

Eurostat regional yearbook

2019 edition



**Eurostat regional
yearbook**

2019 edition

Printed by Imprimerie Bietlot in Belgium

Manuscript completed in June 2019.

The European Commission is not liable for any consequence stemming from the reuse of this publication.

Luxembourg: Publications Office of the European Union, 2019

© European Union, 2019

Reuse is authorised provided the source is acknowledged.

The reuse policy of European Commission documents is regulated by Decision 2011/833/EU (OJ L 330, 14.12.2011, p. 39).

For any use or reproduction of photos or other material that is not under the copyright of the European Union, permission must be sought directly from the copyright holders.

Copyright for photographs: cover photo: © elina/Shutterstock; foreword: © European Union; introduction: © Production Perig/Shutterstock; EU policies for regions and cities: © encierro/Shutterstock; population: © manpeppe/Shutterstock; health: © Khakimullin Aleksandr/Shutterstock; education and training: © ESB Professional/Shutterstock; labour market: © ESB Professional/Shutterstock; economy: © sculpies/Shutterstock; structural business statistics: © Christian Lagerek/Shutterstock; research and innovation: © Alexander Raths/Shutterstock; digital economy and society: © wavebreakmedia/Shutterstock; tourism: © Christophe Demunter; transport: © TTstudio/Shutterstock; agriculture: © levgenii Meyer/Shutterstock; focus on European cities: © Feel good studio/Shutterstock; Focus on socioeconomic development: © Christian Mueller /Shutterstock.

For more information, please consult: <https://ec.europa.eu/eurostat/about/policies/copyright>

Theme: General and regional statistics

Collection: Statistical books

Print: ISBN 978-92-76-03504-6
ISSN 1830-9674
doi:10.2785/411990
Cat. No: KS-HA-19-001-EN-C

PDF: ISBN 978-92-76-03505-3
ISSN 2363-1716
doi:10.2785/1522
Cat. No: KS-HA-19-001-EN-N

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 a territory, complementing information for the EU, 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. For this edition of the *Eurostat regional yearbook* we have introduced NUTS 2016 as the basis for classifying the EU's regions, while a set of statistical regions has also been added for one of the enlargement countries, Serbia.

The *Eurostat regional yearbook* is based on the most recent data available, usually for 2017 or 2018. Whenever possible, it also provides analyses of changes over a 5 or 10-year period. These analyses are supported by a range of maps, tables, figures and infographics which are designed to highlight regional variations.

As well as standard chapters covering social, economic and environmental issues, the 2019 edition also has a special focus on city statistics and another on regional socioeconomic developments; the latter develops the theme of temporal analyses by looking in more detail at how regions have fared — either forging ahead with dynamic growth or being left behind — since the global financial and economic crisis.

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 2019* 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: EU policies for regions and cities, 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 socioeconomic developments after the global financial and economic crisis.

Chief editor

Mariana Kotzeva

Editors

Teodóra Brandmüller and Åsa Önnersfors
(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 Önnersfors, 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: <https://ec.europa.eu/eurostat/>
E-mail: estat-user-support@ec.europa.eu

Data extraction

The data presented within this publication were extracted during March and April 2019.

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: <https://ec.europa.eu>

Acknowledgements

Coordination group: Timothy Allen, Louise Corselli-Nordblad, Helene Strandell and Pascal Wolff (Eurostat, Unit B.4., Dissemination and user support), Teodóra Brandmüller, Åsa Önnersfors, Petronela Reinecke and Ruxandra Roman-Enescu (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, Teodóra Brandmüller and Oliver Müller (Eurostat, Unit E.4., Regional statistics and geographical information)
- **EU policies for regions and cities:** Simon Bley and Fritz Gebhard (Eurostat, Unit E.2., Environmental statistics and accounts; Sustainable development); Marta Beck-Domžalska and Andrea Gallelli (Eurostat, Unit F.1., Social indicators: Methodology and development; Relations with users); 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, Ángeles Hermosa López and Christopher Jung (Eurostat, Unit F.5., Education, health and social protection); Lucian Agafitei and Emilio di Meglio (Eurostat, Unit F.4., Income and living conditions; Quality of life)
- **Education and training:** Alessandro Albano, 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); Mélina Antuofermo, Fabienne Montaigne and Hartmut Schrör (Eurostat, Unit F.3., Labour market and lifelong learning)
- **Economy:** Luis Biedma, Panagiota Bisiela and Nils Thoma (Eurostat, Unit C.2., National accounts production)
- **Structural business statistics:** Tatiana Mrljanova, Claudia Pelzer, Samuli Rikama and Sarmite Visocka (Eurostat, Unit G.2., European businesses)
- **Research and innovation:** Valdas Ambraziūnas, Urška Arsenjuk, Gregor Kyi and Stefania Panaitescu (Eurostat, Unit G.4., Innovation and digitalisation)
- **Digital economy and society:** Michaela Grell, Bettina Obringer 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 and Georgios Xenellis (Eurostat, Unit E.3., Transport)
- **Agriculture:** Edward Cook, Oscar Gomez Prieto, Marjo Kasanko, Pol Marquer, Helena Ramos and Johan Selenius (Eurostat, Unit E.1., Agriculture and fisheries)
- **Focus on European cities:** Filipe Alves, Valeriya Angelova-Tosheva, Teodóra Brandmüller and Petronela Reinecke (Eurostat, Unit E.4., Regional statistics and geographical information)
- **Focus on regional socioeconomic developments:** Luis Biedma and Panagiota Bisiela (Eurostat, Unit C.2., National accounts production); Teodóra Brandmüller and Daniela Sciranková (Eurostat, Unit E.4., Regional statistics and geographical information); Giampaolo Lanzieri and Gabriela Senchea-Badea (Eurostat, Unit F.2., Population and migration); Elodie Cayotte, Sabine Gagel, Fabienne Montaigne and Hartmut Schrör (Eurostat, Unit F.3., Labour market and lifelong learning)

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 Daiva de Kort-Paplauskaitė, Unit B.2., Publications

Contents

Foreword	3
Abstract	4
Acknowledgements	5
Introduction	7
1. EU policies for regions and cities	17
2. Population	25
3. Health	39
4. Education and training	55
5. Labour market	73
6. Economy	87
7. Structural business statistics	101
8. Research and innovation	117
9. Digital economy and society	131
10. Tourism	143
11. Transport	155
12. Agriculture	169
13. Focus on European cities	181
14. Focus on regional socioeconomic developments	195
Annexes	217

Introduction





Eurostat, the statistical office of the **European Union (EU)**, collects, compiles and publishes statistics for the **EU** and **euro area** aggregates, as well as national, regional and other subnational data, primarily for the 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.

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 476 000 inhabitants on 1 January 2018, or Luxembourg, which had 602 000 inhabitants, with larger Member States, such as Germany, the most populous EU Member State, where there were 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 is an example of a more monocentric pattern of development, as its economic activity is more concentrated in and around the capital city of Paris.

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)**.

For more information:
[Methodological manual on territorial typologies](#), Eurostat (2018)

Table 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	Urban-rural typology: predominantly urban regions; intermediate regions; predominantly rural regions	Metropolitan regions	Coastal regions	Border regions	Island regions	Mountain regions
Local typologies:	Local administrative units (LAU)	Degree of urbanisation (°): cities; towns and suburbs; rural areas	City definitions: cities; functional urban areas (FUA) = cities and their commuting zones	Coastal areas			
Grid typologies:	Grid cells (1 km²)	Cluster types: 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)

(°) 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



STATISTICS ON REGIONS

At the heart of regional statistics is the **NUTS** classification — a classification of territorial units for statistics. Note that since the last edition of the publication the 2016 version of the NUTS classification has been introduced. The NUTS regional classification for EU Member States is based on a hierarchy of regions and subdivides each 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, Luxembourg and Malta are each composed of a single NUTS level 2 region according to the [2016 version of the NUTS classification](#). Among non-member countries covered by this publication, a similar situation exists in Iceland, Liechtenstein, Montenegro and North Macedonia, which are each composed of a single level 2 region. Table 2 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*.

Most of the regional statistics shown in the *Eurostat regional yearbook* are for NUTS level 2 regions. However, 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). The more detailed statistics are only available for a limited selection of indicators that include agriculture, demography, economic accounts, business demography and transport.

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.

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

Table 2: Number of NUTS 2016 regions and statistical regions by country

	NUTS level 1	NUTS level 2	NUTS level 3
EU-28	104	281	1 348
Belgium	3	11	44
Bulgaria	2	6	28
Czechia	1	8	14
Denmark	1	5	11
Germany	16	38	401
Estonia	1	1	5
Ireland	1	3	8
Greece	4	13	52
Spain	7	19	59
France	14	27	101
Croatia	1	2	21
Italy	5	21	110
Cyprus	1	1	1
Latvia	1	1	6
Lithuania	1	2	10
Luxembourg	1	1	1
Hungary	3	8	20
Malta	1	1	2
Netherlands	4	12	40
Austria	3	9	35
Poland	7	17	73
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	41	179
	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
North Macedonia	1	1	8
Albania	1	3	12
Serbia	2	4	25
Turkey	12	26	81

Source: Eurostat

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 fourth regular amendment of the NUTS classification ([Commission Regulation \(EU\) No 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 is the basis

for classifying regional statistics as used in the 2019 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 2016; 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).

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 individual NUTS regions (see Table 3). 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 of NUTS, regions are created by aggregating smaller administrative regions.

In a similar vein to the NUTS classification, 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.

Table 3: Population size constraints for NUTS 2016 regions
(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



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 (LAU 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 km² in combination with a minimum population threshold (see Table 4 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, education and training](#), [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 50 000 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:

[Methodological manual on territorial typologies](#), Eurostat (2018)

Table 4: Spatial concepts used in the degree of urbanisation

Grid cell concept	Criteria
High density clusters (urban centres)	Population ≥ 50 000 inhabitants and contiguous grid cells of 1 km ² with ≥ 1 500 inhabitants per km ²
Urban clusters	Population ≥ 5 000 inhabitants and contiguous grid cells of 1 km ² with ≥ 300 inhabitants per km ²
Rural grid cells	Grid cells outside urban clusters and urban centres

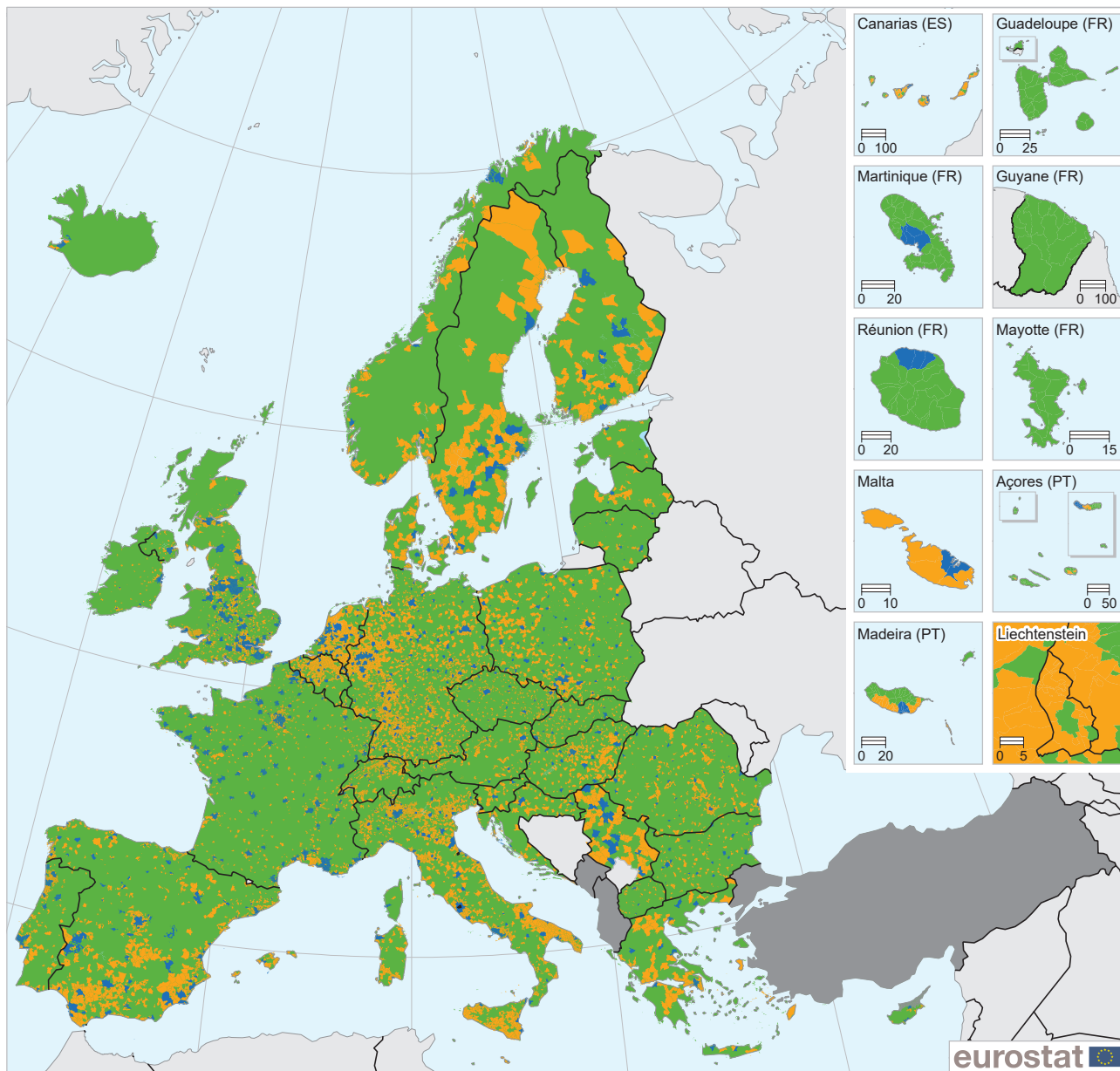
Degree of urbanisation concept	Alternative terminology	UN classification	Criteria
Cities	Densely populated areas	Large urban areas	≥ 50 % of the population lives in high-density clusters
Towns and suburbs	Intermediate urbanised areas	Small urban areas	< 50 % of the population lives in rural grid cells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

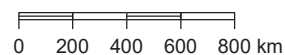


Map 1: Degree of urbanisation for local administrative units (LAU)



Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 06/2019

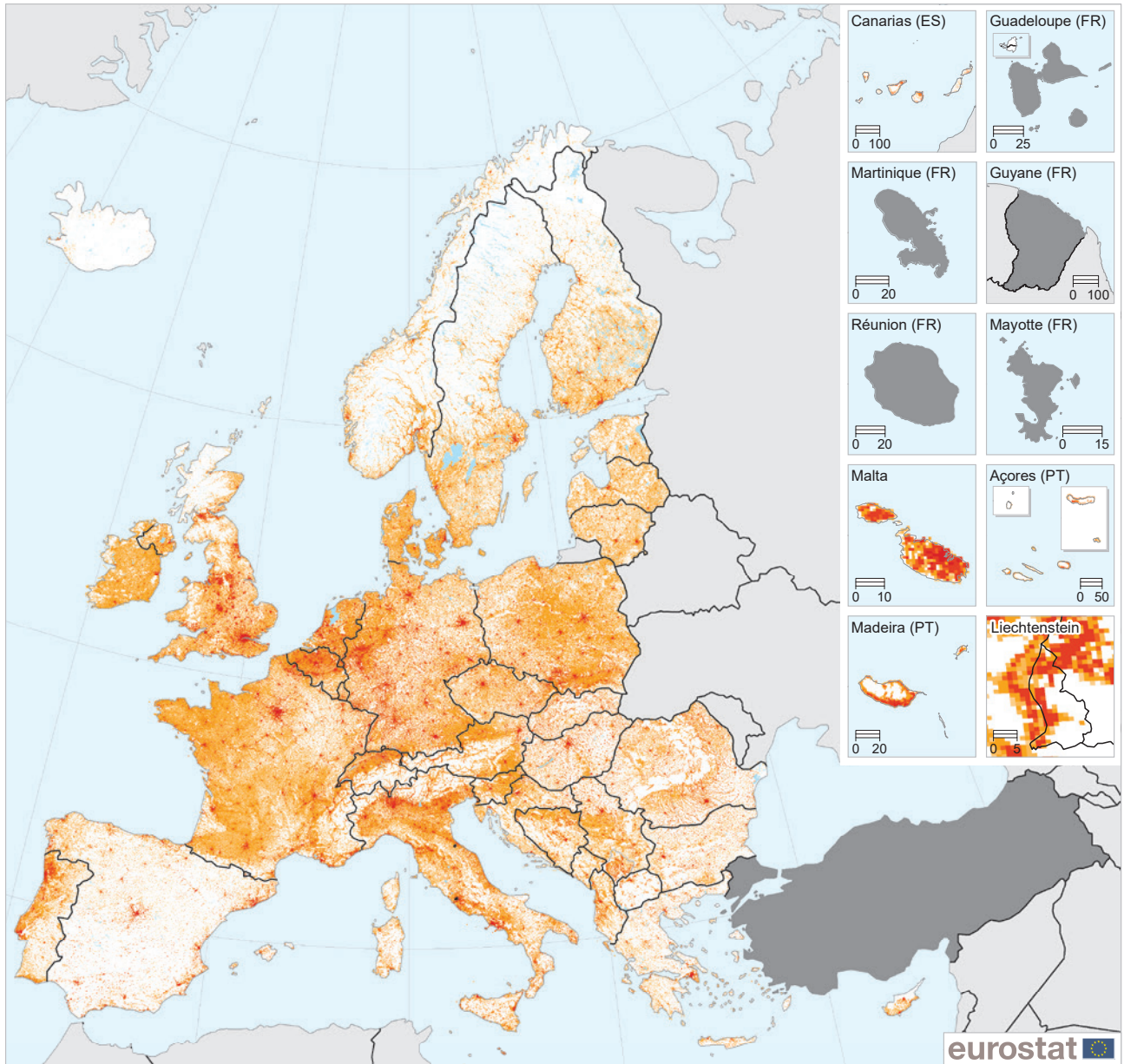
- Cities**
(Densely populated areas: at least 50 % of the population lives in urban centres)
- Towns and suburbs**
(Intermediate density areas: less than 50 % of the population lives in rural grid cells and less than 50 % of the population lives in urban centres)
- Rural areas**
(Thinly populated areas: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



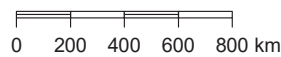
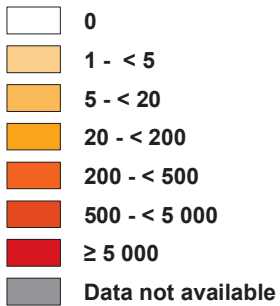
Note: based on population grid from 2011 and LAU 2016.

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 km²)



Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 06/2019



Source: JRC, Eurostat, Geostat population grid 2011

STATISTICS ON CITIES

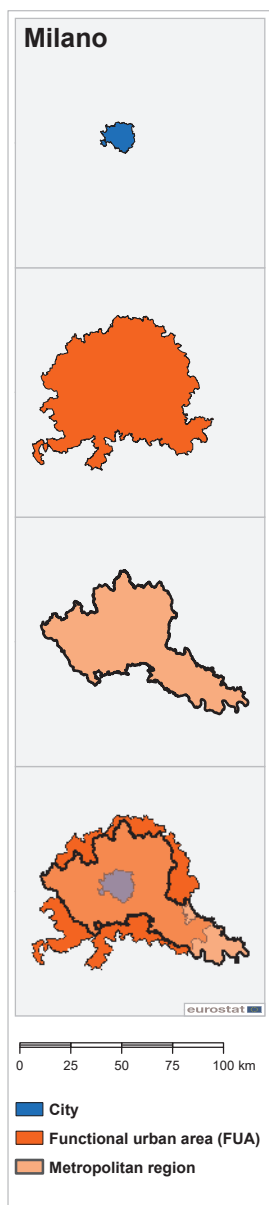
European cities face a variety of challenges, from poverty, crime and social exclusion, to urban sprawl, pollution and counteracting climate change. By contrast, cities also have considerable potential for attracting investment, people and services, encouraging research, creativity and innovation. Cities 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.

Cities have become more prominent in the policy debate both at the European and global level. The [urban agenda](#)

for the EU was approved in 2016 with three pillars: better regulation, better funding and better knowledge and data. Cohesion policy has a strong urban dimension with dedicated funding for urban development, urban innovative actions and policy exchanges between cities. The European Commission proposal for the next [multiannual financial framework for the period 2021-2027](#) (COM(2018) 321 final) has requirements for 'thematic concentration and urban earmarking'. One of five priority policy objectives is 'a Europe closer to citizens by fostering the sustainable and integrated development of urban, rural and coastal areas and local initiatives'.

At the global level, UN-Habitat launched its New Urban Agenda in 2016. The UN Sustainable Development Goal (SDG) 11 is dedicated to cities and settlements.

Figure 1: City and related typologies — an example for Milano



A **city** is a local administrative unit (LAU) where the majority of the population lives in an urban centre of at least 50 000 inhabitants. The city of Milano has 1 346 000 inhabitants.

A **functional urban area** consists of a city and its commuting zone. The functional urban area of Milano has 5 111 000 inhabitants.

Metropolitan regions are NUTS 3 regions or a combination of NUTS 3 regions which represent all agglomerations of at least 250 000 inhabitants. These agglomerations were identified using the functional urban area. Each agglomeration is represented by at least one NUTS 3 region. If in an adjacent NUTS 3 region more than 50 % of the population also lives within this agglomeration, it is included in the metropolitan region. The metropolitan region of Milano has 4 316 000 inhabitants.

Source: Eurostat



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 50 000 inhabitants.
- A greater city is an approximation of the urban centre when this stretches beyond the administrative city boundaries.
- A functional urban area consists of the city and its surrounding commuting zone.

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.

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

For more information:

[Methodological manual on city statistics](#), Eurostat (2017)
[Methodological manual on territorial typologies](#), Eurostat (2018)

A short reading guide

COVERAGE AND TIMELINESS

The *Eurostat regional yearbook* contains statistics for the 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, North Macedonia, Albania, Serbia and Turkey). The designations employed and the presentation of material in maps, tables and figures do not imply the expression of any opinion whatsoever on the part of the EU 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. In general, 2018 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 2017, 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

2018), the economy, tourism, transport (some data are for 2016) 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 relating to the status of the data, for example, detailing whether the data are estimated, provisional or forecasted. These flags have 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

EU policies for regions and cities





European policymaking is inherently multidimensional: on the one hand, it has to encompass a broad framework providing objectives for the [European Union \(EU\)](#) as a whole, while on the other it needs to acknowledge the often specific needs of national and subnational territories. Recent challenges such as the global financial and economic crisis, the impact of globalisation, increasing levels of income inequality, widespread disillusionment with the political class, or security concerns from terror attacks provide just a few examples of the two-sided need to deliver both global and local solutions in a coherent manner.

One of the EU's main challenges is to ensure that all policy 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

WHAT IS COHESION POLICY?

EU cohesion policy is designed to promote an overall harmonious development of the EU by strengthening its economic, social and territorial cohesion. In doing so it promotes job creation, business competitiveness, economic growth and [sustainable development](#) across regions and cities, aiming to improve the overall quality of life experienced by people in the EU.

The bulk of cohesion policy funding is concentrated on less developed regions of the EU, with the goal of helping to reduce economic, social and territorial disparities. 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 — this is equivalent to almost one third of the total EU budget.

Cohesion policy is delivered through a number of funds: the [European regional development fund \(ERDF\)](#) and the [cohesion fund](#). Together with the [European social fund \(ESF\)](#), the [European agricultural fund for rural development \(EAFRD\)](#) and the [European maritime](#)

[and fisheries fund \(EMFF\)](#), they make up the [European structural and investment funds \(ESIF\)](#).

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 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 has allocated 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 and missing links in network infrastructures; enhancing institutional capacity.

The European social fund aims to improve employment and education opportunities in the EU, as well as the situation of the most vulnerable people. More than EUR 80 billion has been earmarked for human capital investment across the EU Member States during the period 2014-2020. It 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.

For more information:

[Directorate-General for Regional and Urban Policy](#) — regional policy, the EU's main 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; 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

Statistics from regional accounts are used in the allocation of European structural and investment funds, with the **NUTS** classification providing the basis for regional boundaries and geographic eligibility.

During the period 2014-2020, eligibility for the European regional development fund and the European social fund was calculated on the basis of regional GDP per inhabitant (in **PPS**) averaged for 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 75 %-90 % of the EU-27 average; and
- more developed regions, where GDP per inhabitant was more than 90 % of the EU-27 average.

Eligibility for the cohesion fund was initially calculated on the basis of GNI per inhabitant (in **PPS**) averaged over the period 2008-2010. It was subsequently revised, based on information for GNI per inhabitant averaged over the period 2012-2014. Bulgaria, Czechia, Estonia, Greece, Croatia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Portugal, Romania, Slovenia and Slovakia are all eligible for cohesion fund support as of 1 January 2017.

The bulk of the total budget for cohesion policy in the EU is provided to regions whose development lags behind the EU average; indeed, more than half of the total budget for cohesion policy was given over to less developed regions that were predominantly located in the south or the east of the EU, the **Baltic Member States** and several outermost regions.

COHESION POLICY: IMPLEMENTATION

European structural and investment funds are attributed through a process which involves EU, national, regional and local authorities, as well as social partners and organisations from civil society. Each EU Member State produces a draft partnership agreement and draft operational programme, which provides information for their regional strategy and a list of proposals for programmes. Having negotiated the contents of these with the **European Commission**, national/regional managing authorities in each of the Member States then select, monitor and evaluate the projects. The European Commission commits funds to allow the managing authorities to start spending funds on their programmes; payments are made on the basis of certified expenditure and a series of reports.

The rules for cohesion policy funding during the period 2014-2020 have been simplified and harmonised so that the same rules now apply to all of the different funds. Procedures have been adapted so they are 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, cohesion policy is (in the current funding period) closely integrated with the **Europe 2020 strategy** and the **EU's investment plan for Europe**. 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.

COHESION POLICY: FUTURE PLANS?

At the time of writing, European institutions are in the process of discussing the delivery and implementation of cohesion policy post-2020; a range of proposals for regulations covering the period 2021-2027 are already in place and these are designed to focus resources on five principal objectives: a smarter Europe; a greener, carbon-free Europe; a more connected Europe; a more social Europe; a Europe that is closer to its citizens.

For more information:

[Regional development and cohesion — proposals for legal texts covering the period 2021-2027](#)

Other policy areas that impact on regions

While the EU's regional policy can play an important role in delivering broader policy goals in range of socioeconomic fields, such as education, the labour market, energy, research and development or the environment, other EU policy areas can, in a similar way, have an impact on regions across the EU.

URBAN DEVELOPMENT POLICY 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.

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.

During the 2014-2020 funding period, European policymakers recognised the important role that could be played by the urban dimension of regional policy, in particular measures designed to assist the fight against poverty and social exclusion. By doing so, the EU placed urban development at the heart of cohesion policy, directing at least half of the resources foreseen under the European regional development fund (ERDF) to be invested in urban areas. The European Commission estimates that during this six-year period some EUR 10 billion from the ERDF will be allocated to sustainable urban development, covering around 750 different European cities, by:

- 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 ERDF 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.

In July 2014, a European Commission Communication *The urban dimension of EU policies — key features of an EU urban agenda* (COM(2014) 490 final) discussed a range of options for developing an urban agenda for the EU, 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 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 of best practices.

For more information:

[Urban development policy in the EU](#)
[Urban agenda for the EU](#)

RURAL DEVELOPMENT POLICY 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 territorial make-up: for example, Ireland, Sweden and Finland are very rural, whereas the Benelux Member States and Malta are characterised by much higher levels of urbanisation. Equally, within individual Member States there can be a broad range of different typologies: for example, the densely-populated, urbanised areas of Nordrhein-Westfalen in the west of Germany may be contrasted with the sparsely-populated, largely rural areas of Mecklenburg-Vorpommern in the north-east.

The EU's rural development policy is designed to help rural areas meet a wide range of economic, social and environmental challenges. The [European agricultural fund for rural development \(EAFRD\)](#) provides finance for the EU's rural development policy, promoting sustainable development and contributing 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 [common agricultural policy \(CAP\)](#) amounts to EUR 161 billion, 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 (see above for more details).

For more information:

[Rural development policy in the EU](#)

THE EUROPE 2020 STRATEGY

The [Europe 2020 strategy](#) was designed as the successor to the [Lisbon strategy](#); it was adopted by the [European Council](#) on 17 June 2010. The Europe 2020 strategy is the EU's common agenda for this decade, placing emphasis on promoting a growth pact designed to create 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 people aged 20-64 years to at least 75 %.
- Research and development — increase combined public and private investment in R & D to at least 3.00 % of [gross domestic product \(GDP\)](#).
- Climate change and energy sustainability —
 - reduce greenhouse gas emissions by at least 20 % compared with 1990 levels;
 - increase the share of renewable energy in final energy consumption to 20 %;
 - achieve a 20 % increase in energy efficiency.
- Education —
 - reduce the rate of early leavers from education and training to less than 10 %;
 - increase the proportion of people 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.

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.

The European Commission has set-up an annual cycle for coordinating economic policies known as the European semester. Its main purpose is to foster structural reforms and to create more jobs and growth in line with the Europe 2020 strategy, while boosting investment, ensuring sound public finances and preventing excessive macroeconomic imbalances. At the end of 2018, the European Commission presented its [Annual growth survey 2019: for a stronger Europe in the face of global uncertainty](#) (COM(2018) 770 final), which highlighted six consecutive years of uninterrupted

economic growth, the return of convergence across EU Member States, and the continued decline of national government deficits. The survey also found that to reinforce the social dimension of the EU and foster further convergence and better living standards and working conditions, it would be necessary to turn the principles outlined in the [European pillar of social rights](#) (see below for more details) into action, at European and national levels.

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 EU 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 European 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. These 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:
[Europe 2020 strategy](#)
[European semester](#)



EUROPEAN PILLAR OF SOCIAL RIGHTS

The European pillar of social rights was jointly signed by the European Parliament, the Council and the European Commission in November 2017. It aims to take account of changing realities in the world of work, to promote the renewal of economic convergence across the EU, and to deliver new and more effective rights for citizens. The pillar is built around three main headings:

- Equal opportunities and access to the labour market (education, training and lifelong learning; gender equality; equal opportunities; active support for employment).
- Fair working conditions (secure and adaptable employment; wages; information about employment conditions and protection in case of dismissals; social dialogue and involvement of workers; work-life balance; healthy, safe and well-adapted work environment and data protection).
- Social protection and inclusion (childcare and support to children; adequate protection for workers; unemployment benefits; minimum income; old age income and pensions; healthcare; inclusion of people with disabilities; long-term care; housing and assistance for the homeless; access to essential services).

The three main headings are subsequently broken down into a set of [20 key principles](#) — cross-references to individual principles are provided through this publication (as and when relevant).

In order to monitor the progress being made in terms of strengthening the social dimension of Europe through the pillar of social rights, the European Commission has established a [social scoreboard](#) for monitoring the performance of individual EU Member States; the information collected is also used for economic policy coordination as part of the European semester. In a similar vein to the Europe 2020 strategy, and despite the European pillar of social rights not making any specific reference to regional policy, policymakers have shown a growing interest in analysing information at a more detailed, subnational level. Many of the indicators in the social scoreboard may be provided by Eurostat for a range of territorial typologies — principally, by NUTS region or by [degree of urbanisation](#).

For more information:

[European pillar of social rights](#) — European Commission

[European pillar of social rights](#) — Eurostat dedicated section

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 provides a global policy framework for stimulating action until the year 2030 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 inter-agency and expert group on SDG indicators (IAEG-SDG), a global list of indicators was developed to measure the goals and targets of the 2030 agenda. These indicators cover the three main dimensions of sustainability: social solidarity, economic efficiency and environmental responsibility.

On 22 November 2016, the European Commission adopted a Communication, [Next steps for a sustainable European future](#) (COM(2016) 739 final). It details the significance of the SDGs, identified EU policies that contribute to the implementation of SDGs, and announced plans for regular monitoring within an EU context.

The EU has made a firm commitment towards delivering on the SDGs and on the [Paris Agreement](#) on climate change. With a broad range of challenges ahead, the EU highlighted further actions required to help secure a sustainable future in a reflection paper released by the European Commission in January 2019, [Towards a sustainable Europe by 2030](#). The paper highlighted that some of the most important global challenges to be faced in the coming years include issues around social equality, solidarity and environmental protection. It also underlined a range of actions that would be required to secure the well-being of EU citizens, such that future generations may continue to inherit a better world. These actions included plans to tackle increases in global greenhouse gas emissions, the threat to biodiversity and ecosystems, and technological, structural, and demographic changes in a globalised world.

For more information:

[The EU's approach to sustainable development](#)

EUROPEAN COMMITTEE OF THE REGIONS

The [European Committee of the Regions \(CoR\)](#) — as the EU's assembly for regional and local representatives — provides a voice for regions and cities across the EU. It was created in 1994 and is composed of 350 members who are regional presidents, mayors or elected representatives from the 28 Member States of the EU; successive European treaties have broadened its role. The CoR works closely with the European Commission, the European Parliament and the Council of the EU, as well as with various tiers of authority inside each of the EU Member States to promote multi-level governance and to ensure that European policy developments uphold the principles of subsidiarity and proportionality. The CoR promotes economic, social and territorial cohesion through autonomy for regional and local authorities.

On June 26 2019, the CoR adopted a set of [proposals](#) for the next legislative mandate of the EU strengthening the democratic foundation of the EU and improving its governance; improving the competitiveness of the EU; recalling the importance of cohesion policy as the EU's main investment and solidarity policy; calling for a long-term strategy for increased sustainability at all levels of government; developing a comprehensive EU migration policy with the same standards, driven towards integration and with clear communication of costs and benefits; putting EU values into practice in its external policies. With this in mind, the CoR has set up a monitoring platform to observe the involvement of local and regional authorities in the European semester and the Europe 2020 strategy.



The [#CohesionAlliance](#) is a coalition of people who believe that the role of EU cohesion policy should be strengthened after 2020. The alliance was created through cooperation between leading European associations of cities and regions and the European Committee of the Regions.

By the end of May 2019, more than 400 local and regional authorities, federations of local and regional authorities and civil society organisations and over 11 000 individual signatories 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 (excluding the United Kingdom).



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 local and 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 17th European Week of Regions and Cities will be held under the title, *Strong cohesion policy for the future*, with three principal themes:

- the future of the EU and the roles of the regions and cities;
- a Europe closer to citizens;
- a greener Europe.

For more information:

[European Committee of the Regions](#)
[European Week of Regions and Cities](#)

2

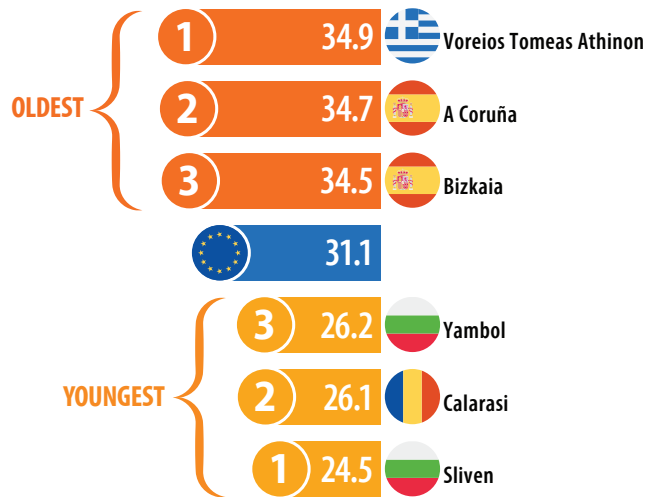
Population



Which regions in the EU have the oldest and youngest median age for women giving birth?



(years, 2017 data)



There are considerable differences in regional demographic developments across the European Union (EU), including:

- dynamic metropolises which are often characterised by relatively youthful populations, large numbers of people living alone, high costs of living and buoyant labour markets;
- towns and cities in former industrial heartlands that have been left behind, characterised by relatively high levels of unemployment, poverty and social exclusion;
- commuter belts/suburban areas which are often inhabited by families;
- coastal and countryside locations that may be viewed as retirement locations for relatively affluent pensioners;
- other rural and remote regions which may exhibit declining population numbers and a relatively elderly population structure, while being characterised by narrow labour market opportunities and poor access to a wide range of services.

Life expectancy

Life expectancy at birth is defined as the average number of years a newborn would live, if subjected throughout his/her life to current mortality conditions. Historically, life expectancy has risen, with increased longevity 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. It is, however, interesting to note a potential end to such developments as there was a reduction in EU-28 life expectancy at birth in both 2015 and 2017.

Women tend to live longer than men. During the three-year period 2015-2017, life expectancy of a female newborn in the EU-28 was 83.5 years; this was 5.4 years higher than the corresponding figure for a male newborn. The gender gap for life expectancy at birth has gradually narrowed over time: information for the EU-28 aggregate is only available for a relatively short time series, with the gap between the sexes having stood at 6.3 years during the three-year period 2002-2004.

Comunidad de Madrid had the highest female and male life expectancy in the EU

Map 2.1 presents female life expectancy at birth for NUTS level 2 regions for the three-year period 2015-2017. It may be contrasted with Map 2.2 which provides similar information for male life expectancy; note that the same colour shades have been used for both maps to assist comparing the results.

The five EU regions with the highest female life expectancy at birth were all located in Spain. During the period 2015-2017, the capital city region of Comunidad de Madrid recorded the highest female life expectancy, at 87.5 years, followed by Castilla y León and Comunidad Foral de Navarra (both recording at least 87.0 years). The first regions from outside Spain to appear in the ranking were both located in France,



as female life expectancy at birth stood at 86.7 years in both the capital city region of Ile-de-France and the island region of Corse.

At the other end of the range, female life expectancy at birth was lowest — during the period 2015-2017 — in the French outermost region of Mayotte, at 76.8 years (data refer to an average for 2015 and 2017); this was 10.7 years less than female life expectancy in the Comunidad de Madrid. Aside from Mayotte, the lowest levels of female life expectancy — no higher than 78.2 years — tended to be recorded in regions across Bulgaria (Severozapaden, Severen tsentralen, Yugoiztochen and Severoiztochen) Hungary (Észak-Magyarország) and Romania (Vest).

Mirroring the results for female life expectancy at birth, the Comunidad de Madrid and Inner London — West had the highest male life expectancy, at 82.0 years during the period 2015-2017 (see Map 2.2). As such, a new born male child in Comunidad de Madrid could expect to live, on average, 5.5 years less than a new born female child from the Spanish capital city region.

Apart from Comunidad de Madrid and Inner London — West, the regions with the highest male life expectancy at birth during the period 2015-2017 were located in either Italy or the United Kingdom.

