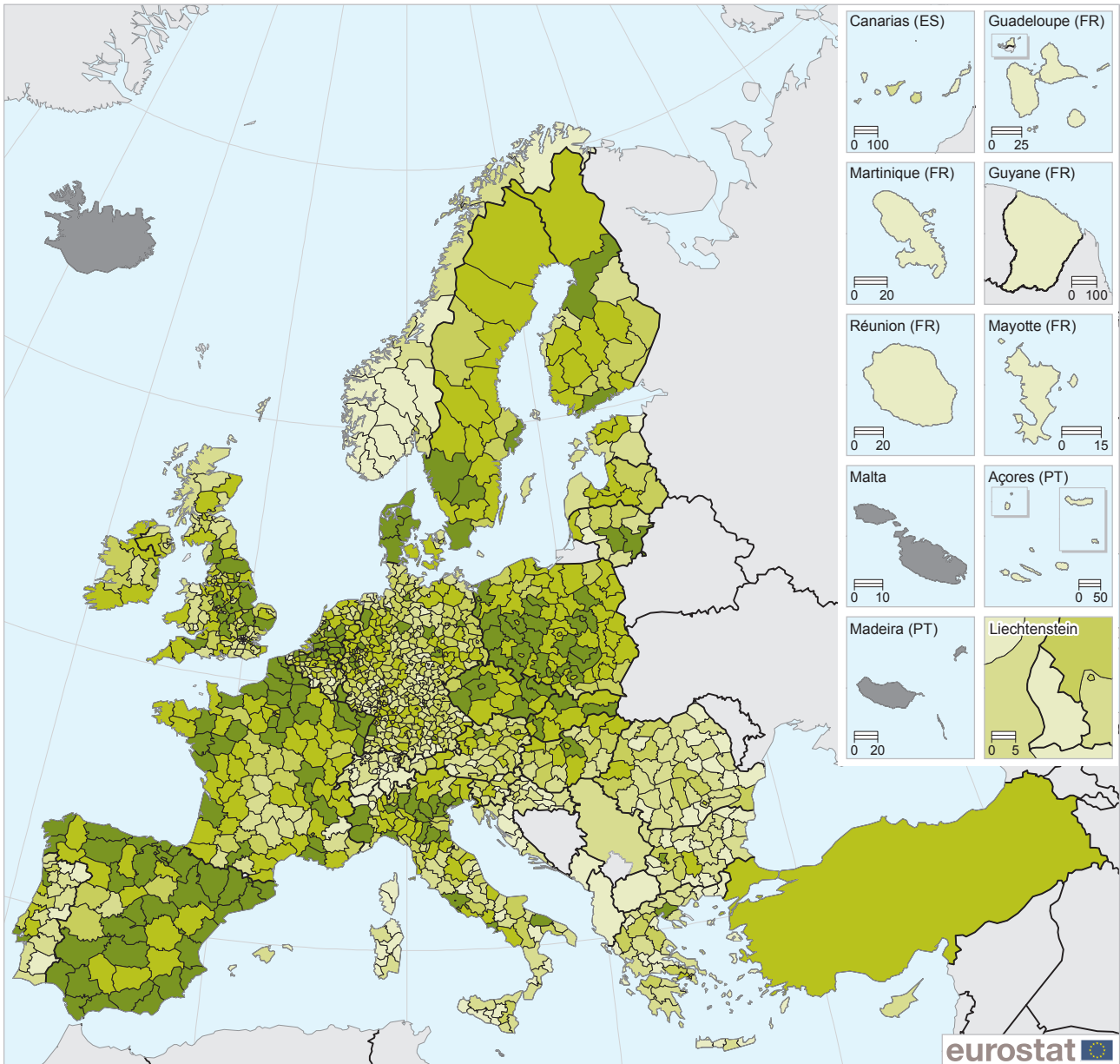
In 2016, the total weight of goods loaded for road freight transport in the EU-28 was 14.2 billion tonnes; when taking account of the distance travelled for each goods operation, this equated to 1 852 billion tonne-kilometres (tkm).

Regional statistics for road freight transport should be interpreted with care as the data presented may reflect, to some extent, the size of each region, as those regions characterised by a large area normally transport more freight. In a similar vein, those regions that are characterised by transporting bulk products that tend to weigh a lot are also likely to report higher values.

In 2016, Barcelona (Spain) was the NUTS level 3 region with the highest level (22.5 billion tkm) of road freight loaded and transported within the EU-28; it was followed by two other Spanish regions, Valencia / València (16.0 billion tkm) and Madrid (13.1 billion tkm). There were three more regions in the EU where the level of road freight loaded and transported within the EU-28 was higher than 10 billion tkm: Groot-Rijnmond, which covers the conurbation around the city of Rotterdam in the Netherlands (12.1 billion tkm); Murcia in south-eastern Spain (11.7 billion tkm); and Hamburg in northern Germany (also 11.7 billion tkm). Together these six regions accounted for approximately 4.7 % of the total road freight that was loaded and transported within the EU-28.

**Map 11.4** confirms that many of the regions with the highest levels of road freight transport were characterised by the presence of freight ports, a relatively high population density, or were located on major road arteries. Road freight transport appeared to be particularly concentrated in Spanish and Polish regions, with the latter particularly specialised in international transport following the opening up of the European haulage market. By contrast, the regions with the lowest levels of road freight were often relatively small island regions, where goods tended to be unloaded rather than loaded, or rural regions (predominantly in eastern or southern parts of the EU).

**Map 11.4:** Road freight transport within the EU-28, by NUTS 3 regions, 2016  
(million tonne-kilometres by region of loading)

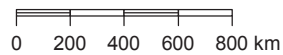


(million tonne-kilometres by region of loading)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 04/2018

EU-28 = 1 852 336

- < 250
- 250 - < 750
- 750 - < 1 250
- 1 250 - < 2 500
- ≥ 2 500
- Data not available



Note: the former Yugoslav Republic of Macedonia, Albania, Serbia and Turkey, national data.

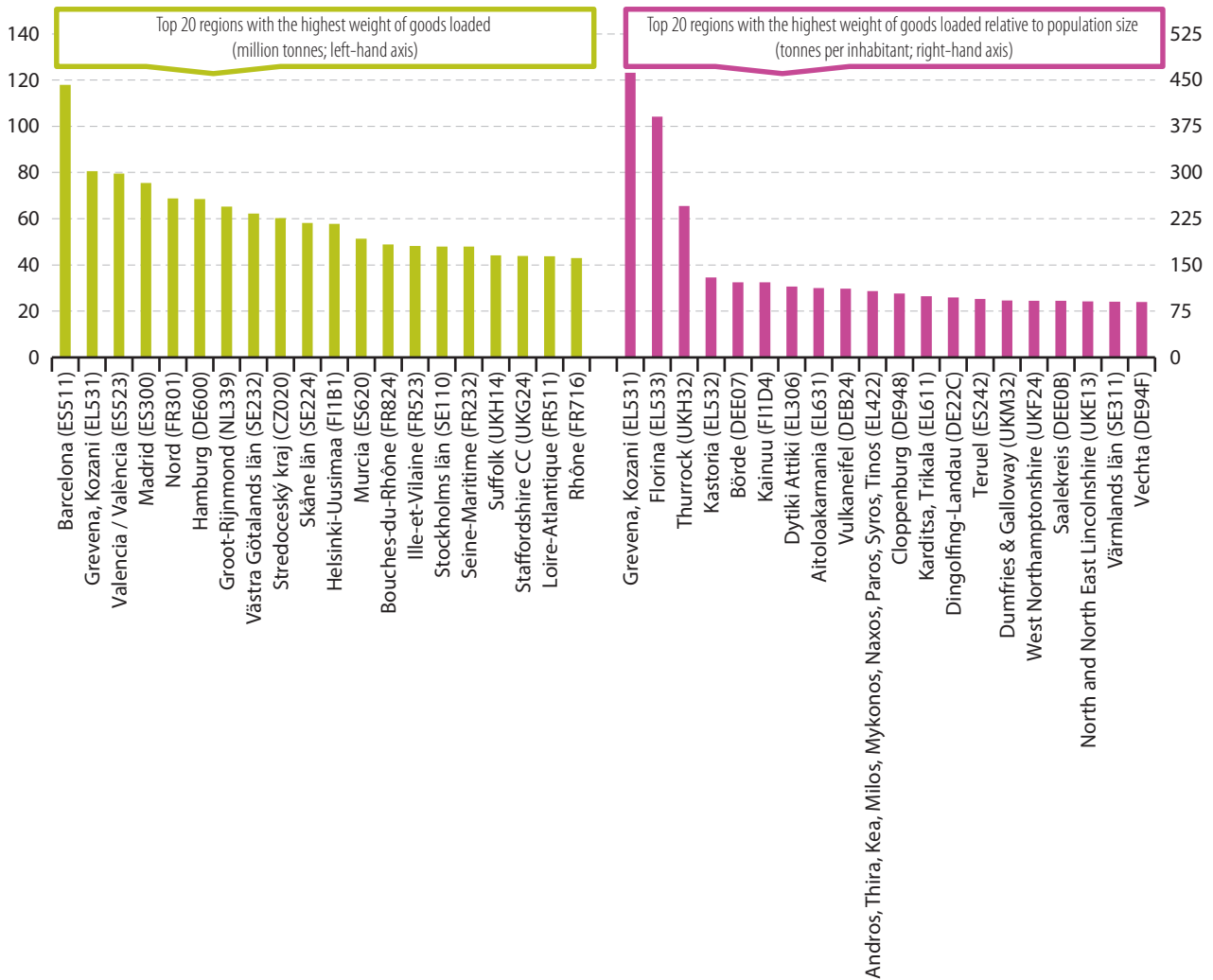
Source: Eurostat (online data codes: [road\\_go\\_ta\\_rl](#) and [road\\_go\\_ta\\_tott](#))



**Figure 11.2** is based on the quantity of road freight loaded (in tonnes), with the information presented limited to goods that are transported within national borders. In 2016, the combined weight of goods loaded in each of the top 20 regions across the EU was 1.2 billion tonnes, equivalent to 8.5 % of the EU-28 total. Many of the NUTS level 3 regions at the top of the ranking for national road freight transport were the

same as the regions which appeared near the top of the ranking for goods transported within the EU-28 (as shown in **Map 11.4**). Barcelona once again recorded the highest level of road freight loaded (118.0 million tonnes), followed by the northern Greek region of Grevena, Kozani (80.6 million tonnes), and the Spanish regions of Valencia / València (79.5 million tonnes) and Madrid (75.4 million tonnes).

**Figure 11.2:** NUTS 3 regions with the highest levels and ratios of national road freight transport, 2016



Note: Départements d'outre-mer (FRA), Malta, Região Autónoma dos Açores (PT2) and Região Autónoma da Madeira (PT3), not available.

Source: Eurostat (online data codes: tran\_r\_vehst, road\_eqs\_carage and demo\_r\_pjangrp3)



# 12

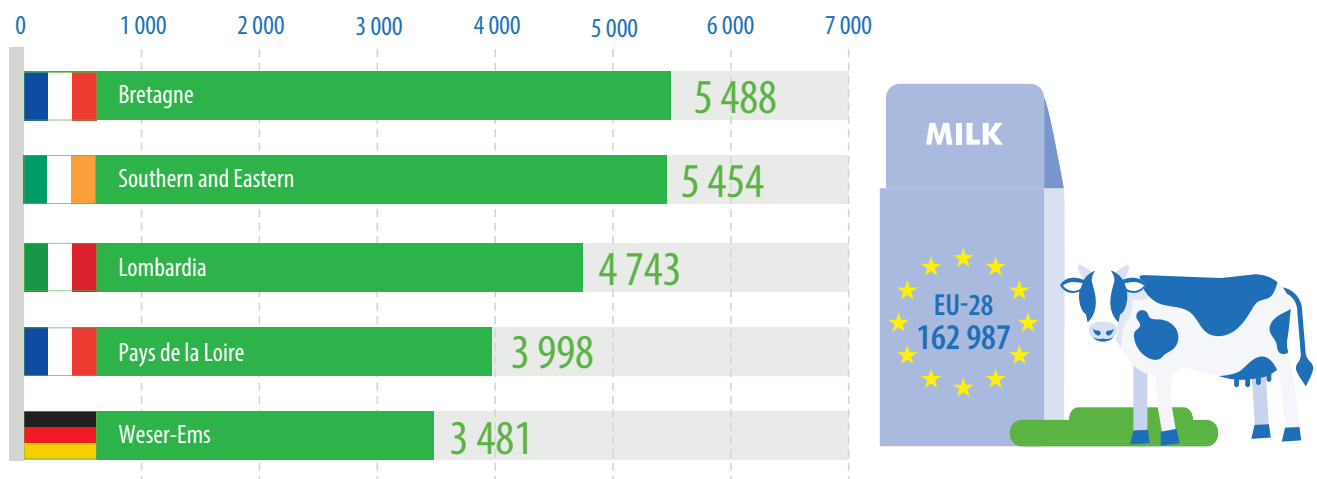
## Agriculture



## Key findings

- The Spanish region of Castilla y León harvested more barley than any other region in the EU and had the second highest level of harvested production for common wheat and spelt.
- The leading wine producers in the EU — Spain, France and Italy — each had five different regions with more than 50 thousand hectares of land under vines, while the biggest area by far was in Castilla-la Mancha (434 thousand hectares).
- Bretagne (France) and Southern and Eastern (Ireland) had the highest levels of cows' milk production, at 5.5 million tonnes each.

### TOP 5 REGIONS IN THE EU COWS' MILK PRODUCTION, 2016 (thousand tonnes)



The European Union (EU) is known throughout the world for its food and culinary traditions, while agricultural products form a major part of Europe's regional and cultural identity. This is, at least in part, due to a diverse range of natural environments, climates and farming practices that feed through into a wide array of agricultural products. In recent years, there has been a pattern of development whereby a growing proportion of EU consumers give increasing importance to the provenance of their food, choosing regional products and traditional specialities.

Around 40 % of the EU's land is farmed: this underlines the important impact that farming can have on natural environments, natural resources, wildlife as well as soil and water quality. Farmers are increasingly being asked to manage the countryside for the benefit of all Europeans, delivering a public good through their maintenance of soils, landscapes and biodiversity, so that the whole of society can benefit from a countryside that is carefully managed and well looked after.

The common agricultural policy (CAP) is managed directly from the EU's budget and it covers all EU Member States. Its main aims are to ensure that EU farmers provide a stable and safe supply of food, produced in a sustainable way at affordable prices for

more than 500 million consumers across the EU. At the same time, it aims to ensure that farmers and other agricultural workers can make a reasonable living.

The challenges for EU agriculture continue to develop, among which: climate change; protecting animal welfare; sustainable management of natural resources and looking after the countryside for future generations; keeping rural economies alive; or helping to ensure viable food production for the world's rapidly expanding population. Farmers are encouraged to adopt environmentally sustainable farming methods to receive full income support payments. In practice this means that they have to maintain existing permanent grassland areas and grow a minimum number of crops (to promote biodiversity); they may receive additional support if they choose to adopt more rigorous practices with respect to environmental protection.

This chapter presents regional agricultural statistics within the European Union (EU) and provides a selection of Eurostat's data within this domain, including information covering the structure of agriculture, cereals production, areas under vines, as well as animal production (livestock specialisation and cows' milk production).





## Structure of agriculture

There were 10.8 million farms in the EU-28 in 2013. These were principally located in eastern parts of the EU, with approximately one third of the total (33.5 %) in Romania, while more than one in eight (13.2 %) were in Poland. The next highest shares were recorded in Italy (9.3 % of the farms in the EU-28), Spain (8.9 %) and Greece (6.5 %), with none of the other EU Member States reporting shares in excess of 5.0 %.

A large part of the farms in the EU are small. In 2013, 83 % of all EU-28 farms were small (defined here as those farms with a **standard output** of less than EUR 25 thousand). Small farms are common in eastern and southern parts of the EU. **Map 12.1** presents an analysis of average farm size (in terms of standard output) for NUTS level 2 regions in 2013. The average size of the 10.8 million farms in the EU-28 was EUR 30.5 thousand of standard output. Note, however, that the **survey coverage** varies between EU Member States and that this may impact the results presented below, as the use of different thresholds to exclude the smallest farms has a big impact on the average size.

### ***The largest average sizes of farms in the EU — as measured by standard output — were most commonly found in the Netherlands and Germany***

There was a considerable variation in the average size of farms between EU Member States and regions. There were 35 regions across the EU-28 where the standard output per farm averaged at least EUR 200 thousand (as shown by the darkest shade in **Map 12.1**). These regions were located in the Netherlands (every region except for Zeeland), Germany (eight NUTS level 1 regions), Belgium (four regions), Denmark, France and the United Kingdom (three regions each), the Czech Republic (two regions) and Slovakia (one region). Standard output per farm peaked at EUR 542 thousand in the German region of Sachsen-Anhalt, while two other German regions — Mecklenburg-Vorpommern and Thüringen — were also present among a ranking of the four regions with the largest farms in economic terms (all with an average standard output in excess of EUR 400 thousand); they were joined by the Dutch region of Zuid-Holland.

At the other end of the range, there were 69 regions in the EU-28 where farms generated, on average, less than EUR 25 thousand of standard output in 2013 (as shown by the lightest shade); many of these farms are family-run farms and some may be characterized as subsistence farms. All of the Bulgarian, Greek, Croatian, Hungarian and Romanian regions figured in this list, along with 11 of the 16 Polish regions, five Spanish regions, four regions each from Italy and Portugal, two from Austria and single regions from France and Ireland, as well as Cyprus, Latvia, Lithuania and Malta (all single regions at this level of detail) and Slovenia (only

national data available). As such, the vast majority of these regions with a low average size were in eastern or southern parts of the EU. The region with the lowest level of standard output per farm (EUR 2 600) was Sud-Vest Oltenia in Romania (if the two Spanish autonomous cities of Ceuta and Melilla are excluded from the analysis).

## Cereals

**Arable land** is often used for the production of cereals, one of the most important outputs of the EU's agricultural sector. Cereals are used primarily for human consumption and animal feed, but they are also used to make drinks and for industrial products (for example, starch). Cereals production in the EU is principally located in lowland regions, characterised by large plains, with a temperate climate and relatively modest levels of rainfall.

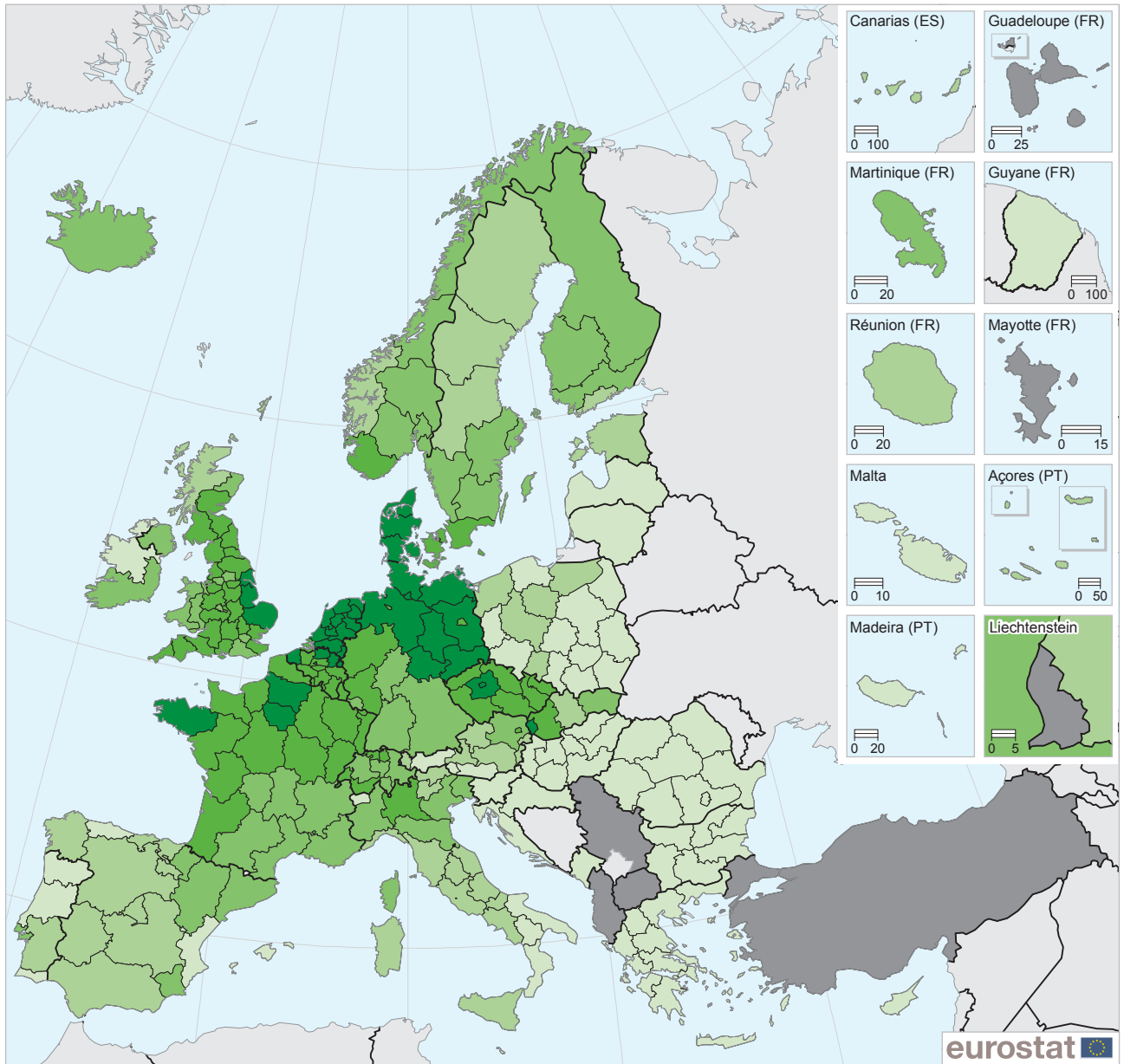
In 2016, the area of agricultural land that was used for the production of cereals (including rice) in the EU-28 was 57.2 million hectares. The EU-28's **harvested production** of cereals was 301.7 million tonnes, which marked the second consecutive annual reduction in cereals output and an overall fall of 9.3 % when compared with the most recent peak for cereals output, 332.6 million tonnes in 2014.

The highest levels of total cereals production in the EU (as shown by the size of the circles in **Map 12.2**) generally ran in a band from Spain, up through western and northern France, into eastern England, Germany, Denmark, Poland and Latvia, with relatively high levels of production in northern Italy, Hungary and Romania. In 2016, the harvested production of cereals reached at least 5.0 million tonnes in: Sud - Muntenia (Romania), Latvia (a single region at this level of detail), East of England (a NUTS level 1 region), Centre (France), Niedersachsen and Bayern (Germany; both NUTS level 1 regions) and Castilla y León (Spain); the highest level of output in the EU was recorded in the last of these, at 9.0 million tonnes.

### ***The Spanish region of Castilla y León harvested more barley than any other region in the EU and also recorded the second highest level of regional production for common wheat and spelt***

There is considerable diversity in relation to the types of cereal that are grown in the EU, with regional specialisation reflecting, at least to some degree, topography, soil type, climate and rainfall, or competing land uses. As well as showing the total level of harvested cereals production for each of the NUTS level 2 regions in 2016, **Map 12.2** also provides information on the most commonly grown cereal in each region (as shown by the colour of each circle).