At the other end of the range, the lowest male life expectancy at birth was recorded in central and western Lithuania (Vidurio ir vakarų Lietuvos regionas), at 69.7 years; this was 12.3 years less than the highest level recorded in the Comunidad de Madrid and Inner London — West. Male life expectancy was also relatively low in a number of regions located in the [Baltic Member States](#), Bulgaria, Hungary and Romania.

The largest gender gaps for life expectancy were recorded in Lithuania

A comparison between Map 2.1 and Map 2.2 allows an analysis of gender gaps for life expectancy at birth.

As noted above, women tend to live longer than men: 5.4 years across the whole of the EU-28 during the period 2015-2017. At a regional level, the gender gap for life expectancy at birth was consistently in favour of women for each of the NUTS level 2 regions in the EU and this pattern was also repeated across the statistical regions of [EFTA](#) and [candidate countries](#).

The largest gender gaps for life expectancy at birth were recorded in the two Lithuanian regions, where women could expect to live in excess of 10 years more than their male counterparts. These were the only two regions in the EU to record double-digit differences between the sexes:

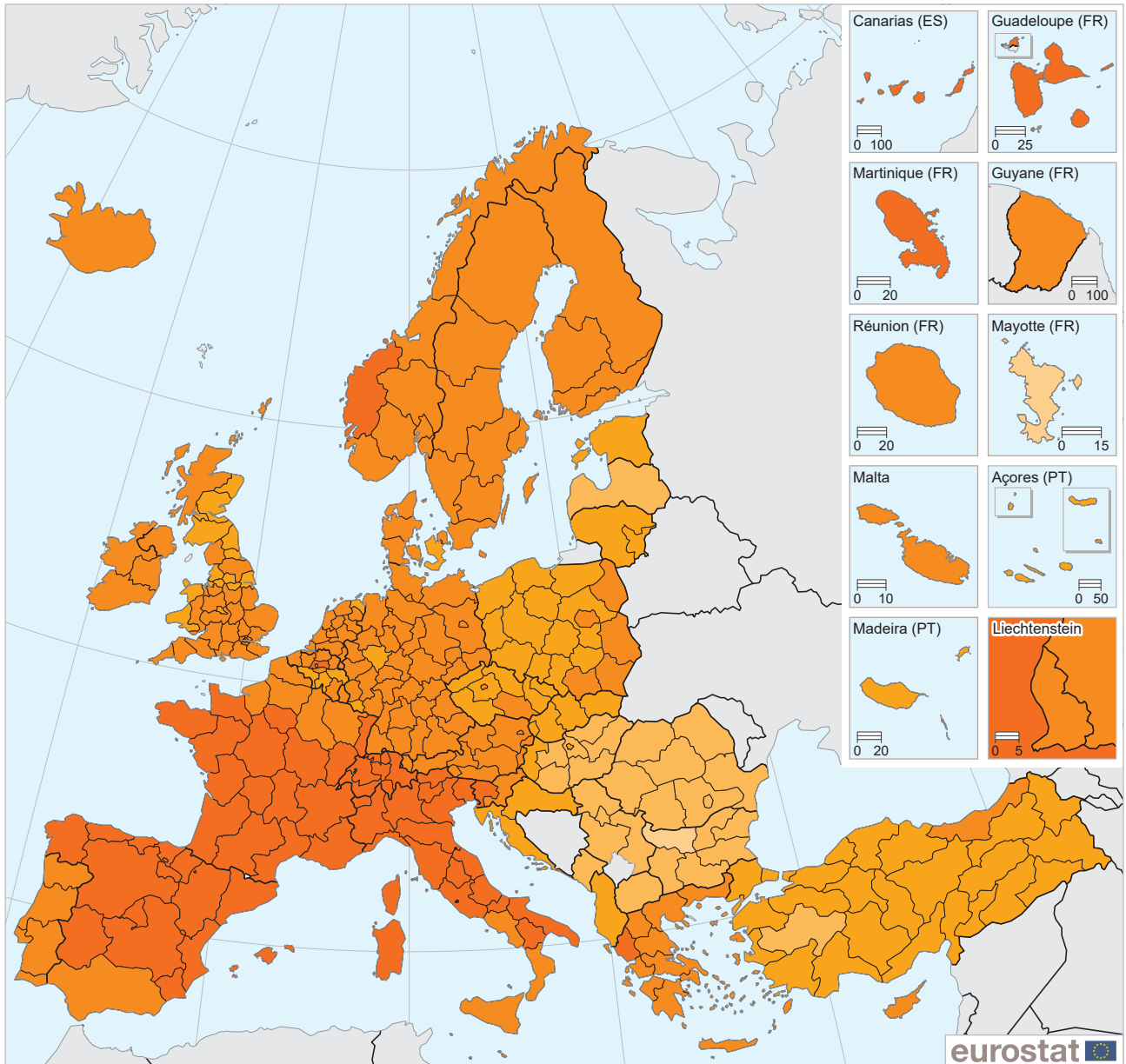
- Sostinės regionas (with a gap of 10.1 years);
- Vidurio ir vakarų Lietuvos regionas (10.3 years).

Gender gaps for life expectancy were also relatively large — more than 7.5 years in favour of women — in the remainder of the Baltic Member States (Estonia and Latvia are single regions at this level of detail), all but 3 of the 17 regions in Poland, the two easternmost regions of Romania (Nord-Est and Sud-Est) and the French island region of Guadeloupe.

While there were no regions in the EU where men could expect to outlive women, the gender gap for life expectancy at birth was as narrow as 1.1 years in the French outermost region of Mayotte (data refer to an average for 2015 and 2017); this was due, at least in part, to Mayotte recording the lowest level of female life expectancy in the EU. Women also outlived men by a relatively narrow margin during the period 2015-2017 in:

- the central Dutch region of Flevoland (2.8 years difference between the sexes);
- five additional regions of the Netherlands — Utrecht, Overijssel, Gelderland, Noord-Holland and Zuid-Holland — as well as three region in the United Kingdom — Bedfordshire and Hertfordshire, Cheshire, and Essex — where the gender gap was within the range of 3.0-3.2 years.

Map 2.1: Female life expectancy at birth, 2015-2017
(years, by NUTS 2 regions)



- EU-28 = 83.5
- < 75.0
- 75.0 - < 77.5
- 77.5 - < 80.0
- 80.0 - < 82.5
- 82.5 - < 85.0
- ≥ 85.0
- Data not available

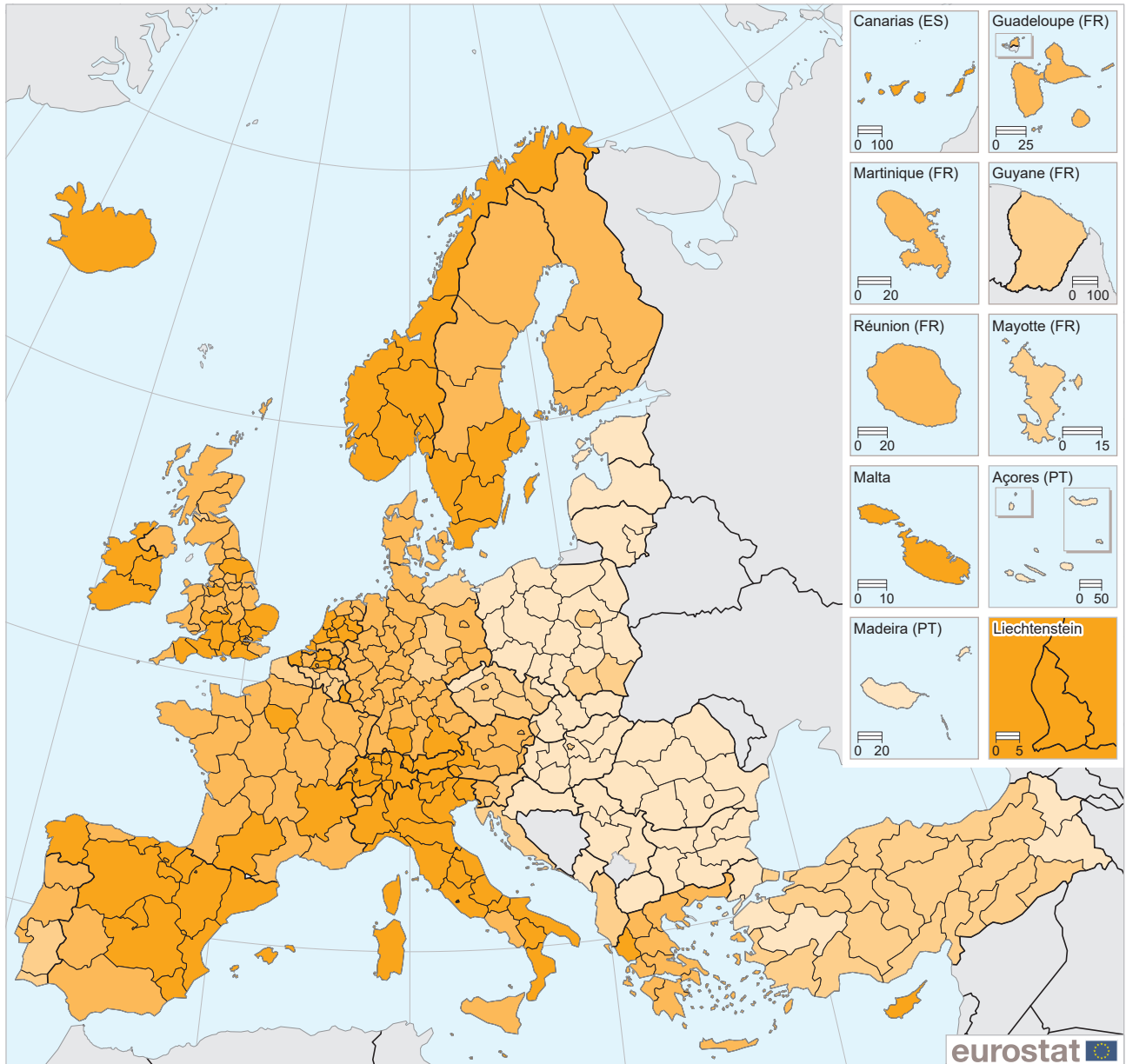
Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019

0 200 400 600 800 km

Note: information shown for a three-year average. Albania: national data. Northern and Western (IE04), Southern (IE05), Eastern and Midland (IE06), Eastern Scotland (UKM7), West Central Scotland (UKM8), Southern Scotland (UKM9), Beogradski region (RS11), Region Vojvodine (RS12), Region Šumadije i Zapadne Srbije (RS21) and Region Južne i Istočne Srbije (RS22): 2017. Guyane (FRY3): 2016-2017. Mayotte (FRY5): 2015 and 2017. Guadeloupe (FRY1) and Mardin, Batman, Şırnak, Siirt (TRC3): 2016.

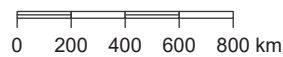
Source: Eurostat (online data codes: [demo_r_mlifexp](#) and [demo_mlexpec](#))

Map 2.2: Male life expectancy at birth, 2015-2017
(years, by NUTS 2 regions)



- EU-28 = 78.1
- < 75.0
- 75.0 - < 77.5
- 77.5 - < 80.0
- 80.0 - < 82.5
- 82.5 - < 85.0
- ≥ 85.0
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019



Note: information shown for a three-year average. Albania: national data. Northern and Western (IE04), Southern (IE05), Eastern and Midland (IE06), Eastern Scotland (UKM7), West Central Scotland (UKM8), Southern Scotland (UKM9), Beogradski region (RS11), Region Vojvodine (RS12), Region Šumadije i Zapadne Srbije (RS21) and Region Južne i Istočne Srbije (RS22): 2017. Guyane (FRY3): 2016-2017. Mayotte (FRY5): 2015 and 2017. Guadeloupe (FRY1) and Mardin, Batman, Şırnak, Siirt (TRC3): 2016.

Source: Eurostat (online data codes: [demo_r_mlifexp](#) and [demo_mlexpec](#))

Fertility

A replacement level of 2.1 children per woman is often cited as the level of **fertility** required for the total population to remain unchanged within developed world economies, with births and deaths balancing out (ignoring the potential impact of migration). In 2017, the EU-28's total fertility rate was lower, at an average of 1.59 children per woman. There were 5.07 million live **births** in the EU-28 in 2017, compared with 5.27 million **deaths**, resulting in a natural population decline of around 0.2 million persons.

Although a lengthy time series is unavailable for the EU-28 aggregate to demonstrate the decline in fertility rates over the last 50 years, there are quite lengthy series for some of the individual EU Member States. One of the starkest examples is provided by Ireland, where the total fertility rate fell from a high of 3.77 children per woman in 1968 to 1.77 children per woman by 2017.

In 2017, the total fertility rate was below the replacement level in all of the EU Member States, contributing towards a gradual ageing of the population. This may reflect, at least in part, a growing proportion of women choosing to delay/postpone childbirth, with higher female participation rates in further education and/or more women choosing to establish a professional career before they decide whether or not to start a family.

The only EU Member States to report more than one region with a fertility rate of at least 2.1 children per woman were France, Romania and the United Kingdom

Regional demographic statistics are one of the few areas where NUTS level 3 data are collected and published for each of the EU Member States, EFTA and candidate countries. Map 2.3 presents the total fertility rate for NUTS level 3 regions and provides information on the mean number of children who would be born to a woman during her lifetime, if she were to spend her childbearing years conforming to the age-specific fertility rates that have been measured in a given year.

In 2017, there were 20 NUTS level 3 regions in the EU which recorded a total fertility rate of at least 2.10 children per woman (as shown by the darkest shade in Map 2.3). Many of these regions were characterised as (sub)urban areas and they included:

- seven regions from the United Kingdom;
- six regions from France, including the outermost region of Mayotte (4.87 children per woman) which had the highest fertility rate in the EU;
- five regions from Romania, including the eastern city of Vaslui (2.61 children per woman) which had the highest fertility rate in mainland EU;
- the Bulgarian region of Sliven;
- the autonomous Spanish city of Melilla.

At the other end of the range, the lowest fertility rates — less than 1.25 births per woman (as shown by the lightest shade in Map 2.3) — were principally, but not exclusively, located across southern parts of the EU, with particular clusters in mainland Greece, southern Italy, north-eastern Spain and northern Portugal. The relatively mountainous, central Greek region of Fokida had the lowest fertility rate among NUTS level 3 regions in the EU, at 0.81 children per woman

Childbirth across the EU is increasingly delayed, in particular for women living in capital city regions

Regions that are characterised by more traditional gender roles, the close proximity of family support, as well as relatively low educational attainment and socioeconomic status tend to be characterised by younger mothers. By contrast, women who delay childbirth are more likely to be living in relatively affluent regions, in possession of a tertiary level of educational attainment and career-orientated.

In 2017, the **median** age of women at childbirth in the EU-28 was 31.1 years. There is only a limited time series available for the EU-28 aggregate, but even during the short period from 2013 to 2017, the median age of women at childbirth rose by 0.4 years.

The median age of women at childbirth in 2017 was highest, among NUTS level 3 regions, in:

- the Greek capital city region of Voreios Tomeas Athinon (34.9 years);
- the north-western Spanish region of A Coruña (34.7 years);
- the northern Spanish/Basque region of Bizkaia, which includes the city of Bilbao (34.5 years).

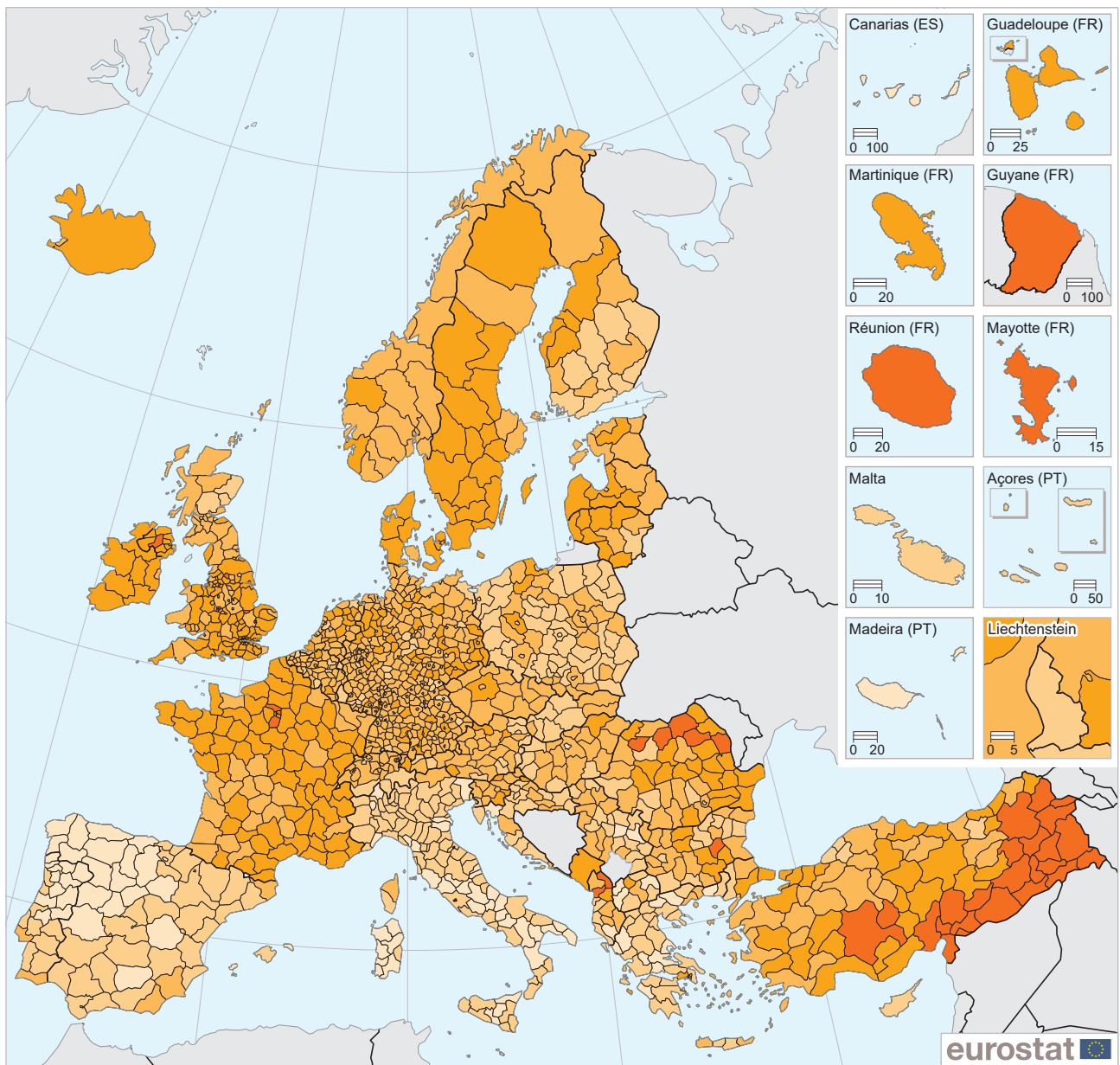
At the other end of the range, the median age of women at childbirth was lowest in:

- the neighbouring eastern Bulgarian regions of Sliven (24.5 years) and Yambol (26.2 years);
- Călărași (Romania; 26.1 years).

The pattern of women becoming progressively older before they have children is particularly evident in urban regions and was often most pronounced in capital city regions (see Map 2.4). A comparison among EU Member States composed of more than two NUTS level 3 regions reveals that the capital city region had the highest median age of women at childbirth in a majority of the Member States, with the highest values recorded for: Paris in France (33.2 years), Wandsworth which in the United Kingdom (33.7 years) and Voreios Tomeas Athinon in Greece (34.9 years).

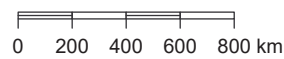
There were 22 NUTS level 3 regions across the EU where the median age of women at childbirth was less than 27.5 years in 2017 (as shown by the lightest shade

Map 2.3: Total fertility rate, 2017
(number of children per woman, by NUTS 3 regions)



- EU-28 = 1.59
- <math>< 1.25</math>
- <math>1.25 - < 1.50</math>
- <math>1.50 - < 1.75</math>
- <math>1.75 - < 2.10</math>
- ≥ 2.10
- Data not available

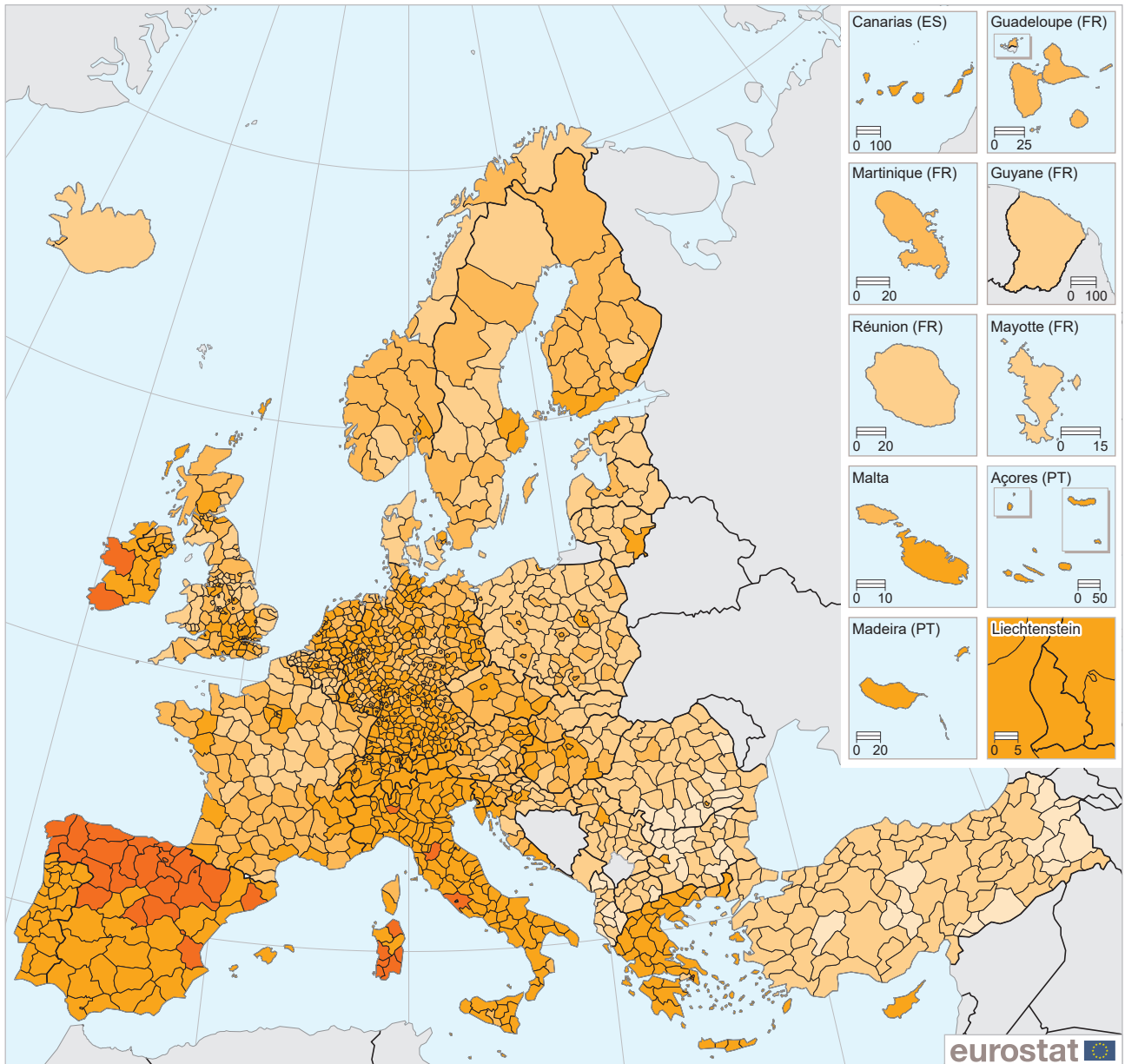
Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019



Note: the total fertility rate is defined as the mean number of children that would be born alive to a woman during her lifetime if she were to survive and pass through her childbearing years conforming to the fertility rates by age of a given year.

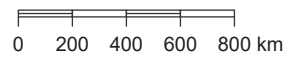
Source: Eurostat (online data codes: [demo_r_find3](#) and [demo_find](#))

Map 2.4: Median age of women at childbirth, 2017
(years, by NUTS 3 regions)



- EU-28 = 31.1
- < 27.5
 - 27.5 - < 30.0
 - 30.0 - < 31.0
 - 31.0 - < 33.5
 - ≥ 33.5
 - Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019



Source: Eurostat (online data codes: demo_r_find3 and demo_find)



in Map 2.4); they were exclusively located in just two of the EU Member States:

- 12 regions from Bulgaria, where the lowest median age (24.5 years) was recorded in the eastern region of Sliven;
- 10 regions from Romania, where the lowest median age (26.1 years) was recorded in the south-eastern region of Călărași.

In 2017, births to women aged less than 20 years accounted for more than one quarter (26.1 %) of all births in the Bulgarian region of Sliven, which was almost three times as high as the national average (9.4 %) and 10 times as high as the EU-28 average (2.6 %). The next highest shares of births to women in this age group were recorded in the neighbouring Bulgarian region of Yambol, where more than one fifth (20.7 %) of all babies were born to women aged less than 20 years, and the Romanian region of Călărași (18.5 %).

Population structure

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. Most population projections indicate that the EU's population will continue to age as a result of persistently low fertility rates and extended longevity.

During the most recent decade for which data are available, the median age of the EU-28 population rose by 2.7 years, reaching 43.1 years at the start of 2018. There were only three EU Member States where the median age of the population was below 40 years as of 1 January 2018: Ireland (37.3 years), Cyprus (37.5 years) and Luxembourg (39.4 years). By contrast, two Member States had particularly high median ages: Germany (46.0 years) and Italy (46.3 years).

Map 2.5 shows the median age of NUTS level 3 regions at the start of 2018. The lowest median ages were recorded in:

- two outermost French regions, Mayotte (18.1 years) and Guyane (26.1 years);
- five urban regions in the United Kingdom — Nottingham (29.9 years), Manchester (30.0 years), Tower Hamlets (eastern London; 31.2 years), Leicester (31.8 years) and Southampton (32.2 years) — each of which was characterised by relatively large student populations;
- note also that there were 33 statistical regions in Turkey where the median age was at least as low (less than 32.2 years) with several largely rural, southern and eastern regions recording median ages that were close to 20.0 years.

Capital cities often exert a considerable pull on both international and intra-regional migrants

In recent decades, many of the EU Member States have been characterised by an increasing pattern of population concentration, as people have moved from rural, agricultural regions towards large cities (and their surrounding suburban areas). In approximately half of EU Member States composed of more than two NUTS level 3 regions, the lowest median age, at the start of 2018, was recorded in the capital city region, with the lowest values recorded in: Dublin in Ireland (36.0 years), Bruxelles-Capitale/Brussel-Hoofdstad in Belgium (35.8 years) and Byen København in Denmark (33.8 years). When the capital city region did not have the lowest median age, it was sometimes the case that it was recorded in a suburban region close to the capital city, for example, Dytiki Attiki (the western agglomeration of Athens). An alternative pattern observed in several EU Member States was for the region with the lowest median age to be recorded in a city region characterised by a sizeable student population, for example, Heidelberg Stadtkreis in Germany, Gdanski in Poland or Nottingham in the United Kingdom.

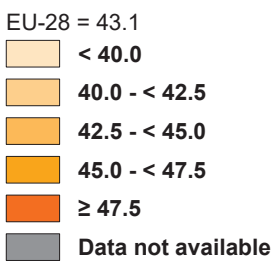
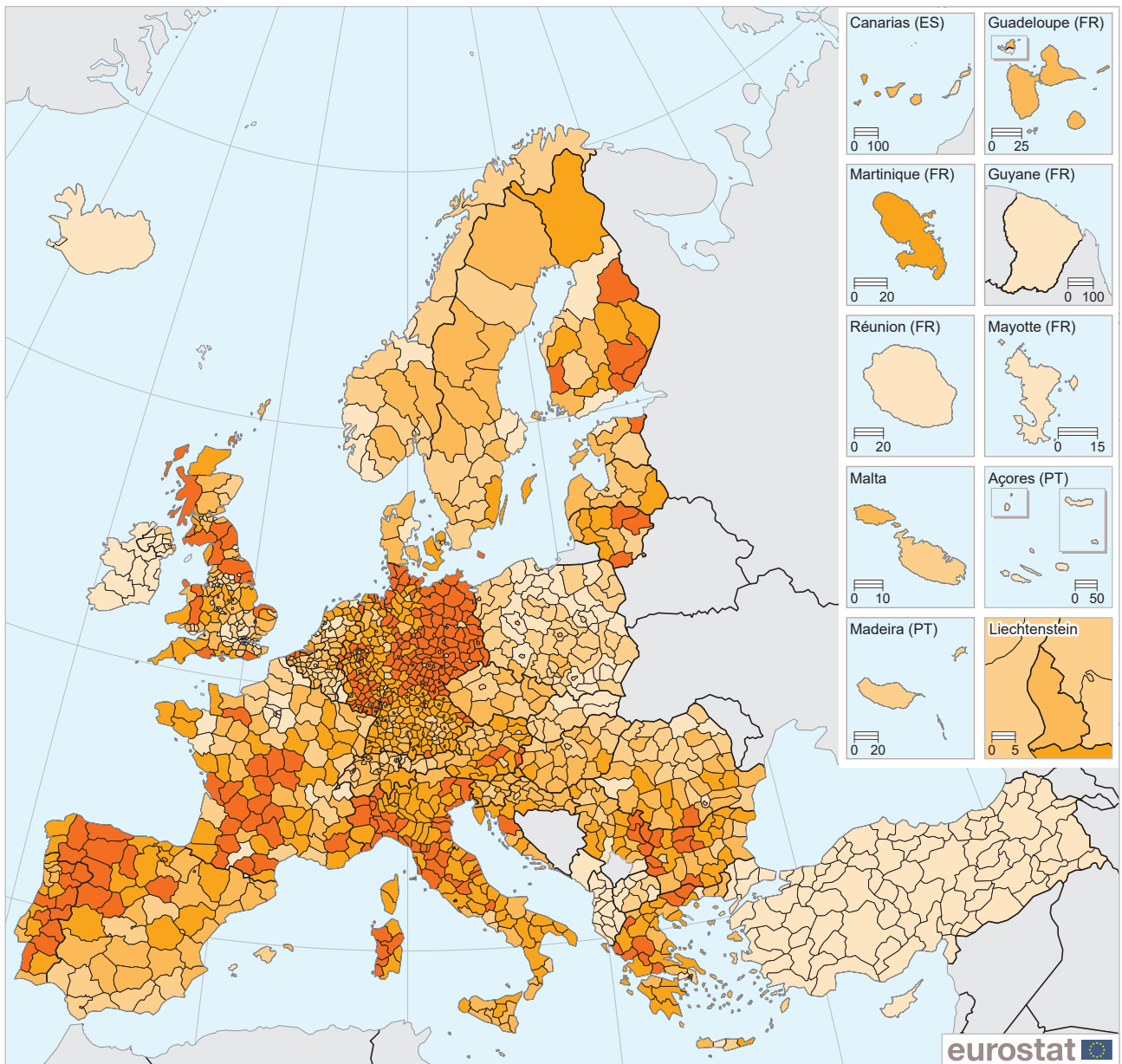
By contrast, the NUTS level 3 regions with the highest median ages as of 1 January 2018 included:

- the central Greek region of Evrytania (55.0 years);
- the north-western Belgian region of Arr. Veurne, near to the coast and the French border;
- nine German regions spread across three eastern Länder — characterised by a lack of varied employment opportunities in the aftermath of reunification, which may have encouraged (particularly young) people to move in search of more varied and better paid work:
 - Suhl, Kreisfreie Stadt; Altenburger Land; and Greiz (all in Thüringen);
 - Mansfeld-Südharz; Dessau-Roßlau, Kreisfreie Stadt; and Wittenberg (all in Sachsen-Anhalt);
 - Spree-Neiße; Prignitz; and Elbe-Elster (all in Brandenburg).

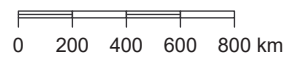
More generally, regions with ageing population structures were often characterised as:

- rural areas whose economies were centred on traditional activities — this pattern was particularly apparent in upland/mountainous areas of central France, Greece, north-western Spain, Portugal and the United Kingdom;
- popular retirement destinations — for example, the Danish island of Bornholm, the Italian coastal regions of Savona, Genova (both Liguria) and Trieste (Friuli Venezia Giulia), or the Isle of Wight, Dorset CC and North and West Norfolk in the United Kingdom.

Map 2.5: Median age of population, 2018
(years, by NUTS 3 regions)



Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019



Note: EU-28, provisional.

Source: Eurostat (online data codes: demo_r_pjanind3 and demo_pjanind)



The highest old-age dependency ratios in the EU were often recorded in rural, sparsely-populated regions

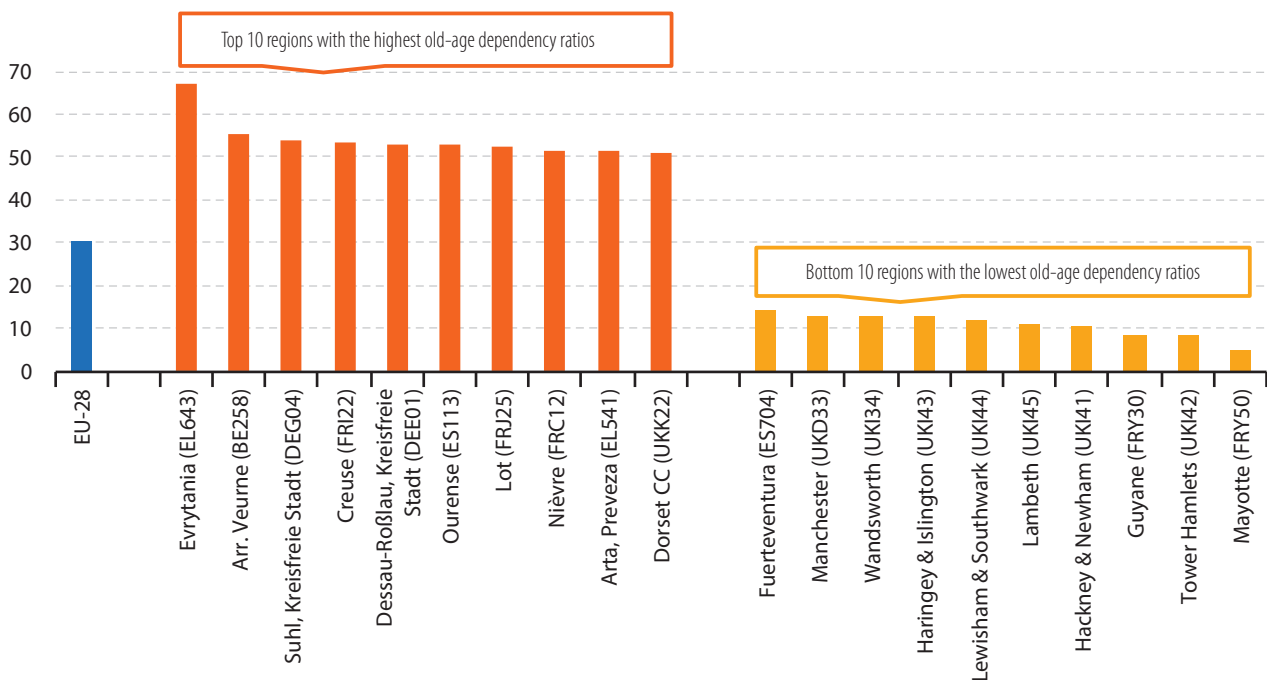
Figure 2.1 shows the **old-age dependency ratio**, defined here as the number of elderly people (aged 65 years and over) compared with the number of working-age (aged 15-64 years) people. On 1 January 2018, this ratio stood at 30.5 % across the whole of the EU-28; in other words, there were just over three people of working-age for every elderly person.

Some of the lowest old-age dependency ratios for NUTS level 3 regions were recorded in capital city and

outermost regions of the EU, including: the French outermost regions of Mayotte and Guyane — the former of which had the lowest old-age dependency ratio in the EU (5.0 %); and six boroughs from London — one of which, Tower Hamlets, had the second lowest ratio in the EU (8.3 %) — and the centre of Manchester (all in the United Kingdom).

The central Greek region of Evrytania had, by far, the highest old-age dependency ratio among NUTS level 3 regions, at 67.0 %; in other words, for every two elderly persons there were just three people of working-age.

Figure 2.1: Old-age dependency ratios, 2018
(%, highest and lowest ratios, by NUTS 3 regions)



Note: the old-age dependency ratio is calculated as the number of older dependents (≥ 65 years) relative to the working-age population (15-64 years). EU-28: provisional.

Source: Eurostat (online data codes: [demo_r_pjanind3](#) and [demo_pjanind](#))

Population change

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, with an increase in the relative importance of **net migration** (the difference between the number of immigrants and emigrants). However, Eurostat produces net migration figures by taking the difference between total population change and natural change; this concept is referred to as net migration plus (statistical) adjustment.

Map 2.6 presents the **crude rate of total population change** for 2017 and is composed of two different effects: natural population change and net migration plus adjustment. Between 1 January 2017 and 1 January 2018, the EU-28's population rose by 1.0 million inhabitants, equivalent to a growth rate of 2.0 per 1 000 inhabitants; note, these figures are shown relative to the 'usual resident population' (those people living in each region for at least the last 12 months). The increase in the total population of the EU-28 was wholly attributable to net migration plus adjustment (up 1.2 million persons), as the number of deaths outpaced the number of births (by around 0.2 million persons).

At a regional level, changes in the total number of inhabitants may result not just from migratory flows to and from other countries but also from flows of people within the same national territory (moving from one region to another). Indeed, such intra-regional migration generally accounts for a larger share of the net change in population numbers than migratory flows from other countries. Some of the main developments include:

- a capital city effect — 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;

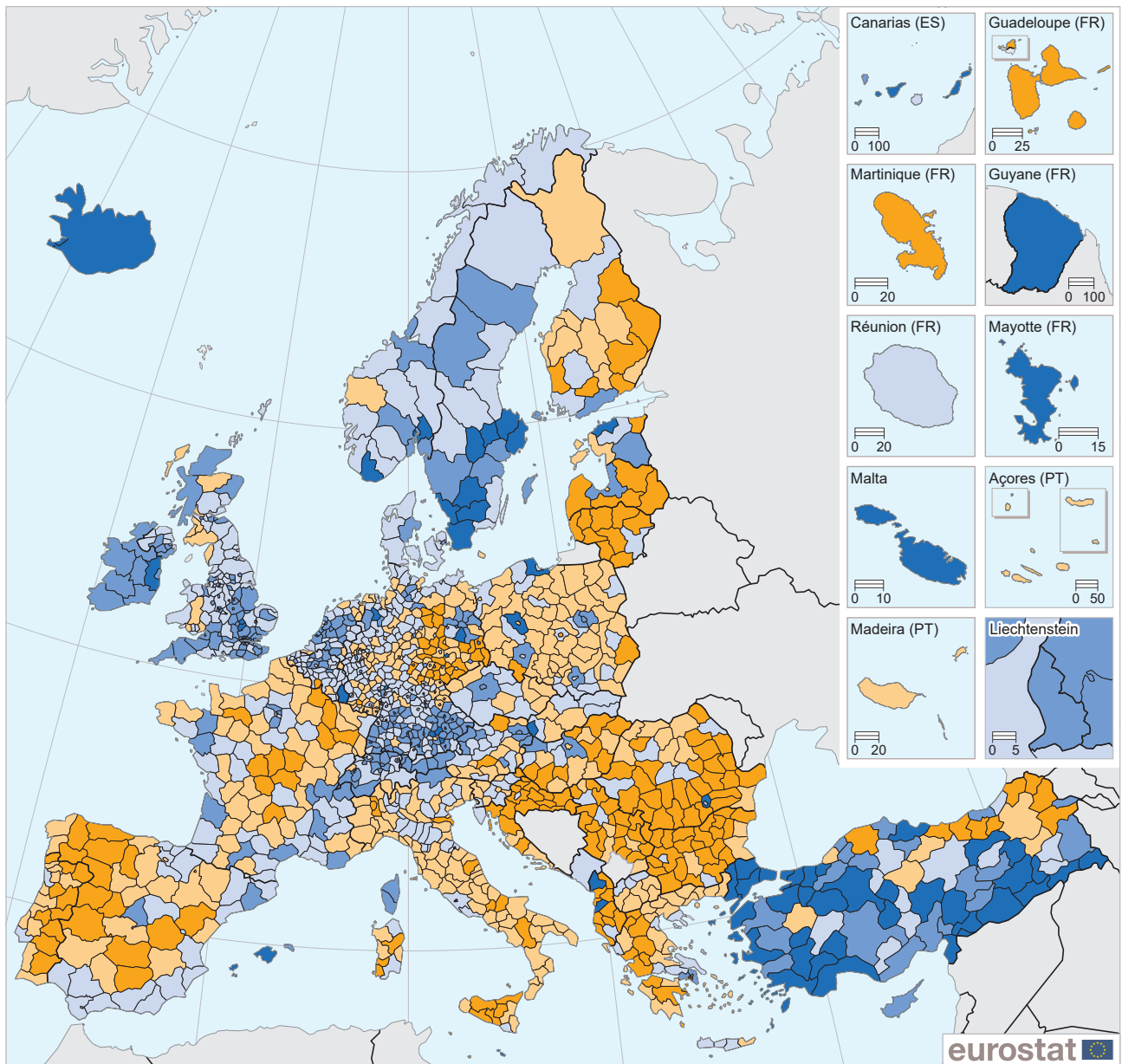
- an urban-rural split — with the majority of urban regions continuing to report population growth, while the number of persons resident in many peripheral, rural and post-industrial regions decline;
- regional divergences within individual EU Member States — these may impact on regional competitiveness and cohesion, for example, differences between the eastern and the western regions of Germany, or between northern and southern regions of Belgium, Italy and the United Kingdom.

Most EU regions with rapidly expanding populations were characterised by high levels of net migration plus adjustment, rather than rapid natural population change

During 2017, a majority (765) of NUTS level 3 regions reported an increase in their overall number of inhabitants, while there were eight that had no change in their population. The darkest shade of blue in Map 2.6 shows those regions with a crude rate of total population growth that was at least 12.0 per 1 000 inhabitants in 2017. Among these the highest growth rates were recorded in: the eastern Aegean island regions of Ikaria, Samos (60.1 per 1 000 inhabitants) and Chios; the French outermost regions of Mayotte and Guyane; the southern Mediterranean island of Malta; and Fuerteventura in the Canary islands (Spain).

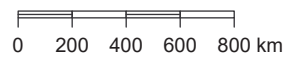
At the other end of the range, there were 16 NUTS level 3 regions where the population declined by more than 20.0 per 1 000 inhabitants in 2017, they were located exclusively in eastern Europe and the Baltic Member States, with the biggest reduction in the easternmost Croatian region of Vukovarsko-srijemska županija (-42.0 per 1 000 inhabitants), while there were also sizeable contractions in a number of other Croatian regions and several regions across the Baltic Member States. Note there was an even greater reduction in the population of the north-eastern Turkish region of Bayburt (-114.2 per 1 000 inhabitants), as well as reductions in excess of 20.0 per 1 000 inhabitants in four Albanian regions — Gjirokastër, Dibër, Berat and Kukës.

Map 2.6: Crude rate of total population change, 2017
(per 1 000 persons, by NUTS 3 regions)



- EU-28 = 2.0
- <math>< -6</math>
- <math>-6 - < 0</math>
- <math>0 - < 6</math>
- <math>6 - < 12</math>
- ≥ 12
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019



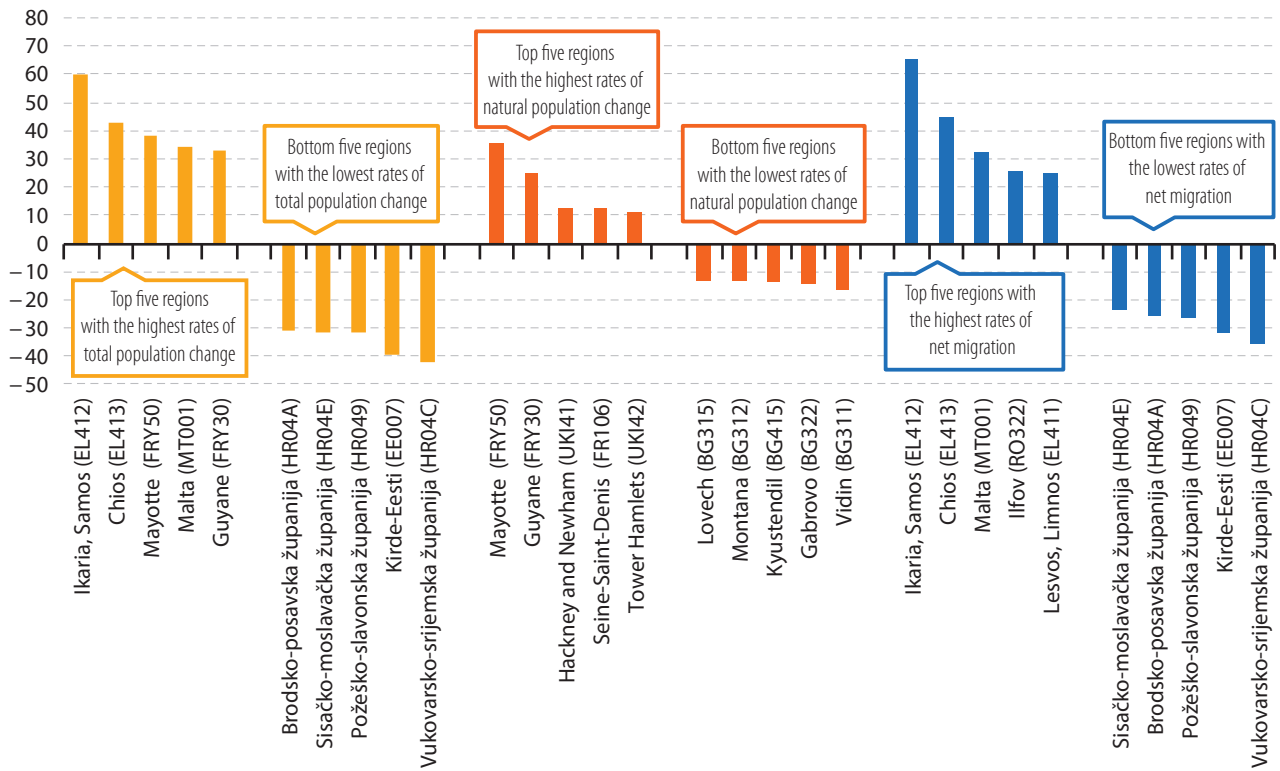
Note: EU-28, provisional.

Source: Eurostat (online data codes: demo_r_gind3 and demo_gind)

Figure 2.2 provides a more detailed regional analysis for those regions with the highest and lowest rates of three measures of population change: overall population

change (as shown in Map 2.6); natural population change; and net migration plus adjustment.

Figure 2.2: Crude rates of population change, 2017
(per 1 000 persons, highest and lowest rates, by NUTS 3 regions)



Source: Eurostat (online data codes: [demo_r_gind3](#) and [demo_gind](#))

3

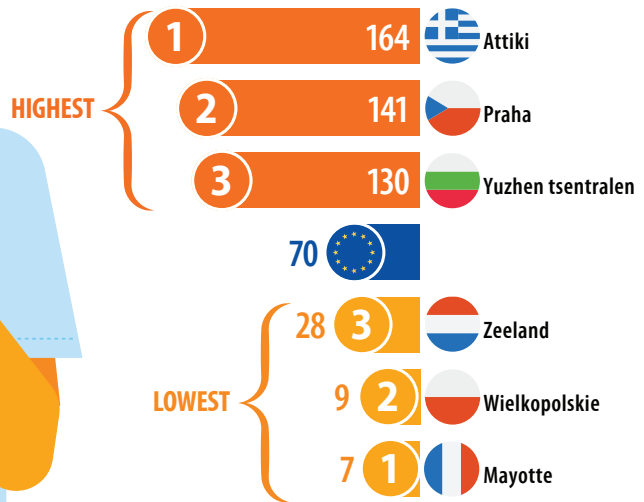
Health



Which regions in the EU have the highest and lowest number of dentists per inhabitant?



(per 100 000 inhabitants, 2015 data, except 2016 for Mayotte)



Population ageing in the coming decades is likely to be a major challenge for the European Union's (EU's) health sector: indeed, the demand for healthcare will likely increase at a rapid pace, while an ageing population may result in staff shortages for certain medical specialisations or in specific geographic regions. According to a 2012 report by the Directorate-General for Health and Food Safety, more than 60 000 doctors (or 3.2 % of the EU-28 workforce) were expected to retire/leave the profession each year during the period 2009-2020.

Health is an important priority for Europeans, who expect to be protected against illness or after an accident and to receive appropriate healthcare services. This chapter presents recent statistics on health across the regions of the EU, providing information concerning self-perceived health status. It also looks at healthcare services through an analysis of the number of hospital beds, the share of the population with unmet needs for medical examination(s), the number of (practising) dentists and the share of the population with unmet needs for dental examination(s). It concludes with information on the most common causes of death, focusing on female deaths from breast cancer, male deaths from prostate cancer and deaths from suicide.

Health status

Figure 3.1 provides an analysis by degree of urbanisation, detailing the proportion of the adult population (defined here as people aged ≥16 years) who perceived their health as good or very good.

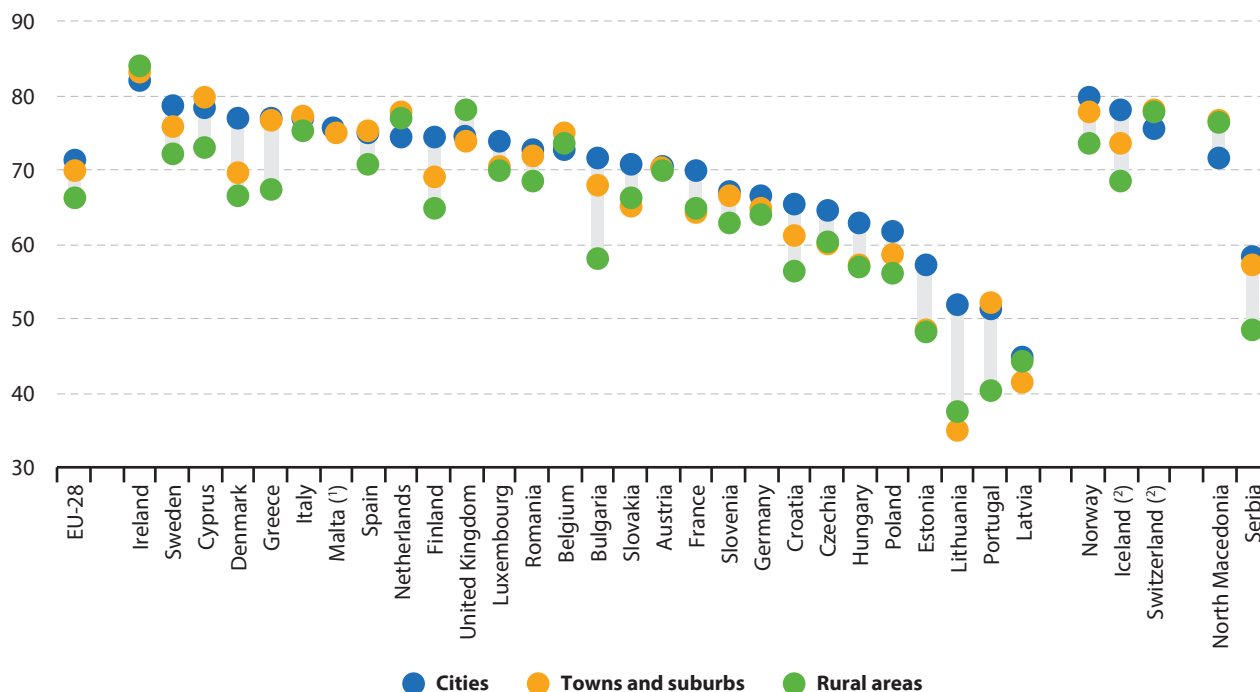
A higher proportion of people living in cities perceived their own health as good or very good

In 2017, almost seven tenths (69.7 %) of the EU-28 adult population perceived their own health as good or very good. This share was higher for people living in cities (71.5 %) than it was for people living in towns and suburbs (70.1 %) or people living in rural areas (66.6 %). Note that self-perceived health status is quite strongly related to age, and so the analysis of health status by degree of urbanisation may reflect, at least to some degree, differences in age structures for each degree of urbanisation. A closer analysis among the EU Member States reveals that:

- a higher proportion of people living in cities (rather than towns and suburbs or rural areas) perceived their own health as good or very good in a majority (19) of the EU Member States; note that people living in major cities often tend to be comparatively young (in relation to the population as a whole);
- people living in towns and suburbs — often inhabited by a relatively high number of families — were most likely to perceive their own health as good or very good in the southern Member States of Cyprus, Italy, Spain and Portugal, as well as in Belgium and the Netherlands;
- people living in the rural areas of Ireland and the United Kingdom — which generally had a relatively high share of older persons among their inhabitants — were more likely to perceive their own health as good or very good.



Figure 3.1: People who perceive their own health as good or very good, 2017
(%, share of population aged ≥16 years, by degree of urbanisation)



Note: ranked on cities.

(*) Rural areas: not available.

(?) 2016.

Source: Eurostat (online data code: hlth_silc_18)

Healthcare

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 hospitals and in speciality hospitals. There were 2.60 million hospital beds in the EU-28 in 2016, which meant that the total number of beds fell overall by 9.0 % during the most recent decade for which data are available. The average number of hospital beds in the EU-28, relative to population size, fell by 64 beds per 100 000 inhabitants between 2006 and 2016, such that there were, on average, 509 hospital beds per 100 000 inhabitants in the latest period. Falling numbers of hospital beds 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, at least in part, due to the introduction of new treatments and less-invasive forms of surgery.

The neighbouring regions of Mecklenburg-Vorpommern in north-east Germany and Zachodniopomorskie in north-west Poland recorded the highest density of hospital beds relative to population

Figure 3.2 reflects country-specific ways of organising health care and the types of service provided to patients. It confirms a very high density of hospital beds in Germany and Austria, as well as many eastern regions of the EU. There were only three regions that recorded ratios in excess of a thousand hospital beds per 100 000 inhabitants, they were:

- the northern German region of Mecklenburg-Vorpommern — a predominantly rural area with a low level of population density — which had the highest density of hospital beds in the EU, at slightly less than 1 300 hospital beds per 100 000 inhabitants;
- the northern Polish region of Zachodniopomorskie — which shares a border with Mecklenburg-Vorpommern — with just over 1 200 hospital beds per 100 000 inhabitants;
- the Romanian capital city region of Bucuresti - Ilfov, where there were 1 023 hospital beds per 100 000 inhabitants.

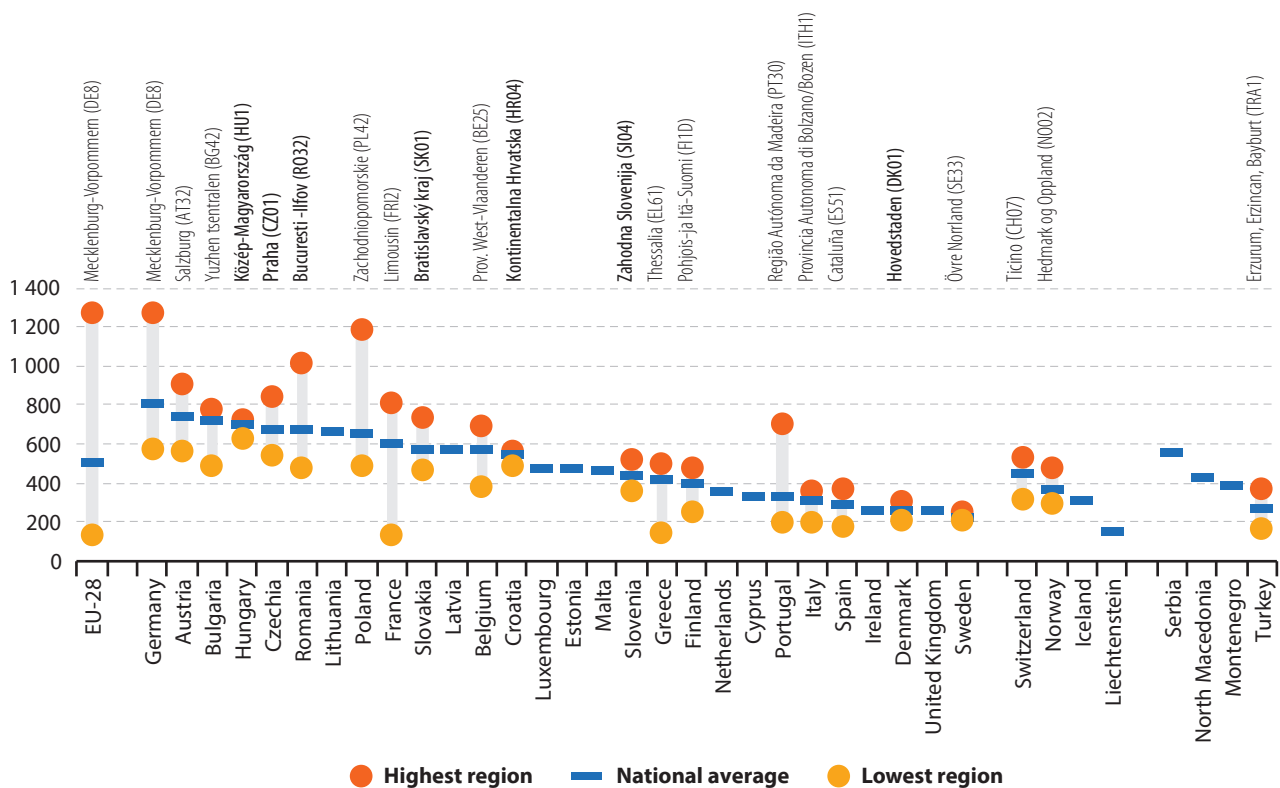
There were contrasting patterns in relation to the number of hospital beds relative to population size in capital city regions of the EU Member States:

- in many of the eastern Member States — Hungary (data only available for NUTS level 1), Czechia, Romania, Slovakia, Croatia and Slovenia — the capital city region had the highest ratio of hospital beds relative to population;
- in many western and northern Member States, it was more commonplace to find capital city regions recording relatively low ratios, while the highest

ratios of hospital beds was 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).

Aside from the outermost region of Mayotte (France) and the autonomous cities of Melilla and Ceuta (both Spain), the lowest ratios of hospital beds relative to population size were recorded in Calabria in Italy (223 beds).

Figure 3.2: Number of hospital beds, 2016
(per 100 000 inhabitants, by NUTS 2 regions)



Note: Germany and Közép-Magyarország (HU1), NUTS level 1. Ireland, the Netherlands, the United Kingdom and Serbia: national data. Italy and Latvia: 2015. Chemnitz (DED4): not available. Regions listed above the figure are those with the highest ratio. Capital regions are indicated by a bold typeface.

Source: Eurostat (online data codes: [hlth_rs_bdsrg](#) and [hlth_rs_bds](#))

Unmet needs for medical examination

There are a variety of reasons why an individual may claim that they have an unmet need for a medical examination, these include:

- cost, whereby medical examinations are considered too expensive;
- distance, if patients consider it too far to travel to a clinic/hospital for an examination or there are no means of transportation available;

- time, when patients are dissuaded from having a particular type of examination, for example, because of a lengthy waiting list or having to take time off work;
- cultural sensitivity/fear about certain types of medical examination.

Issues such as these have the potential to restrict an individual's access to medical examinations and may subsequently have an impact upon their overall quality of life, well-being and social participation, as well as influencing socioeconomic developments at a more aggregated level.

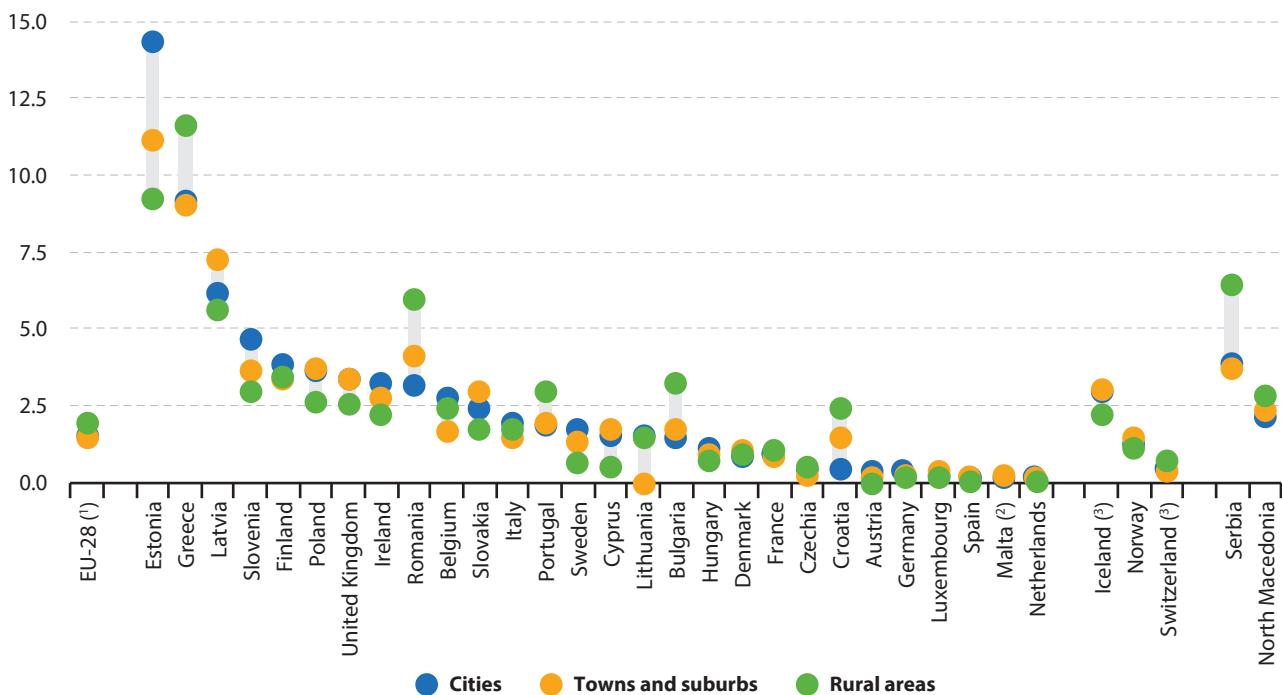
In 2017, the proportion of the EU-28 adult population (defined here as people aged ≥16 years) with unmet needs for medical examination — due to it being too expensive, too far to travel, and/or because of waiting lists — was 1.7 %. An analysis by degree of urbanisation (see Figure 3.3) reveals that this share was slightly higher in rural areas (2.0 %) than it was in either cities (1.6 %) or in towns and suburbs (1.5 %).

The overall proportion of the adult population with unmet needs for medical examination in 2017 was less than 0.5 % in Germany, Luxembourg, Malta, Austria, Spain and the Netherlands. By contrast, the share of adults with unmet needs for medical examination stood within the range of 3.0-5.0 % in Poland, the United Kingdom, Slovenia, Finland and Romania, rising to 6.2 % in Latvia and 10.0 % in Greece, while peaking at 11.8 % in Estonia.

In the cities, towns and suburbs of Estonia and the rural areas of Greece, more than 1 in 10 adults had unmet needs for medical examination

An analysis by degree of urbanisation for 2017 shows that in 11 of the EU Member States the proportion of adults with unmet needs for medical examination was highest among people living in cities; this was most notably the case for people living in the cities of Estonia (14.4 %). By contrast, people living in rural areas accounted for the highest proportion of adults with unmet needs for medical examination in seven EU Member States and this was particularly notable in Greece (11.7 %) and Romania (6.0 %). These differences may, at least in part, reflect differences in the distribution of poverty and social exclusion, which tends to be relatively high in the cities of northern and western Europe and in the rural areas of southern and eastern Europe.

Figure 3.3: People with unmet needs for medical examination, 2017
(%, share of population aged ≥16 years, by degree of urbanisation)



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

(1) Rural areas: estimate.

(2) 2016.

(3) Rural areas: not available.

Source: Eurostat (online data code: [hlth_silc_21](#))

Numbers of dentists

Dentists diagnose, treat and prevent diseases, injuries and abnormalities of the teeth, mouth, jaws and associated tissues by applying the principles and procedures of modern dentistry. They use a broad range of specialised diagnostic, surgical and other techniques to promote and restore oral health. Eurostat gives preference to the concept of practising dentists, although data are only available for professionally active (the Netherlands, Slovakia, North Macedonia and Turkey) or licensed dentists (Ireland, Greece, Spain and Portugal) in some countries ⁽¹⁾.

In 2016, there were an estimated 358 000 dentists across the EU-28, which equated to 70.0 dentists for every 100 000 inhabitants. A relatively short time-series exists, but this shows the total number of dentists in the EU-28 rising at a modest pace between 2009 and 2016, with an overall increase of 4.9 %. Relative to the total number of inhabitants, the number of dentists in the EU-28 rose from 67.6 to 70.0 per 100 000 inhabitants during this period.

Attiki and Praha were the only regions to report more than twice as many dentists (relative to population size) as the EU-28 average

Some of the highest ratios of dentists relative to population size (among NUTS level 2 regions) were

recorded in capital city regions (see Map 3.1). Indeed, six of the seven highest ratios in 2015 were recorded in capital city regions, namely, those of Romania, Germany, Bulgaria, Spain, Czechia and particularly Greece (Attiki had the highest ratio in the EU, at 163.5 dentists per 100 000 inhabitants). The high number of dentists in capital city regions may be linked, at least in part, to the critical mass of (potential) clients provided by such large urban areas, as well as the high number of universities, research establishments, dental schools and specialist hospitals that are located in and around capital cities. In 2015, the only non-capital city region among the seven highest regional ratios was Yuzhen tsentralen in Bulgaria (129.8 dentists per 100 000 inhabitants).

At the other end of the range, the lowest ratios of dentists relative to population size in 2015 were recorded in:

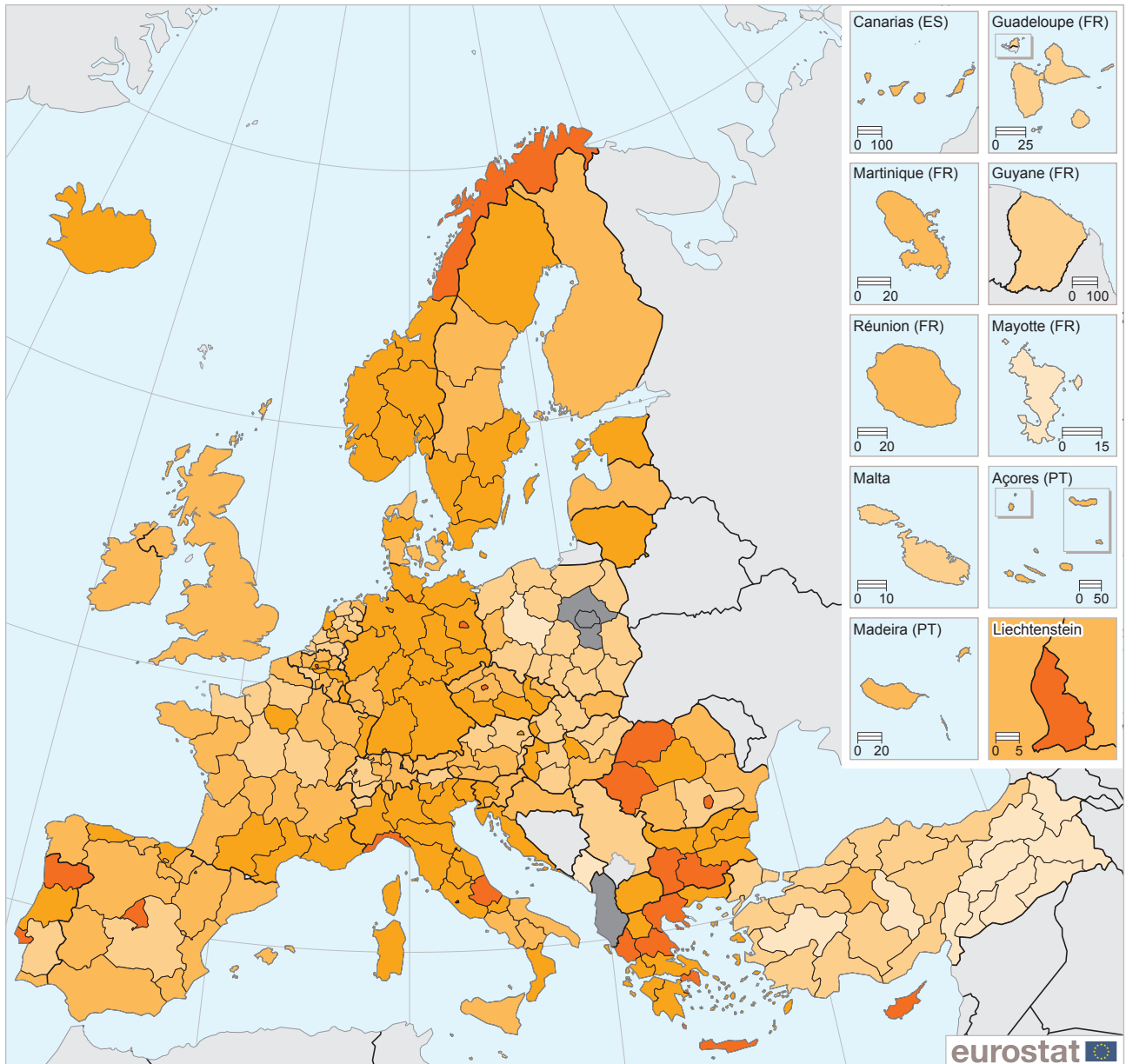
- six Polish regions — Pomorskie, Śląskie, Dolnośląskie, Warmińsko-mazurskie, Opolskie and Wielkopolskie;
- two regions from the Netherlands — Flevoland and Zeeland;
- two outermost regions of France (2016 data) — Guyane and Mayotte, the latter recording the lowest ratio in the EU, at 7.0 dentists per 100 000 inhabitants.

⁽¹⁾ Professionally active dentists are practising dentists and other dentists for whom their education in dentistry/stomatology is a prerequisite for the execution of the job. They include: dentists who provide services for patients; dentists working in administration and management positions requiring education in dentistry; dentists conducting research into oral health and dental care; dentists who participate in public action to maintain or improve standards of oral health and dental care; dentists preparing scientific papers and reports.

Dentists licensed to practice include practising and other (non-practising) dentists, who are registered and entitled to practice as health care professionals in the field of dentistry. They include: dentists who provide services for patients; other dentists for whom their education in dentistry/stomatology is a prerequisite for the execution of the job; other dentists for whom their education in dentistry/stomatology is not a prerequisite for the execution of the job; dentists registered as health care professionals and licensed to practice but who are not economically active (for example, they are unemployed or retired); dentists working abroad.

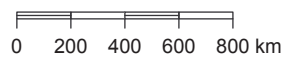
Practising dentists provide services for patients. They include: practising dentists who have completed studies in dentistry/stomatology at university level and who are licensed to practice; interns (with an adequate diploma and providing services under supervision of other dentists or dental specialists during their postgraduate internship in a health care facility); salaried and self-employed dentists delivering services irrespectively of the place of service provision; foreign dentists licensed to practice and actively practising; stomatologists; dental surgeons; maxillofacial surgeons.

Map 3.1: Number of dentists, 2016
(per 100 000 inhabitants, by NUTS 2 regions)



- EU-28 = 70.0
- < 25
- 25 - < 50
- 50 - < 75
- 75 - < 100
- ≥ 100
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 06/2019



Note: in the context of comparing health care services across EU Member States, Eurostat gives preference to the concept of practising dentists (used here unless otherwise indicated). The Netherlands, Slovakia, North Macedonia and Turkey: professionally active dentists. Ireland, Greece, Spain and Portugal: dentists licensed to practise. Germany and Közép-Magyarország (HU1): NUTS level 1. Ireland, Lithuania, Finland, the United Kingdom and Serbia: national data. Belgium, Bulgaria, Czechia, Germany, Estonia, Greece, Spain, Croatia, Cyprus, Latvia, Lithuania, Hungary, the Netherlands, Poland, Portugal, Romania, Slovenia, Sweden, Norway, Switzerland, North Macedonia and Turkey: 2015. Denmark, Slovakia, Finland and Serbia: 2014. Serbia: definition differs (see metadata). EU-28: estimate.

Source: Eurostat (online data codes: hlth_rs_prsrg and hlth_rs_prs1)

Unmet needs for dental examination

In 2017, the proportion of the EU-28 adult population (defined here as people aged ≥16 years) with unmet needs for dental examination — due to it being too expensive, too far to travel, or because of waiting lists — was 2.9 %; this could be compared with a share of 1.7 % for unmet needs for medical examination. An analysis by degree of urbanisation (see Figure 3.4) reveals that the proportion of adults with unmet needs for dental examination was higher in rural areas (3.1 %) of the EU-28 than it was in cities (3.0 %) or in towns and suburbs (2.4 %).

The share of the adult population with unmet needs for dental examination in 2017 was less than 1.0 % in Austria, Germany, Luxembourg, Malta and the Netherlands (all five of these EU Member States also reported low shares, less than 0.5 %, of their respective adult populations facing unmet needs for medical examination). By contrast, the share of adults with unmet needs for dental examination reached double figures in Greece (10.0 %), Portugal (11.6 %) and Latvia (13.9 %). As such, both Greece and Latvia were present among the three Member States with the highest shares of people facing unmet needs for both medical and dental examination.

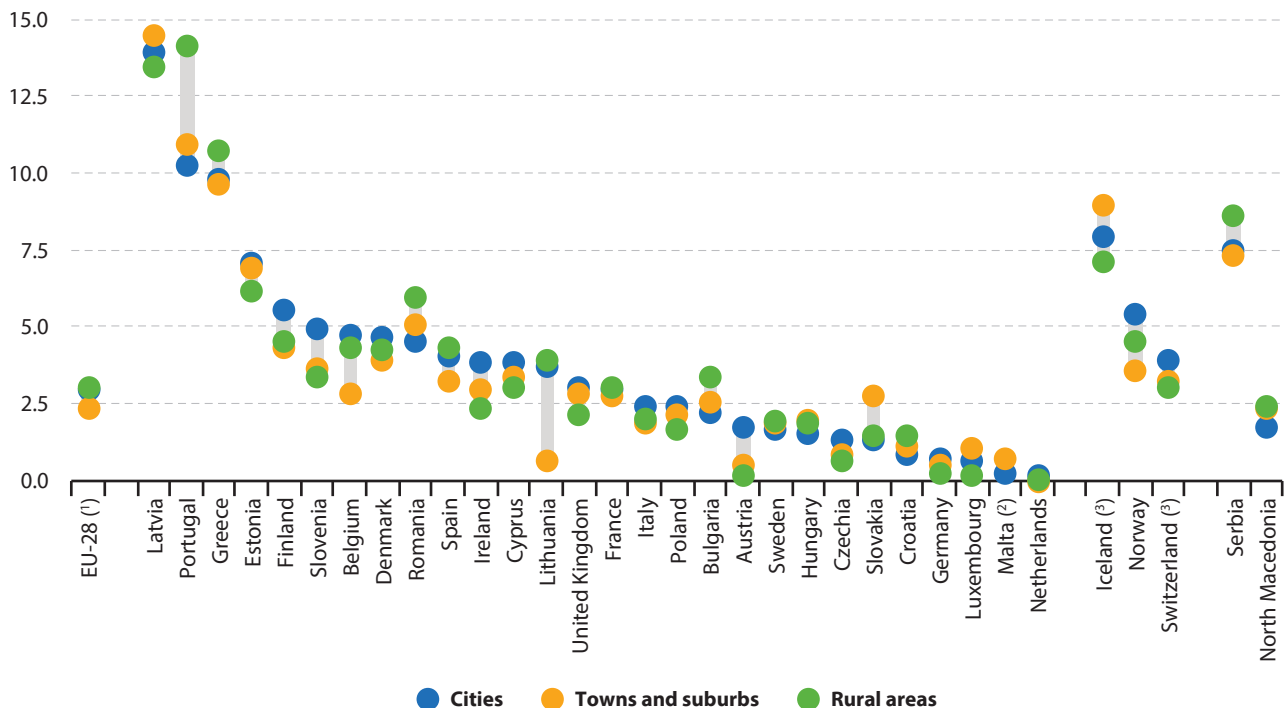
In the rural areas of Greece, Latvia and Portugal, more than 10 % of all adults had unmet needs for dental examination

An analysis by degree of urbanisation shows that in 13 of the EU Member States the proportion of adults with unmet needs for dental examination in 2017 was highest for those people living in cities. The gap was particularly apparent in Slovenia, Austria and Finland, where the share of people living in cities with unmet needs for dental examination was at least 1.0 percentage point (pp) higher than the share in towns and suburbs or in rural areas. By contrast, people living in rural areas accounted for the highest proportion of adults with unmet needs for dental examination in nine EU Member States; this gap was particularly apparent in Portugal (a difference of 3.2 pp compared with the other degrees of urbanisation), Greece (1.1 pp), Romania (0.9 pp) and Bulgaria (0.8 pp).