**Map 12.1:** Average economic size of farm holdings, by NUTS 2 regions, 2013  
(thousand EUR)

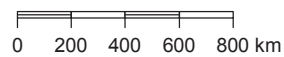


(thousand EUR)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 04/2018

EU-28 = 30.5

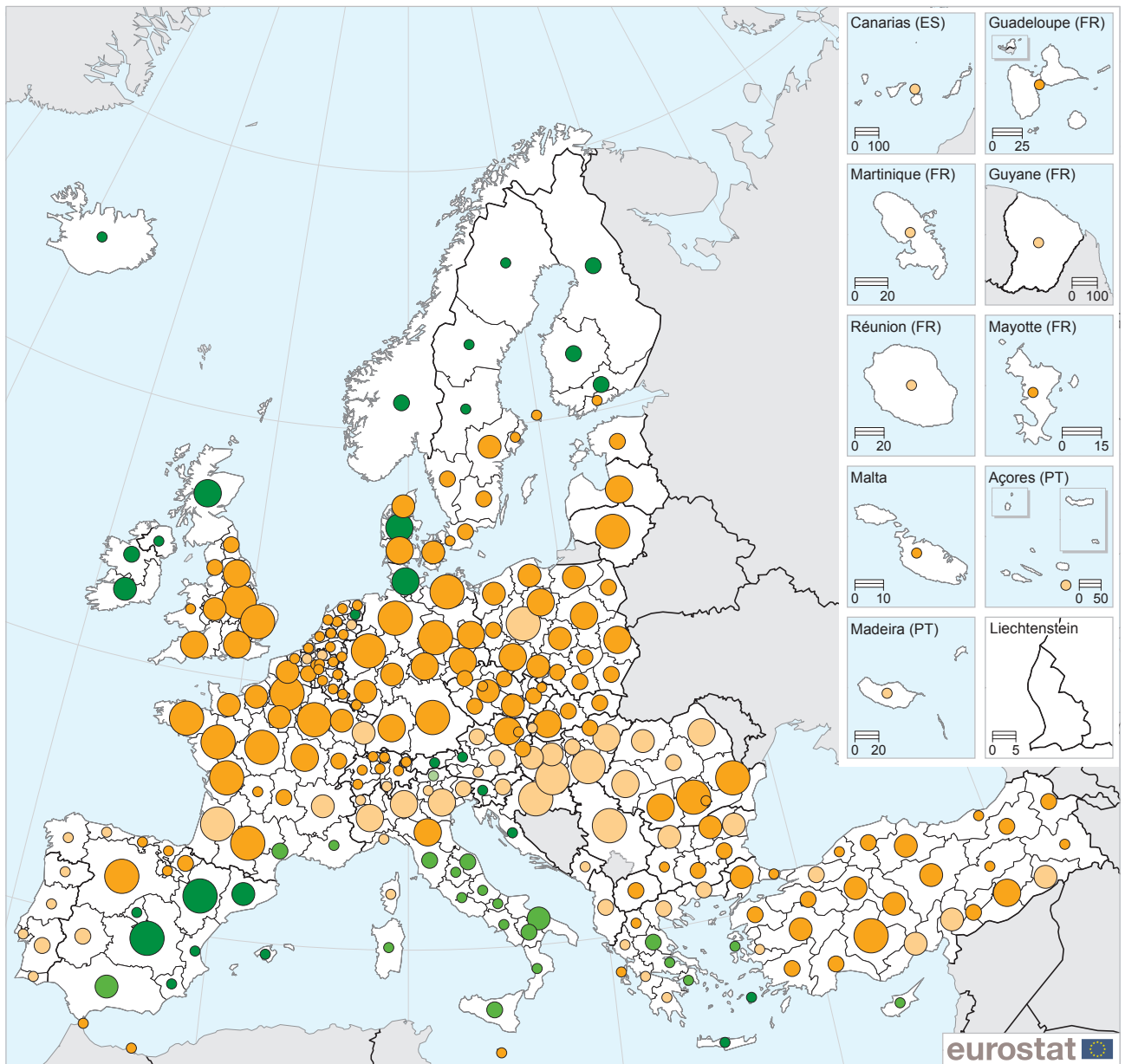
- < 25
- 25 - < 50
- 50 - < 100
- 100 - < 200
- ≥ 200
- Data not available



Note: Germany and London (UKI), NUTS level 1. Slovenia: national data. Iceland, Switzerland and Montenegro: 2010.

Source: Eurostat (online data code: ef\_kvecsleg)

**Map 12.2:** Harvested production of cereals (including seed) and most commonly grown cereals, by NUTS 2 regions, 2016 (million tonnes)



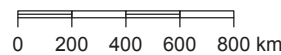
Most commonly grown cereal

- Common wheat and spelt
- Grain maize and corn-cob mix
- Barley
- Durum wheat
- Rye and winter cereal mixtures (maslin)

EU-28 = 301.7  
Harvested production of cereals (including seed)

- < 0.5
- 0.5 - < 1.5
- 1.5 - < 2.5
- 2.5 - < 3.5
- ≥ 3.5

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 06/2018



Note: the map shows the harvested production of cereals (including seed) as proportional circles for each region, while the colour of each circle denotes the most commonly grown cereal in that region. Germany and the United Kingdom: NUTS level 1. Norway, Albania and Serbia: national data. Toscana (IT11) and the United Kingdom: 2015. Montenegro: provisional.

Source: Eurostat (online data code: agr\_r\_acs)

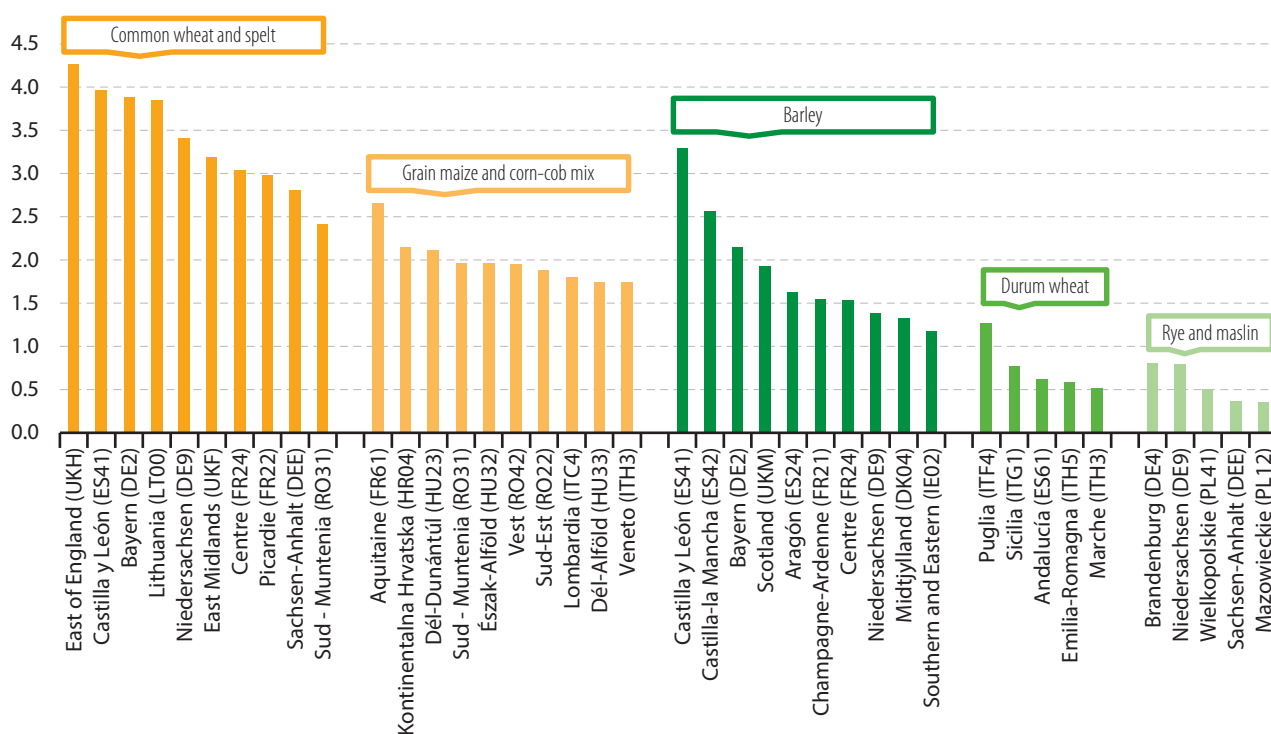
The most commonly grown category of cereals in the EU-28 was common wheat and spelt. Its production was particularly concentrated in northern and central France (but also Midi-Pyrénées) and England and Wales in the United Kingdom, as well as the majority of the regions in the Benelux Member States, Germany, Denmark and the more southerly regions of Sweden. Common wheat and spelt was also grown more than any other type of cereal in a band of regions stretching from eastern Austria, through the Czech Republic, Slovakia, Poland and into the Baltic Member States, and was also the most common cereal for several regions in southern Romania and Bulgaria. In 2016, the highest levels of regional production for common wheat and spelt were in East of England (a NUTS level 1 region; 4.3 million tonnes), Castilla y León (Spain; 4.0 million tonnes).

There were also a large number of regions in the EU where grain maize and corn-cob mix was the most commonly grown cereal in 2016. The highest concentration of regions specialising in grain maize and corn-cob mix were in southern EU Member States, with a band of regions running from Portugal, through parts of Spain, across much of southern France (and Alsace) into northern regions of Italy, southern and western regions in Austria, most of Hungary, and eastern parts of Croatia and Slovenia, while grain maize and corn-cob mix was also the most commonly grown cereal in northern Romania, two regions in Bulgaria and several regions of Greece. The highest levels of regional production were in Aquitaine (France; 2.7 million tonnes), Kontinentalna Hrvatska (Croatia; 2.1 million tonnes) and Dél-Dunántúl (Hungary; also 2.1 million tonnes).

The regions where barley was the most commonly grown cereal were often characterised as being more remote or mountainous regions of the EU, generally in northern or southern EU Member States, for example in northern or southern Finland and Sweden, the south-eastern regions of Spain, or the Greek islands. Barley was also the most commonly grown cereal in a band of regions covering both regions in Ireland, Northern Ireland and Scotland (in the United Kingdom), as well as in two mountainous Austrian regions, the western regions of Croatia and Slovenia, and single regions from each of Denmark, Germany and the Netherlands. In 2016, the highest levels of regional production for barley were in the Spanish regions of Castilla y León (3.3 million tonnes) and Castilla-la Mancha (2.6 million tonnes).

In contrast to the situation for other cereals, there were relatively few regions in the EU which specialised in growing durum wheat or rye and winter cereal mixtures (maslin). Durum wheat was the most commonly grown type of cereal in central and southern parts of Italy, two regions in southern France and a single region in the south of Spain, as well as several Greek regions and Cyprus. The highest levels of harvested production in the EU were recorded in Puglia (1.3 million tonnes) and Sicilia (0.8 million tonnes). Rye and maslin was the most commonly grown cereal crop in just one region of the EU, the mountainous Italian Provincia Autonoma di Bolzano/Bozen. However, the highest regional level of production was in two German regions, Brandenburg and Niedersachsen (both 0.8 million tonnes).

**Figure 12.1: NUTS 2 regions with the highest levels of production for selected cereals, 2016**  
(million tonnes)



Note: Germany and the United Kingdom: NUTS level 1. Toscana (IT1) and the United Kingdom: 2015.

Source: Eurostat (online data code: agr\_e\_acs)



## Vineyards

The EU is the world's leading producer of wine, accounting for more than half of global production and consumption. The quality and price of wine varies from one year to another, reflecting — among others — weather conditions, yields and changes in supply and demand for different types of wine. Several regions, principally in southern parts of the EU, depend to a large degree on economic activities that are directly or indirectly linked to winemaking and its commercialisation.

There has been a general decline in EU-28 wine consumption in recent years, which largely reflects changing consumption patterns (especially in southern Europe), as table wines which were drunk on a daily basis with meals have, to some degree, been replaced by higher value, quality wines as well as other alcoholic and non-alcoholic beverages.

Quality wines are defined as those covered by two distinct EU schemes: protected designation of origin (PDO), a label for European food/drink with a guaranteed geographical origin using recognised know-how (and grapes exclusively from the area in question); protected geographical indication (PGI), a label for European quality food closely linked to a certain region (with at least 85 % of grapes coming from the area in question). Through these logos, consumers can easily recognise quality products and rely on their authenticity, while they also provide producers in the EU with legal protection against imitation or misuse.

Note the vineyard data collection focuses more on the structural potential of vineyards and hence the classification is based on compliance with PDO/PGI specifications rather than on 'wine certification' decisions that are taken by the growers each year.

In 2015, some 3.2 million hectares of land in the EU-28 was under vines (in/not yet in production); this area was spread across 17 different EU Member States (that each had more than 500 hectares of vines). More than three quarters (78.1 %) of the total land area under vines in the EU was used for the production of quality wines, either PDO wines (61.7 %) or PGI wines (16.4 %).

**Map 12.3** clearly shows that the distribution of areas under vines was heavily skewed in favour of southern regions of the EU. The size of each circle reflects the total area that was under vines for each NUTS level 2 region, while the colour shades provide information on the propensity to produce quality wines; a darker shade indicates a greater share of the total area under vines was devoted to the production of quality wines.

***There were only four regions in the EU where more than 100 thousand hectares of land was under vines — Castilla-la Mancha, Languedoc-Roussillon, Aquitaine and Puglia***

In 2015, there were 18 NUTS level 2 regions in the EU where the total area under vines was greater than 50 thousand hectares; together these regions accounted for 61 % of the total area under vines in the EU. These 18 regions were evenly distributed between the largest wine producers in the EU, with five regions from each of Spain, France and Italy; there were also two regions from Portugal and a single region from Romania.

By far the largest area under vines in 2015 was in the central Spanish region of Castilla-la Mancha (434 thousand hectares); this was almost twice as high as the second largest area, recorded in the southern French region of Languedoc-Roussillon (239 thousand hectares). Aquitaine (south-west France; 144 thousand hectares) and Puglia (southern Italy; 101 thousand hectares) were the only other regions in the EU where the area under vines for the production of wine was in excess of 100 thousand hectares.

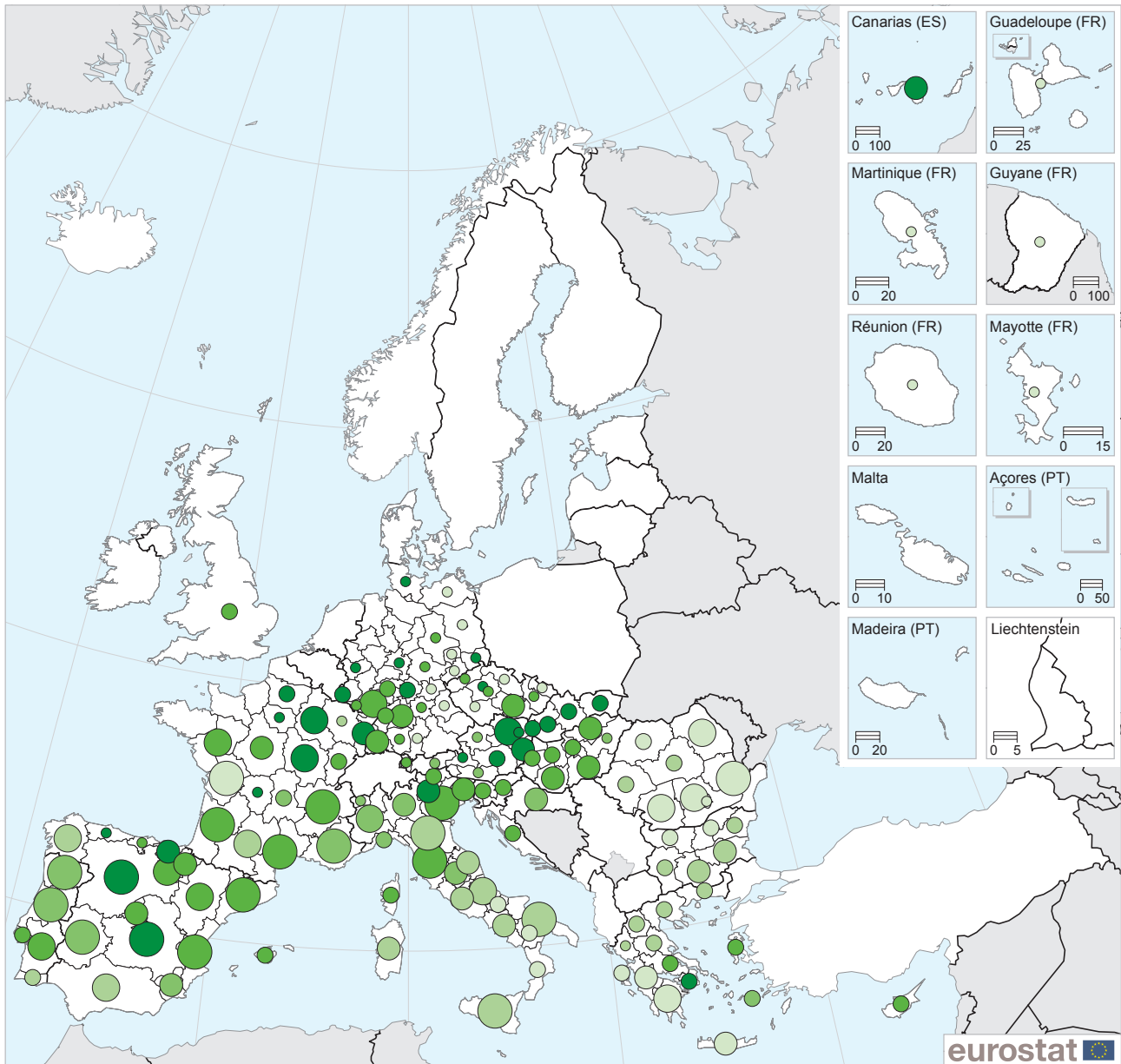
Given the gradual shift in consumer tastes away from table wine, it is unsurprising to find that European wine growers are increasingly adopting vines with the potential for producing higher quality wines. For example, in 2015, some 95.7 % of the area under vines in Castilla-la Mancha was for the production of quality wines, while the corresponding share for Aquitaine was only slightly lower, at 93.0 %. Some well-known examples of the vast array of quality wines produced in the EU's leading wine-producing regions include: Valdepeñas and La Mancha from Castilla-la Mancha; Fitou and Corbières from Languedoc-Roussillon; St-Émilion and Entre-Deux-Mers from Aquitaine; Salice Salento and Primitivo di Manduria from Puglia.

The share of quality wines in the total area under vines was generally much lower across most wine-producing regions of eastern Europe, as well as in parts of Greece. It is also interesting to note the very low share (5.4 %) of quality wine production in the western French region of Poitou-Charentes (which had the ninth largest area under vines in 2015); this may be attributed to its grape production being predominantly used to distil Cognac or Pineau de Charente.



**Map 12.3: Area of vines for quality wines, by NUTS 2 regions, 2015**

(thousand hectares under vines and share of area under vines which is used to produce grapes for quality wines)



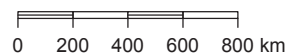
EU-28 = 78.1  
Share of area under vines which has potential to produce grapes for quality wines (%)

EU-28 = 3 230  
Area under vines (thousand hectares)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 06/2018

- < 50
- 50 - < 75
- 75 - < 85
- 85 - < 95
- ≥ 95

- < 1
- 1 - < 10
- 10 - < 25
- 25 - < 50
- ≥ 50



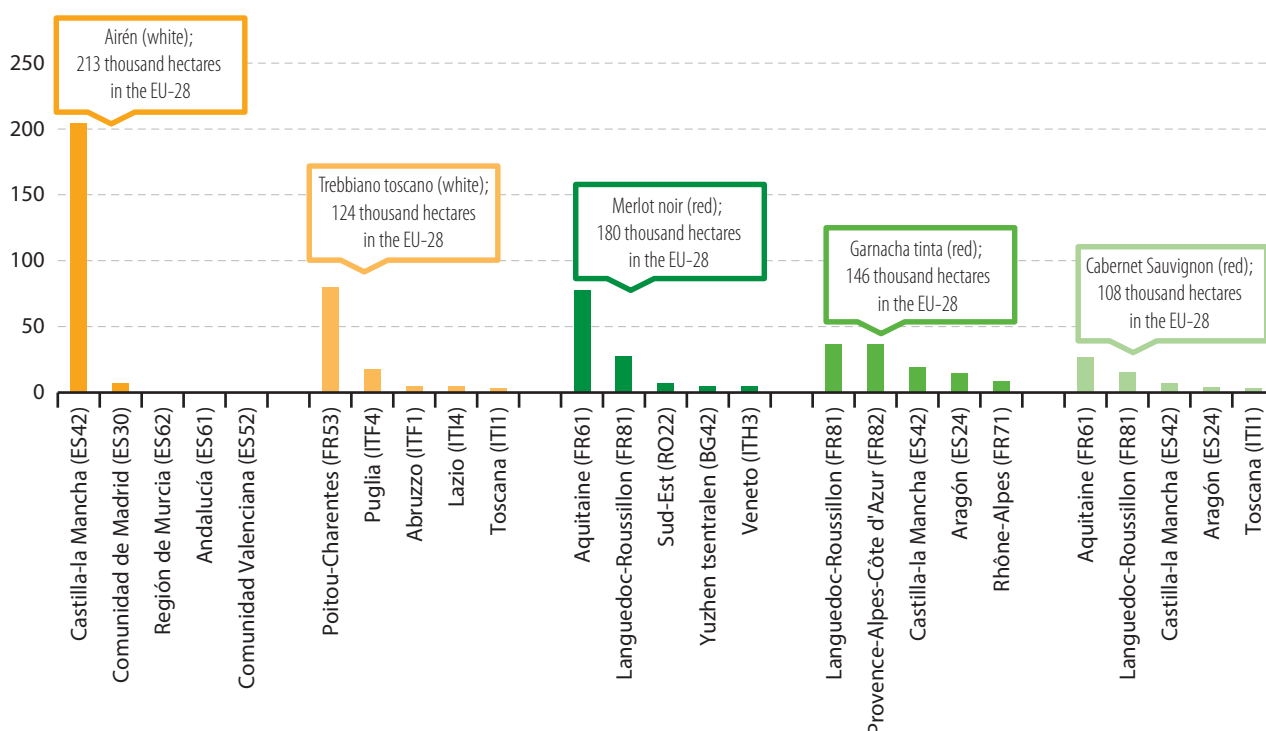
Note: the map shows the total area under vines as proportional circles for each region, while the colour of each circle denotes the share of the area under vines which is used to produce grapes for quality wines. The United Kingdom: national data. France: estimates (other than for the départements d'outre-mer (FRA)).

Source: Eurostat (online data code: vit\_t1)

**Figure 12.2** provides a more detailed analysis of the total area under vines for the five most common types of grape varieties that are planted across the EU. In 2015, the most common variety was Airén, a drought-resistant white wine grape that is native to central Spain and in particular the region of Castilla-la Mancha. The Trebbiano toscano grape was principally grown in Poitou-Charentes and, as noted above, is principally used to manufacture strong alcohols.

The most common red wine grape varieties included Merlot noir, Garnacha tinta and Cabernet Sauvignon. The last of these was quite widely spread across the EU; its largest area was located in Aquitaine, where it is often blended with Merlot Noir to produce some of the most famous red wines of Bordeaux. Garnacha tinta (sometimes referred to as Grenache) is one of the most widely planted red wine grape varieties in the world; in the EU its largest areas ran from Castilla-la Mancha and Aragón in Spain, through into southern France, covering large areas of Languedoc-Roussillon, Provence-Alpes-Côte d'Azur and Rhône-Alpes.

**Figure 12.2: NUTS 2 regions with the largest areas under vines, by selected grape varieties, 2015** (thousand hectares)



Note: the figure shows the most common regions for the five grape varieties which cover the largest area in the EU-28. The United Kingdom: national data. France: estimates (other than for the départements d'outre-mer (FRA)).

Source: Eurostat (online data code: vit\_t4)

## Animals

The information presented in **Map 12.4** covers livestock farming in the EU, presenting information in relation to **bovines**, swine (pigs), sheep and **goats**; note it excludes **poultry** as well as other less common animal types. The total livestock population for these four types of animals in the EU-28 was estimated to be 336 million head in 2016. Pigs were the most commonly reared animals (147.2 million head of swine), followed by 89.1 million head of bovine animals, 87.1 million head of sheep and 12.8 million head of goats (the latter two figures being estimates made specifically for the purpose of this publication).

In 2016, Spain, Germany, France and the United Kingdom held the largest overall populations of livestock: the greatest number of pigs were raised in Spain and Germany, while France raised the highest number of bovine animals and the United Kingdom had, by far, the largest population of sheep; Greece had the largest number of goats.

**There were 4.1 million head of bovine animals in Southern and Eastern (Ireland) and 8.6 million head of swine in Niedersachsen (Germany)**

**Map 12.4** shows patterns of regional specialisation for livestock; note this is not based simply on a count of the number of head of each type of animal, but is

rather determined in relation to the EU-28 average and therefore shows a relative rather than absolute measure of specialisation. When considering these livestock populations it should be remembered that some regions are larger than others and that data for Germany and the United Kingdom are shown for NUTS level 1 regions.

Several EU Member States had clear livestock rearing specialisations that were common to most of their regions in 2016: this was the case for goats in Greece, swine in Denmark or Poland, bovines in the Czech Republic, Ireland, Slovenia or Sweden, as well as sheep in the United Kingdom. By contrast, a more diverse picture was apparent in a number of Member States, including Spain, France, Italy, Portugal or Slovakia, with no clear national specialisation across different regions.

Counts of livestock vary considerably between regions, reflecting not only the size of each region but also its landscape, climate and alternative uses for land (not just agricultural). Among the 87 regions in the EU which were relatively specialised in rearing bovines in 2016, there were 12 where the number of head rose above one million. Half of these were located in France (Rhône-Alpes, Limousin, Bourgogne, Auvergne, Basse-Normandie and Pays de la Loire), two were from Germany (Schleswig-Holstein and Bayern; note these are both NUTS level 1 regions), while there were also single regions from Poland (the capital city region of Mazowieckie) and the United Kingdom (Northern Ireland; also a NUTS level 1 region). The final two regions were both in Ireland, namely, Border, Midland and Western, and Southern and Eastern, the latter of which had the highest count, at 4.1 million head.

There were 54 regions in the EU that were relatively specialised in rearing swine, of which 24 regions recorded in excess of a million head, with half of these having more than two million heads. The highest numbers of swine were raised in: three regions in Denmark, two regions in Germany (both NUTS level 1 regions, including Niedersachsen, which had the highest count in the EU, at 8.6 million heads), two regions in Spain (including Cataluña, which had the second highest count, at 7.6 million heads), as well as single regions from each of Belgium, France, Italy, the Netherlands and Poland. As well as in Niedersachsen and Cataluña, there were more than 7.0 million heads raised in Nordrhein-Westfalen (Germany), Bretagne (France) and Aragón (Spain).

There were 45 regions in the EU where the rearing of goats was the most specialised (relative to the EU average) form of livestock farming in 2016. The southern Spanish region of Andalucía (1.1 million heads)

was the only region in the EU to record more than one million goats, with Castilla-la Mancha (another Spanish region) and the Greek island region of Kriti the only regions where the population of goats was higher than half a million.

Finally, there were 37 regions across the EU where rearing sheep was the most specialised (relative to the EU average) form of livestock farming in 2016. A total of 15 of these regions had more than one million head of sheep, among which eight regions had more than two million head. The largest sheep populations were in the west and north of the United Kingdom (NUTS level 1 regions), with the highest counts in Wales (6.2 million heads) and Scotland (5.0 million heads), while the third largest sheep population in the EU was in the Spanish region of Extremadura (3.5 million heads).

#### ***Cows' milk production peaked at 5.5 million tonnes in Bretagne (north-west France) and Southern and Eastern (Ireland)***

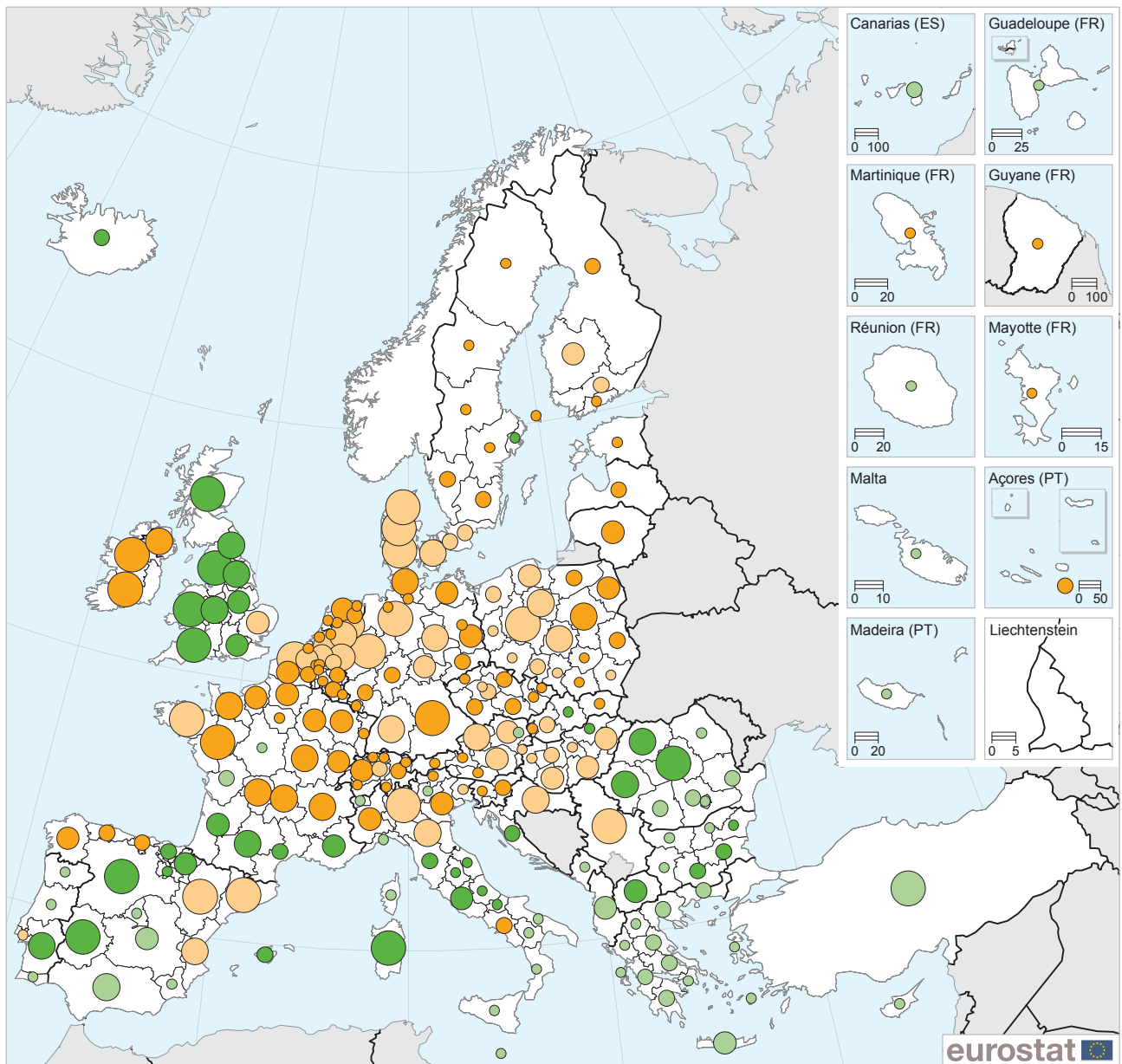
Dairy pasture and arable land for fodder crops are most often combined in regions characterised by temperate climates with a relatively high degree of rainfall. There were 44 NUTS level 2 regions in the EU where cows' milk production rose to more than a million tonnes in 2016 (as shown by the darkest shade in **Map 12.5**) and together these regions accounted for 56 % of the milk produced in the EU.

The most specialised regions for dairy cow farming in the EU were found across Denmark, Germany, Ireland, parts of France and Poland, as well as several Alpine regions and much of western England, Wales, Scotland and Northern Ireland (in the United Kingdom). In regions where grassland is more scarce (for example, around the Mediterranean or in south-eastern parts of the EU) dairy cow farming tends to be relatively uncommon and may be substituted by sheep or goat farming, especially when livestock farmers are confronted with relatively arid landscapes, less favourable climatic conditions, or farming in upland areas.

In 2016, the highest levels of cows' milk production in the EU were in Bretagne (north-west France) and the Southern and Eastern region of Ireland, as output stood at 5.5 million tonnes in both of these regions. The third highest level of cows' milk production was in Lombardia (northern Italy; 4.7 million tonnes), while Pays de la Loire, Basse-Normandie (both France), Weser-Ems and Schleswig-Holstein (both Germany) were the only other regions in the EU where cows' milk production was at least 3.0 million tonnes.



**Map 12.4: Relative livestock specialisation and head of livestock, by NUTS 2 regions, 2016**  
(based on % share of livestock in the EU-28)



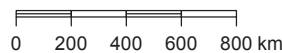
EU-28 = Swine  
Most commonly reared animal type relative to EU-28 average

- Bovines
- Swine
- Sheep
- Goats

EU-28 = 147 188  
Most commonly reared animal type relative to EU-28 average (thousand head)

- < 250
- 250 - < 500
- 500 - < 1 000
- 1 000 - < 2 000
- ≥ 2 000

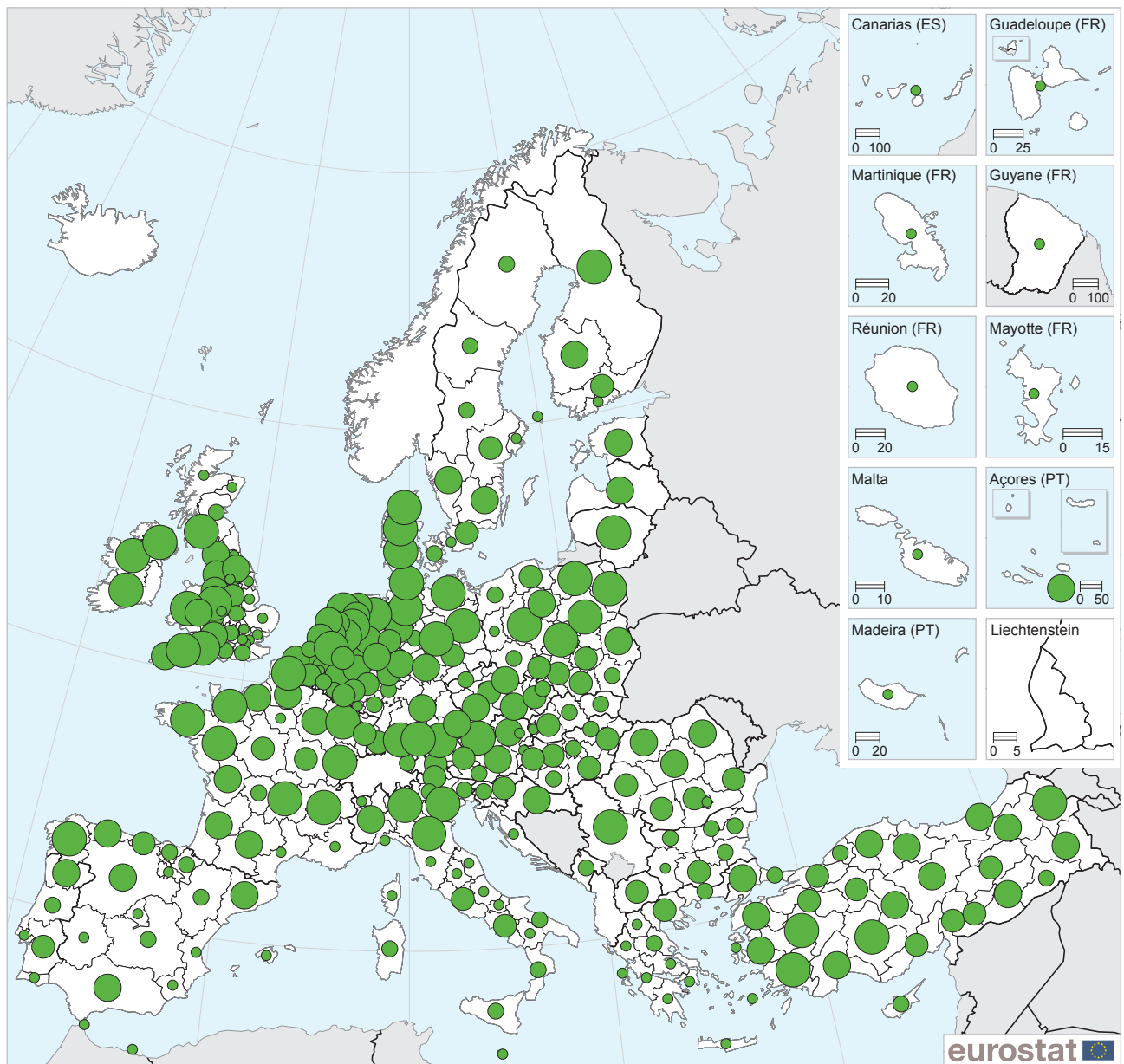
Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 05/2018



Note: the colour of each circle denotes the most commonly reared animal for each region (based on a specialisation ratio relative to the EU-28 average), while the size of each circle represents the number of head for most commonly reared animal type (relative to the EU-28 average). Germany and the United Kingdom: NUTS level 1. Albania, Serbia and Turkey: national data. EU-28: Cyprus: sheep and goats, 2015. Ireland: goats, 2014. Eurostat estimates for sheep and goats (made for the purpose of this publication). France, Cyprus, Portugal, Montenegro, Albania and Turkey: provisional.

Source: Eurostat (online data codes: agr\_r\_animal, apro\_mt\_lscat, apro\_mt\_lspig, apro\_mt\_lsheep and apro\_mt\_lsgoat)

**Map 12.5: Cows' milk production, by NUTS 2 regions, 2016**  
(thousand tonnes)

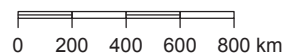


(thousand tonnes)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 06/2018

EU-28 = 162 987

- < 100
- 100 - < 250
- 250 - < 500
- 500 - < 1 000
- ≥ 1 000



Note: Serbia, national data. Bedfordshire and Hertfordshire (UKH2): 2015. Inner London - West (UKI3) and Inner London - East (UKI4): 2014. Belgium: estimates. EU-28, Spain and Montenegro: provisional.

Source: Eurostat (online data codes: [agr\\_r\\_milkpr](#) and [apro\\_mk\\_farm](#))

# 13

Focus on  
European cities

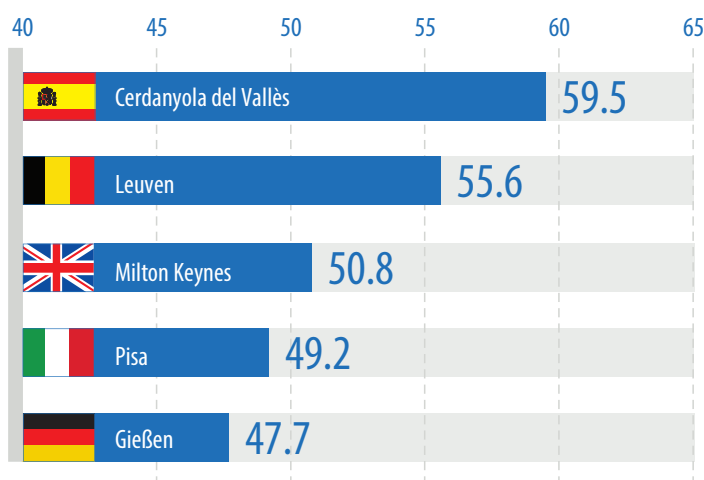




### Key findings

- The highest young-age dependency ratio for cities in the EU was recorded in the Communauté d'agglomération Val de France, situated close to Paris (58.4 %).
- Citizens of other EU Member States accounted for more than one fifth of the total population living in the Belgian capital city, Bruxelles / Brussel.
- In Ireland, Italy, Cyprus, Portugal and the United Kingdom, the unemployment rate in cities was lower among people born in another EU Member State than it was for nationals.

### TOP 5 CITIES IN THE EU TERTIARY STUDENTS, 2016 (per 100 inhabitants)



More than half the world's population resides in urban areas, and cities continue to attract an increasing share of the people in search of a job and an improved quality of life. Indeed, cities are often seen as centres of economic growth, providing opportunities for study, innovation and employment; poles of economic activity that attract a broad spectrum of people (be they national or international migrants). This is particularly true for capital cities, which are often characterised by particularly high concentrations of economic activity, employment and wealth.

Yet, there is often a paradox insofar as some cities also display very high levels of social exclusion, unemployment and income disparity, while many cities are confronted by issues such as crime, traffic congestion or pollution. Furthermore, within individual cities it is possible to find people who enjoy a very comfortable lifestyle living in close proximity to others who may face considerable challenges — herein lies the 'urban paradox'.

An increasing share of the European Union (EU's) population live and work close to cities and it is widely expected that this pattern will continue in the future, as economic activity is consolidated in and around urban areas. There is however a diverse mix of cities in the EU:

at one end of the scale are the global metropolises of London and Paris (with close to 10 million inhabitants), while at the other end, approximately half of the cities in the EU had a relatively small urban centre of between 50 and 100 thousand inhabitants. Although population numbers in and around some of the EU's largest cities are often growing at a fast pace, especially when taking into account their surrounding suburbs, there are other cities in the EU, for example, those characterised by their location in former industrial heartlands, where population numbers are in decline.

This expansion of population numbers both within and around some of the main metropolises in the EU — sometimes referred to as urban sprawl — is accompanied by a range of complex challenges: for example, issues relating to sustainability, social cohesion, an ample supply of housing, or the provision of efficient transport services. This chapter focuses on three areas: demographic developments (including a special focus on migrants); education and labour markets (including an analysis of the transition from unemployment to employment); and the living standards enjoyed by those living in cities (including information on the risk of poverty or social exclusion and housing costs).

## Population

Population statistics for cities refer to the total number of inhabitants according to their [usual residence](#), in other words, the place where a person normally lives, regardless of temporary absences; this is generally their place of legal or registered residence. Population numbers are a reference for measuring the general size of an urban entity and are used as a denominator for many derived indicators.

### YOUNG-AGE DEPENDENCY RATIOS

**Map 13.1** provides information on the age structure of 925 cities in the EU, Norway and Switzerland. The size of the circles shows how large each city is in terms of its overall number of inhabitants, while the shading reflects the young-age dependency ratio, in other words the ratio between the number of young people aged 0-19 years and the number of working-age people (defined here as persons aged 20-64 years).

Across the EU-28 as a whole, the young-age dependency ratio was 34.7 % in 2016. The age structure of EU cities was somewhat skewed insofar as 552 recorded ratios that were below the EU-28 average, compared with 356 that had higher than average young-age dependency ratios. These figures are influenced, at least to some degree, by fertility patterns, with falling crude birth and fertility rates often associated with a decision to delay parenthood, have smaller families or have no children. This pattern may be particularly common in cities which are characterised by large student populations or cities which attract graduate labour, as these young people are more likely to choose to delay parenthood in order to first establish a career.

#### ***Cities with the highest young-age dependency ratios were often characterised by relatively large populations of manual workers and/or migrant populations***

Young-age dependency ratios were relatively high in most cities across the Benelux countries, France and the United Kingdom. In contrast, the lowest ratios tended to be recorded in cities located in eastern and southern part of the EU, as well as in Germany and Austria.

A closer analysis reveals that many of the cities with particularly high shares of young persons (relative to their working-age populations) were characterised as suburban areas around some of the EU's largest cities or more provincial areas with relatively high shares of manual workers and/or net inward migration. There were 11 cities in the EU which recorded young-age dependency ratios of at least 50.0 % — in other words, the population structure was such that there were

fewer than two people of working-age for each young person aged less than 20 — eight of these were located in France (2014 data), while the other three were in the United Kingdom (2016 data).

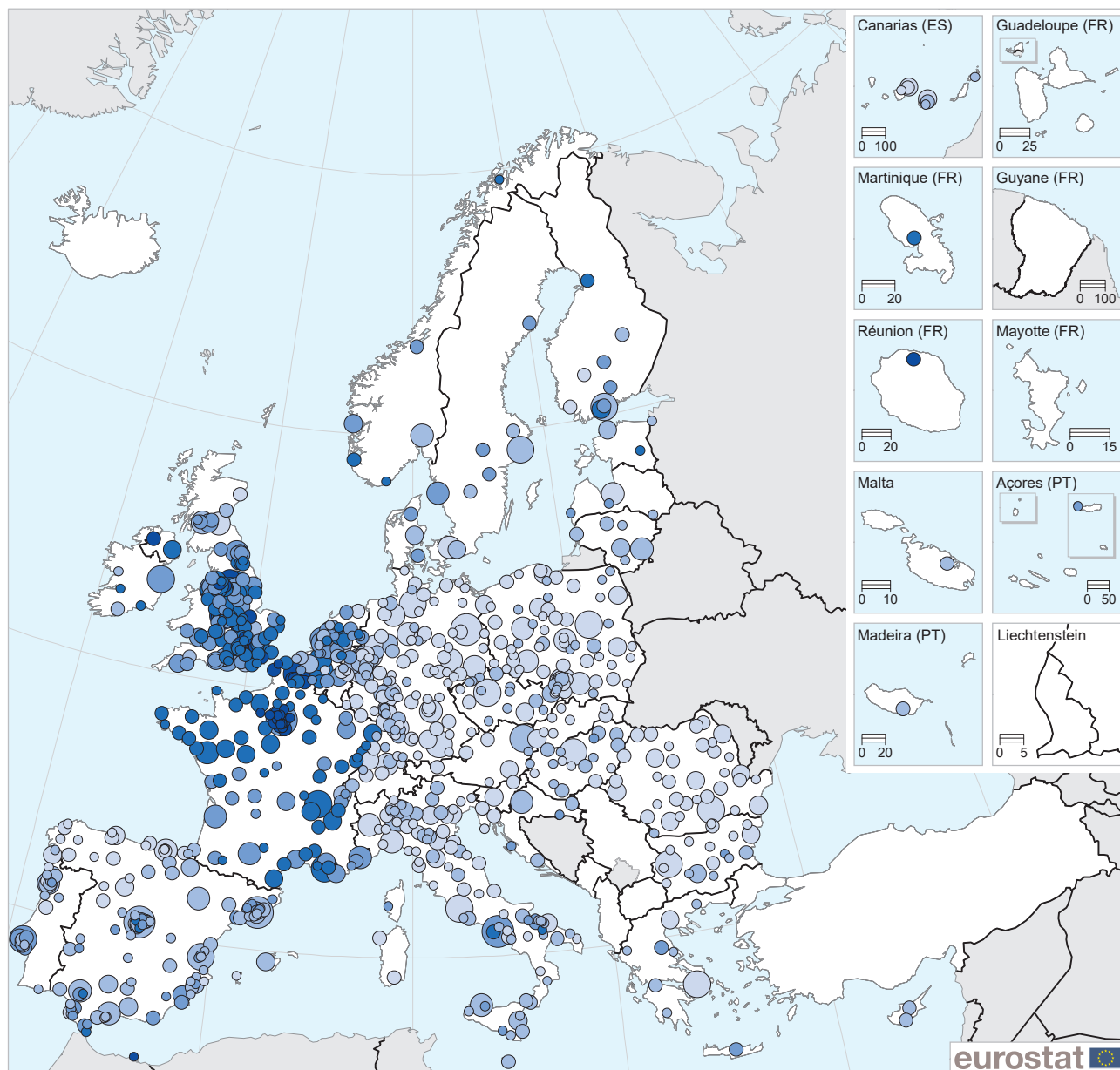
The highest young-age dependency ratio (58.4 %) was recorded in the Communauté d'agglomération Val de France, situated to the north of the French capital, while each of the remaining French cities were also located relatively close to the capital, namely, Saint Denis and Creil (both also to the north of Paris), the Communauté d'agglomération Lacs de l'Essonne, Sénart en Essonne and Evry (to the south), and Mantes en Yvelines and Communauté de communes des Coteaux de Seine (to the west). The highest young-age dependency ratio in the United Kingdom was recorded in Bradford (Yorkshire; 51.1 %), while the other cities where there were fewer than two working-age adults for each young person aged less than 20 were Blackburn with Darwen (to the north of Manchester) and Slough (to the west of London). Many of these cities in France and the United Kingdom were characterised by a relatively high share of migrants within their total populations.

These developments were synonymous with more general patterns, insofar as the 52 cities with the highest young-age dependency ratios in the EU were all located in either France or the United Kingdom (if excluding the atypical case of the autonomous Spanish city of Melilla). Outside of these 52 cities in France or the United Kingdom, the highest young-age dependency ratio was in Greater Ede (to the east of Utrecht in the Netherlands).

At the other end of the range, the vast majority of the 307 cities across the EU with young-age dependency ratios that were less than 30.0 % were located in Germany (88 cities), Poland (50), Italy (45), Romania (35) and Spain (32), while Bulgaria was the only other EU Member State to record a count that was in double-digits (11 cities).

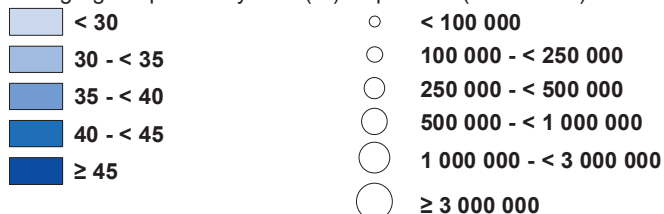
Looking in more detail, the lowest young-age dependency ratios in the EU were recorded in two German university cities, namely, Greifswald (in north-east Germany; 21.7 % in 2014) and Würzburg (northern Bavaria; 21.7 % in 2015). They were followed by two cities in Romania — Brasov (central Romania; 22.1 % in 2015) and Braila (eastern Romania; 22.3 % in 2015) — and the Italian city of Cagliari (which is on the southern coast of Sardinia; 22.6 % in 2015). It is also interesting to note several atypical cases, for example, the university city of Leuven (29.6 % in 2015) was the only city in Belgium, the capital city of København was the only city in Denmark (27.7 % in 2013), and the Scottish cities of Aberdeen and Edinburgh were the only cities in the United Kingdom to report young-age dependency ratios that were less than 30.0 %.