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

Figure 3.4: People with unmet needs for dental examination, 2017
(%, share of population aged ≥16 years, by degree of urbanisation)



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

(1) Rural areas: estimate.

(2) 2016.

(2) Rural areas: not available.

Source: Eurostat (online data code: hlth_silc_22)



causes of death following the [International Statistical Classification of Diseases and Related Health Problems \(ICD\)](#). These statistics 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. They refer specifically 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 2017, there were 5.27 million deaths across the EU-28

During the last few years, there have been more deaths than births in the EU-28, although the total number of inhabitants has continued to rise due to net migration (for more information on these developments, see Chapter 2 on [population](#)). Eurostat's demographic statistics reveal that there were 5.27 million deaths in the EU-28 in 2017: this was somewhat higher than a year before, with the total number of deaths increasing by 137 000. This pattern was repeated in a majority (24) of the EU Member States, with relatively high growth rates in Cyprus (where the number of deaths rose by 9.6 % between 2016 and 2017), Luxembourg (7.5 %), Malta (6.9 %), Italy (5.5 %) and Greece (4.8 %). Note that some of these are relatively small Member States and that the total number of deaths in one specific year may reflect the impact of a one off event, such as a particularly cold winter or the presence of an epidemic. More generally, the number of deaths increased at a relatively fast pace between 2016 and 2017 in most of the southern Member States, while Finland (-0.4 %), Ireland (-0.7 %), Portugal (-0.7 %) and Lithuania (-2.3 %) were the only Member States reporting a reduction in their total number of deaths.

A wide range of factors determine regional mortality patterns, for example: age structures, gender, living/working conditions and the surrounding environment. Each individual can also influence their own chances of leading a long and healthy life, through lifestyle choices they make concerning issues such as exercise, diet, the consumption of alcohol, whether or not they smoke, or their behaviour when driving.

Maps 3.2-3.5 show regional statistics on causes of death using [standardised death rates](#): the standardisation aims to remove the influence of differences in age structures between regions (as elderly persons are more likely to die than younger persons, or are more likely to catch/contract a specific illness/disease). Standardised death rates are more comparable across space and/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). Statistics on causes of death are provided for NUTS level 2 regions in the form of three-year averages covering the period 2013-2015, thereby smoothing

out some of the fluctuations that might occur from one year to the next for what may be relatively small subpopulations.

Ischaemic heart diseases were the most common cause of death in the EU-28

On the basis of the European shortlist for causes of death, the leading cause of death in the EU was ischaemic heart disease, with a standardised death rate of 129 deaths per 100 000 inhabitants during the period 2013-2015. The next most common causes of death included:

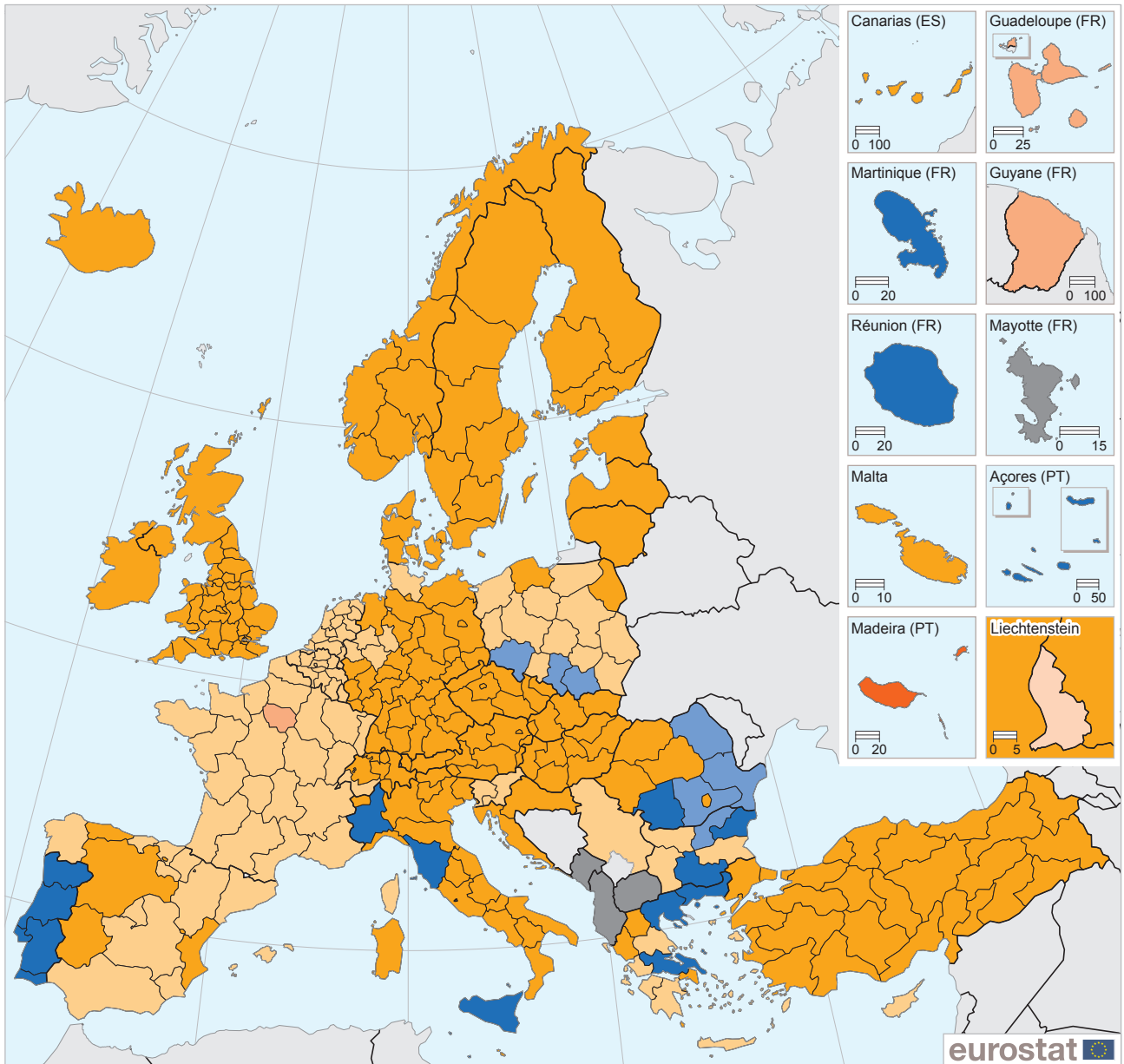
- other heart diseases (92 deaths per 100 000 inhabitants);
- cerebrovascular diseases (87 deaths);
- other diseases of the circulatory system (74 deaths);
- malignant neoplasm (cancer) of the trachea, bronchus and lung (54 deaths);
- dementia (35 deaths);
- chronic lower respiratory diseases (35 deaths);
- accidents (31 deaths);
- malignant neoplasm (cancer) of the colon, rectosigmoid junction, rectum, anus and anal canal (31 deaths);
- pneumonia (26 deaths).

Map 3.2 shows the most common causes of death for NUTS level 2 regions, based on standardised death rates for the period 2013-2015. Of the 271 regions in the EU for which data are available, a majority (154) reported that ischaemic heart disease was the most common cause of death. Across the EU Member States (composed of more than one NUTS level 2 region), ischaemic heart disease was the most common cause of death in each and every region of Czechia, Denmark, Croatia, Hungary, Austria, Slovakia, Finland, Sweden and the United Kingdom, while it was the most common cause of death in the vast majority of Italian regions.

Other heart diseases were the leading cause of death in 89 different regions, including every region of Belgium, the Netherlands and Slovenia, and the vast majority of regions in Spain, France and Poland. Cerebrovascular diseases were the most common cause of death in 17 different regions of the EU, including all of the mainland regions of Portugal. The other most common causes of death were less widespread — with a single-digit count of regions:

- other diseases of the circulatory system were the most common cause of death in seven eastern European regions;
- the residual grouping of ill-defined and unknown causes of mortality was the most common cause of death in three French regions — the capital city region of Ile-de-France, as well as the two outermost regions of Guadeloupe and Guyane;
- pneumonia was the most common cause of death in a single region, the outermost Portuguese Região Autónoma da Madeira.

Map 3.2: Most common causes of death, 2013-2015
(standardised death rates per 100 000 inhabitants, by NUTS 2 regions)



- EU-28 = ischaemic heart disease
- Ischaemic heart diseases**
- Other heart diseases**
- Cerebrovascular diseases**
- Other diseases of the circulatory system**
- Pneumonia**
- Ill-defined and unknown causes of mortality**
- Other symptoms, signs and abnormal clinical and laboratory findings**
- Data not available**

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 06/2019

0 200 400 600 800 km

Note: information shown for a three-year average. Közép-Magyarország (HU1), Makroregion Województwo Mazowieckie (PL9) and Scotland (UKM): NUTS level 1. Ireland, Lithuania and Serbia: national data.

Source: Eurostat (online data code: hlth_cd_ysdr2)



Across the EU, there were 32.8 deaths from breast cancer per 100 000 female inhabitants

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 95 400 people in the EU-28 that died from malignant neoplasm of the breast (hereafter referred to as breast cancer); this equated to 7.2 % of all deaths from cancer. Breast cancer predominantly affects women (although 957 men died from the disease in 2015): it accounted for around one sixth (16.2 %) of all female deaths related to cancer.

The EU-28 standardised death rate from all forms of cancer averaged 261.7 deaths per 100 000 inhabitants during the period 2013-2015. The rate for breast cancer among women averaged 32.8 deaths per 100 000 female inhabitants. Regional variations in deaths from breast cancer may, at least in part, reflect differences in national health care systems, for example the availability of mammography screenings (which reduce mortality rates) or the use made of hormone replacement therapy for menopause (which increases the risk of breast cancer).

Map 3.3 shows there were 15 regions across the EU where the standardised death rate from breast cancer was at least 40.0 deaths per 100 000 female inhabitants during the period 2013-2015 (these are shown in the darkest shade). They were widely distributed across the EU and included:

- three bordering regions from western Belgium and northern France — West-Vlaanderen and Prov. Hainaut in Belgium and Nord-Pas de Calais in France;
- four eastern European capital city regions, Kontinentalna Hrvatska (Croatia), Közép-Magyarország (Hungary; NUTS level 1), București-Ilfov (Romania) and Bratislavský kraj (Slovakia).

At the other end of the range, there were only four regions in the EU where the standardised death rate from breast cancer was less than 20.0 deaths per 100 000 female inhabitants in 2013-2015, they were:

- La Rioja and its neighbouring region of Comunidad Foral de Navarra, located in northern Spain;
- Guyane, an outermost region of France;
- Åland, an autonomous archipelago in Finland, which recorded the lowest death rate at 15.7 deaths per 100 000 female inhabitants (note this region has a very small population which may strongly influence the results for a specific period).

Prostate cancer was the main cause of death for a relatively high number of men in several Baltic and Nordic regions

In 2015, there were 75 400 people in the EU-28 that died from malignant neoplasm of the prostate (hereafter referred to as prostate cancer); this equated to 5.7 % of all deaths from cancer. Prostate cancer only affects men and accounted for just over one tenth (10.2 %) of all male deaths that were related to cancer in 2015.

The number of men dying from prostate cancer has overtaken the number of women dying from breast cancer in several EU Member States; in 2015, this situation was observed in Sweden, the United Kingdom, Denmark, Finland, Estonia and Portugal. It may, at least in part, be related to demographic changes, with a higher number of men living much longer lives (prostate cancer tends to affect particularly elderly men), but may also reflect national health care systems (for example, the availability and take-up of screenings for both forms of cancer, as well as public information campaigns).

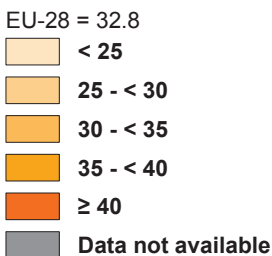
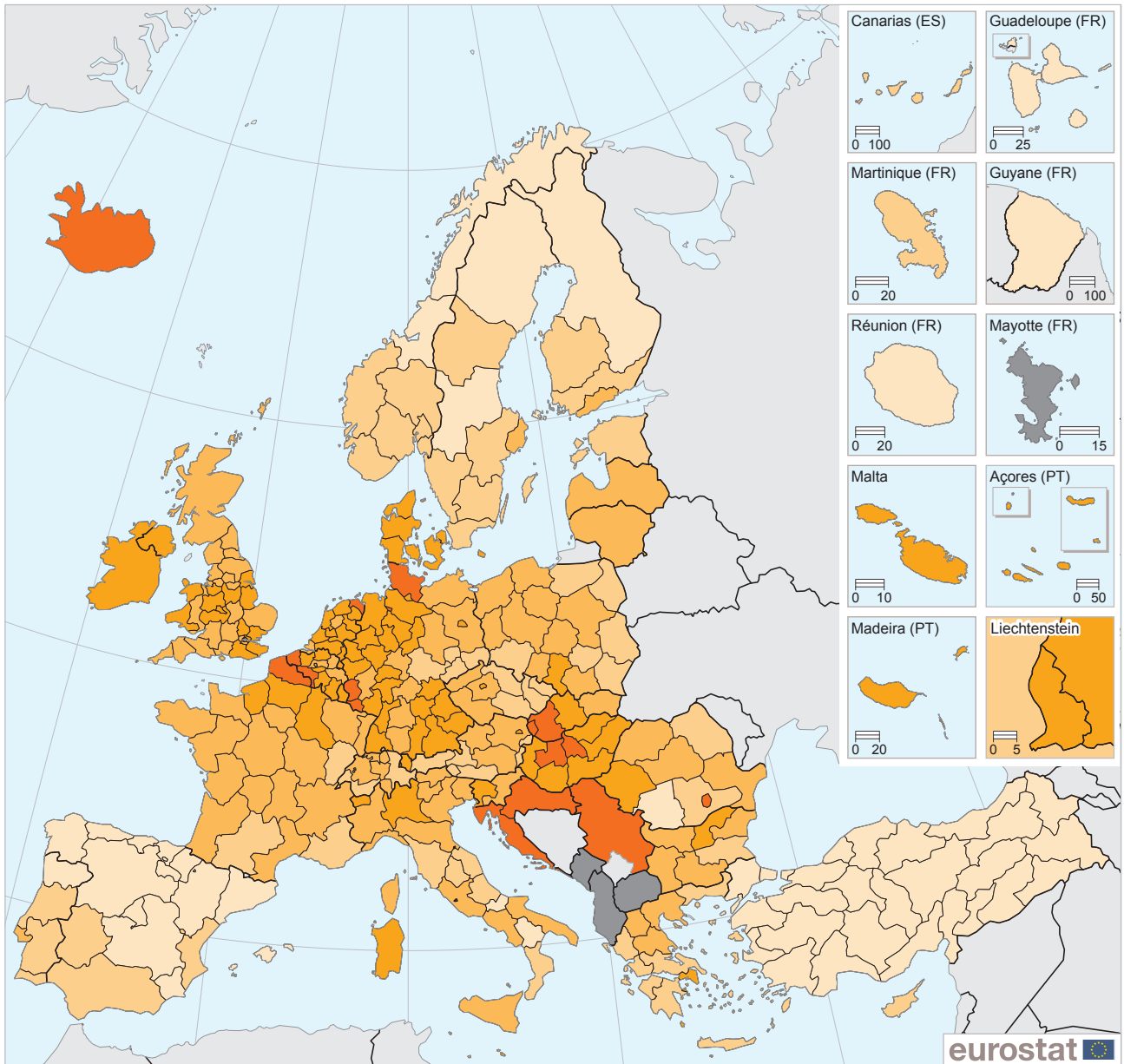
Standardised death rates are more reliable for comparing between diseases as they remove the impact of different age structures. The death rate from prostate cancer in the EU-28 averaged 39.5 deaths per 100 000 male inhabitants during the period 2013-2015, therefore somewhat higher than the standardised death rate from breast cancer, at 32.8 deaths per 100 000 female inhabitants.

Across NUTS level 2 regions, the highest standardised death rates from prostate cancer in 2013-2015 — at least 60.0 deaths per 100 000 male inhabitants (as shown by the darkest shade in Map 3.4) — were concentrated in:

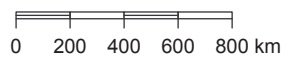
- **Baltic** — Estonia, Latvia (both single regions at this level of detail) and Lithuania (only national data available) — and **Nordic** regions, including two regions in Denmark and five regions in Sweden;
- two outermost regions of France — Guadeloupe and Martinique — the latter recording the highest death rate, at 76.5 deaths per 100 000 male inhabitants;
- the outermost Portuguese Região Autónoma dos Açores;
- the eastern half of Slovenia, Vzhodna Slovenija.

By contrast, the lowest standardised death rates from prostate cancer were largely concentrated in southern Europe, as the death rate fell below 30.0 per 100 000 male inhabitants in 17 regions of Italy — including Molise, which recorded the lowest rate (23.6 deaths per 100 000 male inhabitants) in the EU — four regions in Greece, three regions in Spain and Malta (a single region at this level of detail).

Map 3.3: Standardised death rates from breast cancer, 2013-2015
(per 100 000 female inhabitants, by NUTS 2 regions)



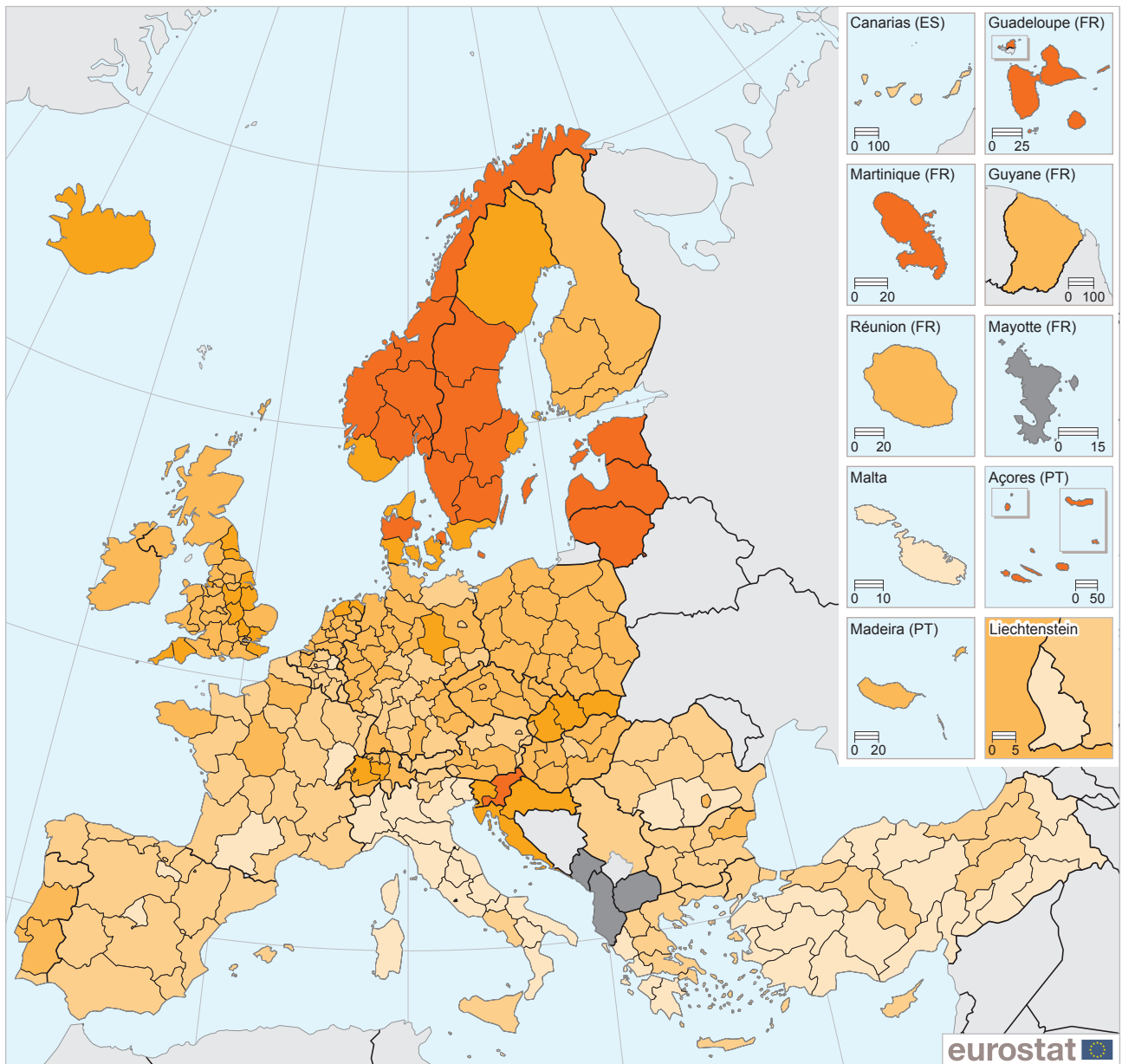
Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 06/2019



Note: information shown for a three-year average. Közép-Magyarország (HU1), Makroregion Województwo Mazowieckie (PL9) and Scotland (UKM): NUTS level 1. Ireland, Lithuania and Serbia: national data.

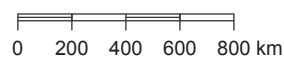
Source: Eurostat (online data code: hlth_cd_ysdr2)

Map 3.4: Standardised death rates from prostate cancer, 2013-2015
(per 100 000 male inhabitants, by NUTS 2 regions)



- EU-28 = 39.5
- < 30
- 30 - < 40
- 40 - < 50
- 50 - < 60
- ≥ 60
- Data not available**

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 06/2019



Note: information shown for a three-year average. Közép-Magyarország (HU1), Makroregion Województwo Mazowieckie (PL9) and Scotland (UKM): NUTS level 1. Ireland, Lithuania and Serbia: national data.

Source: Eurostat (online data code: hlth_cd_ysdr2)

Across the EU, there were 11.3 deaths from suicide per 100 000 inhabitants

Intentional self-harm — hereafter referred to as suicide — is one of the most common external causes of mortality, alongside falls and 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 and exclude failed attempts or other non-fatal forms of self-harm.

In 2015, there were 56 200 people in the EU-28 that died from suicide, which was slightly higher than the number of people that died from falls (55 200) and considerably more than the number that died from transport accidents (30 100). Given the sensitivity of suicide, it should be noted that for some EU Member States data on suicide are potentially under-reported.

There is a considerable gender gap for suicide: in 2015, men accounted for more than three quarters (76.7 %) of all suicides in the EU-28. This may, at least in part, be attributed to the likelihood of success from the chosen method of suicide, as men tend to select more impulsive (and deadly) methods. The EU-28 standardised death rate from suicide during the period 2013-2015 averaged 11.3 deaths per 100 000 inhabitants, with the rate for men (18.5 deaths per 100 000 male inhabitants) some 3.75 times as high as that for women.

Map 3.5 presents standardised death rates from suicide for the period 2013-2015. The highest death rates in the EU (20.0 or more deaths per 100 000 inhabitants) are shown in the darkest shade. Lithuania (only national data available) had, by far, the highest death rate, among NUTS level 2 regions, at 32.6 deaths per 100 000 inhabitants, followed by two neighbouring regions from south-east of Hungary (Észak-Alföld and Dél-Alföld) and two neighbouring regions in north-west France (Bretagne and Basse Normandie).

At the other end of the range, the lowest death rates from suicide (below 5.0 deaths per 100 000 inhabitants)

are shown in the lightest shade; they included six regions each from Greece and Italy (including Molise, which had the lowest rate in the EU, at 3.6 deaths per 100 000 inhabitants).

As noted above, there are considerable differences between the sexes for suicide. The highest standardised death rate for men during the period 2013-2015 was recorded in Lithuania (only national data available), at 60.5 deaths per 100 000 male inhabitants, followed by two Hungarian regions — Észak-Alföld (48.1 per 100 000 male inhabitants) and Dél-Alföld (44.1 per 100 000 male inhabitants). By contrast, the three highest death rates from suicide for women were all recorded in Belgium: Prov. Namur (14.6 per 100 000 female inhabitants), Prov. Liège (12.9 per 100 000 female inhabitants) and Prov. West-Vlaanderen (12.4 per 100 000 female inhabitants).

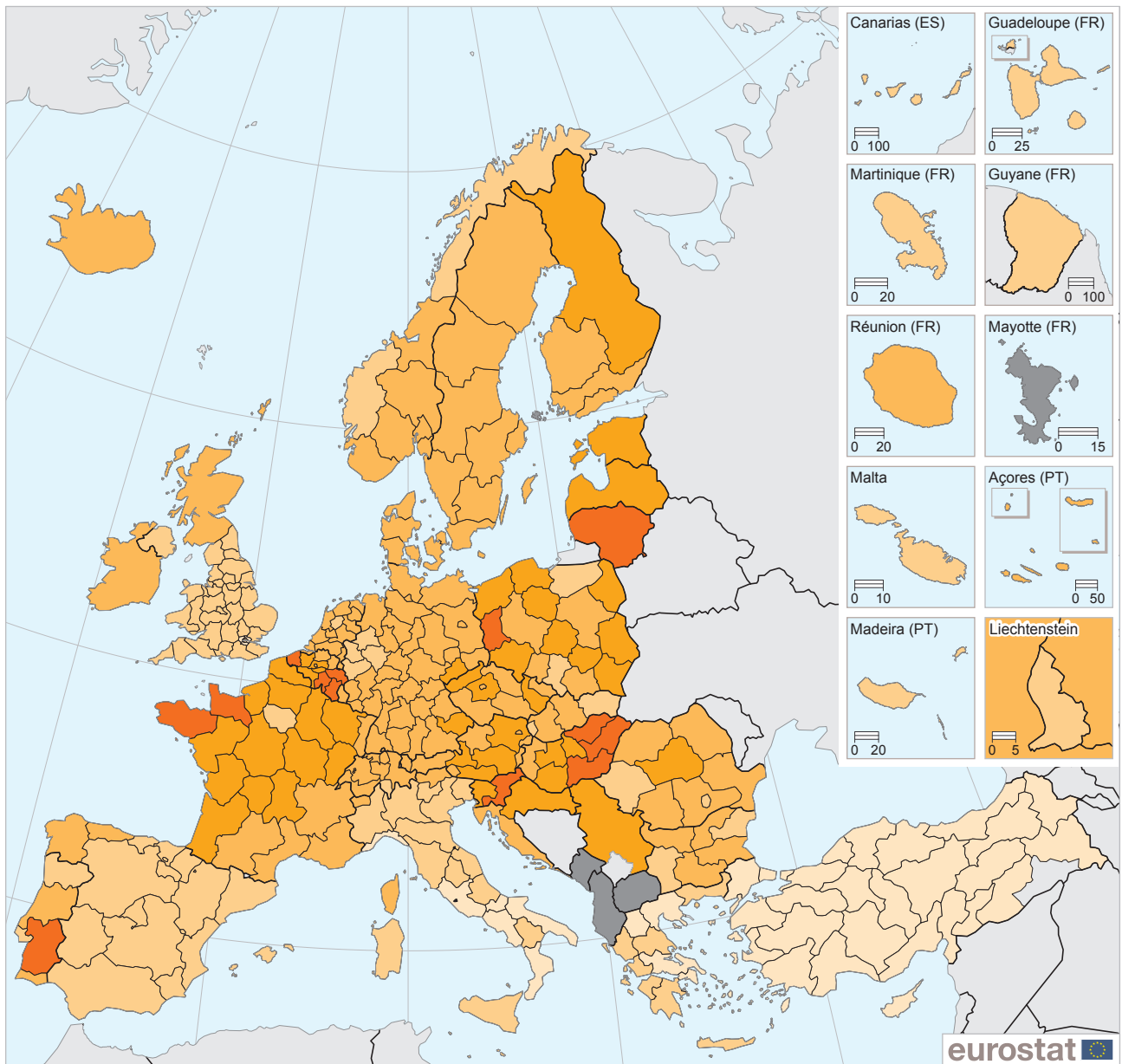
There was a gender gap for suicide in each of the NUTS level 2 regions of the EU (subject to data availability), with higher death rates for men than women. This pattern was particularly apparent in eastern Europe, as standardised death rates for men from suicide were at least six times as high as those for women in:

- all but one region of Poland, the exception being Zachodniopomorskie;
- all but one region of Slovakia, the exception being the capital city region of Bratislavský kraj;
- a majority of the regions in Romania;
- the easternmost region of Czechia, Moravskoslezsko.

Standardised death rates from suicide were also at least six times as high for men as they were for women in six regions located across southern Europe:

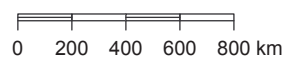
- three from Greece — Dytiki Ellada, Dytiki Makedonia and Kriti;
- the two autonomous, outermost regions of Portugal — Açores and Madeira;
- Malta (a single region at this level of detail).

Map 3.5: Standardised death rates from suicide, 2013-2015
(per 100 000 inhabitants, by NUTS 2 regions)



- EU-28 = 11.3
- < 5
- 5 - < 10
- 10 - < 15
- 15 - < 20
- ≥ 20
- Data not available**

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 06/2019



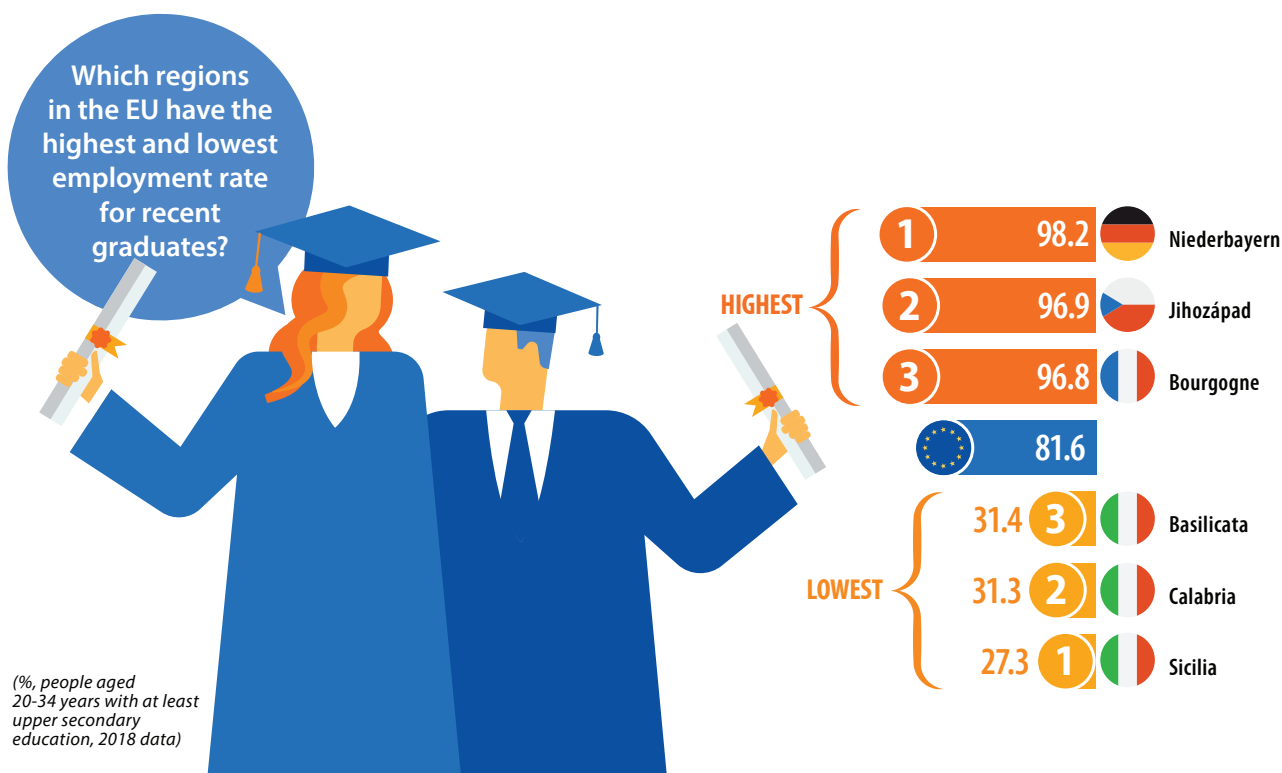
Note: information shown for a three-year average. Közép-Magyarország (HU1), Makroregion Województwo Mazowieckie (PL9) and Scotland (UKM): NUTS level 1. Ireland, Lithuania and Serbia: national data. Kastamonu, Çankırı, Sinop (TR82): 2012-2014.

Source: Eurostat (online data code: hlth_cd_ysdr2)

4

Education and training





One of the 20 underlying principles of the [European pillar of social rights](#) seeks to ensure that ‘everyone has the right to quality and inclusive [education](#), training and [lifelong learning](#) in order to maintain and acquire skills that enable them to participate fully in society and manage successfully transitions in the labour market’. Indeed, at least a basic level of education is desirable, so that everyone has the opportunity to participate in economic and social life, while reducing the risk of falling into poverty or social exclusion. From a broader perspective, the promotion of education and training is 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 and innovation.

Education, [vocational training](#) and 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 of pupils and students through different levels of the education system (according to the [international standard classification of education \(ISCED\)](#) — see box for more details), before analysing transitions from education into the [labour market](#). Data are presented for: the share of children under the age of three in formal care; participation rates in early childhood education; gender gaps for students in vocational training; the share of the population with a tertiary degree; [early leavers](#) from

education and training; the share of [young people neither in employment nor in education or training \(NEET\)](#); [employment rates](#) for recent graduates; and [adult participation in learning](#) (education and training).

Early childhood education (and care)

As one of its 20 underlying principles, the European pillar of social rights seeks to ensure that ‘children have the right to affordable early childhood education and care of good quality’. Research has shown that early experiences of children are often critical for their long-term development, with early childhood and primary education thought to play a key role in potentially 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 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.



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, official statistics on education are compiled according to the international standard classification of education (ISCED). It is used to assemble a wide variety of statistics, covering topics such as enrolments and attendance, educational attainment, or human or financial investment.

ISCED is the reference classification for organising formal education programmes and related qualifications by education levels and fields into internationally agreed categories. The most recent version of the classification — [ISCED 2011](#) — was adopted by the UNESCO General Conference in November 2011 and identifies the following levels of education:

- 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.

The term tertiary education refers to an aggregate composed of ISCED levels 5-8.

In 2016, there were 110 million children, pupils and students enrolled across the EU in all [levels of education](#) from early childhood education to doctoral studies.

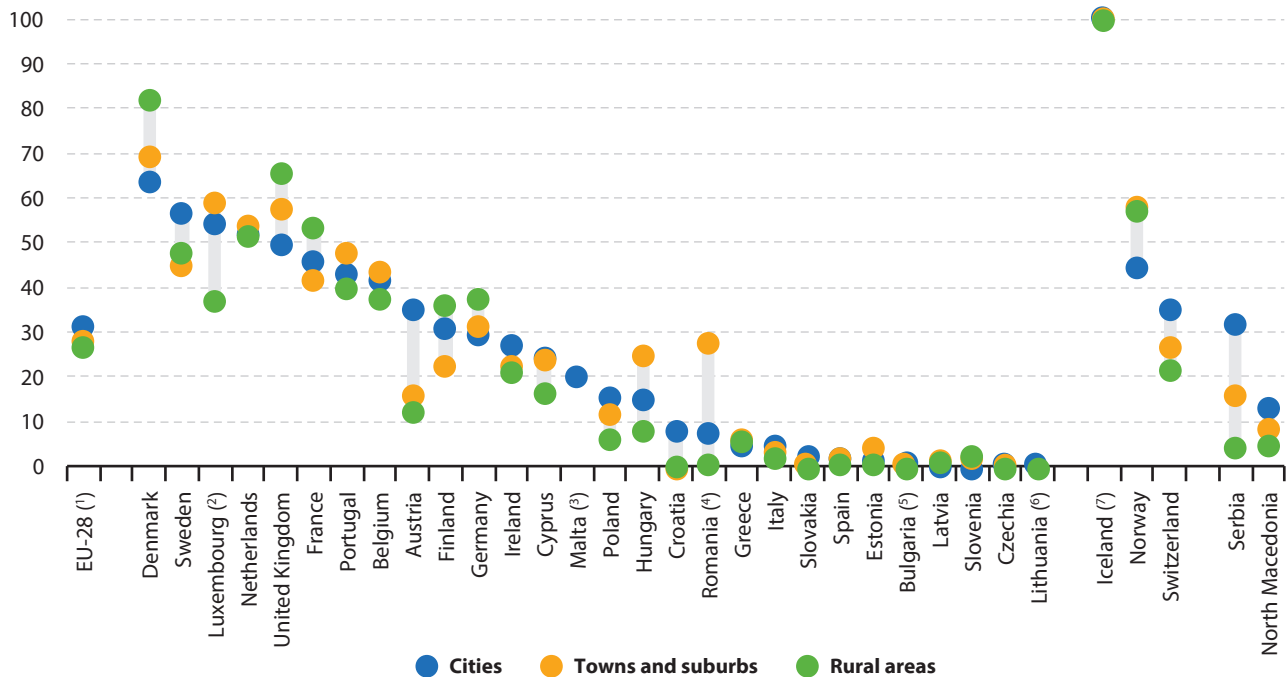
Almost 3 out of every 10 children under the age of three in the EU attended formal child care

One of the first opportunities children have to develop learning, critical thinking and collaborative skills is if they attend formal child care. In 2016, almost three tenths (29.5 %) of children in the EU-28 under the age of three participated in formal child care; this indicator forms part of a scoreboard for the European pillar of social rights, designed to build a more inclusive and fairer EU.

Figure 4.1 shows the distribution of this ratio by degree of urbanisation, with a higher proportion of children living in cities (31.7 %) participating in formal child care than those living in towns and suburbs (28.6 %) or rural areas (26.8 %). There were however considerable differences between EU Member States in terms of the propensity to make use of formal child care for children under the age of three. Higher participation rates were most often recorded in northern and western regions of the EU, whereas children under the age of three from southern and eastern regions were more likely to remain at home or with the extended family/friends (rather than attend formal child care).

Contrary to the pattern for the EU as a whole, more children under the age of three living in the rural areas of Denmark (82.4 %), the United Kingdom (66.1 %) and France (53.7 %) participated in formal child care, in comparison with their peers living in cities, or towns and suburbs. A similar pattern was repeated in Germany (38.0 %) and Finland (36.4 %), where slightly more than one third of all children less than the age of three living in rural areas participated in formal care, as well as in Slovenia where the participation rate in rural areas was just 2.6 %. Elsewhere, children under the age of three living in cities and in towns and suburbs were more likely than children living in rural areas to be enrolled in formal care, possibly reflecting, at least in part, a lack of care services in remote areas with low levels of population density.

Figure 4.1: Children under the age of three in formal care, 2016
(%, by degree of urbanisation)



Note: ranked on cities.

(1) Estimates.

(2) Cities: low reliability.

(3) Towns and suburbs and rural areas: not available.

(4) Low reliability.

(5) Towns and suburbs: low reliability.

(6) Towns and suburbs: not available.

(7) Towns and suburbs and rural areas: low reliability.