Map 13.1: Young-age dependency ratio, selected cities, 2016 (%)

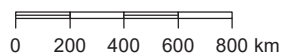


EU-28 = 34.7

Young-age dependency ratio (%) Population (inhabitants)



Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 04/2018



Note: based on the ratio of the total population aged 0-19 years / the total population aged 20-64 years, expressed in percentage terms. Dublin (IE), Athina (EL), Madrid (ES), Barcelona (ES), Valencia (ES), Sevilla (ES), Pamplona/Iruña (ES), Bilbao (ES), Santa Cruz de Tenerife (ES), Elda (ES), Granada (ES), Puerto de la Cruz (ES), Igualada (ES), Paris (FR), Milano (IT), Napoli (IT), Lisboa (PT), Porto (PT), Helsinki/Helsingfors (FI), Stockholm (SE), London (UK), Glasgow (UK), Liverpool (UK), Manchester (UK), Leicester (UK), Portsmouth (UK), Stoke-on-Trent (UK), Nottingham (UK), Brighton and Hove (UK), Southampton (UK), Bournemouth (UK), Southend-on-Sea (UK), Reading (UK), Preston (UK), Rushmoor (UK), Zürich (CH), Genève (CH), Basel (CH), Bern (CH), Lausanne (CH), Luzern (CH) and Lugano (CH): greater city. Belgium, the Czech Republic, Germany, Italy, Hungary and Romania: 2015. France, the Netherlands, Austria, Poland, Winterthur (CH006C1) and Biel/Bienne (CH010C1): 2014. Denmark: 2013. Ireland, Greece, Cyprus, Luxembourg, Sweden and Norway: 2011. Germany (various cities), Lithuania and Poland: estimates. EU-28: provisional.

Source: Eurostat (online data codes: urb\_cpopstr, urbcpop1 and demo\_pjanind)



**PEOPLE LIVING IN CAPITAL CITIES**

Figure 13.1 presents the structure of the resident population as of 1 January 2015 for four capital cities in the EU. These population pyramids contrast the proportion of people living in each city centre with the broader measure of people living in the surrounding commuter zone (known as the functional urban area).

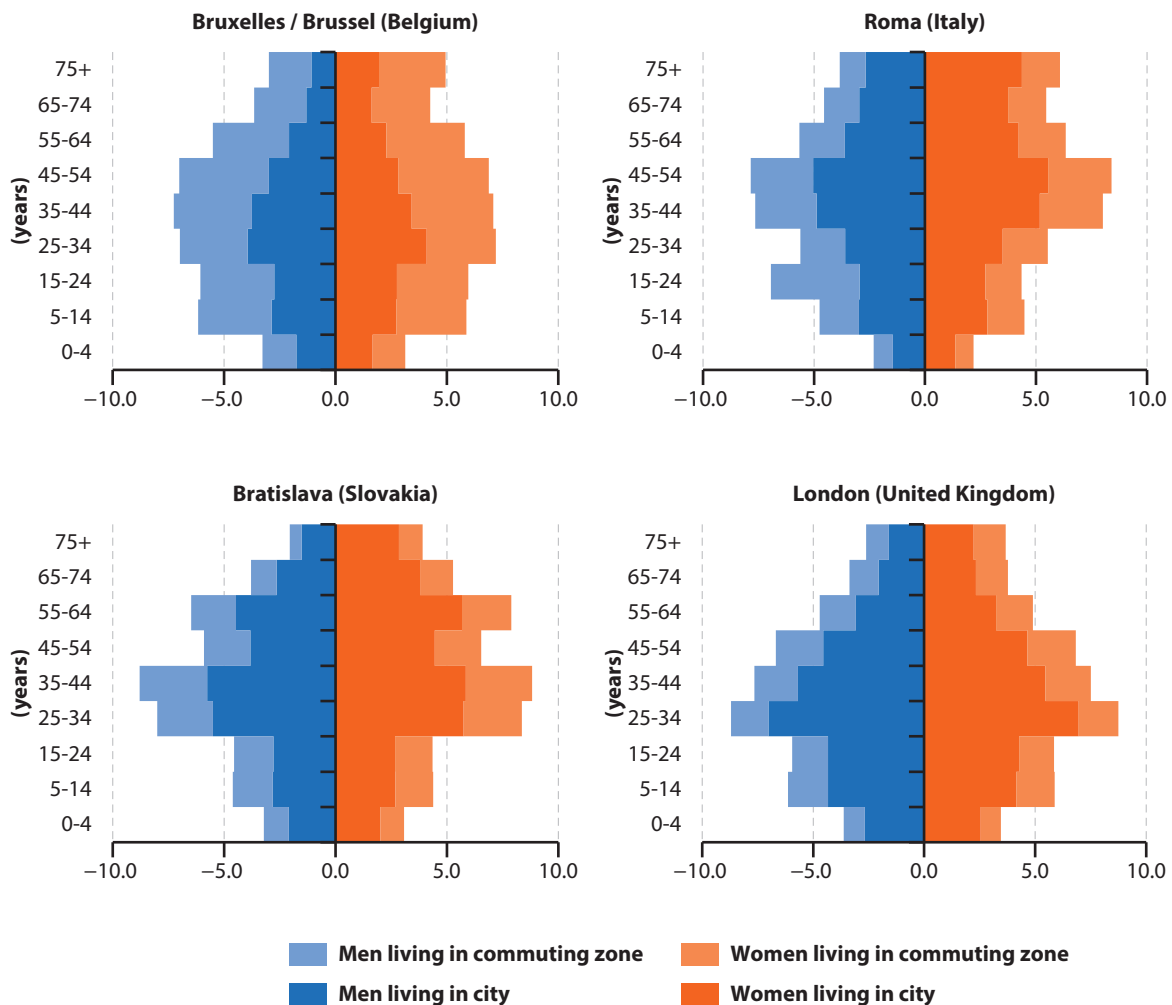
*The Slovenian and British capital cities appear to exert a considerable pull on relatively young working-age people, possibly reflecting employment and lifestyle opportunities*

A functional urban area consists of a city and its surrounding commuting zone. On this basis, London (the capital city of the United Kingdom) was by far the most populous city in the EU, with 12.1 million inhabitants in 2015; for comparison there were 4.5

million people living in the Italian capital of Roma and its surrounding commuter zone. Bratislava (Slovakia) and London both reported a relatively high share of their populations being composed of working-age persons between 25 and 44 years, whereas in Roma, it appeared the largest age groups were slightly older, between 35 and 54 years.

A more detailed analysis of the population structure reveals that more than half of the total number of inhabitants in the Belgian capital city of Bruxelles / Brussel were living in the surrounding commuting zone. This could be contrasted with the situation in London, where more than 70 % of the population were living in the greater city. It is also interesting to note that in Bratislava and Roma, it was relatively common for elderly generations to be living in the city, while the elderly in Bruxelles / Brussel were more likely to be living in the commuting zone.

**Figure 13.1: Population pyramids, selected capital cities, 2015**  
(% share of population)



Source: Eurostat (online data codes: urb\_cpop1 and urb\_lpop1)

## MIGRANTS LIVING IN CITIES

Migration is a long-standing phenomenon, however, it is only since the middle of the last century that Europe has undergone a shift from being a region of net emigration to a region characterised by net immigration. Many European cities play an important role in relation to the perception of migrants through their mix of multicultural and ethnically diverse populations.

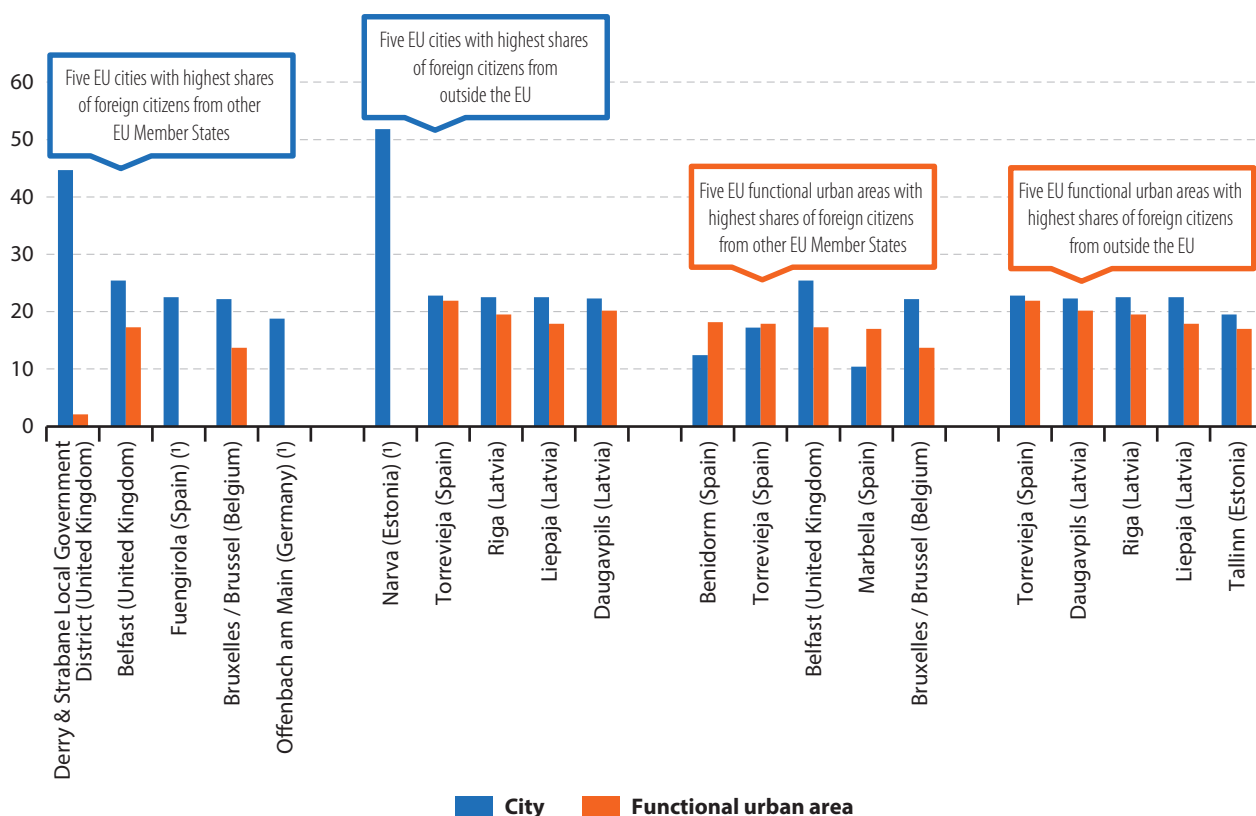
Cities are often characterised as places where migrants and non-migrants interact, through work, study, or raising their families. While cities can offer considerable opportunities for migrants, they may also face considerable challenges regarding integration and/or inclusion. Indeed, one of the European Commission's main priorities is to better manage migration. In this context, the integration and social inclusion of the growing number of migrants settling in Europe is key, whether they originate from other EU Member States or further afield.

**Citizens from other EU Member States accounted for more than one fifth of the total population living in the city of Bruxelles / Brussel (the Belgian capital)**

Figure 13.2 provides an alternative analysis concerning the structure of urban populations, detailing the cities and functional urban areas in the EU with the highest shares of EU and non-EU foreign citizens in 2016 (note the latest reference year available varies considerably for some EU Member States).

In Derry and Strabane (Northern Ireland, the United Kingdom) almost half (44.7 %) of the total number of inhabitants living in the urban centre were citizens of other EU Member States. By contrast, in its broader functional urban area (in other words, including the surrounding commuter zone), the share of migrants from other EU Member States in the total number of inhabitants was just 2.1 %. This pattern was relatively common, insofar as migrants tend to live in city (centres).

**Figure 13.2: Cities and functional urban areas in the EU with the highest shares of EU and non-EU foreign citizens, 2016**  
(% share of population)



Note: Belgium, Germany and Italy: 2015. France, the Netherlands and Austria: 2014. Denmark and Hungary: 2012. The Czech Republic, Ireland, Greece, Cyprus, Lithuania, Poland, Sweden and the United Kingdom: 2011. Luxembourg, Malta, Romania and Slovakia: not available.

(†) Functional urban area: not available.

Source: Eurostat (online data codes: [urb\\_cpocpb](#) and [urb\\_lpopcb](#))





The second highest share of citizens from other EU Member States was also recorded in Northern Ireland, namely in the capital of Belfast, where just over 1 in 4 (25.4 %; 2011 data) of the city's population was a foreign citizen from another EU Member State. The relatively high share of foreign EU citizens living in the southern Spanish city of Fuengirola (22.5 %; 2016 data) may be attributed, at least in part, to a high number of retirees. The next highest shares were recorded in the Belgian capital of Bruxelles / Brussel (22.2 %; 2015 data) and the central German city of Offenbach am Main (18.8 %; 2015 data), which had a relatively large number of Greek, Romanian, Polish and Italian migrants (as well as a high number of migrants from outside the EU). Note that the high share of non-EU migrants living in the [Baltic Member States](#) may, at least in part, be attributed to former Soviet Union citizens who are permanently resident.

## Education and employment

The [Europe 2020 strategy](#) is the EU's growth and jobs strategy for the current decade, which aims to deliver smart, sustainable and inclusive growth. Within the context of education and employment, the strategy foresees increasing the EU-28 employment rate among persons aged 20-64 years to 75 %, cutting the proportion of early leavers from education and training to less than 10 %, and raising the share of people aged 30-34 years with a tertiary level of education to at least 40 %.

### TERTIARY STUDENTS

Modern economies characterised by digital technologies, high skills and innovation are likely to require a growing number of qualified staff in the coming years; skills gaps already exist in some EU Member States and specific sectors. Europe's future prosperity depends, at least to some degree, on

nurturing more dynamic, high-achievers who can develop innovative products and processes.

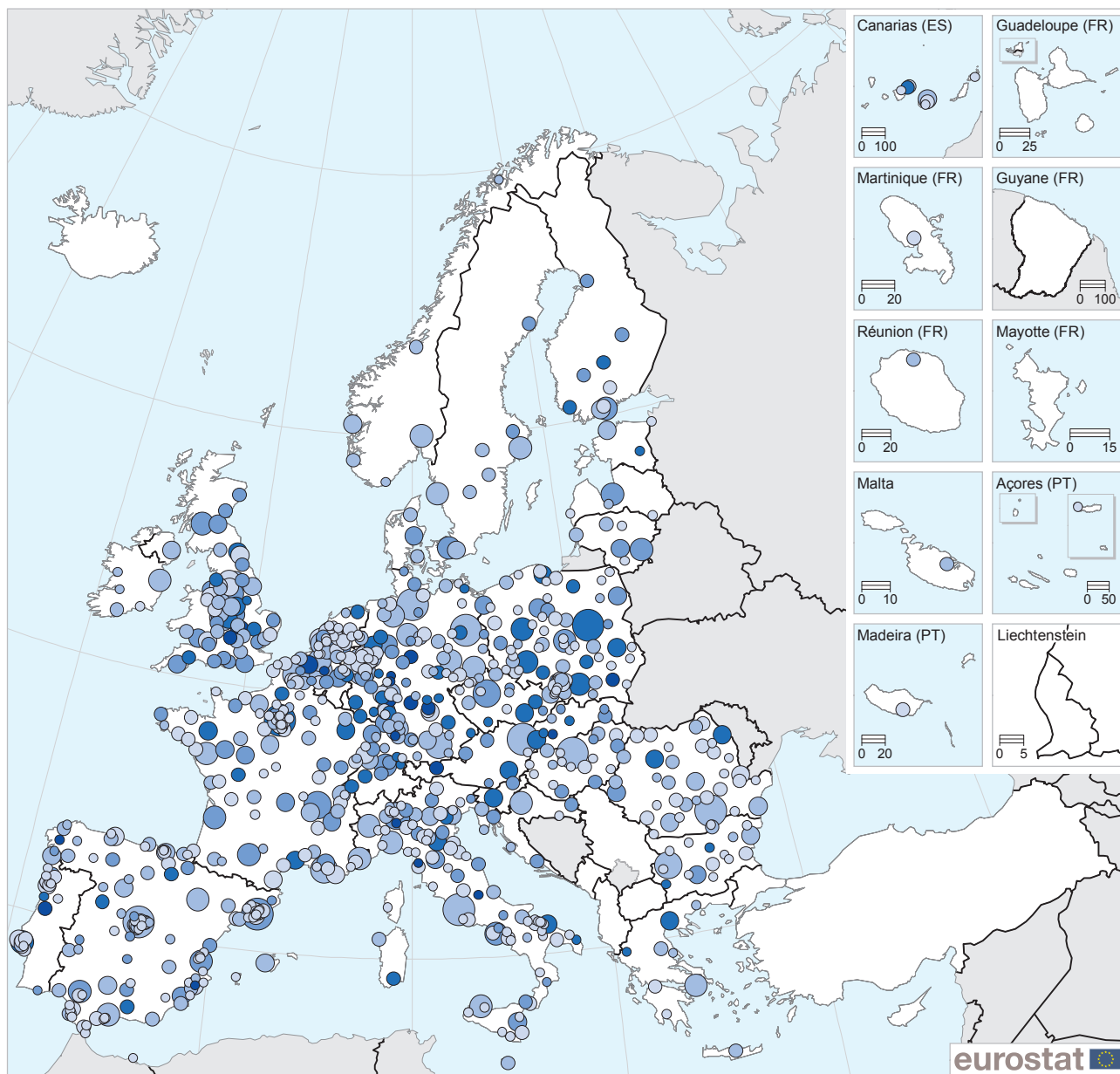
### ***More than half of the total number of inhabitants living near Barcelona in Cerdanyola del Vallès were tertiary students enrolled in higher education establishments***

**Map 13.2** shows the prevalence of tertiary education students relative to the total number of inhabitants for 810 cities across the EU. In 2015, there were, on average, 3.8 tertiary students enrolled in the EU-28's higher education establishments for every 100 inhabitants. Unsurprisingly, the number of tertiary students relative to population size was skewed in favour of cities, with this ratio often rising considerably higher in many of the EU's most famous university cities. These cities with relatively large student populations were widely dispersed across the EU's territory, from Coimbra and Porto in Portugal through Innsbruck in Austria to Kraków and Rzeszów in Poland or from Oxford in the United Kingdom through Gent and Leuven in Belgium and Heidelberg in Germany to Cluj-Napoca in Romania.

There were 23 cities in the EU where the student population in tertiary education accounted for at least one quarter of the total number of inhabitants. These were primarily located in Germany (seven cities), Spain (four), Italy (three), Belgium, Portugal and the United Kingdom (two cities each), while the list was completed by individual cities from each of Austria, Poland and Slovakia. Looking in more detail, there were three cities where the ratio of higher education students to the total resident population was at least 50.0 %: Cerdanyola del Vallès in Spain (home to the Universitat Autònoma de Barcelona); Leuven in Belgium (home to the Katholieke Universiteit and technical universities); and Milton Keynes in the United Kingdom (home to the Open University and Cranfield University among others) — it should be noted that only a very small proportion of the students registered with the Open University are in fact resident in Milton Keynes.

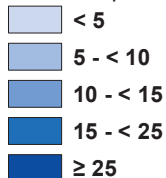


**Map 13.2: Number of tertiary students relative to population size, 2016**  
(students enrolled to study at ISCED levels 5-8 per 100 inhabitants)

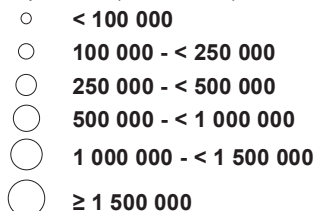


EU-28 = 3.8

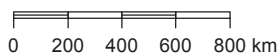
Tertiary students (students enrolled to study at ISCED levels 5-8 per 100 inhabitants)



Population (inhabitants)



Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 04/2018



Note: EU-28, Belgium, the Czech Republic, Italy, Hungary, Romania and the United Kingdom: 2015. Germany, France, Austria, Poland and Winterthur (CH006C1): 2014. Denmark, the Netherlands and Slovakia: 2012. Ireland, Greece, Sweden and Norway: 2011. EU-28, Germany (various cities), Lithuania and Poland: estimates. EU-28: provisional.

Source: Eurostat (online data codes: urb\_ceduc, urbcpop1, educ\_uoe\_enrt01 and demo\_pjan)

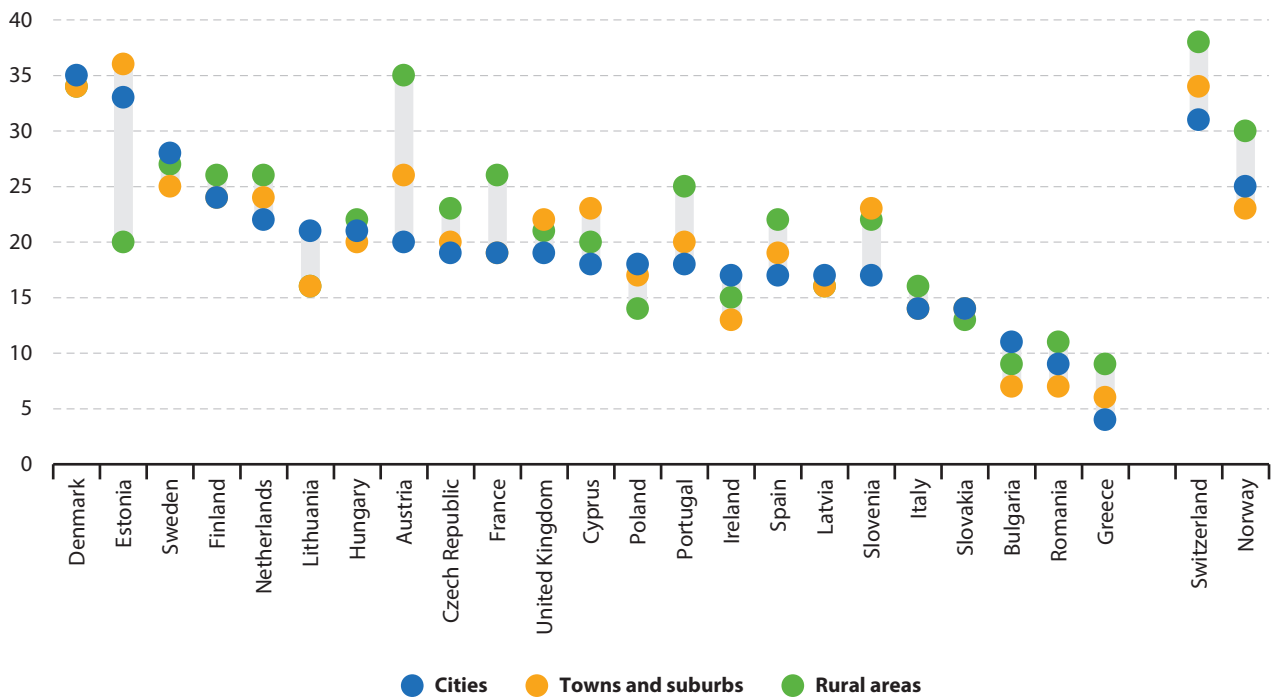
### THE TRANSITION FROM UNEMPLOYMENT TO EMPLOYMENT

In a majority of the eastern EU Member States, cities generally tended to outperform rural areas economically and record some of the highest rates of growth for their economic performance. By contrast, in some western Member States — for example, Belgium, France or the United Kingdom — it was common to find a number of cities ‘left behind’ by globalisation; places that industrialised early on in the industrial revolution but which have not fully adapted when their traditional activities moved elsewhere or were replaced by new technologies. Many of these cities are characterised by persistent pockets of long-term unemployment, high levels of poverty and people living in social exclusion.

Figure 13.3 shows an analysis by degree of urbanisation, illustrating one aspect of labour market flexibility, namely, the share of the adult population (people aged 15-74 years) that was able to move out of unemployment into a job during the course of 2016. In most western and southern economies of the EU, people living in cities faced the greatest difficulties in moving out of unemployment into work. When compared with people living in rural areas, the difference was particularly acute in Austria, France, Portugal, Spain and Greece, as well as Slovenia.

**Figure 13.3: Transition of unemployed persons moving from unemployment to employment, by degree of urbanisation, 2016**

(% share of unemployed persons aged 15-74)



Note: ranked on cities. Belgium, Germany, Croatia, Luxembourg and Malta: not available.

Source: Eurostat (online data code: lfsi\_long\_e03)

**UNEMPLOYMENT IN CITIES**

**Figure 13.4** focuses on **unemployment rates** exclusively in cities, with an analysis by country of birth. In 2016, the total unemployment rate in the EU-28 was 9.1 %, with slightly lower rates for people born in the reporting country (8.4 %) and people born in another EU Member State (8.6 %). By contrast, the EU-28 unemployment rate was much higher among people born outside the EU (15.4 %).