Source: Eurostat (online data codes: [ilc_ats01](#) and [ilc_caindformal](#))

More than 95 % of children in the EU between the age of four and the age for starting compulsory primary education participated in early childhood education

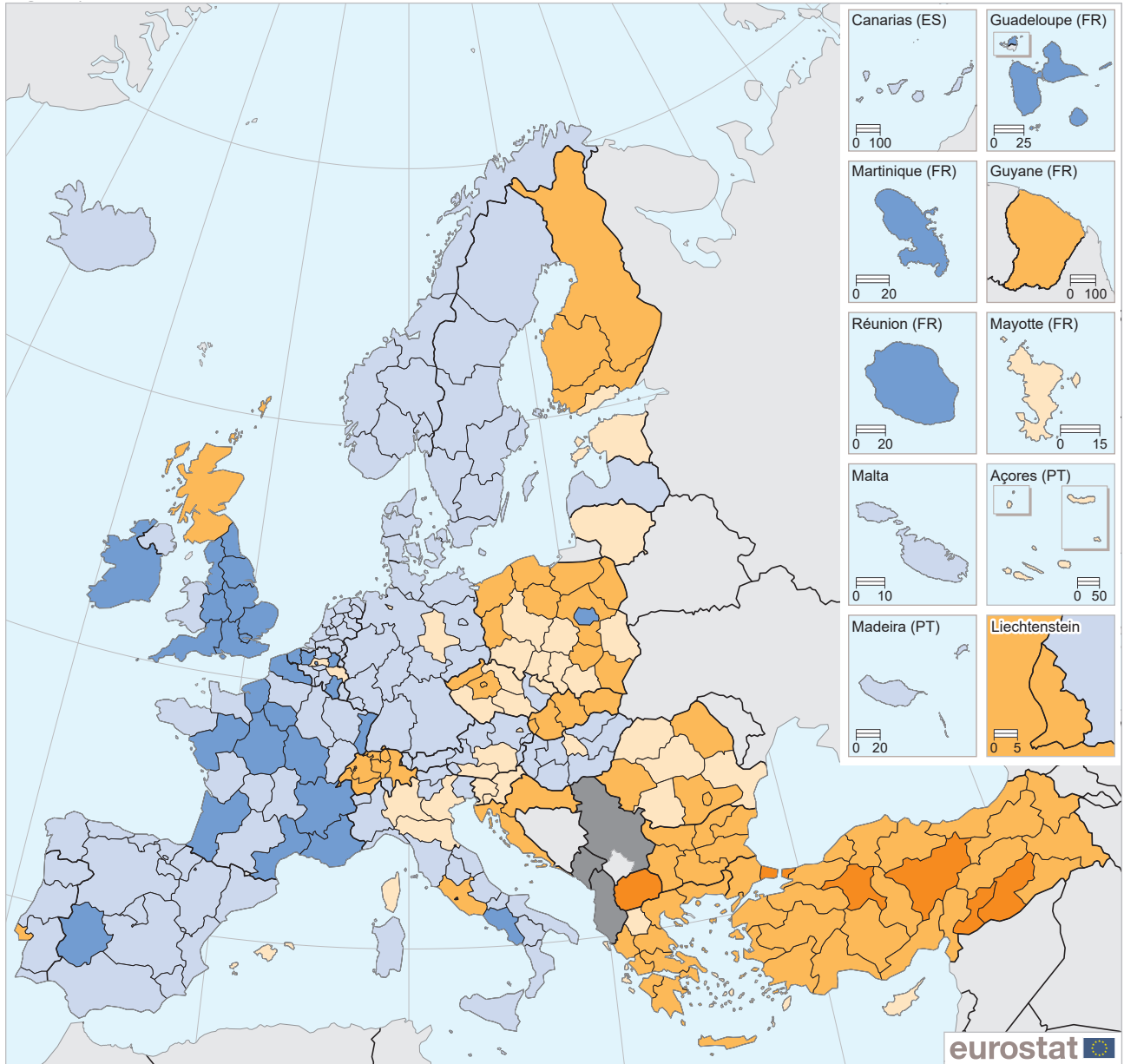
The education and training 2020 (ET 2020) strategic framework set a headline target, insofar as by 2020 at least 95 % of children between the age of four and the age for starting compulsory primary education should participate in early childhood education; note that in contrast to child care, early childhood education has a specific educational component. In 2016, this ratio stood at 95.3 % across the EU-28 — in other words the headline target had already been reached.

An analysis by NUTS level 2 regions reveals that in 2017 there were 85 out of 226 regions — as shown by the yellow shades in Map 4.1 — where the early childhood education participation rate for children between the age of four and the age for starting compulsory primary education was less than 95.0 %. These regions were located in every region of Bulgaria, Czechia (except Střední Morava), Greece, Croatia, Poland (except the capital city region of Warszawski stołeczny), Romania, Slovenia, Slovakia and Finland (except the island region of Åland), as well as Estonia and Cyprus (both single regions at this level of detail) and Lithuania (only national data available).



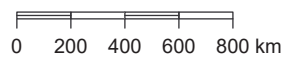
Map 4.1: Participation rates in early childhood education, 2017

(%, share of children between the age of four and the age of starting compulsory primary education, by NUTS 2 regions)



- EU-28 = 95.3
- < 50
- 50 - < 90
- 90 - < 95
- 95 - < 100
- = 100
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019



Note: Germany, Közép-Magyarország (HU1) and the United Kingdom, NUTS level 1. Ireland and Lithuania: national data. EU-28, the United Kingdom, Iceland, Liechtenstein, North Macedonia and Turkey: 2016.

Source: Eurostat (online data codes: [educ_uoe_enra17](#) and [educ_uoe_enra10](#))

During the period 2014-2017, there was a rapid increase in the proportion of children attending early childhood education in the vast majority of Greek regions

Figure 4.2 extends the analysis of participation rates in early childhood education by looking in more detail at recent developments: it provides information for those EU regions with the highest increases and the largest reductions — in percentage point (pp) terms — during the period 2014-2017. There was a rapid increase in the take-up of early childhood education across Greece, with 7 out of the 10 highest increases in the EU being recorded in Greek regions, including:

- Notio Aigaio in the southern Aegean, where the participation rate of children between the age of four and the age of starting compulsory primary education in early childhood education rose by its biggest margin, up 19.4 pp;

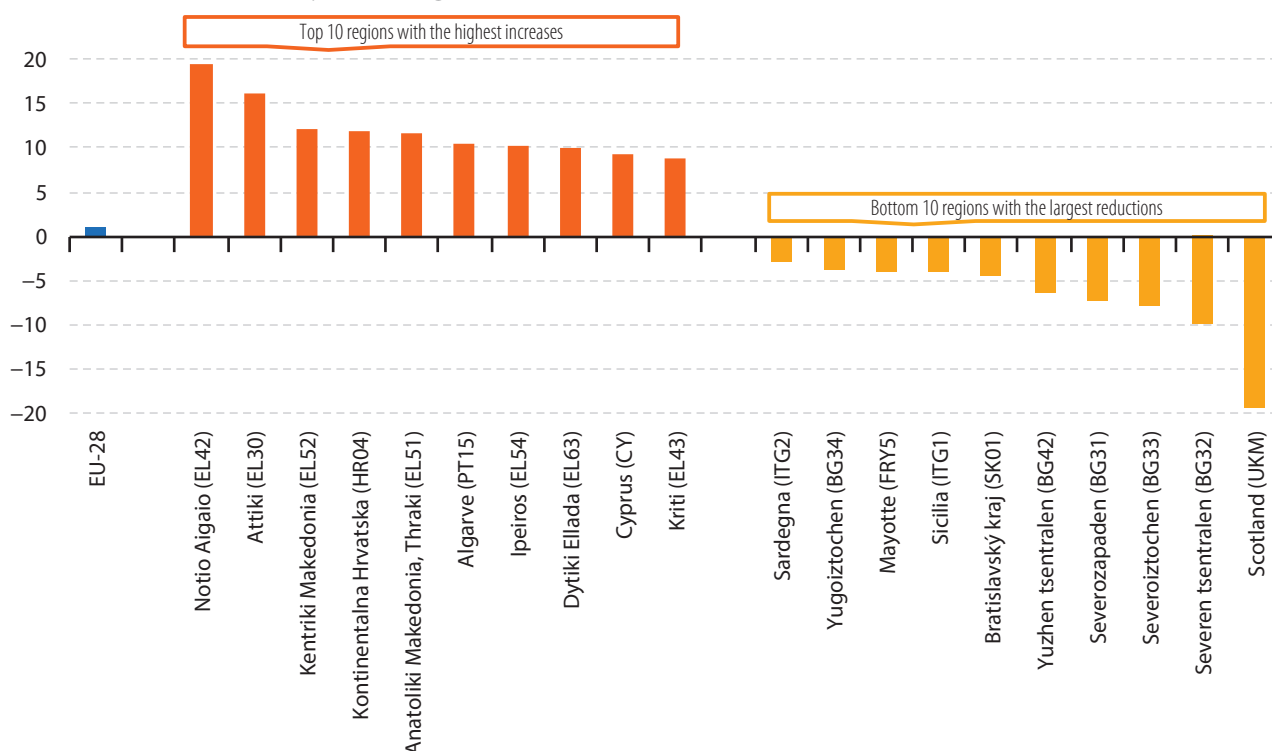
- Attiki, the capital city region, up 16.2 pp;
- Kentriki Makedonia in the north that includes the city of Thessaloniki, up 12.1 pp.

At the other end of the range, many of the regions that had participation rates for early childhood education below 95 % also reported that their participation rates were in decline during the period 2014-2017, suggesting they were unlikely to attain the 2020 target. This was particularly the case for:

- five out of the six Bulgarian regions (with the participation rate also falling in Yugozapaden — the capital city region);
- Bratislavský kraj, the Slovakian capital city region;
- Scotland in the United Kingdom (data are only available for NUTS level 1), which had the biggest reduction, as its participation rate fell by 19.5 pp, the only region across the EU to record a double-digit reduction.

Figure 4.2: Development of participation rates in early childhood education, 2014-2017

(change in share of children between the age of four and the age of starting compulsory education, percentage points difference 2017 minus 2014, by NUTS 2 regions)



Note: Germany, Közép-Magyarország (HU1) and the United Kingdom, NUTS level 1. Ireland and Lithuania: national data. Mayotte (FRY5) and Croatia: 2015-2017. EU-28 and the United Kingdom: 2014-2016.

Source: Eurostat (online data codes: educ_uoe_enra17 and educ_uoe_enra10)



Vocational education

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

In 2016, there were 22.0 million students enrolled in the EU's upper secondary education establishments

Upper secondary education (ISCED level 3) typically ends when students are aged 17 or 18 years. These programmes are designed to prepare students for tertiary education and/or to provide them with the skills that are relevant for employment. In 2016, there were 10.8 million upper secondary students across the EU-28 participating in vocational education programmes, equivalent to almost half (49.3 %) of the total number of upper secondary students; the remaining 50.7 % participated in general upper secondary education programmes that were more academic in nature.

The proportion of upper secondary students participating in vocational education programmes 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 Czechia, the Netherlands and Austria, this type of education is widely seen as an effective way of helping to facilitate an individual's transition into the labour market. In 2017, there were 24 NUTS level 2 regions across the EU where more than 7 out of 10 upper secondary students participated in vocational education, they included: seven out of eight regions from Czechia, with the highest share across all NUTS level 2 regions recorded in Severozápad (76.7 %); six regions from the Netherlands and five regions from Austria.

By contrast, the relative importance of vocational education programmes in relation to the total number of students following upper secondary education was generally quite low in capital city regions, reflecting the concentration of academic establishments in these cities. Indeed, less than one quarter of all upper secondary students followed vocational programmes in:

- the north-western Hungarian region of Közép-Dunántúl (24.0 %);
- two regions from Greece, the mainland region of Peloponnisos (24.8 %) and the capital city region of Attiki (23.4 %);
- Cyprus, which had the lowest share in the EU (16.7 %; national data at this level of detail).

While 54.0 % of upper secondary male students in the EU followed a vocational programme, the corresponding share among upper secondary female students was lower, at 44.5 %

There was a gap between the sexes in terms of their respective participation in vocational education programmes: in 2016, young men in the EU were more likely to follow a vocational programme (54.0 % of all male students in upper secondary education), while young women were more likely to follow a more academic, general programme (55.5 % of all female students in upper secondary education).

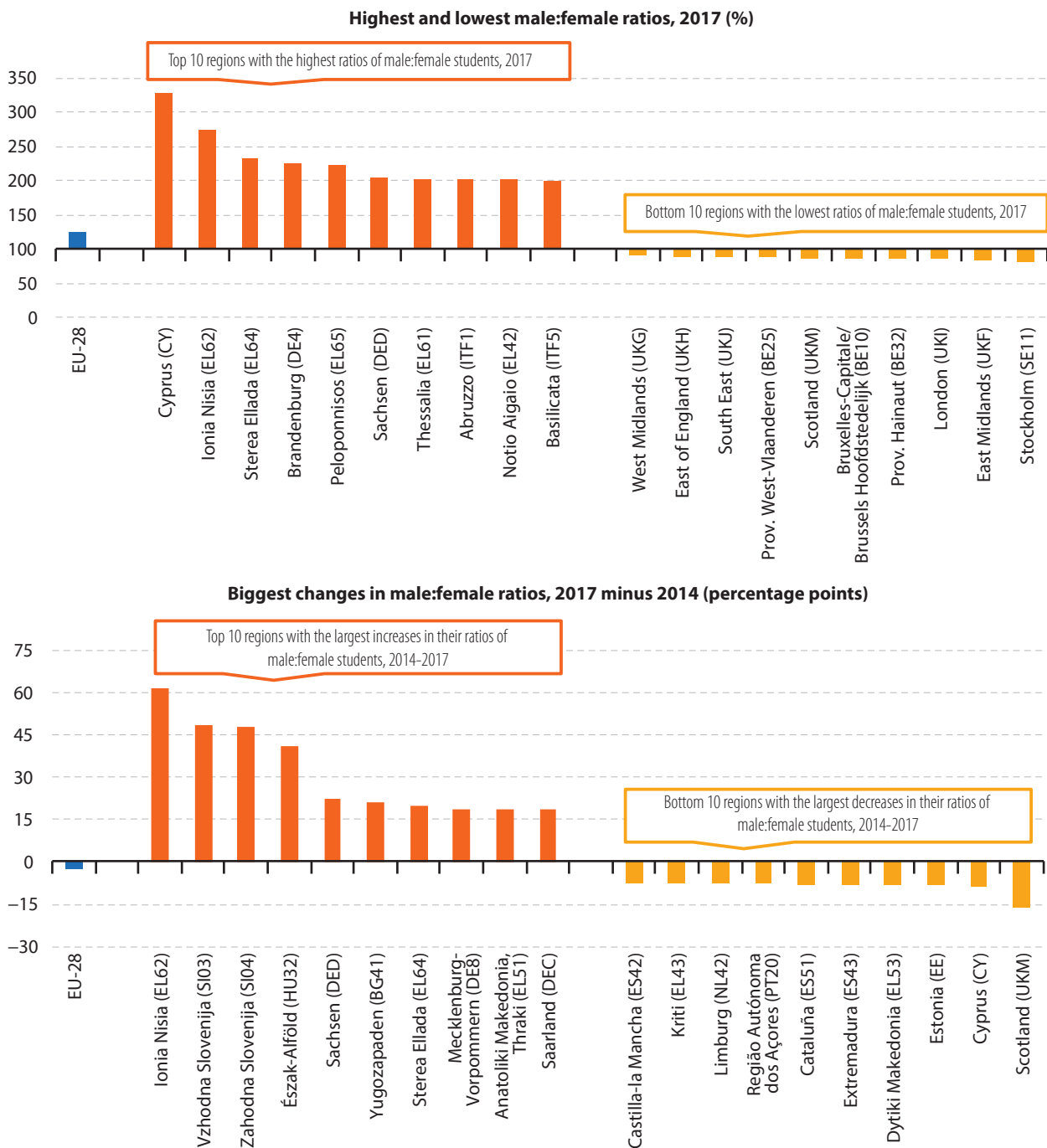
The first half of Figure 4.3 shows those NUTS level 2 regions with the highest and lowest ratios of male to female students in upper secondary education following vocational programmes. For example, there were more than three times as many male as female students in Cyprus following a vocational programme in 2017, while ratios of between two and three times as many male as female students were recorded in five Greek regions (the biggest gender gap being registered in Ionia Nisia), two eastern German regions (Brandenburg and Sachsen) and the southern Italian region of Abruzzo.

By contrast, there were 30 regions where the number of female students enrolled in a vocational programme of upper secondary education was higher than that recorded among male students; these regions were exclusively located across Belgium, the Netherlands, Finland, Sweden and the United Kingdom. In 2017, the biggest gender gaps in favour of women were recorded in:

- Stockholm, the Swedish capital city region, where the number of male students following vocational programmes was equivalent to 82.8 % of the female total;
- two regions from the United Kingdom (both 2016 data and NUTS level 1), East Midlands (83.9 %) and the capital city region of London (85.8 %).

Between 2014 and 2016, the ratio of male to female students following vocational programmes in upper secondary education across the EU-28 fell by 2.8 pp. The second half of Figure 4.3 shows those regions with the biggest changes in their shares of male and female students during the period 2014-2017, when the proportion of women following vocational programmes rose across much of Spain, Cyprus (national data at this level of detail), the Netherlands, Poland, Romania, Sweden and the United Kingdom.

Figure 4.3: Ratio of male to female students in upper secondary education following vocational programmes, 2017
(% in 2017 and percentage points difference 2017 minus 2014, by NUTS 2 regions)



Note: the ratio is calculated as the number of male students following vocational programmes within upper secondary education divided by the number of female students following vocational programmes within upper secondary education (expressed as a percentage). The second half of the chart shows those regions characterised by the largest increases in their male:female ratio (with an increasing proportion of men following vocational programmes) and those regions characterised by the largest decreases in their male:female ratios (with an increasing proportion of women following vocational programmes). Germany, Közép-Magyarország (HU1) and the United Kingdom: NUTS level 1. Lithuania: national data. Mayotte (FRY5): 2015-2017. EU-28 and the United Kingdom: 2014-2016.

Source: Eurostat (online data code: educ_uoe_enrs06)



Tertiary education

Tertiary education (ISCED levels 5-8) builds on secondary education, providing learning activities at a higher level of complexity; it is offered by universities, vocational establishments, institutes of technology, as well as other institutions awarding academic degrees and/or professional certificates. There are a range of policy challenges for tertiary 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 modern workplace. Indeed, in the coming years, it is likely that a growing share of the workforce will need to develop/learn new skills during the course of their working lives in order to safeguard their employability.

In Inner London — West, more than four fifths of the people aged 30-34 had a tertiary level of education attainment

Map 4.2 provides information on the share of the population aged 30-34 years who had successfully completed a tertiary education programme; this age group has been used as it is commonplace for most students to have completed their tertiary education during their twenties (even if they followed a masters or postgraduate course). This indicator forms part of a scoreboard used to monitor the European pillar of social rights, while it is also an ET 2020 benchmark and a Europe 2020 target; for the latter two cases, the policy goal is to increase tertiary educational attainment in the EU-28 so that it reaches at least 40 %.

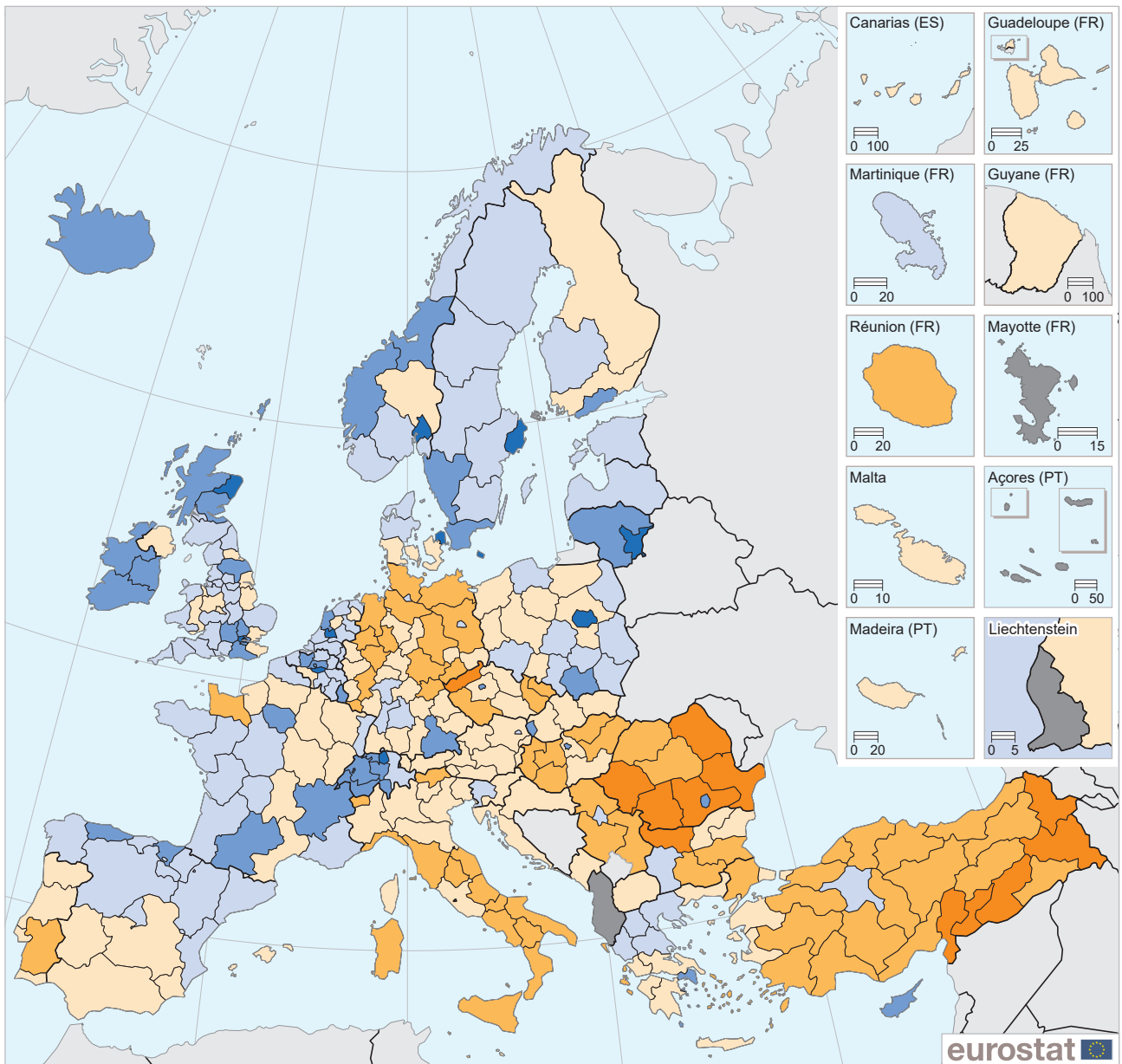
In 2018, more than two fifths (40.7 %) of the EU-28 population aged 30-34 years possessed a tertiary level of education; as such, the ET 2020 benchmark was attained with two years to spare. The EU-28's tertiary educational attainment among people aged 30-34 years rose by 9.6 pp between 2008 and 2018, and by 0.8 pp between 2017 and 2018. Across the EU Member States, attainment levels in 2018 ranged from a low of 24.6 % in Romania and 27.8 % in Italy to cover more than half of this subpopulation in Sweden (52.0 %), Luxembourg (56.2 %), Ireland (56.3 %), Cyprus (57.1 %) and Lithuania (57.6 %).

As with several other education indicators, one of the main characteristics apparent from Map 4.2 is that capital city regions appear to act as a magnet for highly-qualified people. Capital cities may exert considerable 'pull effects' through the varied employment (and social/lifestyle) opportunities that they offer tertiary graduates; for example, they are often the headquarters for large organisations (in both the public and private sectors) and they tend to have a relatively high concentration of graduate jobs in other dynamic or well-paid areas (for example, creative industries or the financial sector). The pull of some capital cities has the potential to create labour market imbalances as a growing number of graduates moving into capital city regions may result in the gentrification of formerly working-class areas, while people on relatively low salaries are driven out (due to the high cost of living and inappropriate housing). The pull of some capital cities may also result in some graduates (at least temporarily) accepting work for which they are over-qualified; in recent years this pattern has extended to cover a growing number of foreign graduates migrating to some of Europe's most cosmopolitan capitals in search of work and a certain lifestyle.

In 2018, there were 10 NUTS level 2 regions where more than three fifths of the population aged 30-34 years had a tertiary level of educational attainment (as shown by the darkest shade of blue in Map 4.2): four of these regions were located in the United Kingdom: Inner London — West, which had the highest level of education attainment in the EU (80.4 %); two more regions from the capital, Inner London — East and Outer London — West and North West; and North Eastern Scotland; while four others were capital city regions from other EU Member States, namely, Denmark, Lithuania, Poland and Sweden.

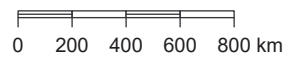
By contrast, tertiary educational attainment remained below the ET 2020 benchmark of 40 % in more than half (152 out of the 278) of the NUTS level 2 regions for which data are available (these are shown in three yellow shades in Map 4.2). Many of them were rural or sparsely populated regions that had a relatively large agricultural sector, and consequently a low level of supply of highly-skilled employment opportunities.

Map 4.2: Tertiary educational attainment, 2018
 (% share of people aged 30-34 years, by NUTS 2 regions)



- EU-28 = 40.7
- < 20
- 20 - < 30
- 30 - < 40
- 40 - < 50
- 50 - < 60
- ≥ 60
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
 Cartography: Eurostat — GISCO, 05/2019



Note: Ionia Nisia (EL62), Ciudad Autónoma de Ceuta (ES63), Ciudad Autónoma de Melilla (ES64), Corse (FRM0), Guadeloupe (FRY1), Martinique (FRY2), Guyane (FRY3), Valle d'Aosta/Vallée d'Aoste (ITC2) and Cornwall and Isles of Scilly (UKK3), low reliability.
 Source: Eurostat (online data code: [edat_lfse_12](#))



Transition from education to work

Education policy seeks to ensure that Europeans have the skills, knowledge, and capabilities to manage their careers throughout life, thereby supporting each individual's well-being and participation in the workforce, while on a broader scale contributing to overall productivity. Nevertheless, school-leavers and graduates are not guaranteed employment when they finish their education, with a range of barriers restricting their progression into the world of work: inappropriate education; a lack of relevant work experience; a lack of skills, such as problem-solving, communication and teamwork; the increased pace at which technology and globalisation disrupt some industries; an overall lack of jobs.

On this journey from education to work, there are greater difficulties for people with low levels of literacy and numeracy, for those who leave education at an early age, and for people coming from disadvantaged backgrounds (for example, immigrant families, or families at risk of poverty or social exclusion).

Early leavers from education and training may be analysed by looking at the share of individuals aged 18-24 years 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 forms part of a scoreboard used to monitor the European pillar of social rights, while it is also an ET 2020 benchmark and a Europe 2020 target; for the latter two cases, the policy goal is to reduce the proportion of early leavers in the EU to less than 10 %.

In 2018, the share of early leavers from education and training in the EU-28 stood at 10.6 %; this was the same share as that recorded a year before, thereby ending a pattern of falling rates. Across the EU Member States, the proportion of early leavers from education and training ranged from 3.3 % in Croatia up to 17.9 % in Spain: this distribution was skewed insofar as just nine Member States recorded shares above the EU-28 average, while 19 Member States had lower shares — 17 of which recorded shares of early leavers from education and training that were below the 10 % policy target.

The lowest regional share of early leavers from education and training was recorded in the Lithuanian capital city region — *Sostinės regionas* — at 1.9 %

In 2018, the share of early leavers from education and training was below the 10.0 % policy target in approximately half — 120 out of 257 — of the NUTS regions for which data are available (as shown by the blue shades in Map 4.3). Some of the lowest shares of early leavers were concentrated in eastern Europe:

among the 23 regions with shares below 5.0 % (dark blue) there were seven regions from Poland, four regions from Czechia and both regions from Croatia and from Slovenia.

Map 4.3 also shows that capital city regions tended to record some of the lowest shares of early leavers from education and training in 2018. This was the case for each of the eastern Member States mentioned above — with their capital city regions recording shares that were below 5.0 %; they were joined by the capital city regions of Ireland, Greece and Lithuania. The relatively low share of early leavers in capital city regions may reflect, among others: a broader choice of education programmes; a greater range of education, training and labour market opportunities; or a higher level of educational attainment among parents.

In 2018, the lowest regional shares of early leavers from education and training across the EU were recorded in:

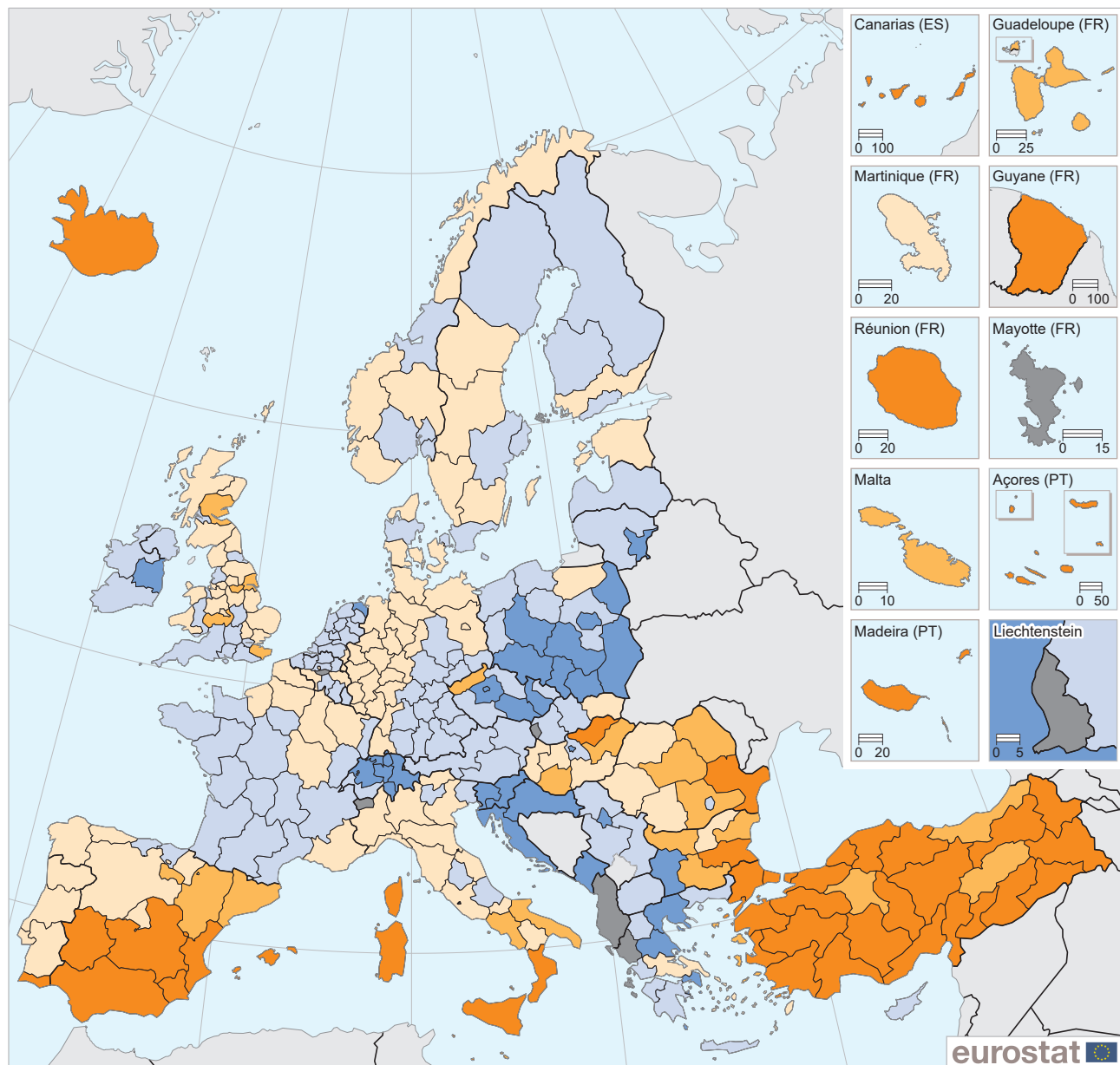
- three capital city regions in eastern Europe — *Sostinės regionas* in Lithuania (1.9 %); Praha in Czechia (2.7 %); Warszawski stołeczny in Poland (also 2.7 %; 2015 data);
- the coastal/island region of Jadranska Hrvatska in Croatia (2.5 %).

The Belgian and German capital city regions were atypical insofar as they both recorded shares of early leavers from education and training that were above their respective national averages. In 2018, the share of early leavers in Région de Bruxelles-Capitale/Brussels Hoofdstedelijk Gewest was 10.7 % (compared with a national average of 8.6 % for the whole of Belgium), while the share of early leavers in Berlin was 13.6 % (compared with a national average of 10.3 %). A closer analysis reveals that Berlin had the third highest regional share of early leavers in Germany, with only Koblenz (13.9 %) and Bremen (14.6 %) recording higher proportions.

Many of the regions in the EU with the highest shares of early leavers from education and training were concentrated in island and/or peripheral regions, where it is likely that a disproportionately high proportion of students have to leave home if they wish to follow a particular tertiary education course or programme, leaving behind a higher concentration of early leavers. There were only three regions across the EU where more than one quarter of young people aged 18-24 were classified as early leavers from education and training:

- the Portuguese island region of Região Autónoma dos Açores (28.3 %);
- the Spanish autonomous region of Ciudad Autónoma de Melilla (29.5 %);
- the outermost French region of Guyane (31.0 %).

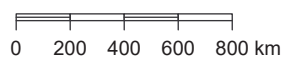
Map 4.3: Early leavers from education and training, 2018
 (% share of people aged 18-24 years, by NUTS 2 regions)



EU-28 = 10.6



Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
 Cartography: Eurostat — GISCO, 05/2019



Note: includes data of low reliability for some regions (too many to document). Austria, Makroregion Południowo-Zachodni (PL5), Makroregion Centralny (PL7), Makroregion Wschodni (PL8), London (UKI), South West (England) (UKK): NUTS level 1. Dresden (DED2), Voreio Aigaio (EL41), Notio Aigaio (EL42), Peloponnisos (EL65), Małopolskie (PL21), North Yorkshire (UKE2), North Eastern Scotland (UKM5) and Ticino (CH07): 2017. Trier (DEB2), Thessalia (EL61) and Região Autónoma da Madeira (PT30): 2016. Prov. Luxembourg (BE34), Dytiki Makedonia (EL53), Warszawski stołeczny (PL91) and Highlands and Islands (UKM6): 2015.

Source: Eurostat (online data code: [edat_lfse_16](#))



The Dutch regions of Groningen and Utrecht had the lowest regional shares of young people who were neither in employment nor in education or training, at 4.1 %

The share of young people aged 18-24 years who were neither in employment nor in education or training (NEET) may be expressed relative to the total population of the same age (18-24 years); 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 (for example, because they are caring for family members, volunteering or travelling, sick or disabled). The NEET rate is one of the indicators used within the scoreboard for the European pillar of social rights.

Having risen during the global financial and economic crisis to a peak of 17.2 % in 2012, the NEET rate in the EU fell for six consecutive years to 13.7 % in 2018; the reduction of 0.9 pp between 2016 and 2017 was the largest year-on-year fall during this period and was followed by a further reduction of 0.6 pp between 2017 and 2018. The NEET rate ranged from a low of 5.4 % in the Netherlands up to a high of 24.9 % in Italy; this distribution was skewed insofar as just eight EU Member States recorded shares above the EU average, while 20 Member States had shares below.

Map 4.4 shows the regional distribution of NEET rates for NUTS level 2 regions: in 2018, the lowest rates (as shown by the lightest shade the map) were principally located across much of Czechia, Germany and the Netherlands. In total, there were 42 regions in the EU where the NEET rate was below 7.5 %:

- all 12 regions of the Netherlands (including Groningen and Utrecht, which both recorded NEET rates of 4.1 % in 2018 — the lowest in the EU);
- six out of the eight regions in Czechia (the exceptions being Moravskoslezsko and Severozápad);
- 16 regions from Germany.

The remaining eight regions with a NEET rate below 7.5 % included five capital city regions — namely those of Bulgaria, Denmark, Lithuania, Poland and Slovenia — as well as two regions from Austria (note, data for Westösterreich concern a NUTS level 1 region) and Prov. Vlaams-Brabant in Belgium. Indeed, it was commonplace in most of the EU Member States to find that capital city regions had relatively low shares of young people who were neither in employment nor in education or training. In this respect, the Belgian and German capital city regions were atypical, as they posted the highest regional rates for each of their respective territories — Région de Bruxelles-Capitale/Brussels Hoofdstedelijk Gewest (16.6 % compared with a national average of 11.5 %) and Berlin (12.0 % compared with 8.1 %).

At the other end of the range, the highest NEET rates in the EU were recorded in two outermost regions of France, with the share of young people who were neither in employment nor in education or training reaching 41.2 % in La Réunion and peaking at 46.6 % in Guyane; these rates were more than 10 times as high as the lowest rates in Groningen and Utrecht.

Another pattern that was apparent in some western EU Member States, was for former industrial heartlands to be characterised by some of the highest NEET rates in their territories. For example, three of the highest rates in Belgium were registered in Prov. Liège, Prov. Namur and Prov. Hainaut, while relatively high rates were also recorded in the French regions of Champagne-Ardenne, Nord - Pas-de-Calais and Picardie, and the British regions of West Midlands, West Wales and the Valleys, Merseyside, Northumberland and Tyne and Wear.

Niederbayern in Germany had the highest employment rate for recent graduates, at 98.2 %

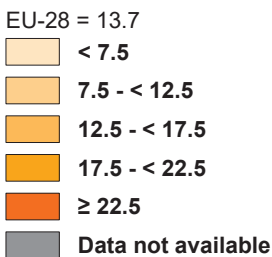
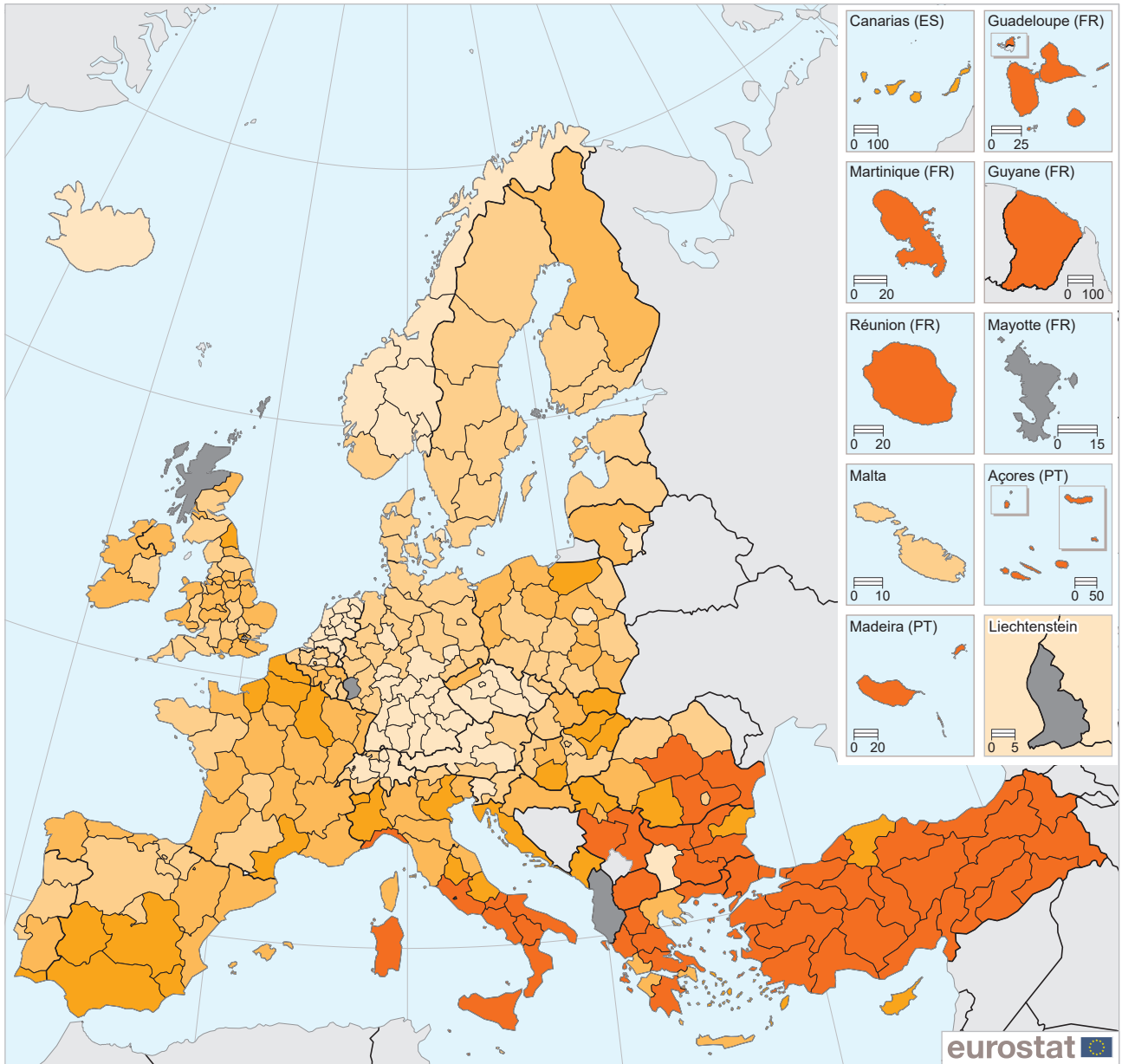
Increasing the employability of young people forms an integral part of the ET 2020 strategy. For this purpose, a benchmark indicator was set concerning the employment rate for young people aged 20-34 years who had successfully completed their education within the previous 1-3 years, obtaining at least an upper-secondary level of educational attainment (referred to here as recent graduates): the target is at least 82 %.

From a relative low of 75.4 % in 2013 — recorded in the aftermath of the global financial and economic crisis — the EU-28's employment rate for recent graduates registered five consecutive annual increases, the latest of which was a gain of 1.4 pp. In 2018, the employment rate for recent graduates stood at 81.6 %; as such, it was only slightly (0.4 pp) below the ET 2020 benchmark.

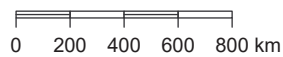
The employment rate for recent graduates was higher than the ET 2020 benchmark in a majority (17) of the EU Member States in 2018, ranging from upwards of 90 % in Malta, Germany and the Netherlands down to less than three fifths of recent graduates in Italy (56.5 %) and Greece (55.3 %).

A more detailed regional analysis is presented in Map 4.5: its shows that in 2018 the employment rate for recent graduates was equal to or above the 82 % benchmark in three fifths of the NUTS level 2 regions for which data are available. Among these, there were 75 NUTS level 2 regions where the employment rate for recent graduates reached 90 % or more (as shown by the darkest shade of blue); they were concentrated across much of Czechia, Germany, the Netherlands, Austria and Sweden, with the south-east German region of Niederbayern — that borders Czechia and Austria — recording the highest regional employment rate for recent graduates, at 98.2 %.

Map 4.4: Young people neither in employment nor in education or training (NEETs), 2018
 (% share of people aged 18-24 years, by NUTS 2 regions)



Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
 Cartography: Eurostat — GISCO, 05/2019



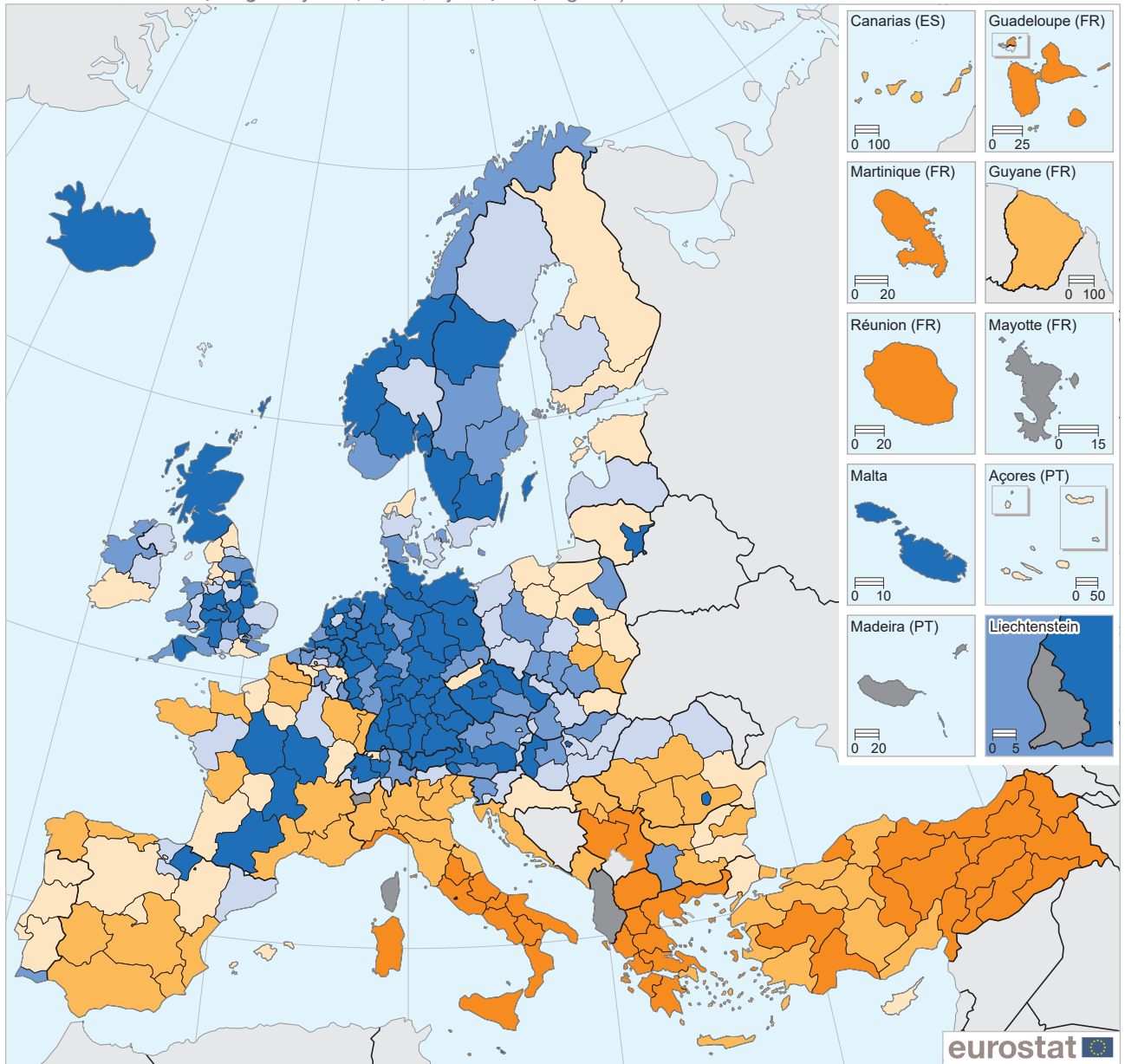
Note: includes data of low reliability for some regions (too many to document). Ostösterreich (AT1) and Westösterreich (AT3): NUTS level 1. Dresden (DED2) and Bratislavský kraj (SK01): 2017. Niederbayern (DE22), Oberpfalz (DE23), Valle d'Aosta/Vallée d'Aoste (ITC2), Zeeland (NL34), Kärnten (AT21), Algarve (PT15) and Região Autónoma da Madeira (PT30): 2016.

Source: Eurostat (online data code: [edat_lfse_22](#))



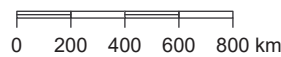
Map 4.5: Employment rate of recent graduates, 2018

(%, share of people aged 20-34 years with at least an upper secondary level of educational attainment having left education and training 1-3 years earlier, by NUTS 2 regions)



- EU-28 = 81.6
- < 60
- 60 - < 75
- 75 - < 82
- 82 - < 86
- 86 - < 90
- ≥ 90
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019



Note: includes data of low reliability for some regions (too many to document). Scotland (UKM): NUTS level 1. Dytiki Makedonia (EL53), Guyane (FRY3): 2017. Cumbria (UKD1): 2016. Cornwall and Isles of Scilly (UKK3): 2015.

Source: Eurostat (online data code: edat_lfse_33)

By contrast, there were four regions in the EU where the employment rate for recent graduates was less than one third:

- three of these were located in southern Italy — Basilicata (31.4 %), Calabria (31.3 %) and Sicilia (27.3 %);
- one was located in central Greece — Sterea Ellada (31.8 %; low reliability).

Lifelong learning

Lifelong learning — or lifelong education and training — seeks to improve an individual's knowledge, skills, competences and/or qualifications for personal, social and/or professional reasons. During the course of a person's working life it is increasingly necessary to develop existing and learn new skills that are relevant to a specific job or which provide opportunities for new career paths. Within this context, the EU's labour force survey (LFS) provides information on the share of the population aged 25-64 years that received formal or non-formal education or training (during the four weeks preceding the survey). This indicator of adult participation in learning (education and training) is part of the scoreboard for monitoring progress with respect to the European pillar of social rights, while it also forms part of the ET 2020 framework: the target is to increase adult participation to at least 15 % by 2020. Note that Eurostat's adult education survey (AES) provides a more comprehensive measure of adult learning (based on a complete 12-month reference period), however, sample sizes are not sufficient for an analysis by NUTS level 2 region.

In 2018, one in nine (11.1 %) of the EU-28 adult population participated in education and training. This marked a modest increase in relation to the year before, up 0.2 pp, and was the third consecutive year that the participation rate increased by a small margin. Nevertheless, adult participation in learning remained some distance from its benchmark target of 15 %.

There were eight EU Member States where the adult participation rate in learning had already reached the benchmark target of 15 % by 2018, with the highest

rates in the Nordic Member States — Denmark (23.5 %), Finland (28.5 %) and Sweden (29.2 %). By contrast, adult participation was below 5 % in Greece, Slovakia, Croatia, Bulgaria and Romania; the last of these recorded the lowest participation rate, at 0.9 %.

Adult participation in learning was higher than 15 % in every region of Denmark, the Netherlands, Finland and Sweden

Adult participation in learning was higher than the ET 2020 benchmark in approximately one quarter of NUTS level 2 regions for which data are available (as shown by the blue shades in Map 4.6). The distribution of these regions across individual EU Member States was very homogeneous — likely reflecting the organisation of education and training initiatives at a national (rather than regional) level — with participation rates of at least 15 % in every region of Denmark, the Netherlands, Finland and Sweden, as well as Estonia and Luxembourg (both single regions at this level of detail).

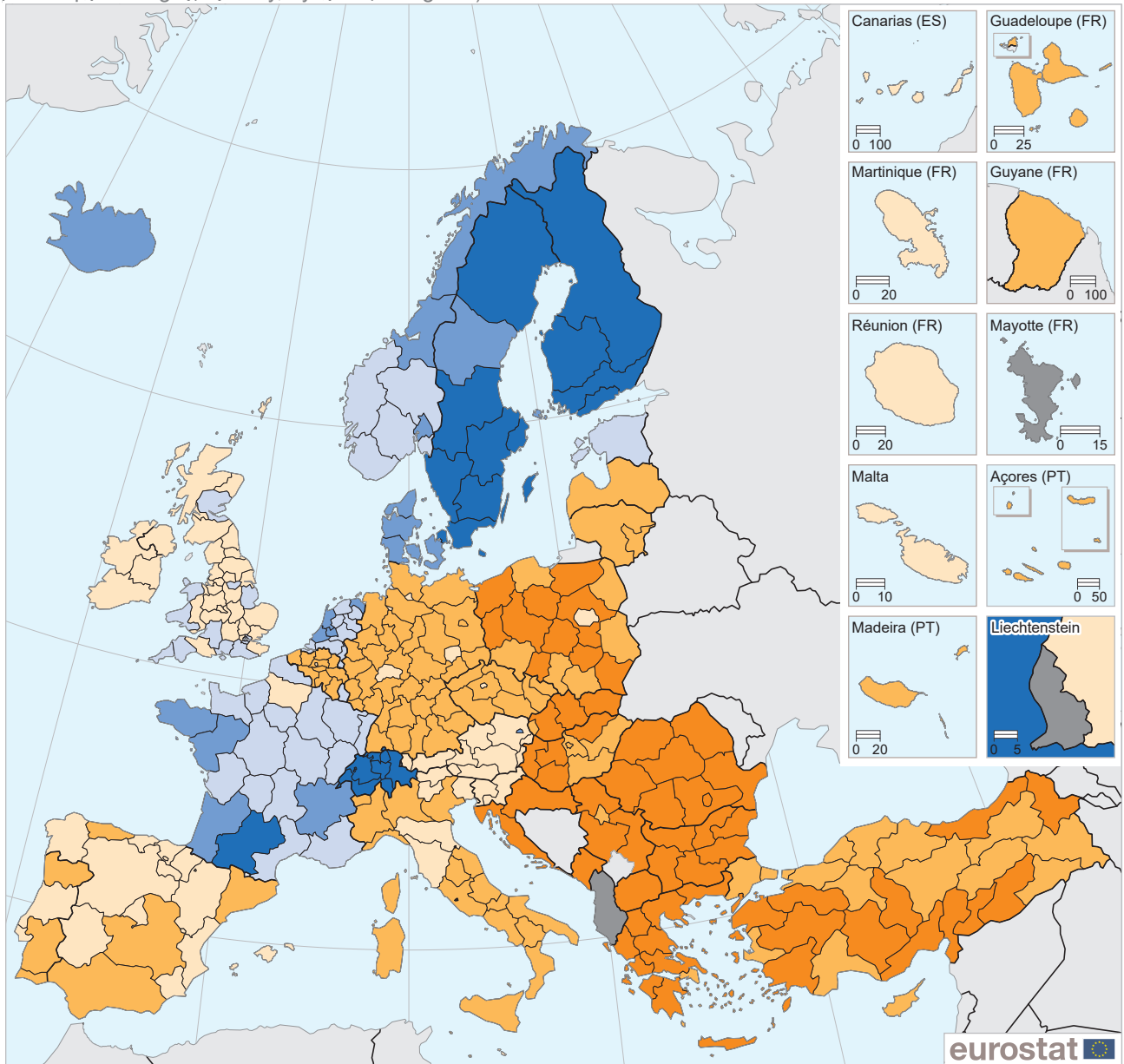
Looking in more detail, the highest share in 2018 was recorded in Helsinki-Uusimaa — the capital city region of Finland — where close to one third (32.2 %) of all adults aged 25-64 participated in education and training. It was followed by five regions that together covered the southern half of Sweden, among which the highest rate was recorded in Sydsverige (30.4 %).

The darkest yellow shade in Map 4.6 indicates those regions where the participation rate for adult education and training was below 5.0 %, including every region of Bulgaria, Croatia and Romania and all but one of the regions in Greece and Slovakia (the exceptions being the capital city regions of Attiki and Bratislavský kraj). The lowest shares were recorded in Romania, where all eight regions had adult participation rates for learning that were less than 1.5 % in 2018; the lowest rates (0.7 %) were registered in four different regions — Nord-Vest, Centru, Sud-Est and Sud-Vest Oltenia. The only other regions in the EU to record participation rates of less than 1.5 % were the Bulgarian regions of Severozapaden and Severoiztochen and the Greek region of Sterea Ellada.



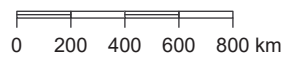
Map 4.6: Adult participation in education and training, 2018

(%, share of people aged 25-64 years that received formal or non-formal education or training in the four weeks preceding the survey, by NUTS 2 regions)



- EU-28 = 11.1
- < 5
- 5 - < 10
- 10 - < 15
- 15 - < 20
- 20 - < 25
- ≥ 25
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019



Note: includes data of low reliability for some regions (too many to document). Sud-Vest Oltenia (RO41): 2017.

Source: Eurostat (online data code: [trng_lfse_04](#))

5

Labour market





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. Under its priority of ensuring a **deeper and fairer economic and monetary union**, the **European Union (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 and is based on **20 underlying principles**. The EU has promoted a broad range of alternative initiatives within this domain, 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); new ways of providing adequate social security cover for the self-employed and people who work in the gig economy.

As well as being of interest 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 labour market integration for all members of society, some groups continue to be subject to discrimination (under-represented or excluded).

This chapter analyses EU labour markets and is split into three principal sections, covering:

- regional employment, including information on **employment rates**, the gender gap in employment rates, and patterns of self-employment;
- a special focus on job satisfaction by region;
- regional **unemployment**, including an analyses of two structural issues — **youth unemployment** and **long-term unemployment**.

In 2018, the EU-28 population between the ages of 15 and 74 years numbered 380.4 million. The **labour force** — often referred to as the economically active population — was composed of 246.7 million, while 133.8 million people were considered to be outside the labour force, or economically **inactive** (in other words, people who 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, people unable to work because of long-term sickness or disability and people outside the labour force for any other reason. Looking in more detail, the EU-28 labour force was composed of 229.8 million **employed persons** and 16.9 million **unemployed persons** (those not working, but actively seeking and available for work).



Employment

The **employment rate** is the ratio of employed persons (of a given age) relative to the total population (of the same age); in this section, information is presented for the working-age population, defined here as people aged 20-64 years. This definition has been used to be in line with the **Europe 2020 strategy** and to reflect the growing proportion of young people who remain within educational systems beyond their teens, which may exclude them from participating in labour markets.

The Europe 2020 strategy set a benchmark target, as part of its agenda for growth and jobs, whereby 75 % of people aged 20-64 years should be in work by 2020. In order to deliver this goal, national targets were 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 reform programme for the United Kingdom.

The European pillar of social rights seeks to guarantee effective citizen rights, by ensuring: equal opportunities and access to labour markets; fair working conditions; social protection and inclusion. One of its 20 underlying principles states that 'everyone has the right to timely and tailor-made assistance to improve employment or self-employment prospects'. The employment rate is part of a **social scoreboard** used to monitor progress with respect to the European pillar of social rights; note the scoreboard also includes a complementary indicator for analysing the structure of the labour force — the **activity rate** — regional analyses for this indicator are presented in **Chapter 14**.

Stockholm recorded the highest regional employment rate in the EU, at 85.7 %

The EU-28 employment rate for people aged 20-64 years stood at 73.1 % in 2018, marking its fifth consecutive increase since a relative low of 68.3 % in 2013. Compared with a year before, the EU-28 employment rate rose by 1.0 **percentage points (pp)**: this was broadly in line with annual developments during the previous five years, when increases of 0.8-1.1 pp were recorded. If the EU-28 employment rate continues to increase at a similar pace

during the next two years then the Europe 2020 target of 75.0 % could be achieved.

Map 5.1 presents employment rates for people aged 20-64 years across **NUTS** level 2 regions; the highest employment rates — equal to or above the Europe 2020 target of 75 % — are shown in a blue shade; just over half (145 out of 281) of all regions in the EU had reached or surpassed this 75.0 % benchmark in 2018. Across the EU, the highest employment rates were recorded in Sweden — where all but one region had an employment rate above 80 % and Stockholm recorded the highest regional employment rate in the EU (85.7 %); high rates were also recorded in Germany and the United Kingdom.

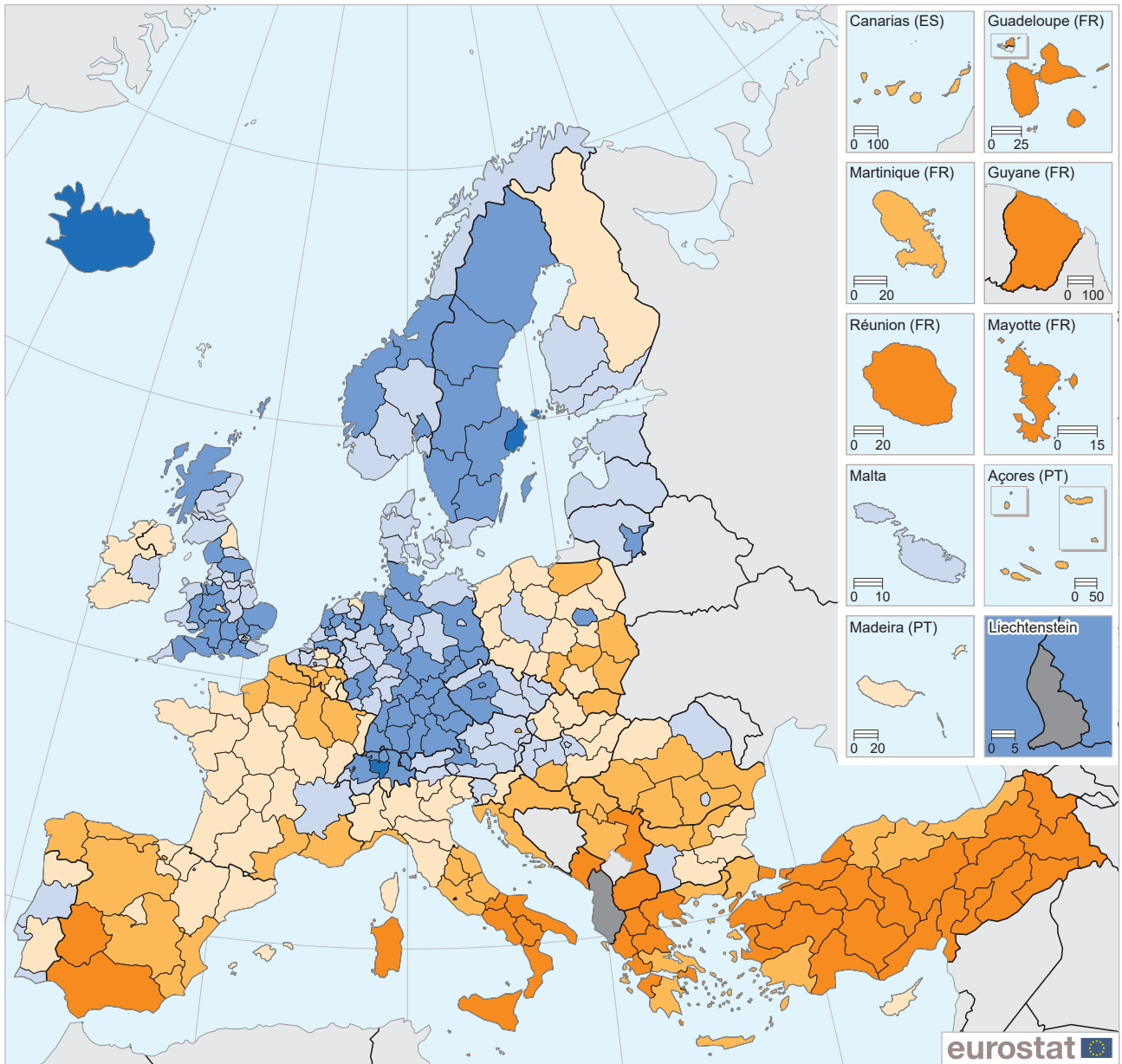
There were two distinct patterns when analysing regional employment rates:

- intra-regional differences were apparent in some of the larger EU Member States, with higher employment rates generally recorded in southern (rather than northern) regions of Germany and the United Kingdom, while employment rates tended to be lower in southern (rather than northern) regions of Spain and Italy;
- contrasting patterns when analysing capital city and metropolitan regions:
 - in eastern parts of the EU it was commonplace to find that employment rates for capital city regions were among the highest in the country (for example, Bulgaria, Czechia or Poland), whereas employment rates for rural regions tended to be considerably lower;
 - in western Member States the picture was often reversed, insofar as the highest employment rates were usually recorded for people living in towns and suburbs or rural regions, whereas the lowest employment rates were recorded in capital city and metropolitan regions (for example Wien in Austria).

In 2018, there were five regions across the EU where less than half of the working-age population was in work: four of these were in southern Italy — Puglia, Calabria, Campania and Sicilia (which had the lowest rate in Italy, at 44.1 %) — while the other was the French overseas region of Mayotte (40.8 %).

Map 5.1: Employment rate, 2018

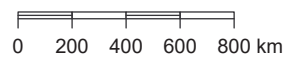
(%, share of people aged 20-64 years, by NUTS 2 regions)



EU-28 = 73.1

- < 60
- 60 - < 70
- 70 - < 75
- 75 - < 80
- 80 - < 85
- ≥ 85
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
 Cartography: Eurostat — GISCO, 05/2019



Source: Eurostat (online data code: [lfst_r_lfe2emprtn](#))



The EU-28 employment rate for women was 11.5 percentage points lower than the corresponding rate for men

One of the 20 underlying principles of the European pillar of social rights is that 'equality of treatment and opportunities between women and men must be ensured and fostered in all areas, including regarding participation in the labour market, terms and conditions of employment and career progression'. The EU-28 employment rate for people aged 20-64 years was 73.1 % in 2018: an analysis by sex reveals that the female employment rate (67.4 %) was considerably lower than the corresponding male rate (78.9 %). Although the gender employment gap was 11.5 pp in 2018, this was notably narrower than a decade earlier, at the onset of the global financial and economic crisis in 2008, when the gender employment gap had stood at 15.1 pp.

The largest gender employment gaps among the EU Member States were recorded in Malta (22.3 pp in 2018), Greece (21.0 pp), Italy (19.8 pp) and Romania (18.3 pp). By contrast, the employment gap between the sexes was less than 5.0 pp in Sweden, Latvia, Finland and Lithuania (where the smallest difference was recorded, at 2.3 pp).

Map 5.2 confirms these national patterns, as the most pronounced gender employment gaps were recorded mainly in southern and eastern regions of the EU, while employment rates for men and women were most closely aligned in many [Baltic](#) and [Nordic](#) regions, as well as parts of Germany. In 2018, the highest regional gender employment gap was recorded in Puglia — one of the most southerly regions in Italy — where the male employment rate exceeded the female employment rate by 28.1 pp. At the other end of the range, Övre Norrland — the most northerly region in Sweden — reported almost no difference between the sexes, with an employment rate for men that was 0.5 pp higher than that for women.

More than two fifths of the workforce in the southern Greek region of Peloponnisos was self-employed

Policymakers are increasingly interested by flexible forms of work, analysing labour market differences between: employees and the [self-employed](#); people employed on a full-time or part-time basis; people employed with a permanent or a temporary work contract. Some commentators claim that self-employment signals the presence of an entrepreneurial spirit in dynamic and innovative economies, whereas others suggest it is perhaps more indicative of the increasingly precarious nature of employment contracts. This divergence may,

at least to some degree, reflect underlying economic conditions, with self-employment being opportunity driven or necessity driven.

In 2018, self-employment provided work to around one in seven (13.7 %) persons aged 20-64 years who were in work across the EU, some 30.3 million persons. Among NUTS level 2 regions (see Map 5.3), the highest share of self-employment was recorded in the southern Greek region of Peloponnisos, as more than two fifths of its workforce was self-employed in 2018. This was in keeping with a broader pattern, as Greek regions occupied the top 11 places in a ranking of self-employment rates for EU regions — each with a share that was in excess of 30 % — the capital city region of Attiki and the island region of Notio Aigaio were the only exceptions.

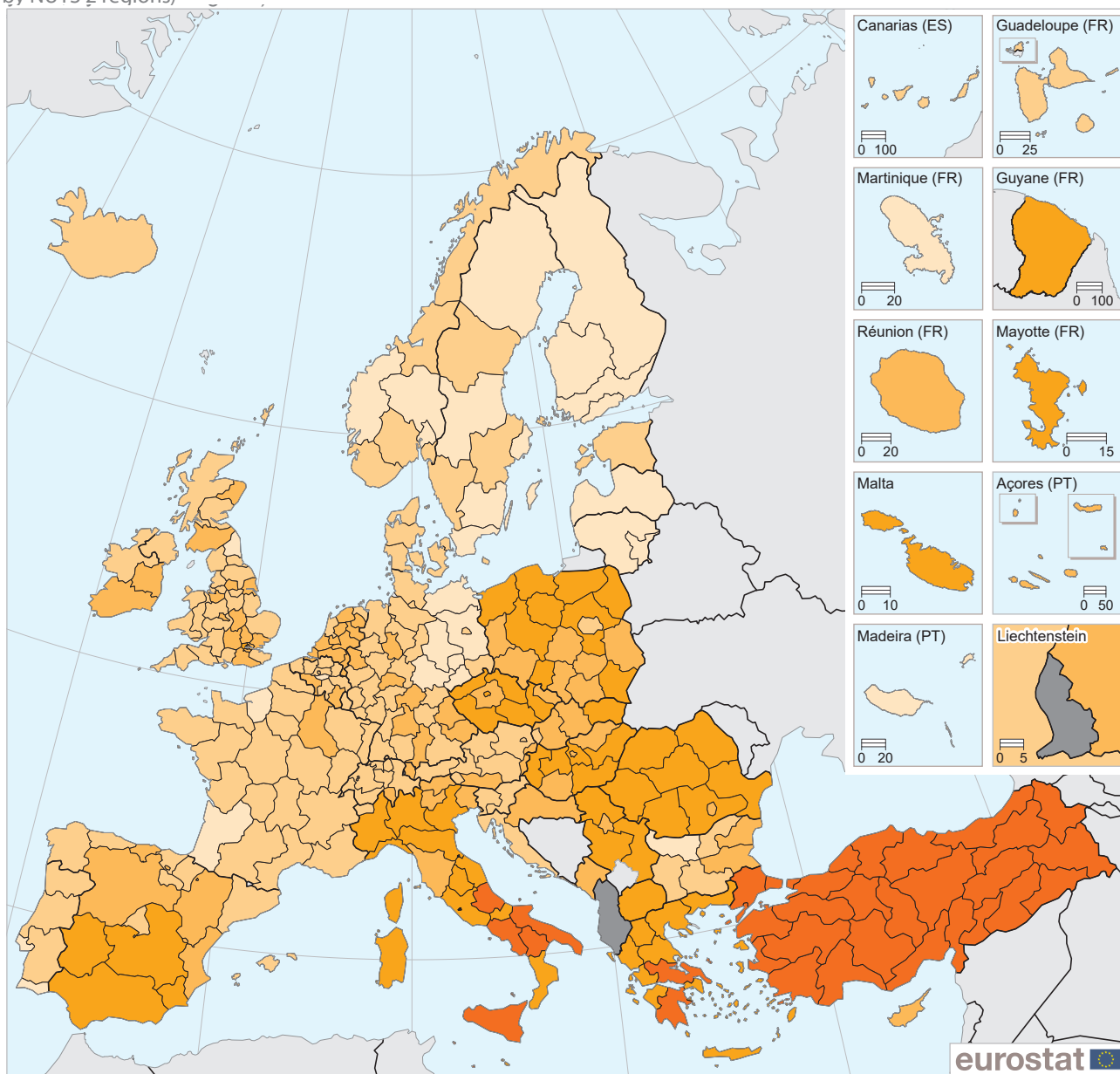
By contrast, the lowest share of self-employment was also registered in a Romanian region — the capital city region of București-Ilfov — where less than 1 in 26 (3.8 %) of the workforce was self-employed in 2018. Aside from București-Ilfov and Vest (both Romania) and Észak-Magyarország and Közép-Dunántúl (both Hungary), the lowest shares of self-employment were more generally recorded in northern and western regions of the EU, in particular in several northern regions of Denmark and Germany; very low shares of self-employment were also recorded across Norway.

In many northern and western EU Member States, it was more common for capital city regions to record some of the highest shares of self-employment, for example in Berlin, Noord-Holland and Stockholm. This pattern may reflect: lifestyle choices, whereby the self-employed seek to benefit from greater autonomy and flexibility at work; the presence of dynamic hubs for start-ups that are usually located in major metropolitan regions; the development of the gig economy.

The highest shares of self-employment in eastern and southern regions of the EU were usually spread over rural regions, with many of the self-employed working in the agricultural sector. By contrast, capital city regions (for example Attiki, Comunidad de Madrid or București-Ilfov) often recorded relatively low shares of self-employment, which may reflect: a wider choice of employment opportunities and occupations; a higher proportion of permanent employment contracts; and the presence of major employers (such as multinational enterprises or public administrations). Praha, Budapest and Zahodna Slovenija were notable exceptions as they had the highest self-employment rates among the Czech, Hungarian and Slovenian regions.

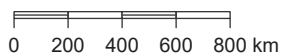
Map 5.2: Gender employment gap, 2018

(percentage points difference, male employment rate minus female employment rate, based on people aged 20-64 years, by NUTS 2 regions)



- EU-28 = 11.5
- < 5
- 5 - < 10
- 10 - < 15
- 15 - < 25
- ≥ 25
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019

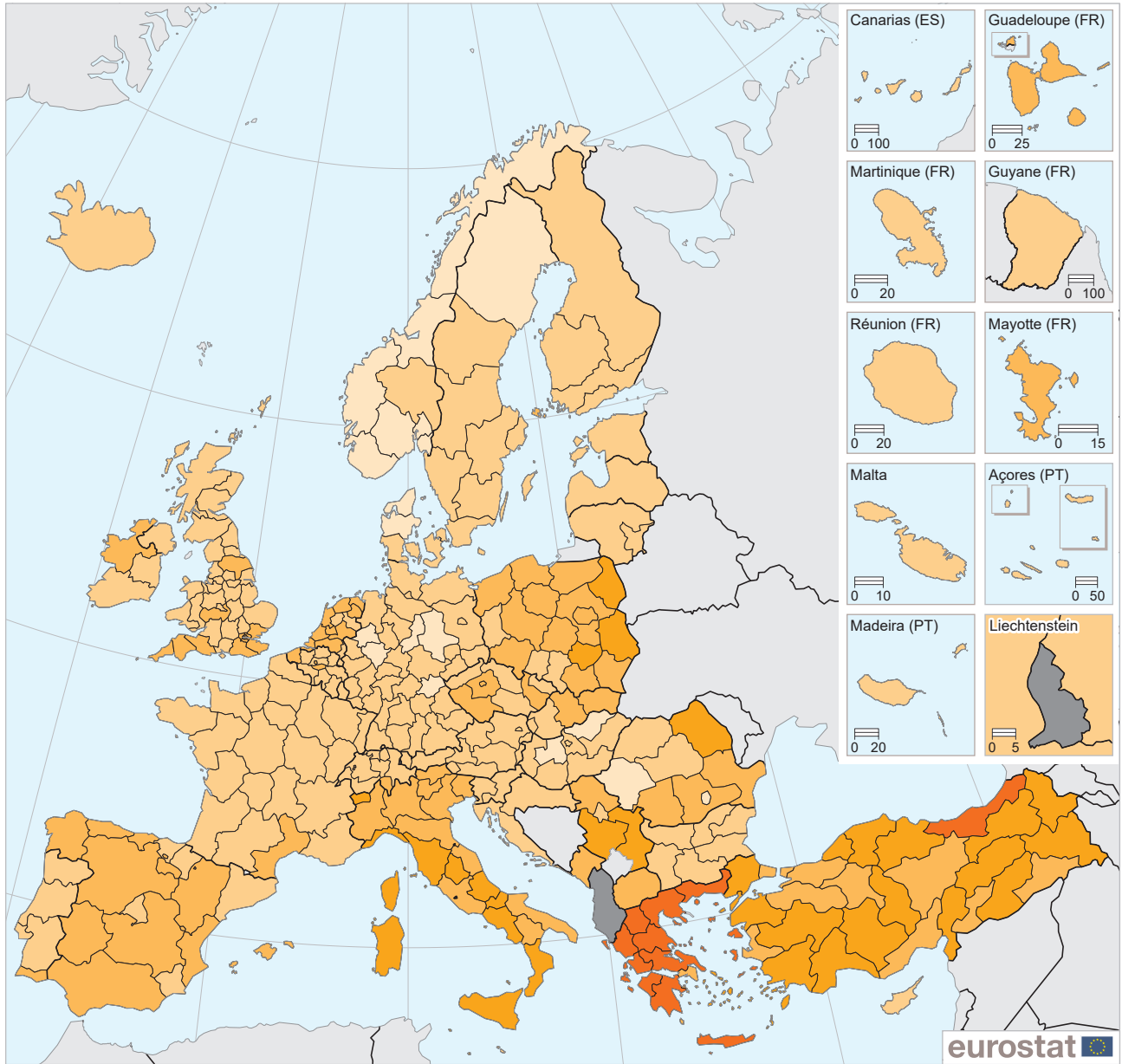


Note: the gender employment gap is defined as the difference between the male employment rate and the female employment rate among those persons aged 20-64 years; the male employment rate was consistently higher than the female employment rate across all regions.

Source: Eurostat (online data code: [lfst_r_lfe2empn](#))

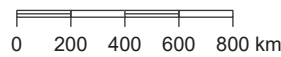
Map 5.3: Self-employed persons, 2018

(%, share of total employment among people aged 20-64 years, by NUTS 2 regions)



- EU-28 = 13.7
- < 7.5
- 7.5 - < 15.0
- 15.0 - < 22.5
- 22.5 - < 30.0
- ≥ 30.0
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019



Note: Åland (FI20), 2017. Ciudad Autónoma de Ceuta (ES63), Ciudad Autónoma de Melilla (ES64), Guyane (FRY3) and Åland (FI20): low reliability.