***In Ireland, Italy, Cyprus, Portugal and the United Kingdom, the unemployment rate in cities was lower among people born in another EU Member State than it was for nationals***

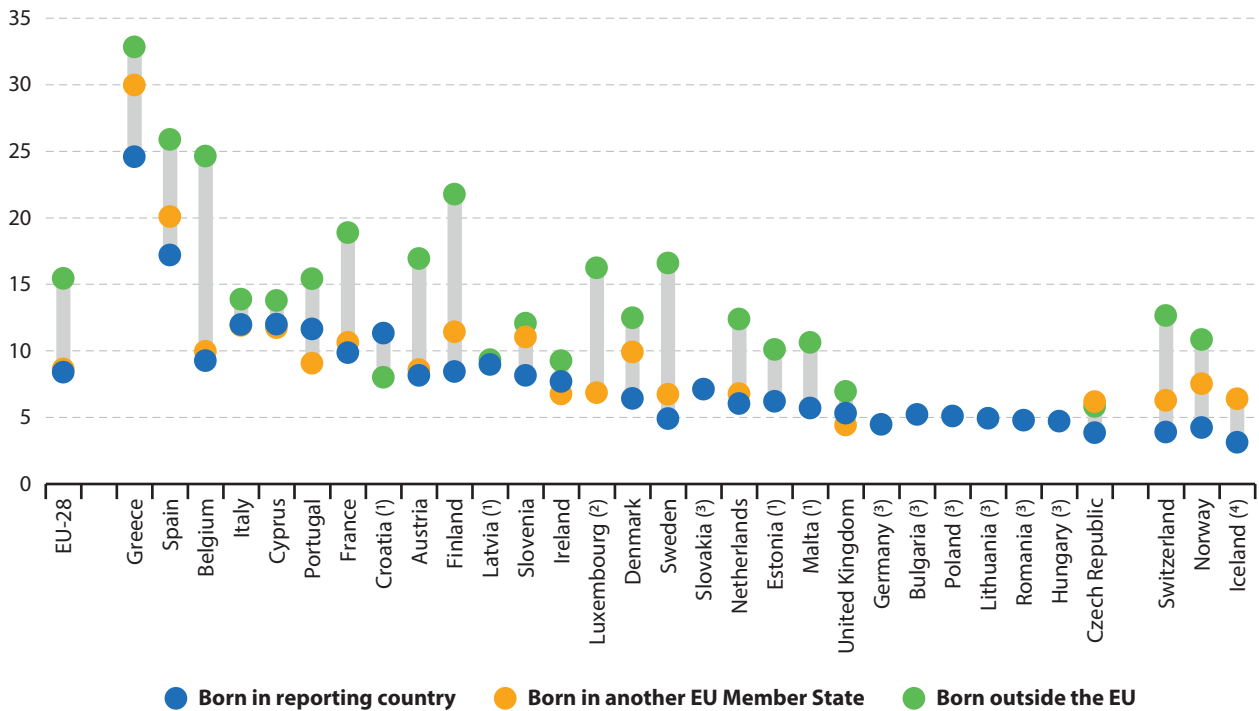
This pattern — higher unemployment rates in cities for people born outside the EU — was repeated in the vast majority of the EU Member States for which data are available. In 2016, the only exceptions were Croatia and the Czech Republic: for the former, the unemployment

rate among people born outside the EU (8.0 %) was lower the rate for people born in Croatia (11.3 %); for the latter, the unemployment rate among people born outside the EU (5.8 %) was lower than the rate for people born in another EU Member State (6.2 %).

The biggest differences (in percentage point terms) between unemployment rates in cities for people born outside the EU and people born in the reporting country were in Belgium, Finland and Sweden. The relatively high levels of social exclusion witnessed among city-dwellers in some northern and western EU Member States may, at least in part, reflect a lack of capacity to assimilate migrants from non-member countries into the labour market.

It is also interesting to note that in five of the EU Member States — Italy, Cyprus, the United Kingdom, Ireland and Portugal — the unemployment rate in cities for people born in another EU Member State was lower than the rate for people born in the reporting country.

**Figure 13.4: Analysis by country of birth of the unemployment rate in cities, 2016**  
(% share of labour force aged 15-74)



Note: ranked on total unemployment rate in cities.

(1) Born in another EU Member State: not available.

(2) Born in reporting country: not available.

(3) Born in another EU Member State and born outside the EU: not available.

(4) Born outside the EU: not available.

Source: Eurostat, labour force survey

## Living conditions

One of the five headline targets for the Europe 2020 strategy is to reduce poverty in the EU by lifting at least 20 million people out of the risk of poverty or social exclusion by 2020. The same indicator is also used within the [sustainable development goals \(SDGs\)](#) and to track the progress being made in relation to the [European pillar of social rights](#), which aims to build a more inclusive and fairer EU.

### PEOPLE LIVING AT RISK OF POVERTY OR SOCIAL EXCLUSION

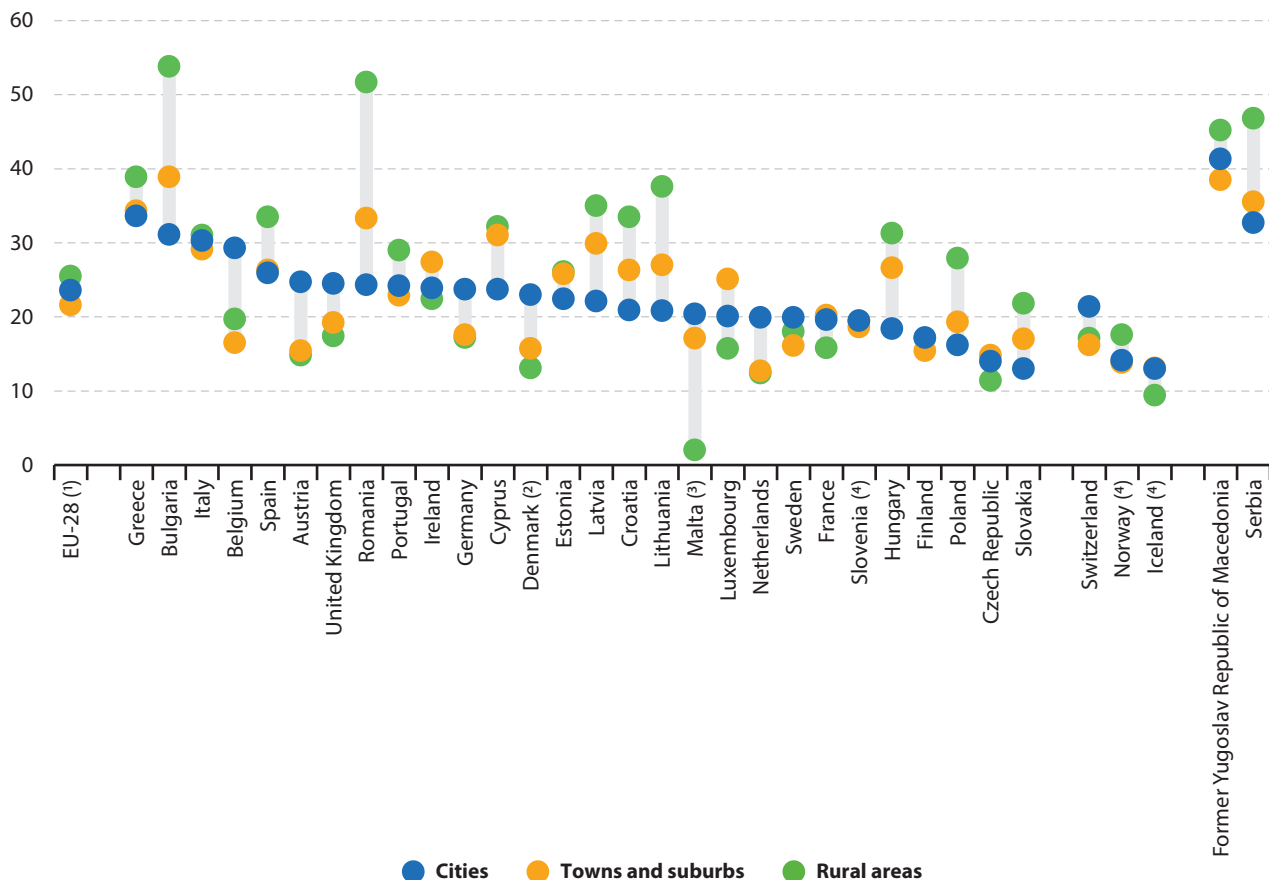
In 2016, almost one quarter (23.5 %) of the EU-28 population was living at risk of poverty or social exclusion. An analysis by degree of urbanisation (see **Figure 13.5**) reveals that people living in towns and suburbs had the lowest risk of poverty or social exclusion (21.6 %), a share which was 23.6 % for city-dwellers and peaked at 25.5 % among people living in rural areas. These figures reflect the growing number of

people living in suburban areas, within relatively close reach of urban centres, while potentially having more space, less noise, less pollution and lower costs.

***In western EU Member States, the risk of poverty or social exclusion tended to be higher in cities, whereas in eastern Member States it was usually higher in rural areas***

A closer examination reveals that in half (14) of the EU Member States, the highest proportion of people at risk of poverty or social exclusion was recorded in rural areas. More than half of the rural population was at risk of poverty or social exclusion in 2016 in Bulgaria and Romania. There were eight Member States where the share of the rural population at risk of poverty or social exclusion was within the range of 30.0-40.0 % — Greece, Lithuania, Latvia, Croatia, Spain, Cyprus, Hungary and Italy. As such, those Member States with relatively high shares of their rural populations living at risk of poverty or social exclusion were located exclusively in the Baltic Member States, eastern or southern parts of the EU.

**Figure 13.5: Proportion of people at risk of poverty or social exclusion, by degree of urbanisation, 2016**  
(% share of population)



Note: ranked on cities.

(1) Rural areas: estimate.

(2) 2017.

(3) Rural areas: low reliability

(4) 2015.

Source: Eurostat (online data codes: [ilc\\_peps13](#) and [ilc\\_peps01](#))

By contrast, the rural populations of Germany, the United Kingdom, the Netherlands, Belgium, Denmark, Austria and Malta (note the data for rural areas is of low reliability) were much less likely to be at risk of poverty or social exclusion than people living in cities. As such, western European cities were often characterised by an urban paradox, insofar as while they generated high levels of wealth, they also reported that relatively large shares of their populations were living with the risk of poverty or social exclusion.

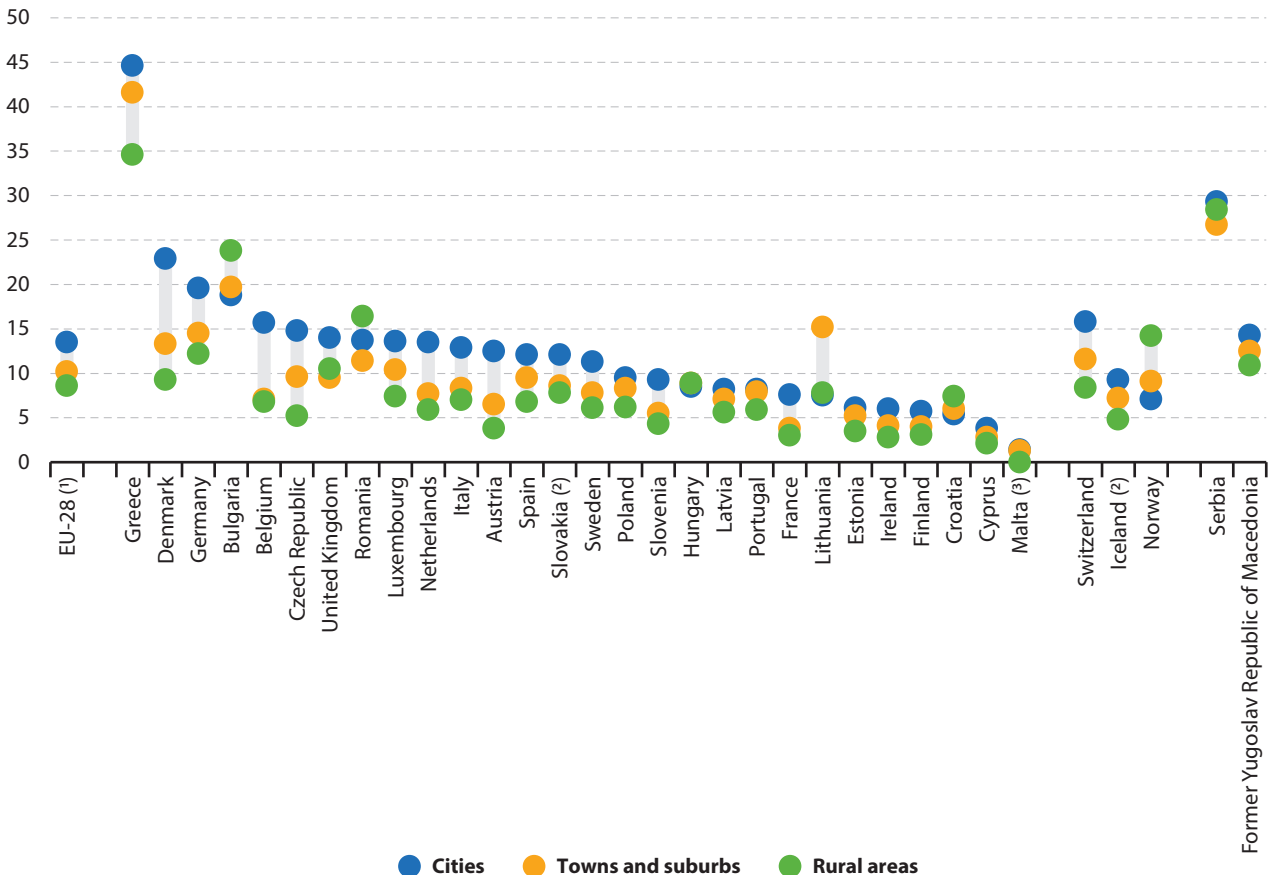
### HOUSING COSTS

Real estate prices and rents vary considerably, not just between and within EU Member States, but also at a more local/regional level. Nevertheless, housing is often the largest single item in a household budget, irrespective of whether the occupants are paying off a mortgage/loan or renting a property.

**People living in cities often paid a premium for living centrally or in a particular borough/district; this meant they were more likely to face a considerable burden from the cost of their housing**

The **housing cost overburden rate** is defined as the share of the population that is living in a household where total net housing costs were greater than 40 % of disposable income. The EU-28 housing cost overburden rate averaged 11.1 % in 2016: an analysis by degree of urbanisation reveals that this burden was lowest in rural areas (8.6 %), with a slightly higher rate recorded for people living in towns and suburbs (10.2 %) and a peak among those living in cities (13.5 %). Note that people living in cities are often prepared to pay more for less space in order to live centrally or in a borough/district with particular amenities or transport connections. This pattern has led to the gentrification (displacement of lower-income families as a result of rising property prices) of some inner cities and considerable changes in their demographic and social make-up, with young, upwardly mobile professionals moving into regenerated housing stock, often

**Figure 13.6: Housing cost overburden rate, by degree of urbanisation, 2016**  
 (% share of people living in households where total housing costs represent more than 40 % of disposable income)



Note: ranked on cities.

(1) Rural areas: estimate.

(2) 2015.

(?) Rural areas: low reliability

Source: Eurostat (online data codes: [ilc\\_lvho07d](#) and [ilc\\_lvho07a](#))

crowding out the indigenous population. In a similar vein, popular rural or coastal locations can also see their property prices rise at a rapid pace, especially when supply is constrained by local planning authorities seeking to maintain the original charm of an area.

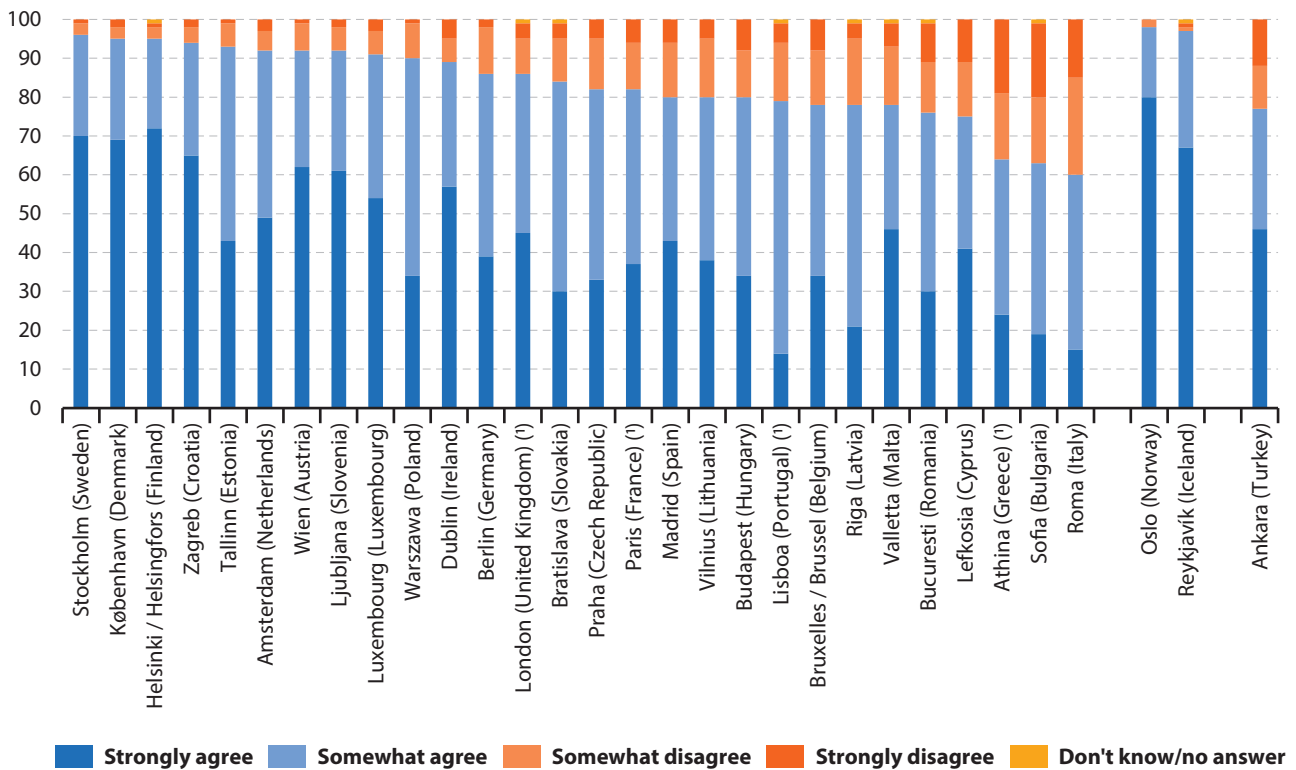
In five EU Member States — Greece, Bulgaria, Romania, Germany and the United Kingdom — the share of the rural population in 2016 that was overburdened by the cost of housing was in double-digits (10 % or higher); particularly high rates were observed in Greece and Bulgaria.

By contrast, there were seven EU Member States where a double-digit share of the population living in towns and suburbs was overburdened by housing costs, with Greece again recording a particularly high share. The share of the population living in cities that was overburdened by housing costs exceeded 10 % in Member States, including all five that registered double-digit shares for their rural populations and again lead by Greece; they were joined by Denmark, Belgium, the Czech Republic, Luxembourg, the Netherlands, Italy, Austria, Spain, Slovakia (2015 data) and Sweden.

### FEELING SAFE IN CAPITAL CITIES

The final analysis in this section concerns information from a perception survey. **Figure 13.7** presents data for capital cities in the EU and details the answers given by respondents when queried about how safe they felt in the neighbourhood where they live. In 2015, the highest shares of positive replies (people who strongly agreed or somewhat agreed that their neighbourhood was safe) were recorded in the Nordic capitals of Stockholm (96 %), København (95 %) and Helsinki / Helsingfors (also 95 %); note that slightly higher shares were recorded in the capital cities of the two Nordic non-member countries shown in the figure, with 98 % feeling safe in Oslo and 97 % in Reykjavik. In the vast majority of the other EU Member States, at least three quarters of the population agreed that they felt safe in their neighbourhood, as was also the case in the Turkish capital city (Ankara). However, lower shares were recorded in the Greek, Bulgarian and Italian capital cities, as the share of people feeling safe fell to less than two thirds of the population in Athina (64 %), Sofia (63 %) and Roma (60 %).

**Figure 13.7: Respondents' answers to the question do you feel safe in the neighbourhood where you live, capital cities, 2015**  
(% share of total)



(¹) Greater city.

Source: Eurostat (online data code: urb\_percep)





# 14

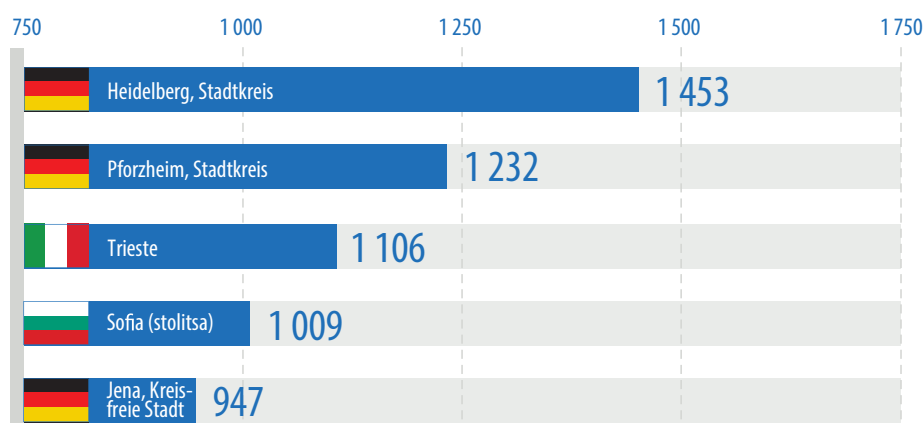
## Focus on regional typologies



## Key findings

- Almost half — 44.8 % — of the EU's population was living in predominantly urban regions, compared with 36.0 % in intermediate regions and 19.2 % in predominantly rural regions.
- Berlin was the only capital city metropolitan region in the EU with a level of GDP per person employed below the national average.
- Border regions in the EU tended to have relatively low employment rates, although this pattern was reversed in Italy, reflecting, at least in part, the relatively high number of Italian commuters from Piemonte and Lombardia into neighbouring Switzerland.

### TOP 5 REGIONS IN THE EU POPULATION DENSITY IN MOUNTAIN REGIONS, 2015 (number of inhabitants/km<sup>2</sup>)



The European Union's (EU's) overall economic activity reflects a myriad of actions taken by different levels of government, enterprises and households. At a more detailed level, most economic processes have a specific territorial dimension — they are located in a fixed place — with the level of activity dependent, to some degree, upon a range of territorial assets, for example, transport or communications networks, access to services, natural resources, the supply or qualifications of the local labour force. This considerable geospatial diversity makes analysing the situation in different regions/areas a complex task.

Although not always the case, most of the chapters within this publication show that regional differences for socioeconomic outcomes can often be greater within individual EU Member States than they are between national territories. For example, there is a considerable degree of variation in crude rates of population change between eastern and southern areas of Germany, while there are widespread socioeconomic differences between northern and southern parts of Italy. Differences such as these also exist at other territorial levels: for example, compare the socioeconomic situation in the wealthy, residential suburb of Neuilly-sur-Seine just to the west of Paris

with that of Roubaix, a town in northern France characterised by wide-ranging challenges linked to de-industrialisation; or, alternatively the situation in the deprived coastal resort of Blackpool in the north-west of England with the affluent, technology-based economy of Cambridge.

Some of the most pressing challenges facing the EU — for example, globalisation, climate change, or social exclusion — have traditionally been approached through broad sectoral policies. However, as differences in economic performance between areas widened, policymakers have looked more closely at uneven spatial developments in the context of whether they are inevitable or even desirable: for example, does it make sense to have the same target for pollution in a city centre as in an area of natural beauty, or does it make sense to have the same target for educational attainment in a capital city as in a remote village? These critiques led to the development of place-based development policy, which highlights the need to reduce inefficiencies in a specific location by relying on local knowledge and capital to deliver a framework for promoting growth, and also resulted in a territorial dimension being introduced into a range of EU policy areas.