Source: Eurostat (online data code: [lfst_r_lfe2estat](#) and [lfsa_egaps](#))

Job satisfaction

There are a wide range of issues that may influence job satisfaction. On a general level, people who are in good health and people with a higher level of educational attainment are more likely to be satisfied with their job. More specifically, for some people the main determinant of job satisfaction is remuneration (in other words, their salary), while others place greater importance on their working environment, for example: job security (a permanent work contract and/or few concerns about being made unemployed); job fit (ensuring they are matched to their job in terms of qualifications, abilities, interests and personality); job flexibility (the ability to choose their working hours and/or a broad range of different tasks at work).

In 2017, Eurostat carried out a [survey on self-employed persons](#) as part of the [labour force survey \(LFS\)](#) — results are presented in a [specific article](#) on Statistics Explained; the third sub-module included a question on the level of an individual's job satisfaction in their main job, with data collected for employees, self-employed persons and family workers — it forms the basis for the information presented below.

The lowest level of job satisfaction was recorded in the German region of Leipzig, where just over one in five of the workforce declared themselves to be highly satisfied with their job

Based on a four-point scale from 'not at all satisfied' to 'highly satisfied', the share of EU-28 workforce that was highly satisfied with their job stood at 42.8 % in 2017. This proportion peaked, among the EU Member States, at 75.0 % in Malta, followed by Sweden (69.5 %) and Denmark (64.8 %). The high shares in Sweden and Denmark may reflect, at least in part, their flexible labour markets that encourage job mobility/flexibility coupled with highly developed social welfare systems (which, among others, protect pension and holiday entitlements if moving between jobs).

The Baltic countries, Ireland, Austria, Italy and Slovenia were the only other EU Member States to report that more than half of their working populations were highly satisfied with their jobs in 2017. By contrast, Romania (28.3 %) and Bulgaria (27.6 %) had the lowest shares in the EU; note, however that Turkey recorded a much lower share, as less than one in five (17.1 %) members of the workforce were highly satisfied with their job.

In 2017, an analysis by NUTS level 2 region reveals that, aside from Malta (a single region at this level of detail; 75.0 %), the highest levels of job satisfaction — at least 60.0 % (as shown by the darkest shade in Map 5.4) were concentrated in Denmark and Sweden (all regions). The highest levels of job satisfaction were recorded in the Swedish region of Norra Mellansverige and the Italian Provincia Autonoma di Bolzano/Bozen (both 71.4 %).

In many northern and western EU Member States, capital city regions recorded some of the lowest levels of job satisfaction in 2017 — for example, the share of the workforce that was highly satisfied with their job in Hovedstaden, Wien and Stockholm was lower than in any other region of Denmark, Austria and Sweden. By contrast, the opposite pattern was observed in several eastern Member States. For example, the highest levels of job satisfaction in Bulgaria and Poland were registered in their capital city regions of Yugozapaden and Warszawski stołeczny.

At the other end of the scale, the lowest levels of job satisfaction in 2017 — where fewer than 30 % of the workforce were highly satisfied by their job (as shown by the lightest shade in Map 5.4) — were principally located in Bulgaria (except the capital city region), Romania (except Nord-Vest and Sud-Muntenia) and (eastern) Germany, including Leipzig which had the lowest level of job satisfaction in the EU, at 20.9 %.

Self-employed people had higher levels of job satisfaction than the workforce as a whole

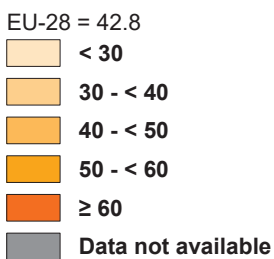
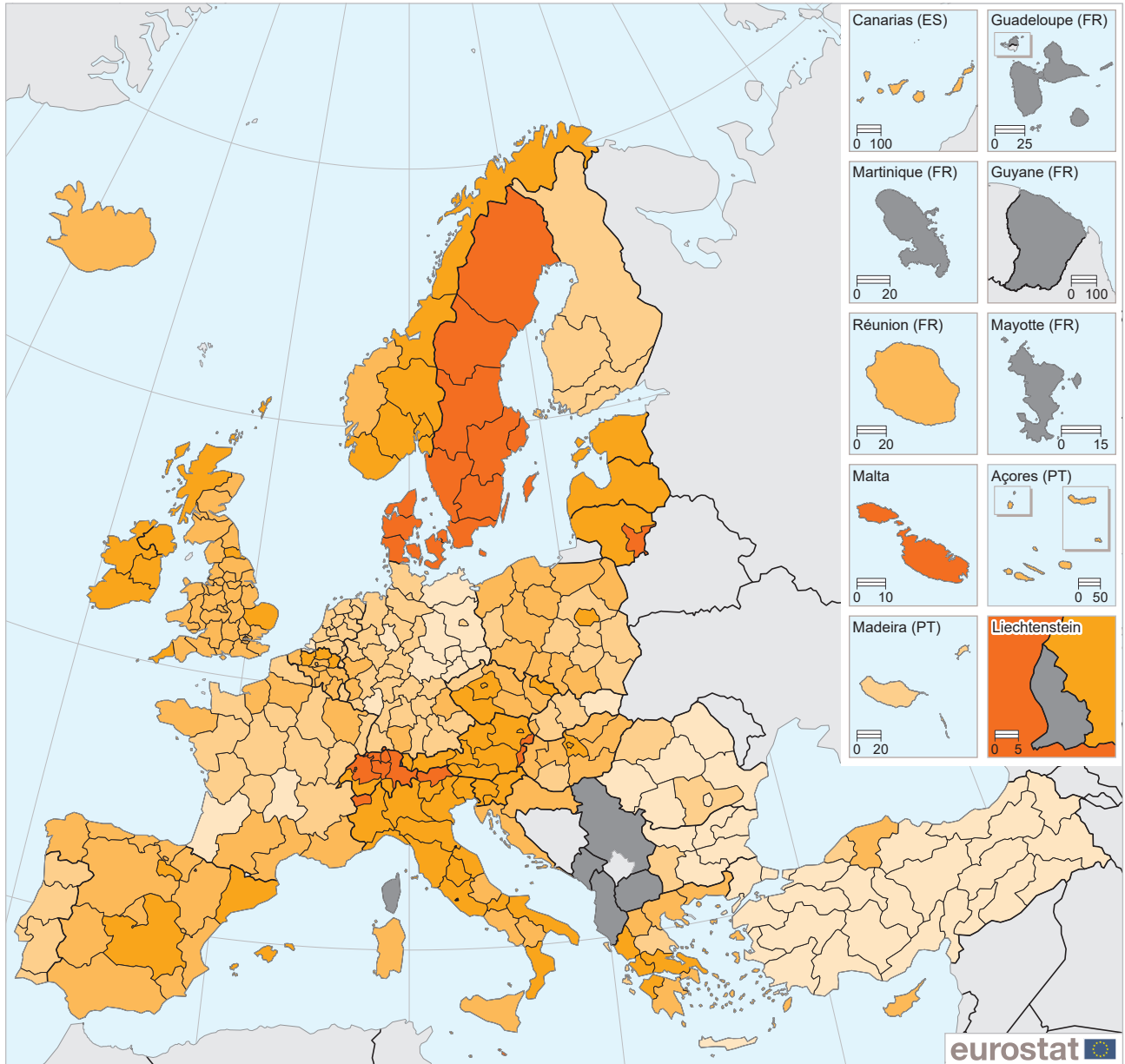
Given that self-employed people in the EU-28 often have greater autonomy and flexibility derived from being their own boss, it is perhaps unsurprising to find that in 2017 they had higher levels of job satisfaction (47.9 % were highly satisfied with their job) when compared with the workforce in general (42.8 %).

A majority of self-employed people living in the cities (50.3 %) and in towns and suburbs (50.4 %) of the EU-28 were highly satisfied with their jobs; this may reflect, at least to some degree, self-employment being opportunity driven in urban areas. Satisfaction levels were lower among the whole of the workforce (therefore including the self-employed) than just among the self-employed, as 42.8 % of employed city-dwellers and 43.8 % of employed people living in towns and suburbs stated that they were highly satisfied with their job. Figure 5.1 confirms this pattern that, in cities as well as towns and suburbs, the self-employed are more likely to be highly satisfied with their job than the employed workforce as a whole. It also reveals that in rural areas there was little difference in terms of job satisfaction between the self-employed and all employed people.

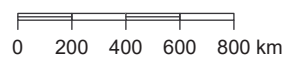
In 2017, self-employed people living in the cities of Slovakia and Finland (note there was a relatively high level of non-response) were more than one third more likely to be highly satisfied with their jobs than employed city-dwellers in general; in the Netherlands, this ratio was even higher, as self-employed city-dwellers were just over 50 % more likely than all city-dwellers to be highly satisfied with their job. By contrast, there were only six EU Member States where self-employed people living in cities were less likely (than the average for all city dwellers) to be highly satisfied with their jobs: Italy, Spain, Slovenia, Croatia (low reliability), Latvia and Cyprus.

Map 5.4: Job satisfaction, 2017

(%, share of employed people aged ≥ 15 years who are highly satisfied with their job, by NUTS 2 regions)



Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019



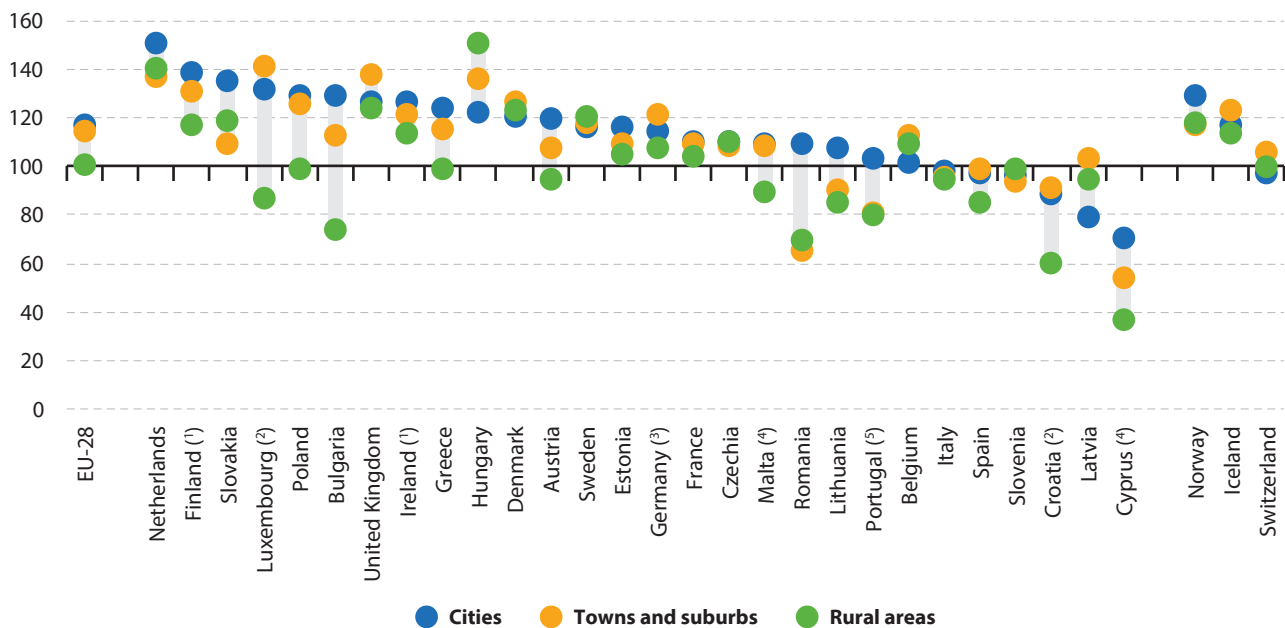
Note: Irish regions and Região Autónoma da Madeira (PT30), non-response, 10-30 %.
Source: Eurostat, labour force survey

At the other end of the spectrum, self-employed persons living in rural areas had lower levels of job satisfaction (than the average for the whole of the rural workforce) in half of the EU Member States in 2017. The lowest relative shares were recorded in Romania, Croatia (low reliability) and Cyprus (also low reliability). This pattern

may reflect self-employment in these rural areas being predominantly necessity driven, with few alternative forms of employment outside of the agricultural sector and a relatively high share of self-employed persons make a living from semi-subsistence farming.

Figure 5.1: Job satisfaction among the self-employed, 2017

(index, based on self-employed people aged ≥ 15 years who are highly satisfied with their job relative to the same share for all employed people = 100, by degree of urbanisation)



Note: ranked on cities.

(1) Non-response, 10-30 %.

(2) Low reliability.

(3) Cities and rural areas: non-response, 10-30 %.

(4) Rural areas: low reliability.

(5) Cities and towns and suburbs: non-response, 10-30 %. Rural areas: non-response, >30 %.

Source: Eurostat, labour force survey

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 and their families. 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](#). One of the 20 underlying principles of the European pillar of social rights states that 'the unemployed have the right to adequate activation support from public employment services to (re)integrate in the labour market and adequate unemployment benefits of reasonable duration', as well as 'the right to personalised, continuous and consistent support. The long-term unemployed have the right to an in-depth individual assessment at the latest at 18 months of unemployment'.

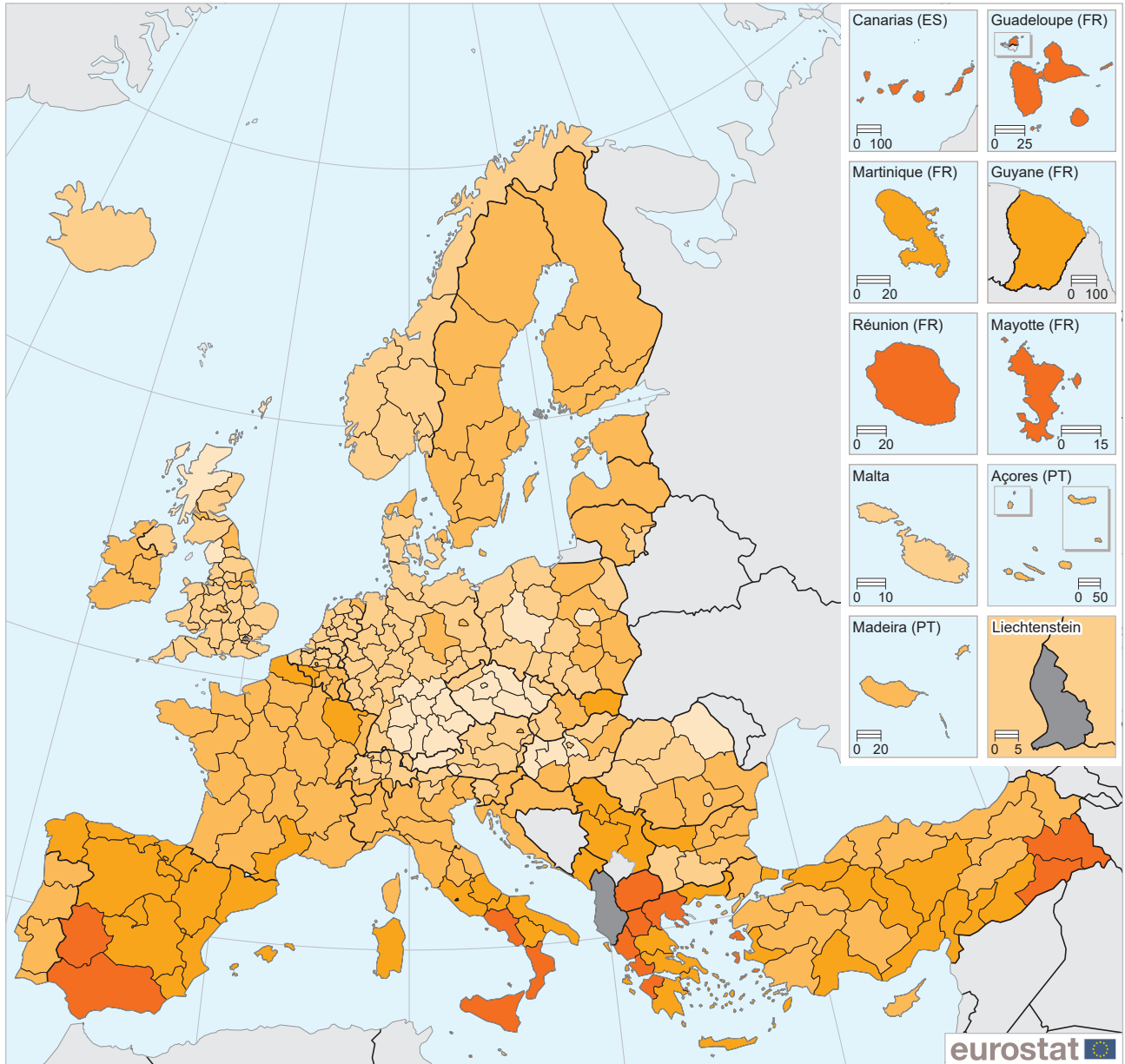
In 2018, there were 16.9 million unemployed persons aged 15-74 years in the EU-28, equivalent to 6.9 % of the total labour force. Having peaked at 26.1 million

unemployed persons or 10.9 % of the labour force in 2013, the number of people without work fell overall by more than one third, or 9.2 million, with five consecutive annual reductions through to 2018. As a result, the EU-28 unemployment rate fell to a level that in 2018 was, for the first time, below that recorded at the onset of the global financial and economic crisis in 2008 (7.0 %).

The lowest regional unemployment rate was recorded in the Czech capital city region of Praha, at 1.3 %

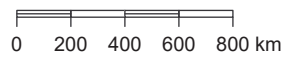
In 2018, the lowest regional unemployment rates — among NUTS level 2 regions — were concentrated together in a cluster of regions that started in western Austria, moved up through southern Germany and across into Czechia; the unemployment rate was also lower than 2.5 % in three Hungarian regions, two regions from each of Poland and the United Kingdom and one Romanian region (as shown by the lightest shade in Map 5.5). In 2018, Praha — the capital city region of Czechia — recorded the lowest regional unemployment rate in the EU, repeating the situation of a year before.

Map 5.5: Unemployment rate, 2018
 (% share of labour force aged 15-74 years, by NUTS 2 regions)



- EU-28 = 6.9
- < 2.5
- 2.5 - < 5.0
- 5.0 - < 10.0
- 10.0 - < 20.0
- ≥ 20.0
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
 Cartography: Eurostat — GISCO, 05/2019



Note: Corse (FRM0), Burgenland (AT11), Lubuskie (PL43), Opolskie (PL52), Cumbria (UKD1), Cornwall and Isles of Scilly (UKK3), North Eastern Scotland (UKM5) and Highlands and Islands (UKM6), low reliability.

Source: Eurostat (online data code: lfst_r_lfu3rt)

By contrast, the highest unemployment rates were recorded in southern and outermost regions of the EU. There were 16 regions across the EU where the unemployment rate was above 20 % in 2018, including: five regions from Greece and from Spain; three outermost regions of France, including the highest regional unemployment rate in the EU that was recorded in Mayotte (35.1 %); three regions in southern Italy. In four northern and western EU Member States — Belgium, Denmark, Germany and Austria — the highest regional unemployment rate in 2018 was recorded in the capital city region.

The EU-28 youth unemployment rate was 15.2 %

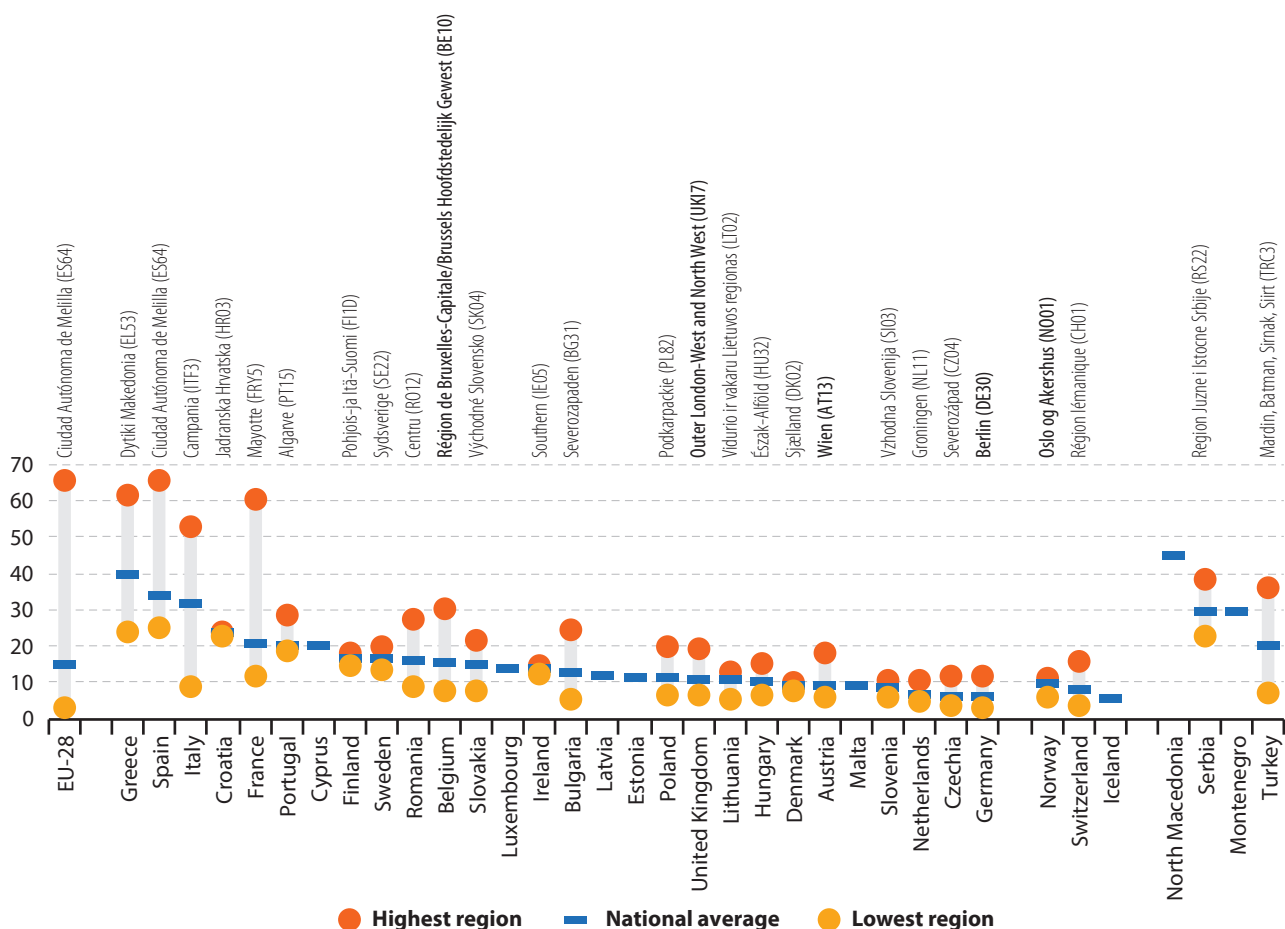
One labour market area of particular interest to policymakers is that of **youth unemployment**. The performance of youth labour markets is closely linked to education and training systems and reflects, at least to some degree, a mismatch between the skills obtained by young people and the skills that are required by employers (to fill job vacancies). Several EU Member States have enacted new employment laws 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 more precarious employment; the latter are often young people and/or people with relatively low levels of educational attainment.

One of the 20 underlying principles of the European pillar of social rights is that 'young people have the right to continued education, apprenticeship, traineeship or a job offer of good standing within four months of becoming unemployed or leaving education'. In 2018, the EU-28 youth unemployment rate was 15.2 %, which was 2.2 times as high as the overall unemployment rate (among people aged 15-74 years) which stood at 6.9 %.

The information presented for regional youth unemployment often duplicates the patterns observed for the total unemployment rate, although youth unemployment rates were consistently higher for all NUTS level 2 regions, this was most notably the case in:

Figure 5.2: Youth unemployment rate, 2018
(%, share of labour force aged 15-24 years, by NUTS 2 regions)



Note: includes data of low reliability for some regions (too many to document). For some regions an earlier reference period has been used (too many to document). Based on those regions for which data are available. Regions listed above the figure are those with the highest rate. Capital regions are indicated by a bold typeface.

Source: Eurostat (online data code: [fst_r_lfu3rt](#))



- three Romanian regions, where the youth unemployment rate was 4.8-6.6 times as high as the total unemployment rate — Nord-Vest, Bucuresti - Ilfov (2017 data) and Centru;
- the capital city regions of Praha (Czechia; 4.3 times as high) and Outer London — West and North West (the United Kingdom; 4.2 times as high).

Figure 5.2 shows that there were some considerable inter-regional variations in youth unemployment rates in 2018: this was particularly the case in France and the three southern EU Member States of Italy, Spain and Greece, where the range between the highest and lowest regional youth unemployment rates was at least 37.5 pp. The biggest difference was recorded in France, where the region with the highest youth unemployment rate was Mayotte (61.1 %) and the region with the lowest rate was Limousin (12.2 %); as such, the youth unemployment rate in Mayotte was five times as high as that in Limousin, a ratio that was only surpassed in Italy, where the region with the highest youth unemployment rate was Campania (53.6 %), some 5.8 times as high as the rate recorded for Provincia Autonoma di Bolzano/Bozen (9.2 %).

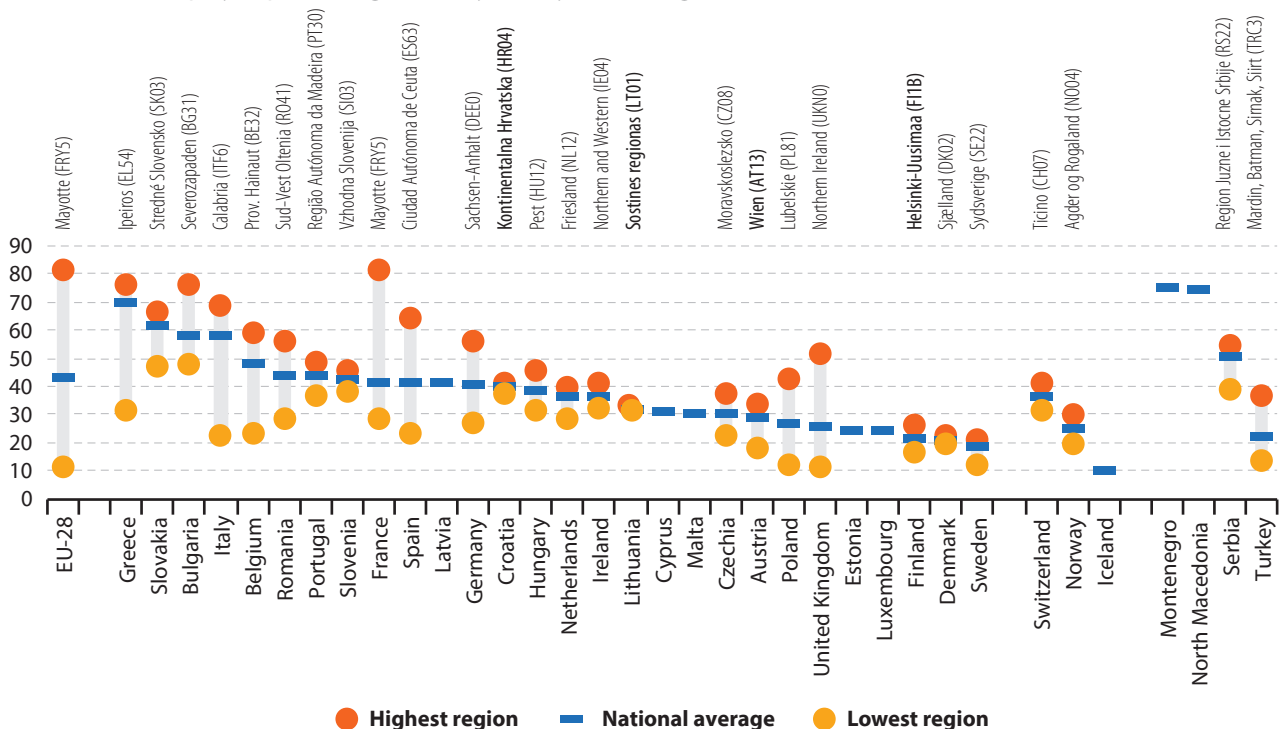
In four western EU Member States, the capital city region had the highest regional youth unemployment rate on the national territory; note, this had also been the case for the overall unemployment rate concerning Belgium, Germany and Austria — the final region was Outer London — West and North West in the United Kingdom.

Long-term unemployment share in the EU-28 was 43.2 %

This final section provides an analysis of **long-term unemployment**, defined here as persons aged 15-74 years who had been without work for at least 12 months. 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 situation 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. One of the 20 underlying principles of the European pillar of social rights is that 'the long-term unemployed have the right to an in-depth individual assessment at the latest at 18 months of unemployment'.

The long-term unemployment share is defined as the share of the long-term unemployed in total unemployment. In 2018, the EU-28 long-term unemployment share was 43.2 %, in other words, more than two fifths of all unemployed people in the EU had been without work for at least a year. Figure 5.3 shows the highest long-term unemployment share was recorded in Mayotte (81.8 %), followed by Ipeiros in Greece (77.2 %), Severozapaden in Bulgaria (76.8 %); two additional mainland regions from Greece followed — Attiki (76.0 %) and Sterea Ellada (74.3 %). By contrast, the lowest long-term unemployment shares were concentrated in Sweden and the south of the United Kingdom.

Figure 5.3: Long-term unemployment share, 2018
(%, share of unemployed persons aged 15-74 years, by NUTS 2 regions)



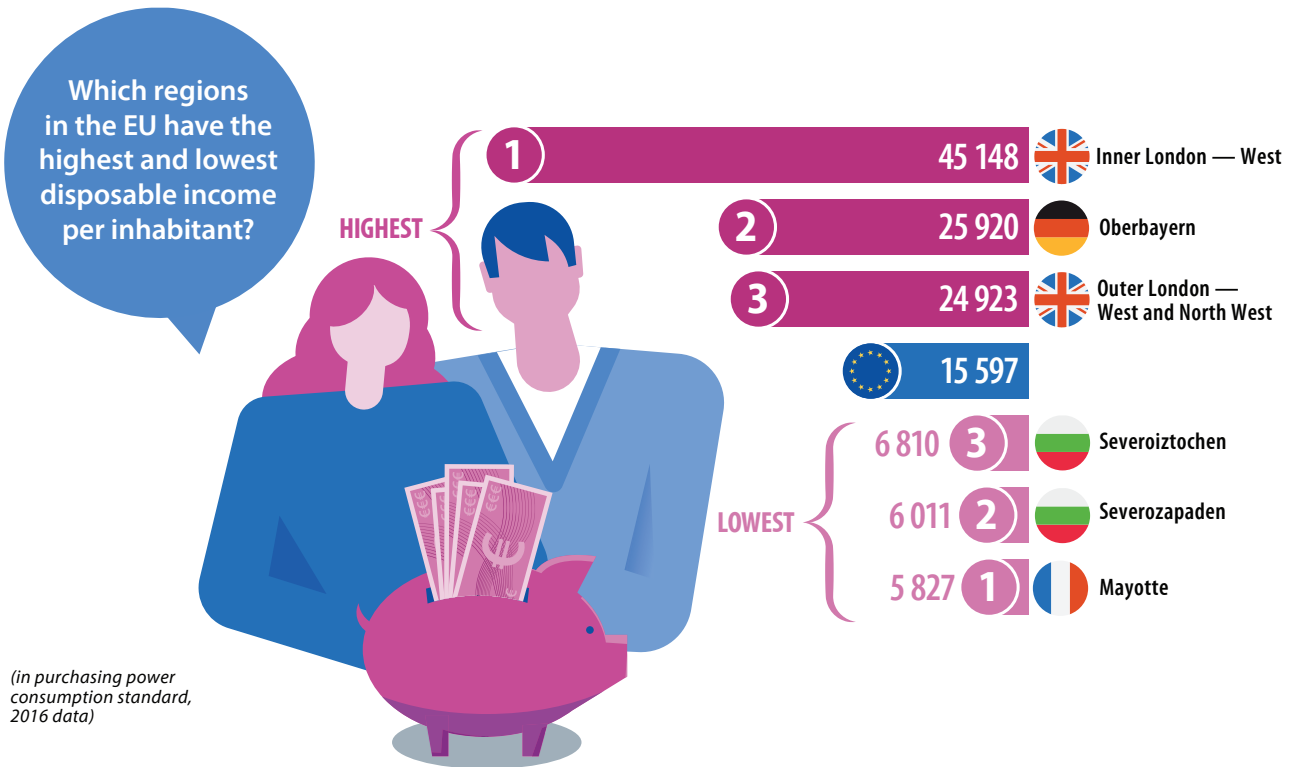
Note: long-term unemployment refers to people who are out of work and have been actively seeking employment for at least a year. Includes data of low reliability for some regions (too many to document). For some regions an earlier reference period has been used (too many to document). Based on those regions for which data are available. Regions listed above the figure are those with the highest share. Capital regions are indicated by a bold typeface.

Source: Eurostat (online data code: lfst_r_lfu2ltu)

6

Economy





The European Union (EU's) regional policy aims to support broader economic priorities such as the [Europe 2020 agenda](#), the [European semester](#) and the [Investment Plan for Europe](#). 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 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 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](#). At the time of writing, negotiations were still on-going and may be expected to conclude during the autumn of 2019: current proposals foresee a modest reduction

in allocations for cohesion policy, with appropriations for economic, social and territorial cohesion across the whole programming period amounting to EUR 330 billion, or 29.1 % of the total EU budget.

This chapter starts with information on regional GDP, the principal aggregate for measuring economic output. It is followed by an analysis of disposable income per inhabitant (in other words, the amount of money that people have left — to spend or save — after deductions for taxes and social security). The penultimate section covers employment specialisation and the compensation of employees (measured in euro per hour worked), and the chapter closes with information that may be used to assess regional competitiveness, detailing labour productivity (measured by [gross value added](#) per hour worked) and investment (measured as [gross fixed capital formation](#) relative to GDP).



Measuring the size of an economy

The central measure of national accounts, **gross domestic product (GDP)**, summarises the economic position of a country or a region. This well-known balance has traditionally been divided by the total number of inhabitants to create a proxy measure for analysing overall living standards, namely, GDP per inhabitant.

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 environmental sustainability or issues such as income distribution or social inclusion, which are increasingly seen as important drivers for **sustainable development** and the overall quality of life.

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 inhabitant 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).

Data in real or constant price terms provide an alternative method for adjusting GDP and are of particular use when analysing developments over time. In contrast to data expressed in nominal or current price terms, values are deflated to take account of price changes (in other words, they are inflation-adjusted); final results are often presented in the form of an index that shows output developments relative to prices in a specific reference year; this type of time-series analysis is presented in the final chapter on **regional socioeconomic developments**.

Regional gross domestic product (GDP)

GDP at market prices in the EU-28 was valued at EUR 15.9 trillion in 2018, equivalent to an average of EUR 30 900 per inhabitant. Behind this overall figure there are considerable differences between EU regions, among others, these might be explained by: the availability of resources, including human resources; changes brought about by globalisation, such as the relocation and outsourcing of manufacturing and some service activities; the legacy of former economic systems; socioeconomic developments; geographic proximity or remoteness. The factors may explain some of the inequalities that exist between regions in the form of the extent of social deprivation, unemployment, infrastructure provisions, or housing conditions, health care or education.

To redress these disparities, every part of the EU is covered by regional policy. The majority of regional funding is concentrated on less developed regions, with the principal aim of helping them 'catch-up'. The allocation of **structural and investment funds** is directed at: less developed regions (where GDP per inhabitant is <75 % of the EU average); transition regions (where GDP per inhabitant is 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 2012-2014 — was less than 90 % of the EU average.

GDP per inhabitant in Inner London — West was 5.8 times as high as the EU-28 average

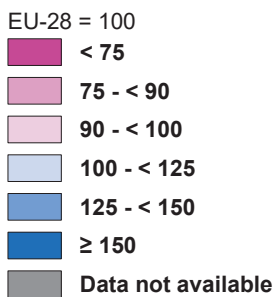
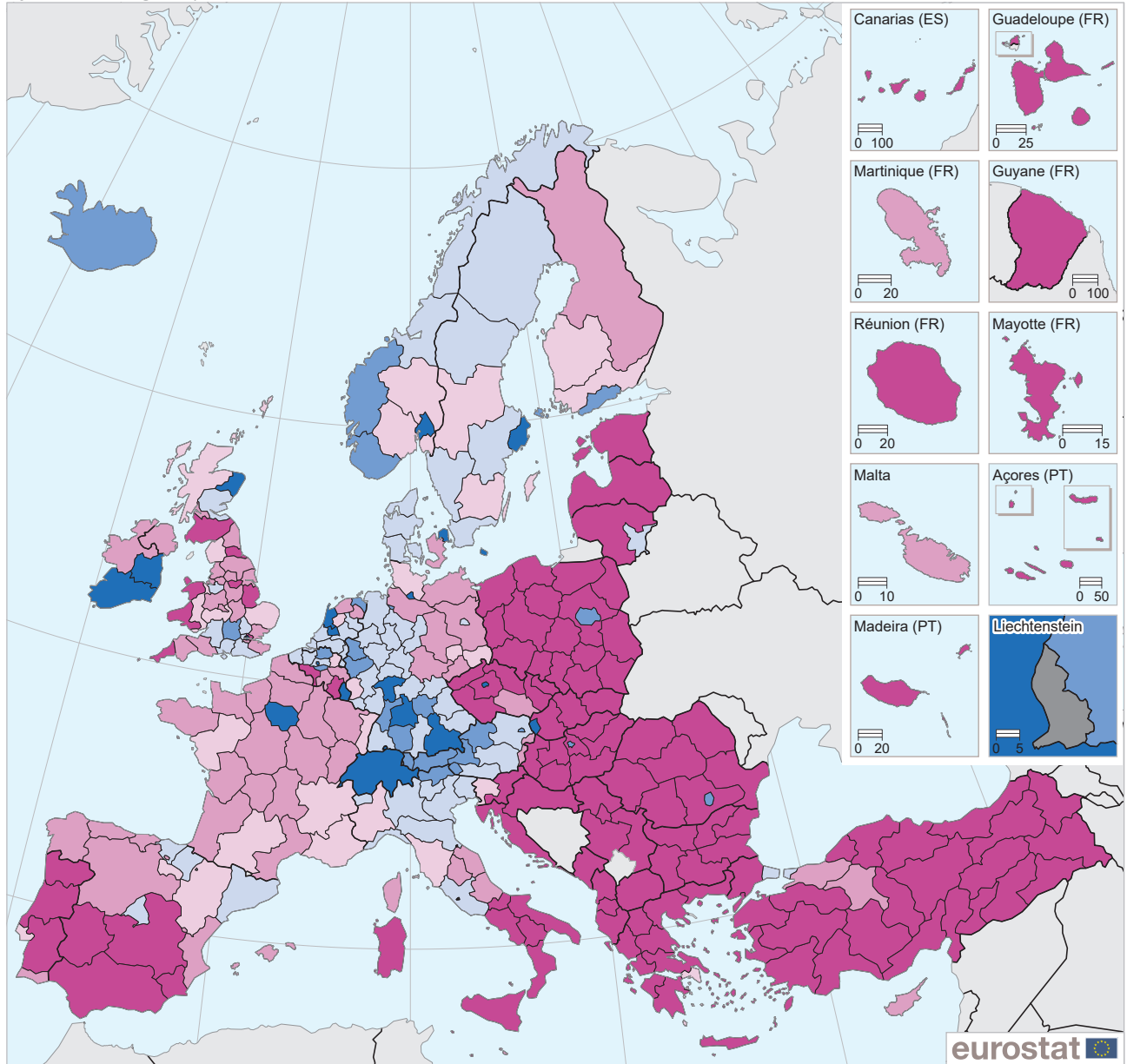
Map 6.1 presents information for GDP per inhabitant across NUTS level 2 regions. The values presented are based on data in PPS terms, expressed as a percentage of the EU-28 average (EU-28 = 100 %); those regions considered as relatively 'rich' — with GDP per inhabitant equal to or above the EU-28 average — are shown in blue. In 2017, these regions were principally 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 Ireland, and in the other direction towards the **Nordic Member States**.