**Figure 14.1:** Territorial typologies — an overview

	Geographical level	Basic territorial typologies	Urban typologies	Coastal typology	Border typology	Island typology	Mountain typology
Regional typologies:	NUTS 1 regions						
	NUTS 2 regions						
	NUTS 3 regions	<b>Urban-rural typology:</b> predominantly urban regions; intermediate regions; predominantly rural regions	<b>Metropolitan regions</b>	Coastal regions	Border regions	Island regions	Mountain regions
Local typologies:	<b>Local administrative units (LAU)</b>	<b>Degree of urbanisation (¹):</b> cities; towns and suburbs; rural areas	<b>City definitions:</b> cities; functional urban areas (FUA) = cities and their commuting zones	Coastal areas			
Grid typologies:	<b>Grid cells (1 km²)</b>	<b>Cluster types:</b> urban centre; urban clusters; rural grid cells	Urban clusters and urban centres				

- Individual codes and labels (based on geographical entity)**
- Three categories per country (aggregated)**
- Combination of individual codes and aggregation**
- Two categories per country (aggregated)**
- Technical level**
- As defined in Regulation (EC) No 1059/2003 on the establishment of a common classification of territorial units for statistics (NUTS).**

(¹) Within the degree of urbanisation typology the aggregation of cities with towns and suburbs is referred to as urban areas.

Source: Eurostat, Regulation (EC) No 1059/2003

Grouping regions and areas according to territorial types can help in understanding common patterns: for example, urban areas/regions generally perform better in economic terms, and they often act as hubs for innovation and education; at the same time, they may also be characterised by a range of different challenges such as congestion, pollution or housing problems. In order to be able to analyse and understand these patterns, Eurostat has expanded the range of statistics that are published on a number of territorial typologies that may help categorise various administrative and functional areas. **Figure 14.1** provides an overview of the main territorial typologies adopted by Eurostat: they form the basis for the statistics shown in this chapter, which presents examples of the wide-ranging analyses that may be performed. At their most basic level, these concepts can be split into two groups, those based on regional typologies and those based on

local typologies. The former relate to statistics classified according to the [classification of territorial units for statistics \(NUTS\)](#); among others, this classification is used as the basis for allocating structural and investment funds between different regions of the EU. By contrast, local typologies are established for more detailed levels, with their basic geographical level that of the [local administrative units \(LAU\)](#), comprising the municipalities/communes of the EU. At an even more detailed level, Eurostat also collects information based on a 1 km<sup>2</sup> statistical grid, which is used for population-based territorial typologies. These building blocks — statistics by NUTS region, statistics by LAU, and statistics for 1 km<sup>2</sup> grids — can be aggregated into different typologies — as shown in **Figure 14.1** — to allow a more comprehensive analysis of territorial patterns and developments in the EU.

The EU integrated a number of territorial typologies into the [NUTS regulation](#) in December 2017: this underlines the importance of regional statistics as an important instrument for targeted policymaking and a useful tool for understanding and quantifying the impact of policy decisions in specific territories. The regulation provides a legal basis for the use of NUTS, LAU and 1 km<sup>2</sup> grid cells, as well as information as to how each of these relates to establishing a complementary set of EU territorial typologies.

Grid-based information is used to establish: [urban centres](#), [urban clusters](#) and [rural grid cells](#);

Statistics for local administrative units are used to establish:

- the [degree of urbanisation](#) ([cities](#); [towns and suburbs](#); [rural areas](#));
- [functional urban areas](#) (cities and their surrounding [commuting zones](#));
- [coastal areas](#) (coastal and non-coastal areas).

Statistics at NUTS level 3 are used to establish:

- the [urban-rural typology](#) ([predominantly urban regions](#), [intermediate regions](#) and [predominantly rural regions](#));
- the [metropolitan](#) typology (metropolitan and non-metropolitan regions);
- the [coastal](#) typology (coastal and non-coastal regions).

By codifying these territorial typologies into a single legal text, it is hoped that they will be applied consistently and harmoniously across various stands of European legislation, while allowing for them to be cross-referenced from other acts and programmes. Note that the NUTS regulation does not provide a legal basis for border, island or mountain typologies.

## Urban-rural typology

The urban-rural typology is based on statistics for NUTS level 3 regions: these are classified according to the density of population in 1 km<sup>2</sup> grid cells, through the share of the population living in urban clusters and rural grid cells, to identify:

- [predominantly urban regions](#) (NUTS level 3 regions where at least 80 % of the population live in urban clusters);
- [intermediate regions](#) (NUTS level 3 regions where between 50 % and 80 % of the population live in urban clusters);
- [predominantly rural regions](#) (NUTS level 3 regions where at least 50 % of the population live in rural grid cells).

In 2016, some 44.8 % of the EU-28 population was living in predominantly urban regions, while more than one third (36.0 %) were living in intermediate regions, and just under one fifth (19.2 %) in predominantly rural regions.

***Around three quarters of the population in the Netherlands and the United Kingdom was living in a predominantly urban region, while more than half of the population in Ireland, Romania and Slovenia was living in a predominantly rural region***

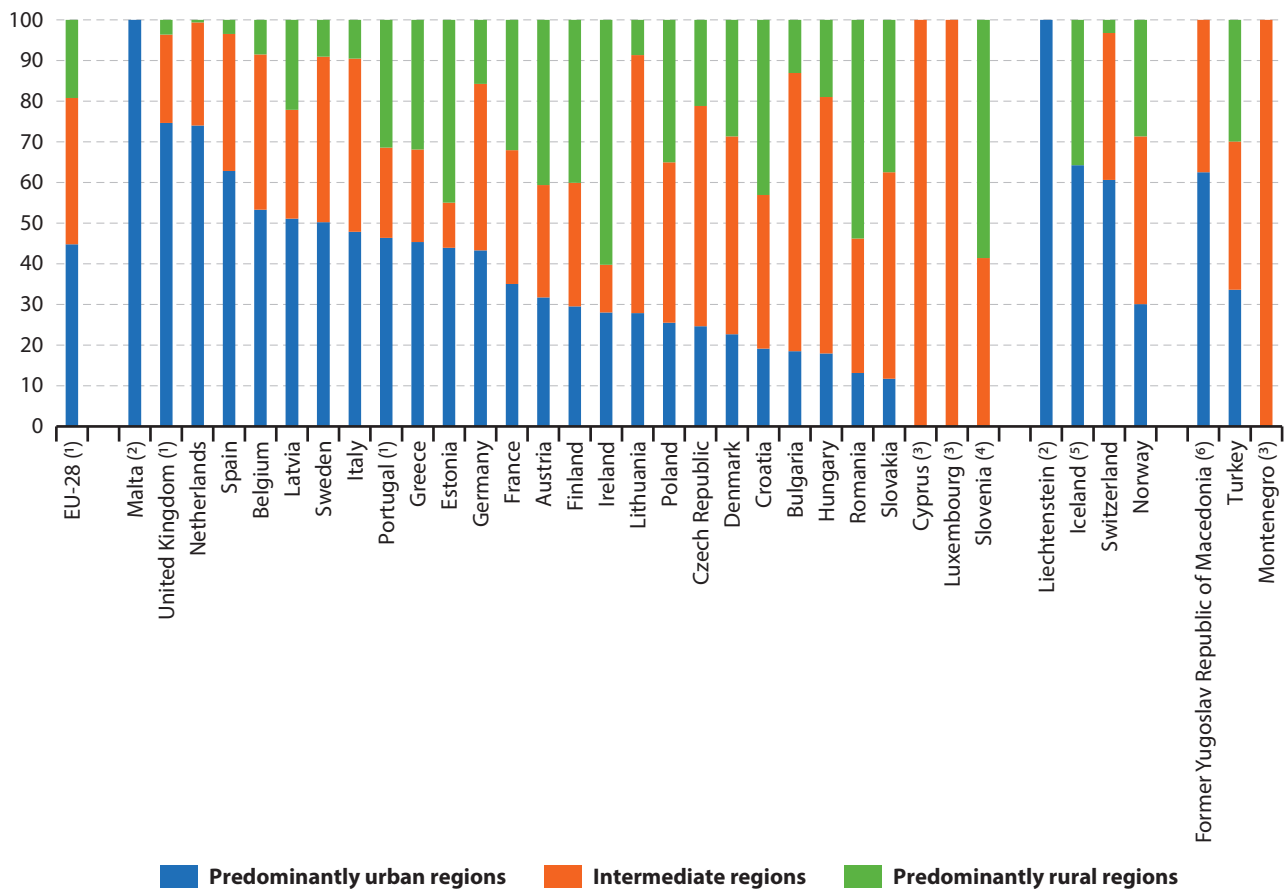
The statistics presented in [Figure 14.2](#) confirm that there were considerable differences in terms of population distributions across the EU Member States. In 2016, the vast majority of the populations living in Malta (100.0 %), the United Kingdom (74.6 %) and the Netherlands (74.0 %) were concentrated in predominantly urban regions, while more than half of the total number of inhabitants from Spain, Belgium, Latvia and Sweden and a simple majority of the populations living in Italy, Portugal, Greece, Germany and France were also living in predominantly urban regions.

Several eastern and northern EU Member States were characterised by having the highest share of their populations living in intermediate regions. This was particularly the case in Bulgaria, where more than two thirds (68.5 %) of the total population lived in an intermediate region in 2016; the same was true for three out of every five persons living in Lithuania and Hungary. Otherwise, there were more people living in intermediate regions of the Czech Republic, Slovakia, Denmark and Poland than in either of the other two types of region. Although shares of 100.0 % in intermediate regions were recorded for Luxembourg and Cyprus, it is important to note that both of these are composed of a single region at NUTS level 3.

In Ireland, Slovenia and Romania, an absolute majority of the population was living in predominantly rural regions, this share peaking in Ireland (60.2 % in 2016). Predominantly rural regions also accounted for the highest share of the total number of inhabitants in Estonia, Croatia, Austria and Finland.



**Figure 14.2: Population structure, by urban-rural typology, 2016**  
(% share of total population)



Note: Malta and Liechtenstein, intermediate and predominantly rural regions, not applicable. Cyprus, Luxembourg and Montenegro, predominantly urban and predominantly rural regions: not applicable. Slovenia: predominantly urban regions: not applicable.

(1) Estimates.

(2) Intermediate regions and predominantly rural regions: not applicable.

(3) Predominantly urban regions and predominantly rural regions: not applicable.

(4) Predominantly urban regions: not applicable.

(5) Intermediate regions: not applicable.

(6) Predominantly rural regions: not applicable.

Source: Eurostat (online data code: [urt\\_pjanagr3](#))

### ***GDP per inhabitant in the predominantly urban regions of Bulgaria, Hungary, Romania and Slovakia was at least 3.0 times as high as in predominantly rural regions***

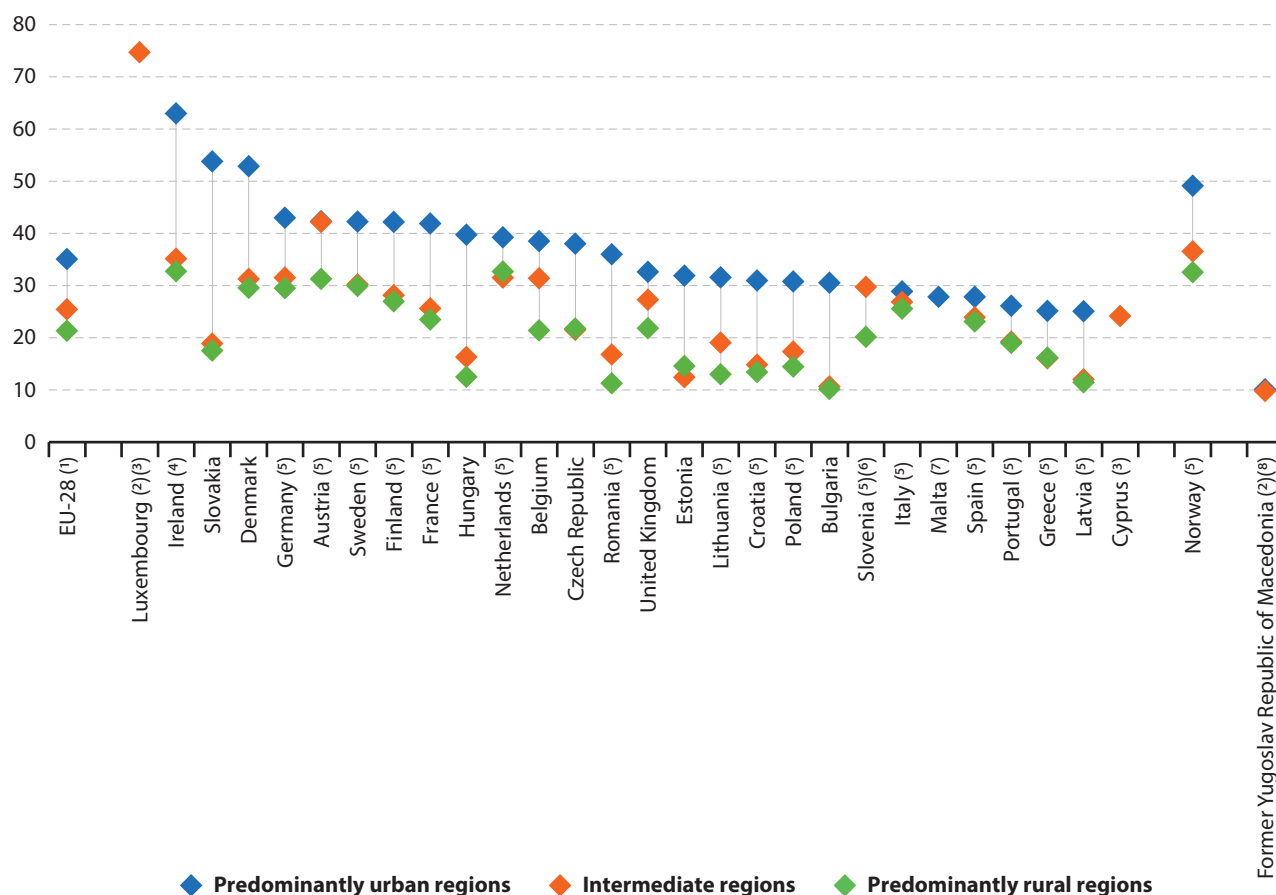
Figure 14.3 presents an alternative analysis based on the urban-rural typology. In 2016, **gross domestic product (GDP) per inhabitant in purchasing power standards (PPS)** — a unit that takes account of price level differences between countries — averaged 29 200 PPS in the EU-28; note that this derived indicator is often used as a measure for overall living standards, although it does not shed any light on income or poverty distributions.

While predominantly urban regions had the highest share of the EU-28 population, their relative

weight in economic terms was even greater. GDP per inhabitant in the EU-28's predominantly urban regions was 35 000 PPS, which was 38 % higher than for intermediate regions and 65 % higher than for predominantly rural regions.

A more detailed analysis among the EU Member States confirms that predominantly urban regions were consistently more productive, insofar as their GDP per inhabitant was at a higher level than for either intermediate regions or predominantly rural regions in each of the 24 Member States where all three different types of region are present. These differences were most pronounced in eastern EU Member States, for example: in 2016, GDP per inhabitant in the predominantly urban regions of Romania (2015 data), Hungary, Slovakia and Bulgaria, was at least 3.0 times as high as in their respective predominantly rural regions. Although the

**Figure 14.3: GDP per inhabitant, by urban-rural typology, 2016**  
(thousand purchasing power standards (PPS) per inhabitant)



(1) Estimates, based on the latest available information for each of the EU Member States.

(2) 2014.

(3) Predominantly urban regions and predominantly rural regions: not applicable.

(4) Dublin (IE021) and South-West (IE025), 2014; all other regions, 2015.

Source: Eurostat (online data code: [nama\\_10r\\_3gdp](#))

(5) 2015.

(6) Predominantly urban regions: not applicable.

(7) Intermediate regions and predominantly rural regions: not applicable.

(8) Predominantly rural regions: not applicable.

most productive forms of economic activity appear to be concentrated in predominantly urban regions, it is important to note that the ratio of GDP per inhabitant may, to some degree, be overstated. This is particularly true in those regions that are characterised by high numbers of commuters travelling across regional boundaries, as their economic output (the numerator) is attributed to the region where they work, while for the count of inhabitants (the denominator) they are attributed to the region where they live.

It is also interesting to note that the ratio between the highest and lowest level of GDP per inhabitant was lower for predominantly urban regions. Among the 24 EU Member States where all three different types of region are present, Ireland had the highest level of GDP per inhabitant for predominantly urban regions (62 900 PPS), which was 2.5 times as high as the lowest ratio in Latvia (25 000 PPS; 2015 data). For predominantly rural regions, the highest level of GDP per inhabitant was also recorded in Ireland (32 700 PPS), which was 3.2 times as high as in Bulgaria (10 100 PPS).

Finally, Austria had the highest level of GDP per inhabitant for intermediate regions (42 100 PPS; 2015 data), some 4.0 times as high as in Bulgaria (10 600 PPS).

## Metropolitan regions

**Metropolitan regions** are a single or an aggregation of NUTS level 3 region(s) in which at least 50 % of the population live in functional urban areas of at least 250 000 inhabitants. The classification is based on identifying urban centres — contiguous grid cells of 1 km<sup>2</sup> with a population density of at least 1 500 inhabitants per km<sup>2</sup> and a minimum population of 50 000 inhabitants. These are subsequently used to identify cities and their surrounding commuter zones (where at least 15 % of the population commutes to work in that city). In a final step, each NUTS level 3 region is assessed to see if it contains a functional urban area — in other words, a city and its commuting zone — of more than 250 000 inhabitants. The typology

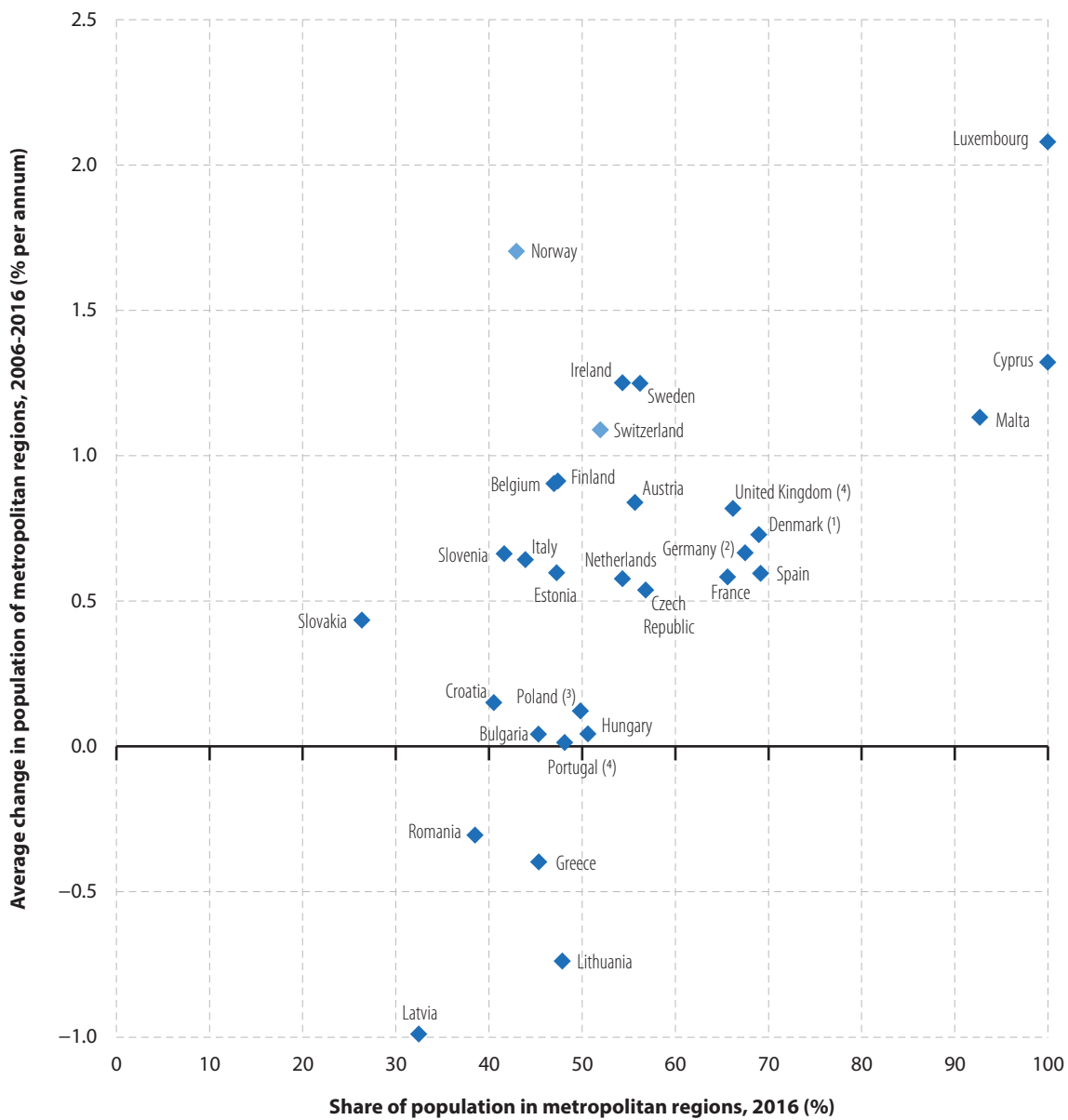


distinguishes between capital city metropolitan regions, second-tier metropolitan regions, and smaller metropolitan regions.

There were 296.3 million people living in the EU's metropolitan regions in 2016; as such, metropolitan regions accounted for almost three out of every five inhabitants. The highest numbers of people living in metropolitan regions were in Germany (55.3 million), France (43.8 million) and the United Kingdom (43.3 million). In relative terms, all of the population (100.0 %)

in Cyprus and Luxembourg lived in metropolitan regions (note both of these are single regions at NUTS level 3), while the next highest share was recorded in Malta (92.7 %; composed of two NUTS level 3 regions). Otherwise, more than 65.0 % of the total population lived in metropolitan regions in Spain (69.2 %), Denmark (69.0 %), Germany (67.5 %), the United Kingdom (66.2 %) and France (65.6 %). These figures confirm that the largest and most concentrated populations living in metropolitan regions were predominantly found in western parts of the EU.

**Figure 14.4: Share of population and population change in metropolitan regions, 2016 and 2006-2016** (% and % per annum)



Note: Belgium, Germany, Estonia, Hungary, Romania, Slovenia and Switzerland, breaks in series.

(†) 2007-2016.

(‡) 2010-2016.

(‡) 2011-2016.

(\*) Estimates.

Source: Eurostat (online data code: met\_pjanaggr3)

**Figure 14.4** also shows the speed at which metropolitan populations were expanding. The fastest growth rate, 2.1 % per annum during the period 2006-2016, was recorded in Luxembourg, while Cyprus, Ireland, Sweden and Malta all saw their metropolitan populations increase by 1.1-1.3 % per annum. By contrast, the total number of people living in the metropolitan regions of Romania, Greece, Lithuania and Latvia declined during the period 2006-2016.

Economic activity was highly concentrated in metropolitan regions: based on the latest information available, these regions contributed almost 72 % of the EU-28's GDP, which could be contrasted against their share of the total population, which was just less than 60 %; as noted above, some of this difference may be attributed to the daily flow of commuters that swell the size of metropolitan workforces and their levels of economic activity.

***GDP per person employed in the Romanian capital city metropolitan region of Bucuresti was more than twice as high as the national average***

In order to demonstrate the concentration of economic activity in metropolitan regions, **Map 14.1** contrasts levels of GDP per person employed in metropolitan and non-metropolitan regions; note that the information shown is presented in relation to national averages (which are set equal to 100). One of the most striking aspects of the map is that average GDP per person employed in non-metropolitan regions was consistently lower than the national average. In 2015, this pattern was particularly pronounced in Bulgaria (2016 data), the [Baltic Member States](#) (Estonia; 2016 data), Ireland (2014 data), Greece, Malta (2016 data) and Romania, where GDP per person employed for non-metropolitan regions was less than 85 % of the national average.

At the other end of the range, there were 16 metropolitan regions where average GDP per person employed was at least 30.0 % higher than the national average in 2015 (as shown by the darkest blue shade in the map). Several of these highly productive metropolitan regions were capital cities, principally located in eastern parts of the EU: Warszawa (Poland), Bratislava (Slovakia; 2016 data), Sofia (Bulgaria; 2016 data) and Bucuresti (Romania). Based on this relative measure, productivity was particularly high in Bucuresti, as its GDP per person employed was more than twice the national average (203.2 %; 2015 data); the next highest ratios in the EU were recorded in two further Romanian metropolitan regions, namely, Constanta (on the Black Sea; 170.9 %) and Cluj-Napoca (north-

west Romania; 149.9 %) and there were three more metropolitan regions in Romania — Timisoara, Brasov and Ploiesti — where GDP per person employed was at least 30.0 % higher than the national average. The remaining capital city metropolitan regions where GDP per person employed was at least 30.0 % higher than the national average were Vilnius (Lithuania), Paris (France) and London (the United Kingdom). It is interesting to note the monocentric distribution of productivity across France and the United Kingdom, as the vast majority of their second-tier and smaller metropolitan regions recorded average levels of GDP per person employed that were below the national average, emphasising the dominant position of their capital cities. A similar pattern was also observed in the [Nordic](#) and [Baltic Member States](#), the Czech Republic, Greece and Portugal, although their capital city metropolitan regions did not reach a level of GDP per person employed that was 30.0 % or more above their national averages.

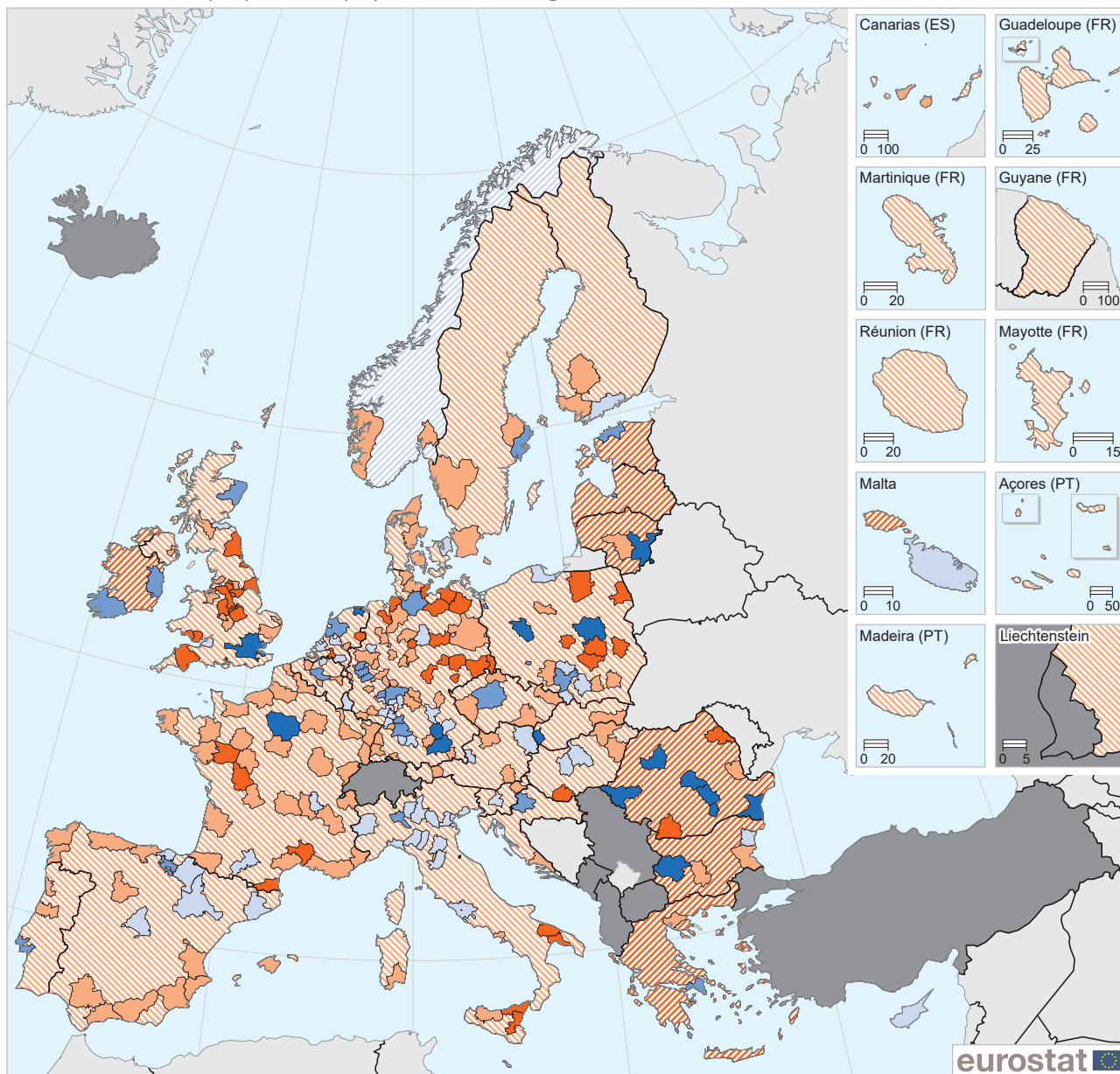
By contrast, there were two neighbouring, metropolitan regions in the south of Germany where GDP per person employed was at least 30.0 % higher than the national average in 2015 — Ingolstadt and München — while productivity levels were almost as high in Frankfurt am Main, Stuttgart and Düsseldorf; this would suggest a more polycentric pattern to the distribution of productivity across Germany. It is also interesting to note that Berlin was the only capital city metropolitan region to report GDP per person employed below its national average. Such a polycentric distribution of relatively high levels of productivity was also evident in Poland and the Netherlands, as well as northern parts of Italy and Spain.

**Map 14.1** shows that there were 49 metropolitan regions in the EU where GDP per person employed was less than 85 % of the national average. More than half of these 49 regions were located in the United Kingdom (16 regions) and Germany (14 regions), although there were also six regions from Poland and four regions from each of France and Italy. The lowest levels of productivity in the United Kingdom were in the metropolitan regions of Doncaster, Stoke-On-Trent, Medway, Kirklees, Cardiff, Kingston upon Hull, Swansea and Middlesbrough, while the lowest levels in Germany were in Schwerin, Neubrandenburg, Görlitz, Erfurt, Dresden, Rostock and Leipzig. Many of these are former industrial heartlands that have been left behind by economic developments, for example, the impact of globalisation and de-industrialisation and/or reunification in the case of eastern German regions, underlying why the policy debate often focuses on rebalancing economic activity.



**Map 14.1: GDP per person employed relative to the national average, by metropolitan and aggregates of non-metropolitan regions, 2016**

(based on data in EUR per person employed; national average = 100)



(based on data in EUR per person employed; national average = 100)

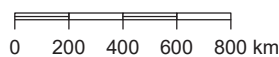
Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 05/2018

**Metropolitan regions**

- < 85
- 85 - < 100
- 100 - < 115
- 115 - < 130
- ≥ 130
- Data not available

**Non-metropolitan regions**

- < 85
- 85 - < 100
- 100 - < 115
- 115 - < 130
- ≥ 130



Note: Germany, Greece, Spain, France, Croatia, Italy, Latvia, Lithuania, Hungary, the Netherlands, Austria, Poland, Portugal, Romania, Sweden, the United Kingdom and Norway, 2015. Ireland: 2014.

Source: Eurostat (online data codes: met\_10r\_3gdp, met\_10r\_3emp, nama\_10r\_3gdp, nama\_10r\_3empers, nama\_10\_gdp and nama\_10\_pe)

## Coastal regions

The *coastal* typology establishes a classification of EU coastal and non-coastal regions for NUTS level 3 regions. Coastal regions are defined according to one of the following three criteria:

- the region has a sea border (448 different regions in the EU, EFTA and candidate countries);
- the region has more than half of its population residing within 50 km of the sea, based on data using a 1 km<sup>2</sup> statistical grid (an additional 87 regions);
- the region is Hamburg in Germany, where there is a strong maritime influence (a single region).

As such, **Map 14.2** shows information for the 536 coastal regions, detailing the *crude rate of net migration* across the 23 EU Member States with a coastline; note there are five landlocked Member States — the Czech Republic, Luxembourg, Hungary, Austria and Slovakia. It is important to note that the statistics presented refer exclusively to migrant flows with other countries (EU Member States and non-member countries) and that they exclude any movements between different regions of the same Member State.

***Among EU coastal regions, the highest crude rates of net migration were recorded in the Greek islands of Lesvos, Limnos, Ikaria and Samos, each of which is located in the Aegean Sea, close to Turkey***

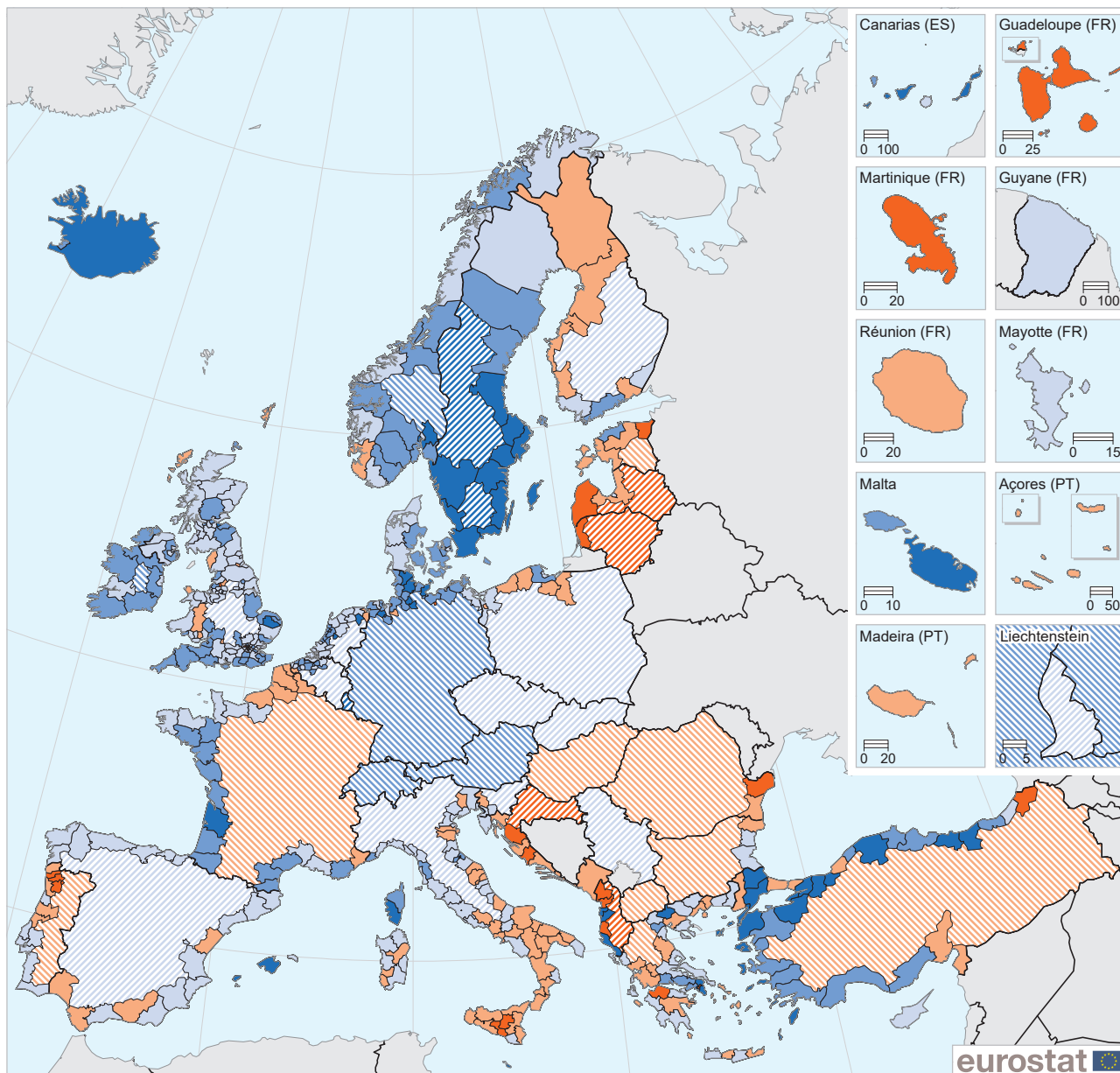
In 2016, the crude rate of net migration for the EU-28 was 2.4 per 1 000 inhabitants, with the total number of inhabitants living in the EU-28 increasing by 1.2

million as a result of migrant flows between the EU-28 and non-member countries. **Map 14.2** shows that net migration was usually positive in EU coastal regions: there were 355 regions that had positive rates of net migration, compared with 121 that had negative rates, while six regions had no change. Some of the highest crude rates of net migration were recorded for the coastal regions of Germany and Sweden, as well as the islands of Greece, Spain and Malta.

Looking in more detail, the highest crude rates of net migration were recorded in the Greek island regions of Lesvos, Limnos (49.2 per 1 000 inhabitants) and Ikaria, Samos (38.3 per 1 000 inhabitants); both of these regions are located in the Aegean Sea and they were common destinations for asylum seekers and migrants travelling by sea between Turkey and the EU. The three next highest crude rates of net migration — each with a rate that was within the range of 20.0-23.0 per 1 000 inhabitants — were disparately spread across the EU territory: Malta, Kalmar län (in the south-east of Sweden) and Fuerteventura (the second largest of the Canary Islands).

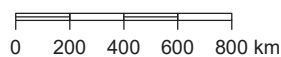
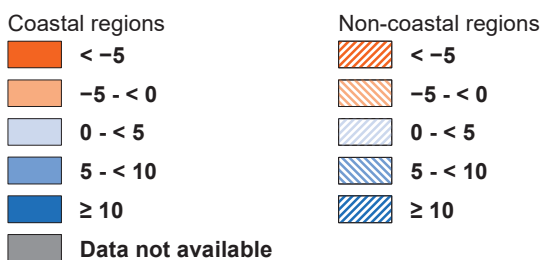
It is also interesting to contrast patterns between coastal and non-coastal regions: for example, in France and Portugal, crude rates of net migration to most coastal regions were considerably higher than for non-coastal (interior) regions. One potential explanation for these differences is that a higher proportion of retirees prefer to move to coastal regions, especially those with more clement climates; note that coastal regions in both northern France and northern Portugal experienced negative rates of net migration.

**Map 14.2: Crude rate of net migration, by coastal and aggregates of non-coastal regions, 2016**  
(per 1 000 inhabitants)



(per 1 000 inhabitants)  
EU-28 = 2.4

Administrative boundaries: © EuroGeographics © UN-FAO © INSTAT  
© Turkstat  
Cartography: Eurostat — GISCO, 05/2018



Note: EU-28, Romania and the United Kingdom, estimates. Germany and France: provisional.  
Source: Eurostat (online data code: [demo\\_r\\_gind3](#) and [demo\\_gind](#))

## Border regions

The classification of EU border and non-border regions is established for NUTS level 3 regions and is based on those regions that have population within 25 km of a land (as opposed to maritime) border. Two main types of border region can be distinguished:

- internal border regions — those regions that share a common border with regions in other EU Member States and/or [European Free Trade Area \(EFTA\)](#) countries;
- external border regions — those regions that are characterised by a common border with countries outside the EU and EFTA.

Location theories traditionally suggested that border regions were likely to suffer from lower levels of attractiveness as national boundaries divided markets. Furthermore, border regions tended to have lower levels of economic activity and poorer infrastructure, which may have prompted some enterprises to settle in regions closer to the geographical centre (where they were better connected to a critical mass of customers). The launch of the [European single market](#) in 1993 removed many of these impediments and sought to establish the four freedoms, guaranteeing the free movement of goods, services, capital and labour across the EU. As well as encouraging competition, these changes also drove a process of economic integration, which was stimulated further by successive enlargements. As a result, some border regions in the EU have found themselves at the centre of an integrated market of more than 500 million consumers, with their close proximity to a border losing some of its relevance, as people and goods flow freely between

countries. Most of the main cross-border commuting flows in the EU are centred on western Europe, with Switzerland and Luxembourg attracting large numbers of commuters from their neighbouring Member States. That said, the majority of border regions in the EU continue to underperform for a variety of socioeconomic indicators when compared with results at a national level.

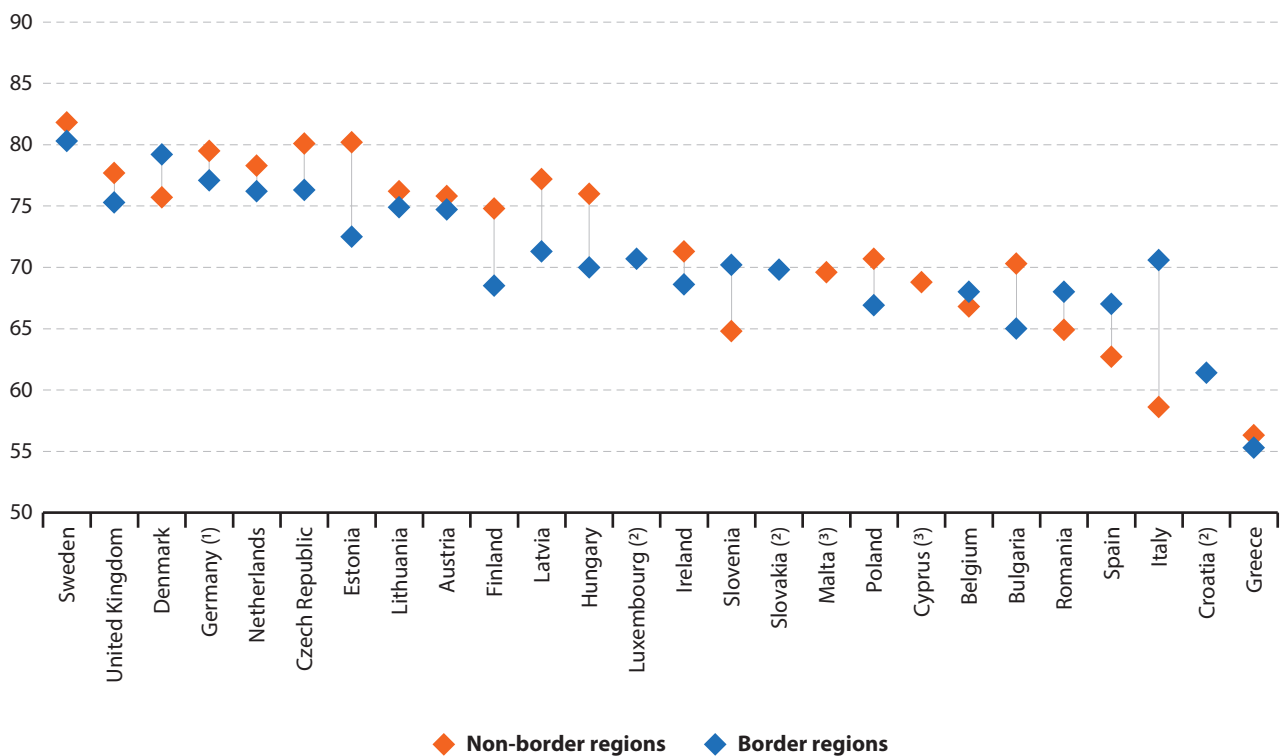
### **Employment rates tended to be lower for border regions than for non-border regions**

There are 475 NUTS level 3 regions within the EU that are considered as border regions. **Figure 14.5** aggregates this data to show [employment rates](#) among the working-age population (defined here as persons aged 20-64 years) for border and non-border regions. In a majority of the 21 EU Member States for which data exists for both border and non-border regions in 2016, the employment rate was higher for non-border regions. The biggest differences in favour of non-border regions were in several Baltic and eastern Member States, as well as Finland; many of these are characterised by the fact that they share an eastern border with neighbouring non-member countries.

On the other hand, employment rates were higher in border regions (than in non-border regions) in Italy, Slovenia, Spain, Denmark, Romania and Belgium. The situation in Italy was of particular interest insofar as the employment rate for border regions was 12.0 [percentage points](#) higher than for non-border regions and reflects, in part, relatively high numbers of Italians from the northern regions of Piemonte and Lombardia crossing the border each day to work in neighbouring Switzerland.



**Figure 14.5: Employment rates for border and non-border regions, 2016**  
(% share of people aged 20-64)



Note: ranked on national employment rates (for people aged 20-64). France and Portugal: not available.

(1) 2013.

(2) Non-border regions: not applicable.

(?) Border regions: not applicable.

Source: Eurostat (online data codes: [urt\\_lfe3emprrt](#) and [lfsa\\_ergan](#))

## Island regions

As for border regions, the territorial typology used for island regions is established on the basis of NUTS level 3 regions. They are territories with: a minimum surface of 1 km<sup>2</sup>; a minimum distance of 1 km between the island and the mainland; a resident population of more than 50 inhabitants; no fixed link (for example, a bridge or tunnel) between the island and the mainland. On this basis, there are 70 island regions in the EU, they are subdivided into the following categories:

- major island with <50 000 inhabitants;
- major island with 50 000 - <100 000 inhabitants;
- major island with 100 000 - <250 000 inhabitants;
- island with 250 000 - <1 000 000 inhabitants;
- island with ≥1 000 000 inhabitants.

As with other territorial typologies, island regions are diverse: some are popular holiday destinations (for example, Mallorca in Spain or Kyklades in Greece), others exercise considerable autonomous powers (for example, Região Autónoma da Madeira in Portugal or Åland in Finland), while others are outermost regions of the EU (for example, Guadeloupe or Mayotte in France). That said, smaller island regions may suffer from their

insularity, which often means that they have lower levels of economic activity than regions that are located within mainland Europe.

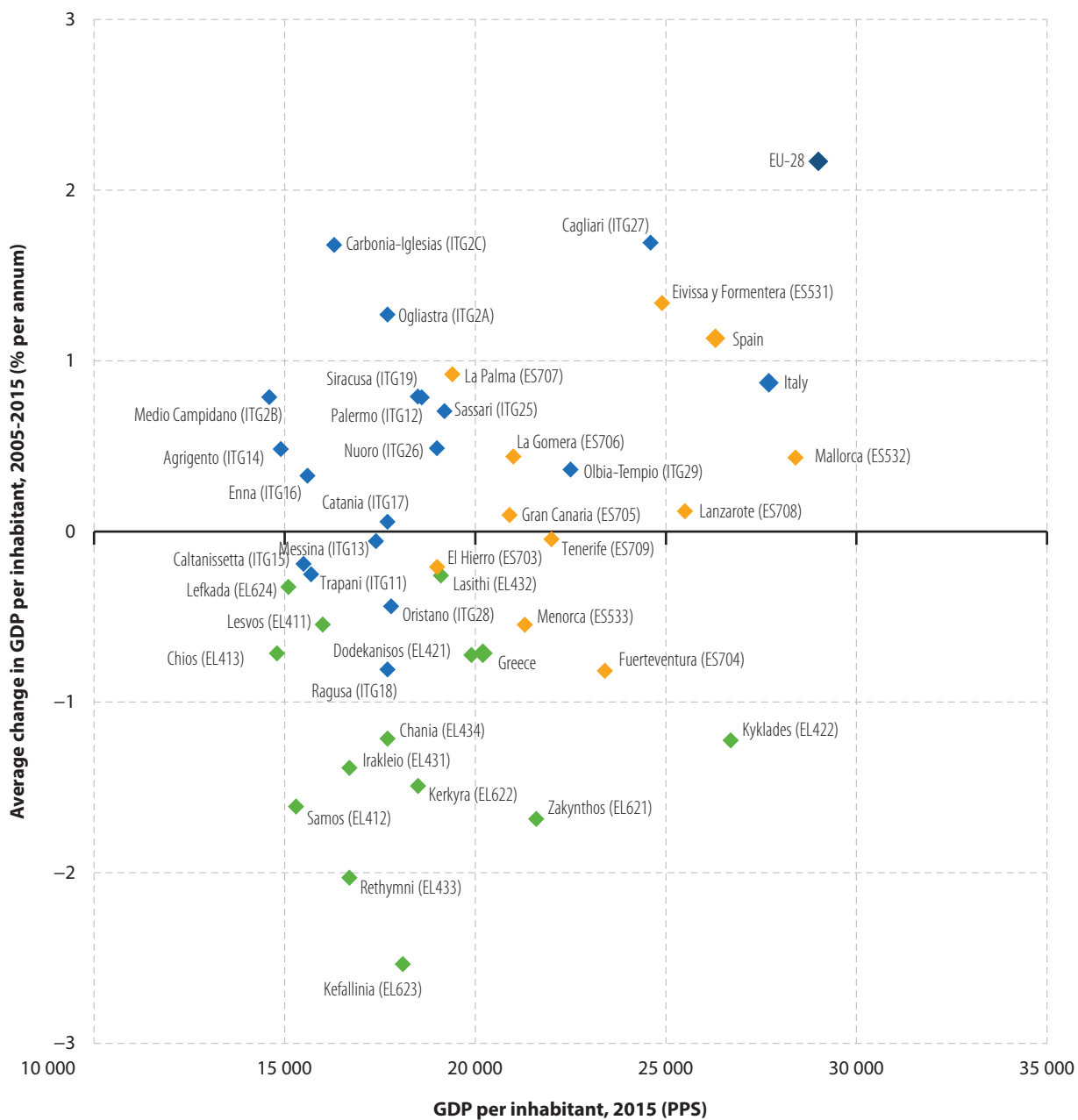
### ***GDP per inhabitant in the island regions of Greece, Spain and Italy was systematically lower than the EU-28 average***

**Figure 14.6** shows data for a selection of island regions, namely, those from Greece, Spain and Italy; note that at NUTS level 3 some of the larger Mediterranean islands — like Sardegna or Sicilia in Italy — are divided into two or more regions (this is also the case for some other islands in the EU not shown in **Figure 14.6** — for example, Ireland, Corse in France or Northern Ireland in the United Kingdom).

In 2015, GDP per inhabitant in the EU-28 averaged 29 000 PPS. The average level of economic output per inhabitant was somewhat lower in Italy (27 700 PPS) and Spain (26 300 PPS) and considerably lower in Greece (20 200 PPS). Looking in more detail, it is interesting to note that none of these island regions had a level of GDP per inhabitant that was as high as the EU-28 average in 2015. Equally, the pace of economic growth per inhabitant during the period



Figure 14.6: GDP per inhabitant and change in GDP per inhabitant, island regions in Greece, Spain and Italy, 2015 and 2005-2015 (purchasing power standards (PPS) and %, based on data in PPS)



Source: Eurostat (online data code: nama\_10r\_3gdp)



2005-2015 was systematically lower than the EU-28 average (2.2 % per annum) in each of the Greek, Spanish and Italian island regions.

Comparing the levels of economic activity between the island regions of Italy, none of them had a level of GDP per inhabitant that was above the Italian national average. In 2015, economic output per inhabitant ranged from an average of 14 600 PPS in Medio Campidano (south-east Sardegna; which was 52.7 % of the Italian national average) to 24 600 PPS in Cagliari (the capital city region of Sardegna; 88.8 %). A similar situation was observed among the Spanish island regions in 2015, although Mallorca (one of the Illes Balears) was an exception, as its GDP per inhabitant was 8.0 % higher than the Spanish national average. The lowest level of economic activity among the Spanish island regions was in El Hierro (one of the Canary Islands), as its GDP per inhabitant averaged 19 000 PPS (72.2 % of the national average). A similar analysis for the Greek island regions reveals there were two regions where GDP per inhabitant was higher than the national average in 2015: Kyklades (in the Aegean Sea; 32.2 % higher) and Zakynthos (in the Ionian Sea; 6.9 % higher). By contrast, the lowest level of GDP per inhabitant among the Greek island regions was in Chios (also in the Aegean Sea; 73.3 % of the national average).

## Mountain regions

The final typology covered in this chapter concerns mountain regions. As for border and island regions this typology is established for NUTS level 3 regions. A mountain region is defined as one in which more than 50 % of the surface is covered by topographic mountain areas, or a region in which more than 50 % of the regional population lives in a topographic mountain area. There are 322 mountain regions in the EU, they are subdivided into the following categories:

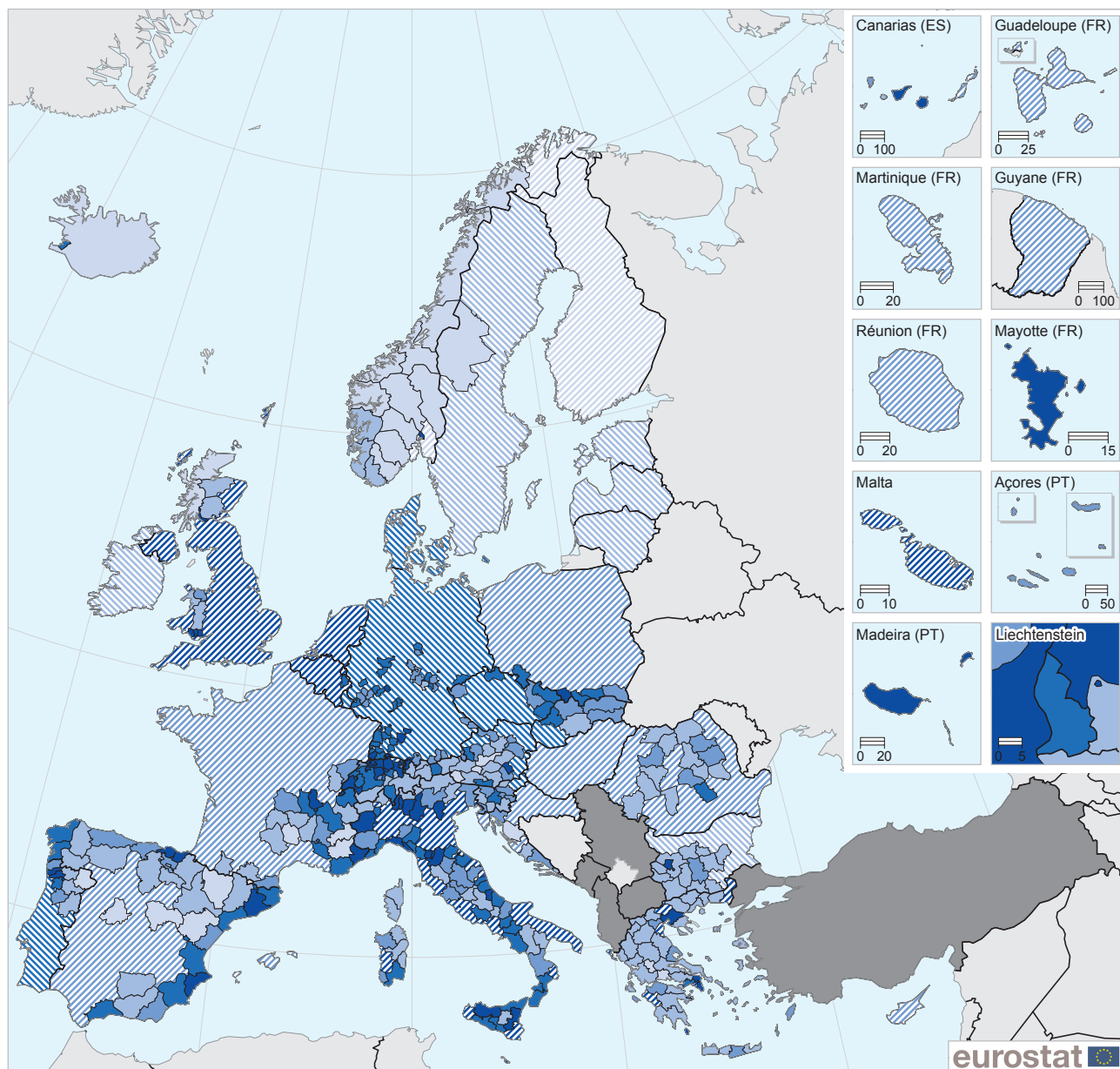
- regions where > 50 % of the total population lives in mountain areas;
- regions where > 50 % of surface area is in mountain areas;
- regions where > 50 % of population and > 50 % of the surface area are in mountain areas.

As for island regions, problems linked to marginalisation may also impact mountain regions. Other problems are congestion and overcrowding (and related problems) in major valleys that form transit routes. **Map 14.3** contrasts population density in mountain and non-mountain regions: there were, on average, 117.1 inhabitants per km<sup>2</sup> across the whole of the EU-28 in 2015. A closer analysis reveals that population density was lower than the EU-28 average for 198 mountain regions, while 124 mountain regions had higher ratios.

### *The least densely populated mountain regions in the EU were in remote areas*

There were 17 mountain regions in the EU where population density was lower than 25.0 inhabitants per km<sup>2</sup> in 2015 (as shown by the lightest shade of blue): four of these were located in Spain, three in each of France and Austria, two in each of Greece and the United Kingdom, and single regions from each of Croatia, Portugal and Sweden. It is interesting to note that the lowest population density ratios were generally recorded in remote regions rather than the highest mountain ranges (where the impact of tourism may, at least in part, have led to more economic development and higher numbers of inhabitants). There were just five mountain regions in the EU where population density fell to less than 10 inhabitants per km<sup>2</sup>: Teruel in Aragon (eastern Spain); Licko-senjska županija to the north of Zadar (Croatia); Caithness & Sutherland and Ross & Cromarty as well as Lochaber, Skye & Lochalsh, Arran & Cumbrae and Argyll & Bute in northern Scotland (the United Kingdom) and Jämtlands län (in the centre of Sweden).

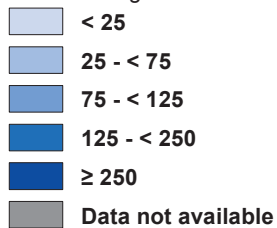
**Map 14.3: Population density, by mountain and aggregates of non-mountain regions, 2015**  
(number of inhabitants/km<sup>2</sup>)



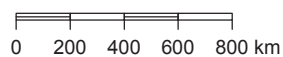
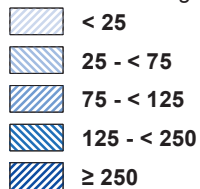
(number of inhabitants/km<sup>2</sup>)  
EU-28 = 117.1

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat  
Cartography: Eurostat — GISCO, 05/2018

**Mountain regions**



**Non-mountain regions**



Note: EU-28, Portugal and the United Kingdom, estimates. France: provisional.  
Source: Eurostat (online data codes: urt\_d3dens, reg\_area3 and demo\_r\_pjangrp3)



# Annex 1 — Classification of territorial units for statistics, 2013 version

## European Union: NUTS 2 regions (capital region is shown in bold)

### BELGIUM

#### **BE10** Région de Bruxelles-Capitale / Brussels Hoofdstedelijk Gewest

BE21	Prov. Antwerpen
BE22	Prov. Limburg (BE)
BE23	Prov. Oost-Vlaanderen
BE24	Prov. Vlaams-Brabant
BE25	Prov. West-Vlaanderen
BE31	Prov. Brabant Wallon
BE32	Prov. Hainaut
BE33	Prov. Liège
BE34	Prov. Luxembourg (BE)
BE35	Prov. Namur

### BULGARIA

BG31	Северозападен/Severozapaden
BG32	Северен централен/Severen tsentralen
BG33	Североизточен/Severoiztochen
BG34	Югоизточен/Yugoiztochen
<b>BG41</b>	<b>Югозападен/Yugozapaden</b>
BG42	Южен централен/Yuzhen tsentralen

### CZECH REPUBLIC

<b>CZ01</b>	<b>Praha</b>
CZ02	Střední Čechy
CZ03	Jihozápad
CZ04	Severozápad
CZ05	Severovýchod
CZ06	Jihovýchod
CZ07	Střední Morava
CZ08	Moravskoslezsko

### DENMARK

<b>DK01</b>	<b>Hovedstaden</b>
DK02	Sjælland
DK03	Syddanmark
DK04	Midtjylland
DK05	Nordjylland

### GERMANY

DE11	Stuttgart
DE12	Karlsruhe
DE13	Freiburg
DE14	Tübingen
DE21	Oberbayern
DE22	Niederbayern

DE23	Oberpfalz
DE24	Oberfranken
DE25	Mittelfranken
DE26	Unterfranken
DE27	Schwaben
<b>DE30</b>	<b>Berlin</b>
DE40	Brandenburg
DE50	Bremen
DE60	Hamburg
DE71	Darmstadt
DE72	Gießen
DE73	Kassel
DE80	Mecklenburg-Vorpommern
DE91	Braunschweig
DE92	Hannover
DE93	Lüneburg
DE94	Weser-Ems
DEA1	Düsseldorf
DEA2	Köln
DEA3	Münster
DEA4	Detmold
DEA5	Arnsberg
DEB1	Koblenz
DEB2	Trier
DEB3	Rheinhessen-Pfalz
DEC0	Saarland
DED2	Dresden
DED4	Chemnitz
DED5	Leipzig
DEE0	Sachsen-Anhalt
DEF0	Schleswig-Holstein
DEG0	Thüringen

### ESTONIA

#### **EE00** Eesti

### IRELAND

IE01	Border, Midland and Western
<b>IE02</b>	<b>Southern and Eastern</b>

### GREECE

<b>EL30</b>	<b>Αττική/Attiki</b>
EL41	Βόρειο Αιγαίο/Voreio Aigaio
EL42	Νότιο Αιγαίο/Notio Aigaio
EL43	Κρήτη/Kriti
EL51	Ανατολική Μακεδονία, Θράκη/Anatoliki Makedonia, Thraki
EL52	Κεντρική Μακεδονία/Kentriki Makedonia
EL53	Δυτική Μακεδονία/Dytiki Makedonia
EL54	Ήπειρος/Ipeiros
EL61	Θεσσαλία/Thessalia
EL62	Ιόνια Νησιά/Ionia Nisia

EL63	Δυτική Ελλάδα/Dytiki Ellada
EL64	Στερεά Ελλάδα/Sterea Ellada
EL65	Πελοπόννησος/Peloponnisos

## SPAIN

ES11	Galicia
ES12	Principado de Asturias
ES13	Cantabria
ES21	País Vasco
ES22	Comunidad Foral de Navarra
ES23	La Rioja
ES24	Aragón

### ES30 Comunidad de Madrid

ES41	Castilla y León
ES42	Castilla-La Mancha
ES43	Extremadura
ES51	Cataluña
ES52	Comunidad Valenciana
ES53	Illes Balears
ES61	Andalucía
ES62	Región de Murcia
ES63	Ciudad Autónoma de Ceuta
ES64	Ciudad Autónoma de Melilla
ES70	Canarias

## FRANCE

### FR10 Île de France

FR21	Champagne-Ardenne
FR22	Picardie
FR23	Haute-Normandie
FR24	Centre
FR25	Basse-Normandie
FR26	Bourgogne
FR30	Nord - Pas-de-Calais
FR41	Lorraine
FR42	Alsace
FR43	Franche-Comté
FR51	Pays de la Loire
FR52	Bretagne
FR53	Poitou-Charentes
FR61	Aquitaine
FR62	Midi-Pyrénées
FR63	Limousin
FR71	Rhône-Alpes
FR72	Auvergne
FR81	Languedoc-Roussillon
FR82	Provence-Alpes-Côte d'Azur
FR83	Corse
FRA1	Guadeloupe
FRA2	Martinique
FRA3	Guyane
FRA4	La Réunion
FRA5	Mayotte

## CROATIA

HR03	Jadranska Hrvatska
<b>HR04</b>	<b>Kontinentalna Hrvatska</b>

## ITALY

ITC1	Piemonte
ITC2	Valle d'Aosta/Vallée d'Aoste
ITC3	Liguria
ITC4	Lombardia
ITF1	Abruzzo
ITF2	Molise
ITF3	Campania
ITF4	Puglia
ITF5	Basilicata
ITF6	Calabria
ITG1	Sicilia
ITG2	Sardegna
ITH1	Provincia Autonoma di Bolzano/Bozen
ITH2	Provincia Autonoma di Trento
ITH3	Veneto
ITH4	Friuli-Venezia Giulia
ITH5	Emilia-Romagna
ITI1	Toscana
ITI2	Umbria
ITI3	Marche
<b>ITI4</b>	<b>Lazio</b>

## CYPRUS

<b>CY00</b>	<b>Κύπρος/Κύπρος</b>
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## LATVIA

<b>LV00</b>	<b>Latvija</b>
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## LITHUANIA

<b>LT00</b>	<b>Lietuva</b>
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## LUXEMBOURG

<b>LU00</b>	<b>Luxembourg</b>
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## HUNGARY

### HU10 Közép-Magyarország

HU21	Közép-Dunántúl
HU22	Nyugat-Dunántúl
HU23	Dél-Dunántúl
HU31	Észak-Magyarország
HU32	Észak-Alföld
HU33	Dél-Alföld

## MALTA

<b>MT00</b>	<b>Malta</b>
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## NETHERLANDS

NL11	Groningen
NL12	Friesland (NL)
NL13	Drenthe
NL21	Overijssel
NL22	Gelderland
NL23	Flevoland

NL31	Utrecht
<b>NL32</b>	<b>Noord-Holland</b>
NL33	Zuid-Holland
NL34	Zeeland
NL41	Noord-Brabant
NL42	Limburg (NL)

## AUSTRIA

AT11	Burgenland
AT12	Niederösterreich
<b>AT13</b>	<b>Wien</b>
AT21	Kärnten
AT22	Steiermark
AT31	Oberösterreich
AT32	Salzburg
AT33	Tirol
AT34	Vorarlberg

## POLAND

PL11	Łódzkie
<b>PL12</b>	<b>Mazowieckie</b>
PL21	Małopolskie
PL22	Śląskie
PL31	Lubelskie
PL32	Podkarpackie
PL33	Świętokrzyskie
PL34	Podlaskie
PL41	Wielkopolskie
PL42	Zachodniopomorskie
PL43	Lubuskie
PL51	Dolnośląskie
PL52	Opolskie
PL61	Kujawsko-pomorskie
PL62	Warmińsko-mazurskie
PL63	Pomorskie

## PORTUGAL

PT11	Norte
PT15	Algarve
PT16	Centro (PT)
<b>PT17</b>	<b>Área Metropolitana de Lisboa</b>
PT18	Alentejo
PT20	Região Autónoma dos Açores
PT30	Região Autónoma da Madeira

## ROMANIA

RO11	Nord-Vest
RO12	Centru
RO21	Nord-Est
RO22	Sud-Est
RO31	Sud - Muntenia
<b>RO32</b>	<b>București - Ilfov</b>
RO41	Sud-Vest Oltenia
RO42	Vest

## SLOVENIA

SI03	Vzhodna Slovenija
<b>SI04</b>	<b>Zahodna Slovenija</b>

## SLOVAKIA

<b>SK01</b>	<b>Bratislavský kraj</b>
SK02	Západné Slovensko
SK03	Stredné Slovensko
SK04	Východné Slovensko

## FINLAND

FI19	Länsi-Suomi
<b>FI1B</b>	<b>Helsinki-Uusimaa</b>
FI1C	Etelä-Suomi
FI1D	Pohjois- ja Itä-Suomi
FI20	Åland

## SWEDEN

<b>SE11</b>	<b>Stockholm</b>
SE12	Östra Mellansverige
SE21	Småland med öarna
SE22	Sydsverige
SE23	Västsverige
SE31	Norra Mellansverige
SE32	Mellersta Norrland
SE33	Övre Norrland

## UNITED KINGDOM

UKC1	Tees Valley and Durham
UKC2	Northumberland and Tyne and Wear
UKD1	Cumbria
UKD3	Greater Manchester
UKD4	Lancashire
UKD6	Cheshire
UKD7	Merseyside
UKE1	East Yorkshire and Northern Lincolnshire
UKE2	North Yorkshire
UKE3	South Yorkshire
UKE4	West Yorkshire
UKF1	Derbyshire and Nottinghamshire
UKF2	Leicestershire, Rutland and Northamptonshire
UKF3	Lincolnshire
UKG1	Herefordshire, Worcestershire and Warwickshire
UKG2	Shropshire and Staffordshire
UKG3	West Midlands
UKH1	East Anglia
UKH2	Bedfordshire and Hertfordshire
UKH3	Essex
<b>UKI3</b>	<b>Inner London - West</b>
<b>UKI4</b>	<b>Inner London - East</b>
UKI5	Outer London - East and North East
UKI6	Outer London - South
UKI7	Outer London - West and North West
UKJ1	Berkshire, Buckinghamshire and Oxfordshire

UKJ2	Surrey, East and West Sussex
UKJ3	Hampshire and Isle of Wight
UKJ4	Kent
UKK1	Gloucestershire, Wiltshire and Bristol/Bath area
UKK2	Dorset and Somerset
UKK3	Cornwall and Isles of Scilly
UKK4	Devon
UKL1	West Wales and The Valleys
UKL2	East Wales
UKM2	Eastern Scotland
UKM3	South Western Scotland
UKM5	North Eastern Scotland
UKM6	Highlands and Islands
UKN0	Northern Ireland

## EFTA countries: statistical regions at level 2 (capital region is shown in bold)

### ICELAND

**IS00** Ísland

### LIECHTENSTEIN

**LI00** Liechtenstein

### NORWAY

<b>NO01</b>	<b>Oslo og Akershus</b>
NO02	Hedmark og Oppland
NO03	Sør-Østlandet
NO04	Agder og Rogaland
NO05	Vestlandet
NO06	Trøndelag
NO07	Nord-Norge

### SWITZERLAND

CH01	Région lémanique
<b>CH02</b>	<b>Espace Mittelland</b>
CH03	Nordwestschweiz
CH04	Zürich
CH05	Ostschweiz
CH06	Zentralschweiz
CH07	Ticino

## Candidate countries: statistical regions at level 2 (capital region is shown in bold)

### MONTENEGRO

**ME00** Црна Гора/Crna Gora

### THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA

**МК00<sup>(1)</sup>** Поранешна југословенска Република Македонија/Poranеšna jugoslovenska Republika Makedonija

### SERBIA

<b>RS11</b>	<b>Београдски регион/Beogradski region</b>
RS12	Регион Војводине/Region Vojvodine
RS21	Регион Шумадије и Западне Србије/Region Šumadije i Zapadne Srbije
RS22	Регион Јужне и Источне Србије/Region Južne i Istočne Srbije

### ALBANIA

AL01	North
<b>AL02</b>	<b>Centre</b>
AL03	South

### TURKEY

TR10	İstanbul
TR21	Tekirdağ, Edirne, Kırklareli
TR22	Balıkesir, Çanakkale
TR31	İzmir
TR32	Aydın, Denizli, Muğla
TR33	Manisa, Afyonkarahisar, Kütahya, Uşak
TR41	Bursa, Eskişehir, Bilecik
TR42	Kocaeli, Sakarya, Düzce, Bolu, Yalova
<b>TR51</b>	<b>Ankara</b>
TR52	Konya, Karaman
TR61	Antalya, Isparta, Burdur
TR62	Adana, Mersin
TR63	Hatay, Kahramanmaraş, Osmaniye
TR71	Kırıkkale, Aksaray, Niğde, Nevşehir, Kırşehir
TR72	Kayseri, Sivas, Yozgat
TR81	Zonguldak, Karabük, Bartın
TR82	Kastamonu, Çankırı, Sinop
TR83	Samsun, Tokat, Çorum, Amasya
TR90	Trabzon, Ordu, Giresun, Rize, Artvin, Gümüşhane
TRA1	Erzurum, Erzincan, Bayburt
TRA2	Ağrı, Kars, Iğdır, Ardahan
TRB1	Malatya, Elazığ, Bingöl, Tunceli
TRB2	Van, Muş, Bitlis, Hakkari
TRC1	Gaziantep, Adıyaman, Kilis
TRC2	Şanlıurfa, Diyarbakır
TRC3	Mardin, Batman, Şırnak, Siirt

<sup>(1)</sup> Provisional code which does not prejudice in any way the definitive nomenclature for the former Yugoslav Republic of Macedonia, which will be agreed following the conclusion of negotiations currently taking place on this subject at the United Nations.

## Annex 2 — Other classifications used in this publication

### City statistics data collection (previously called Urban Audit):

See: <http://ec.europa.eu/eurostat/web/cities/overview> and [http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:City\\_data\\_collection](http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:City_data_collection)

### Degree of urbanisation classification

See: <http://ec.europa.eu/eurostat/web/degree-of-urbanisation/overview> and [http://ec.europa.eu/eurostat/ramon/miscellaneous/index.cfm?TargetUrl=DSP\\_DEGURBA](http://ec.europa.eu/eurostat/ramon/miscellaneous/index.cfm?TargetUrl=DSP_DEGURBA)

### International statistical classification of diseases and related health problems: ICD 2010

See: <http://apps.who.int/classifications/icd10/browse/2010/en>

### International standard classification of education: ISCED 2011

See: <http://www.uis.unesco.org/Education/Documents/isced-2011-en.pdf>

### Statistical classification of economic activities in the European Community: NACE Rev. 2

See: <http://ec.europa.eu/eurostat/web/nace-rev2>



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# Eurostat regional yearbook 2018

Statistical information is an important tool for understanding and quantifying the impact of political decisions in a specific territory or region. The *Eurostat regional yearbook 2018* gives a detailed picture relating to a broad range of statistical topics across the regions of the EU Member States, as well as the regions of the EFTA and candidate countries.

Each chapter presents statistical information in maps, tables, figures and infographics, accompanied by a descriptive analysis highlighting the main findings. Regional indicators are presented for the following 12 subjects: regional policies and European Commission priorities, population, health, education and training, the labour market, the economy, structural business statistics, research and innovation, the digital economy and society, tourism, transport, and agriculture. In addition, two special chapters are included in this edition: a focus on European cities and a focus on regional typologies.

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