Economic activity was skewed, insofar as just 97 out of the 281 regions for which data are available in 2017 recorded a level of GDP per inhabitant that was equal to or above the EU-28 average; as such, wealth creation was concentrated in relatively small regional pockets, while a higher share of regions (a greater share of the population and a much greater share of the total area) had levels of GDP per inhabitant that were below the EU-28 average. These pockets of high wealth creation were often

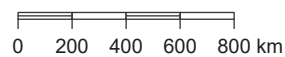


Map 6.1: GDP per inhabitant, 2017

(EU-28 = 100, index based on GDP in purchasing power standards (PPS) in relation to the EU-28 average, by NUTS 2 regions)



Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
 Cartography: Eurostat — GISCO, 05/2019



Note: Norway, Montenegro and Albania, 2016. Switzerland: national data.

Source: Eurostat (online data codes: nama_10r_2gdp, nama_10r_3popgdp, nama_10_gdp and nama_10_pe)



located in capital city and metropolitan regions, with the clearest example provided in the United Kingdom, where the average wealth created per inhabitant of Inner London — West was 5.84 times as high as the EU-28 average; note that London is composed of five separate NUTS level 2 regions. The only other regions to report that their GDP per inhabitant was at least twice as high as the EU-28 average were:

- Luxembourg (a single region at this level of detail) which has a considerable banking and financial services sector — its GDP per inhabitant was 2.45 times as high as the EU-28 average;
- the Southern region of Ireland (which includes the city of Cork), which has sizeable pharmaceutical and information technology sectors — its GDP per inhabitant was 2.16 times as high as the EU-28 average.

High levels of economic output in capital city regions often accentuated monocentric patterns of economic development

There was often a stark contrast between the economic performance of capital city regions and their surrounding regions. This was most apparent in eastern EU Member States: for example, Bratislavský kraj and Praha posted the sixth and seventh highest levels of GDP per inhabitant in the whole of the EU in 2017, while much lower levels of economic activity were recorded in their neighbouring/surrounding regions of Západoslovensko (68.6 % of the EU-28 average) and Střední Čechy (74.6 %). A similar, although less pronounced, pattern was repeated in three more eastern Member States, as GDP per inhabitant stood 25 %-50 % above the EU-28 average in București-Ilfov (Romania), Budapest (Hungary) and Warszawski stołeczny (Poland).

While most of the EU Member States have a monocentric pattern of economic development — their capital city region often being the central hub of activity — the situation in Germany and Italy was somewhat different. They were both characterised by a more polycentric pattern of development in 2017: for example, GDP per

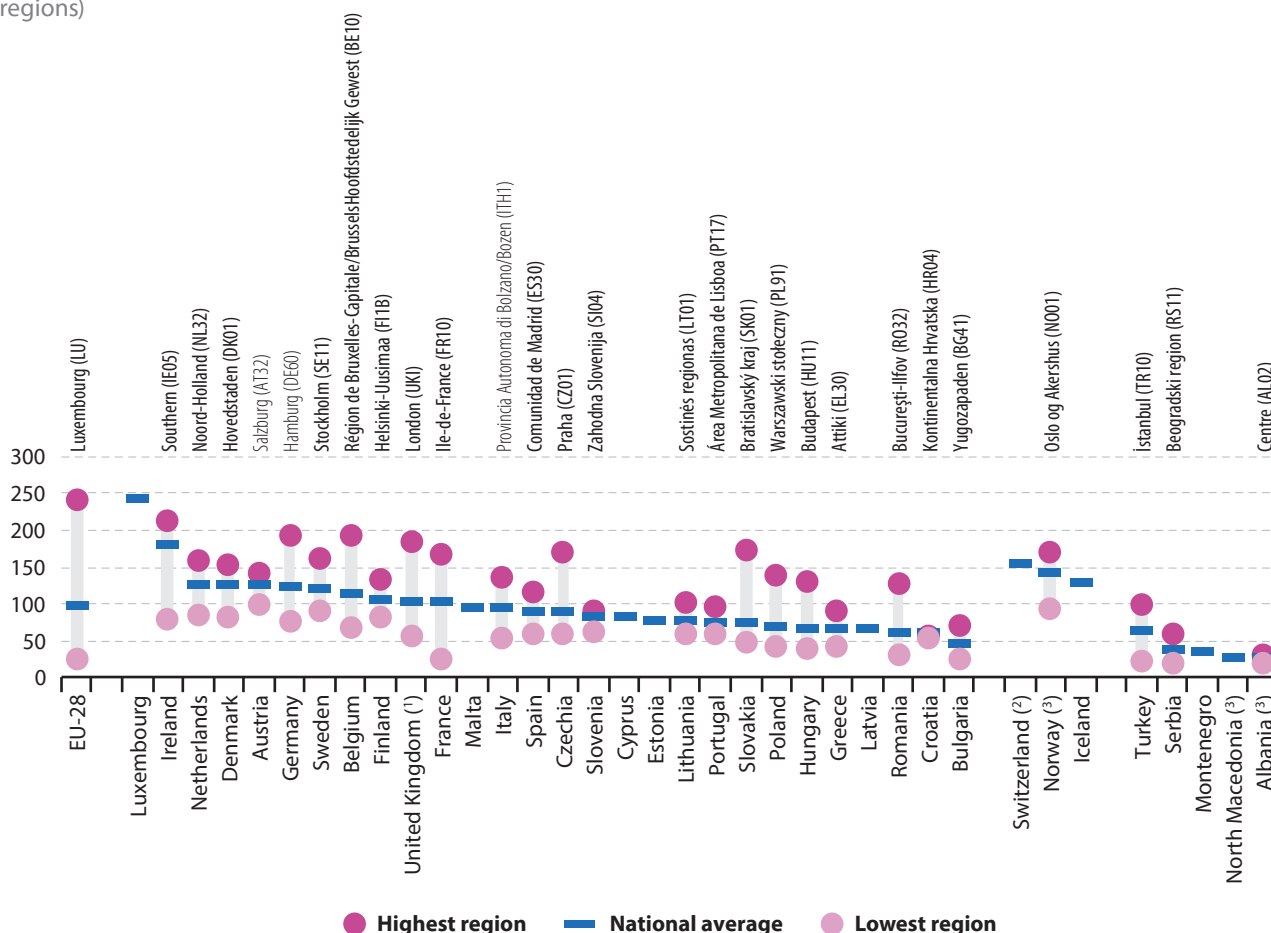
inhabitant in the German capital city region of Berlin was lower than in 19 of the 37 other German regions, while a similar analysis for Italy reveals that GDP per inhabitant in Lazio was lower than in 6 of the 20 other Italian regions. The only EU Member States (composed of more than one NUTS level 2 region) to report that their capital city region did not record the highest level of GDP per inhabitant in 2017 were: Germany (GDP per inhabitant was higher in Hamburg), Ireland (Southern), Italy (Provincia Autonoma di Bolzano/Bozen) and Austria (Salzburg).

‘Poorer’ regions of the EU often covered a considerable share of the remaining territory. They can often be split into two distinct groups: either sparsely-populated, rural regions that are characterised by ageing populations and net emigration; or post-industrial regions stripped of their traditional industrial base, in part due to the consequences of globalisation. The latter group are often classified under the heading of regions that have been ‘left behind’. The poorest regions in the EU are shown in the darkest shade of purple in Map 6.1. They were primarily located in a band, running from Latvia in the north, through eastern parts of the EU, down into Greece and southern Italy, before extending across the Mediterranean to southern regions of Spain and onto most of Portugal. In 2017, GDP per inhabitant was also less than 75 % of the EU-28 average in all but one of the outermost regions, the exception being the French region of Martinique where the level of economic activity reached 77.5 % of the EU-28 average.

Figure 6.1 provides an alternative means of analysing the distribution of GDP per inhabitant between different regions of the same EU Member State. In France, the level of GDP per inhabitant in the capital city region of Ile-de-France was 6.1 times as high as that recorded in the outermost region of Mayotte. There was also a relatively large variation between regional levels of economic activity in Romania, Slovakia, Hungary, Poland and the United Kingdom (note the data for London cover the NUTS level 1 region); in each case, the capital city region recorded GDP per inhabitant that was more than 3.0 times as high as that recorded in the region with the lowest GDP per inhabitant.

Figure 6.1: GDP per inhabitant, 2017

(EU-28 = 100, index based on GDP in purchasing power standards (PPS) in relation to the EU-28 average, by NUTS 2 regions)



Note: regions listed above the figure are those with the highest ratio. Capital regions are indicated by a bold typeface. Ranked on the national average.

(¹) Data are shown for London (UK) as the capital region (NUTS level 1).

(²) Regional data: not available.

(³) 2016.

Source: Eurostat (online data codes: nama_10r_2gdp and nama_10r_3pogdp)

Household income

Part of the wealth created in capital city and metropolitan regions may be attributed to inflowing commuters: while they go to work and generate wealth in these economic centres, commuters often live in surrounding regions where the price of property and the cost of living may be lower. As a result, GDP per inhabitant in capital city and metropolitan regions is often overstated, whereas the opposite may be true for surrounding regions which consequently tend to have a higher share of total household income than their share of economic activity.

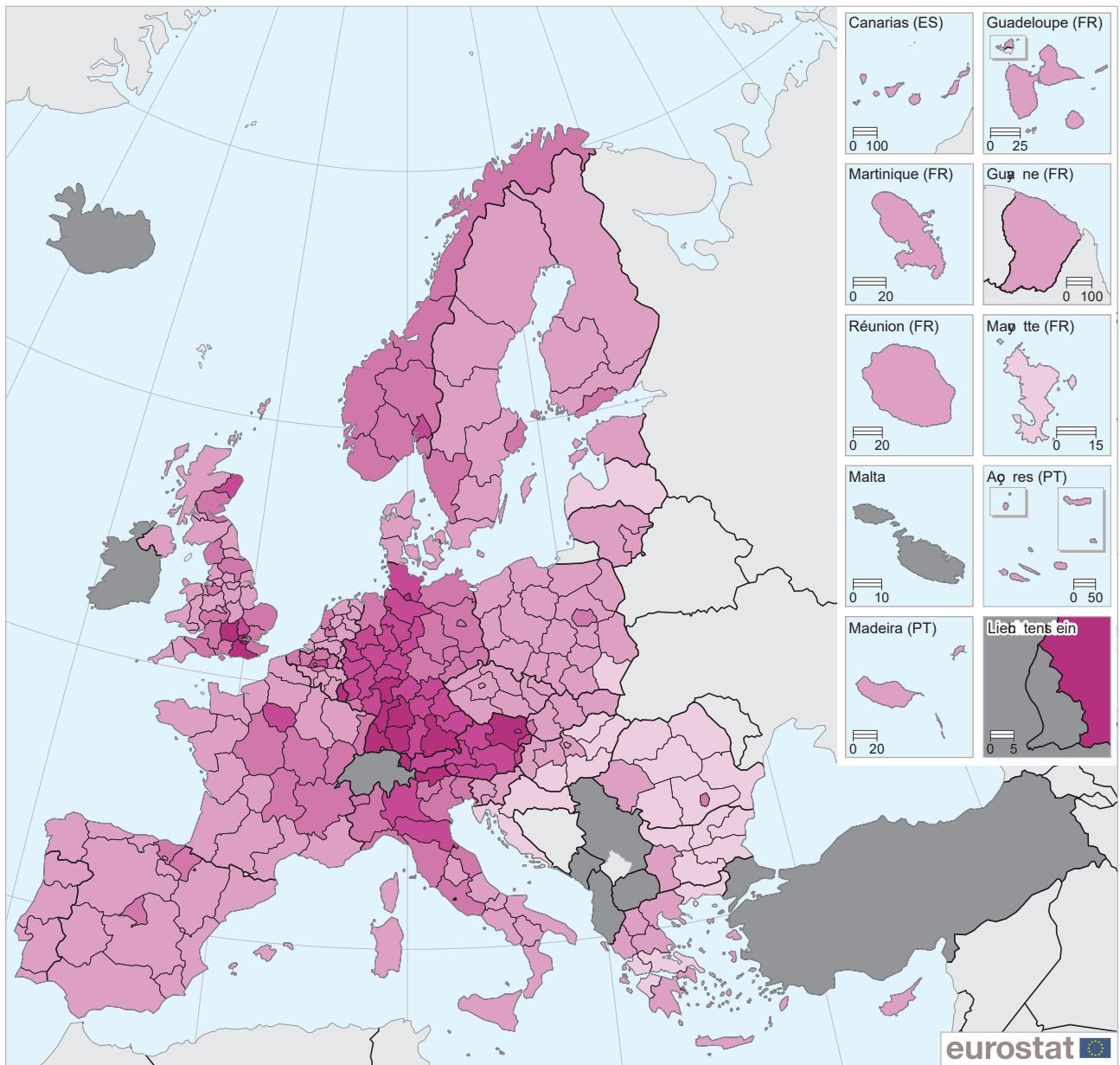
An analysis that focuses on household income rather than GDP reduces some of the disparities between regions: Map 6.2 presents the average level of disposable

income per inhabitant for NUTS level 2 regions; data are presented in purchasing power consumption standards (PPCS), to reflect price level differences across countries.

Disposable income per inhabitant in Inner London — West was 7.7 times as high as in Mayotte

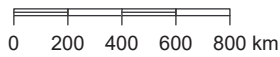
In 2016, disposable income per inhabitant in the EU-28 averaged 15 600 PPCS. It ranged from a high of 45 100 PPCS per inhabitant in Inner London — West down to 5 800 PPCS per inhabitant in Mayotte, a factor of 7.7 to 1. As such, the regions with the highest and lowest levels of disposable income were the same as those with the highest and lowest levels of GDP per inhabitant, although the difference between these two regions was far less for disposable income per inhabitant than for GDP per inhabitant (where the factor was 20.9 to 1).

Map 6.2: Disposable income per inhabitant, 2016
(purchasing power consumption standard (PPCS))



- EU-28 = 15 597
- < 10 000
- 10 000 - < 17 500
- 17 500 - < 20 000
- 20 000 - < 22 500
- ≥ 22 500
- Data not available

Administrative boundaries © EuroGeographics © UN-FAO © Turktat Cartography Eurostat — GISCO, 05/2019



Note: Germany: estimates. Greece, Spain, France and the Netherlands: provisional.
Source: Eurostat (online data codes: [nama_10r_2hhinc](#) and [nama_10r_3popgdp](#))



There were 16 regions in the EU where disposable income per inhabitant was at least 22 500 PPCS in 2016 (as shown by the darkest shade in Map 6.2), they included:

- seven regions from Germany: with the exception of the northern city of Hamburg, they were all spread across the central and southern parts of the country;
- five regions concentrated in the south-east corner of the United Kingdom.

At the other end of the range, the lowest levels of disposable income per inhabitant were mainly recorded in eastern regions of the EU. The lightest shade in Map 6.2 shows those regions where disposable income per inhabitant was less than 10 000 PPCS, including:

- five out of the six regions in Bulgaria, the exception being the capital city region of Yugozapaden;
- both Croatian regions;
- six out of the eight regions in Romania, the exceptions being the capital city region of Bucureşti-Ifov and Vest (which includes the city of Timișoara).

Regional employment and compensation of employees

In 2016, there were 232 million people employed in the EU-28. [NACE — the statistical classification of economic activities in the European Community](#) can be used to identify literally hundreds of different economic activities (see the [next chapter](#) for much more detailed analysis): however, these have been aggregated into just six different groups for the purpose of Map 6.3. The total number of persons employed in the EU-28 is divided as follows:

- agriculture, forestry and fishing (10.4 million people employed; 4.5 % of the EU-28 total);
- industry (35.6 million; 15.3 %);
- construction (14.7 million; 6.3 %);
- wholesale and retail trade; transport; accommodation and food service activities; information and communication (64.4 million; 27.7 %)
- financial and insurance; real estate; professional, scientific and technical; administrative and support service activities (38.1 million; 16.4 %);
- public administration — defence; social security; education; health and social work — arts, entertainment and recreation; others (69.1 million; 29.7 %).

There are many reasons that may explain the distribution and concentration of economic activities across the different EU regions. Natural resource endowments may clarify why some regions are particularly specialised in activities such as mining or forest-based activities. In a similar vein, the weather, location and landscape can help explain why others might be specialised in

agriculture or tourism-related activities. A critical mass of clients (either other enterprises or households/consumers) or the supply of skilled labour may also explain specialisations: for example, research parks tend to develop near to universities, whereas financial, communications and media services are often concentrated in capital city regions.

People employed in agriculture, forestry and fishing accounted for almost half of the total workforce in the Romanian region of Nord-Est — more than 10 times as high as the EU-28 average

Map 6.3 shows which of these six aggregated economic activities had the highest employment specialisation index in each of the NUTS level 2 regions; note, the map does not necessarily indicate the activity with the biggest workforce, rather, it shows the activity with the highest share of the regional workforce relative to the same ratio for the whole of the EU-28.

In 2016, the highest employment specialisation indices were systematically recorded for the primary activity of agriculture, forestry and fishing. Its relative importance as a provider of employment was particularly pronounced in eastern and southern parts of the EU, with 27 different regions reporting an employment share for agriculture, forestry and fishing that was at least three times as high as the EU-28 average of 4.5 %, including: five out of the six regions in Bulgaria, the exception being the capital city region of Yugozapaden; 8 out of the 13 regions in Greece; six regions in Poland; and five out of the eight regions in Romania.

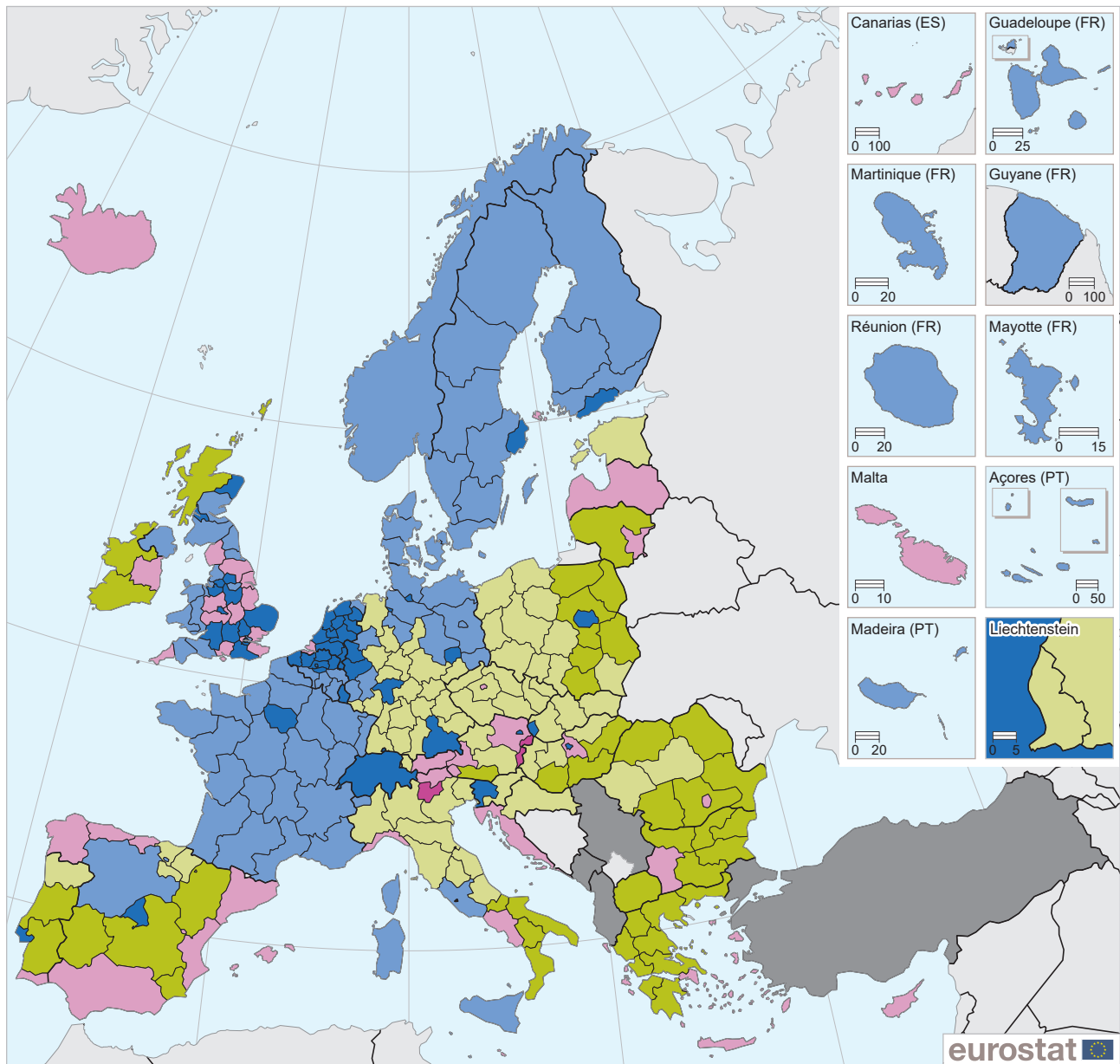
The share of industry in the total number of people employed peaked at 2.7 times as high as the EU-28 average in the Vest development area of Romania. This may, at least in part, be explained by the close proximity of western markets, a relatively skilled and multilingual workforce, as well as foreign direct investment for activities such as electronics, machinery or the automotive industry. The next highest employment specialisation indices for industry were recorded in four different regions that together form the northern border of Czechia. They were characterised by two different patterns: on the one hand, the continued existence of heavy and traditional industries, such as coal, iron and steel, chemicals, textiles or glass; on the other, an inflow of foreign investment into other industrial activities including electronics, pharmaceuticals and transport equipment.

The highest employment specialisation indices for construction were recorded in the French island region of Corse, followed by five regions in the south of the United Kingdom (four of these were located around the capital city, Outer London — East and North East, Outer London - South, Essex and Kent, while the fourth was Cornwall and Isles of Scilly), Malopolskie in Poland, Luxembourg and Burgenland (in the east of Austria).



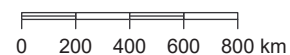
Map 6.3: Employment specialisation, 2016

(percentage points, based on difference compared with EU-28 average, by NUTS 2 regions)



- Agriculture, forestry and fishing**
- Industry**
- Construction**
- Wholesale and retail trade; transport; accommodation and food services; information and communication**
- Financial and insurance; real estate; professional, scientific and technical; administrative and support service activities**
- Public administration (defence; social security; education; health and social work); arts, entertainment and recreation; others**
- Data not available**

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019



Note: the share of the total number of persons employed in each region is computed for the six activities; a similar calculation is made for the whole of the EU-28; the most specialised activity is computed by taking the regional shares and subtracting the EU-28 shares; the map shows, for each region, the activity whose employment share exceeded the EU-28 average by the largest margin (as measured in percentage point terms). Norway and Switzerland: national data. Germany, Greece, Spain, France, Cyprus, the Netherlands, Poland and Romania: provisional. Slovakia: estimates.

Source: Eurostat (online data codes: [nama_10r_3empers](#) and [nama_10_a10_e](#))



For services, the highest employment specialisation indices for wholesale and retail trade, transport, accommodation and food services, information and communication were recorded in six regions characterised as tourist destinations, namely: Notio Aigaio, Ionia Nisia and Kriti in Greece, the two Spanish island regions of Canarias and Illes Balears and the Algarve in Portugal.

The highest employment specialisation indices for financial and insurance; real estate; professional, scientific and technical; administrative and support service activities were recorded in the two regions that cover Inner London, followed by the capital city regions of the Benelux Member States (note that at this level of detail, the data for Luxembourg are presented at a national level).

Finally, the highest employment specialisation indices for public administration; arts, entertainment and recreation; others were recorded either in relatively remote regions (where there may be few alternative employment opportunities) that included the Spanish autonomous cities, the outermost regions of France and the Portuguese Região Autónoma dos Açores, or in EU Member States that are characterised by relatively high levels of public sector spending, for example: Belgium (particularly in the south), Denmark, France and Sweden.

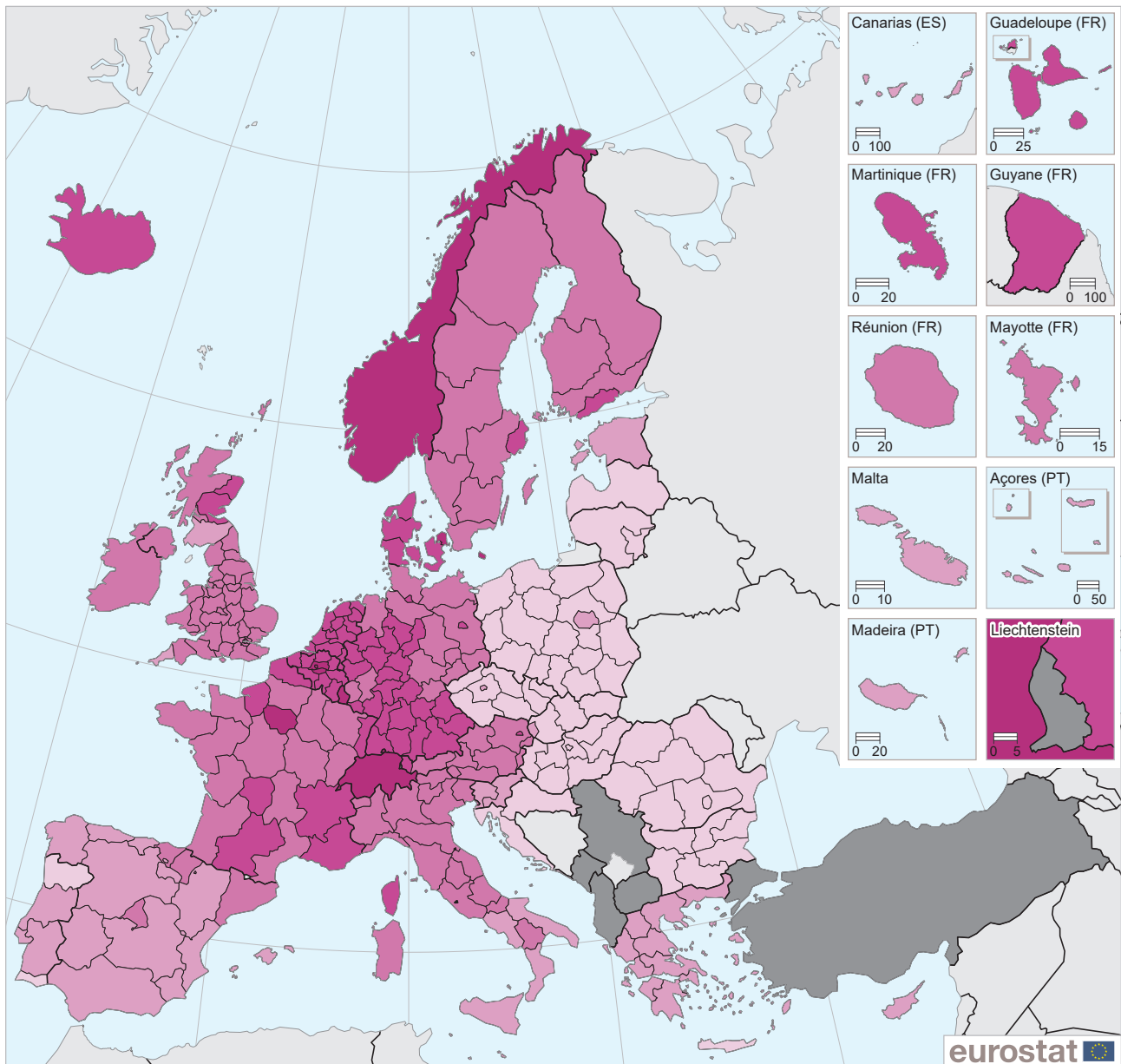
The Belgian capital city Région de Bruxelles-Capitale/Brussels Hoofdstedelijk Gewest had the highest level of employee compensation in the EU, averaging EUR 44.2 per hour

One of the principal areas of interest/concern for many employees is their level of remuneration. [Employee compensation](#) is defined within national accounts as remuneration, in cash or in kind, payable by an employer to an employee in return for work done. The figures presented refer to gross (in other words, before tax) compensation covering three areas: wages and salaries in cash; wages and salaries in kind (such as a company car or vouchers for meals); employers' social contributions (such as health or pension contributions). Data are presented as hourly compensation rates (converted, when necessary, into euro).

In 2016, employees working in the EU-28 received an average of EUR 22.8 for each hour they worked. Across NUTS level 2 regions, the highest level of employee compensation, was recorded in the Belgian capital city Région de Bruxelles-Capitale/Brussels Hoofdstedelijk Gewest, at EUR 44.2 per hour, while the lowest was in the northern Bulgarian region of Severen tsentralen (EUR 3.7 per hour). As such, the ratio between these two regions with the highest and lowest levels of compensation was 12 to 1.

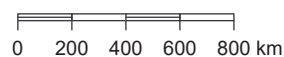
Aside from the Belgian capital city region there were six other regions in the EU that reported employee compensation above EUR 40 per hour, including Luxembourg (a single region at this level of detail; EUR 43.9 per hour); the Danish capital city region of Hovedstaden (EUR 42.2 per hour); and two other Belgian regions that together surrounded the capital, Prov. Vlaams-Brabant and Prov. Brabant Wallon (both EUR 41.7 per hour). It is interesting to note that the compensation of employees in Norway and Switzerland (only national data are available) was higher than in any of the regions in the EU, reaching EUR 44.9 per hour and EUR 50.5 per hour respectively.

Map 6.4: Compensation of employees, 2016
(EUR per hour worked, by NUTS 2 regions)



- EU-28 = 22.79
- < 10
- 10 - < 20
- 20 - < 30
- 30 - < 40
- ≥ 40
- Data not available**

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019



Note: Ireland, Norway and Switzerland, national data. Germany: estimates. Greece, Spain, France, the Netherlands and Iceland: provisional.

Source: Eurostat (online data codes: [nama_10r_2coe](#), [nama_10_a10](#), [nama_10r_2emhrw](#) and [nama_10_a10_e](#))



Labour productivity and investment

National accounts define **labour productivity** as gross value added divided by either the number of persons employed or the number of hours worked. When based on a simple headcount this indicator can, at least to some degree, reflect the structure of the employment market — for instance, it is lowered when there is a shift from full-time to part-time work. As such, an indicator based on the total number of hours worked is normally preferred as it provides a more reliable measure of labour input.

High levels of labour productivity can be linked to the efficient use of labour (without using more inputs), or may result from the mix of activities that form each regional economy, as some activities — for example, business services and financial services — are usually characterised by higher levels of labour productivity than others.

For each hour worked in Luxembourg some EUR 76.3 of added value was generated; by contrast, in the Bulgarian region of Yuzhen tseentralen the corresponding ratio was EUR 5.4 of added value per hour worked

In 2016, an average of EUR 35.2 of added value was created for each hour worked in the EU-28, this figure is used as the basis for deriving a set of regional labour productivity indices that are presented relative to the EU-28 average = 100 (see Map 6.5). There were considerable differences in productivity between EU regions: in Luxembourg (a single region at this level of detail), the labour productivity index was more than twice (216.9) as high as the EU average, while it was 15.4 in the southern Bulgarian region of Yuzhen tseentralen, with productivity approximately one sixth of the EU average.

Ireland (201.6; only national data available) was the only other region — apart from Luxembourg — able to record a level of labour productivity per hour worked that was at least twice as high as the EU-28 average in 2016; both these regions are characterised by a focus on providing a broad range of financial services. Three capital city regions followed in the ranking: Hovedstaden in Denmark (190.3), Stockholm in Sweden (185.3) and Région de Bruxelles-Capitale/Brussels Hoofdstedelijk Gewest in Belgium (184.7). By contrast, five of the six regions with the lowest levels of labour productivity were located in Bulgaria — the only exception being Nord-Est (Romania); all six of these regions had a labour productivity index in the range of 15.4-19.6.

An analysis for EU Member States (composed of more than one NUTS level 2 region) in 2016 reveals that capital city regions generally recorded the highest level of labour productivity in each Member State. There were however four exceptions, as value added per hour worked peaked at: 169.4 in Hamburg (Germany); 103.5 in País Vasco (Spain); 38.0 in Jadranska Hrvatska (Croatia); 117.8 in Lombardia (Italy).

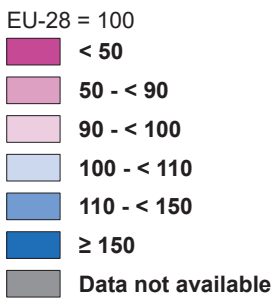
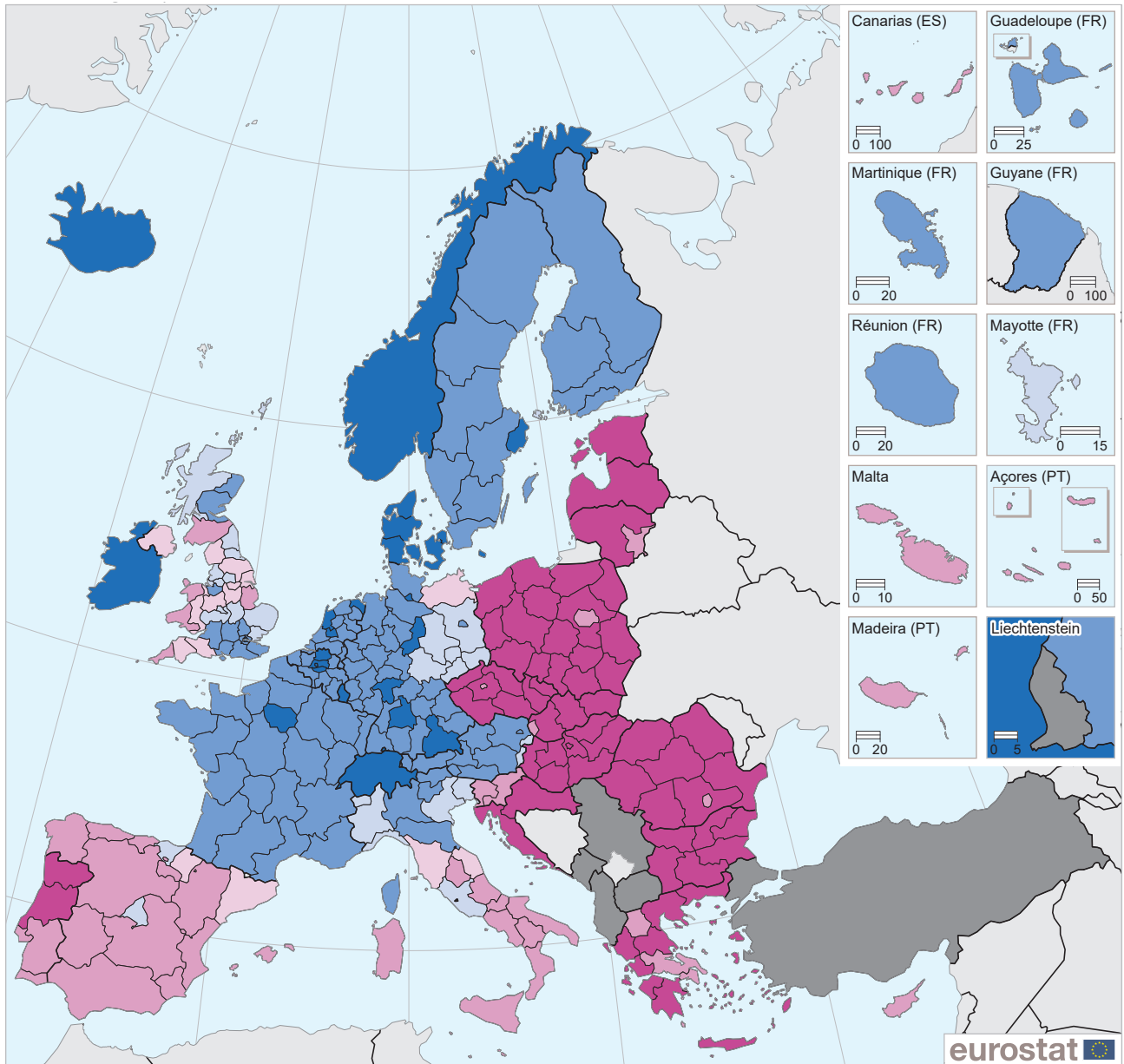
Overall levels of investment tend to mirror economic activity, insofar as regions that generate considerable levels of wealth are likely to see some of it reinvested both by the (local) government sector and private enterprises. On the other hand, regions seeking to speed-up their economic development may try to stimulate investment in infrastructure projects or alternatively attract foreign direct investment or subsidies to promote 'catching-up' with other regions.

Gross fixed capital formation (GFCF) is a macroeconomic concept from national accounts that defines residents' investments in fixed assets during a given period, less disposals. It may be of interest to policymakers when expressed relative to GDP insofar as it shows the share of GDP that is invested, rather than being consumed. Investment rates often rise when business confidence is high, while additional investment on infrastructure, equipment and technology has the potential to drive productivity gains and with it economic performance.

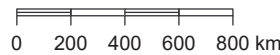


Map 6.5: Labour productivity, 2016

(EU-28 = 100, index based on gross value added per hour worked in EUR in relation to the EU-28 average, by NUTS 2 regions)



Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019



Note: Ireland, Norway and Switzerland, national data. Germany: estimates. Greece, Spain, France, the Netherlands and Iceland: provisional.

Source: Eurostat (online data codes: nama_10r_3gva, nama_10_a10, nama_10r_2emhrw and nama_10_a10_e)

The investment rate for North Eastern Scotland was almost four times as high as the investment rate for Inner London — West

Figure 6.2 highlights the NUTS level 2 regions in the EU with the highest and lowest levels of investment relative to GDP. In 2016, gross fixed capital formation relative to GDP was 20.0 % 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:

- North Eastern Scotland ⁽¹⁾ (41.4 %);
- the Romanian capital city region of Bucuresti - Ilfov (39.3 %);

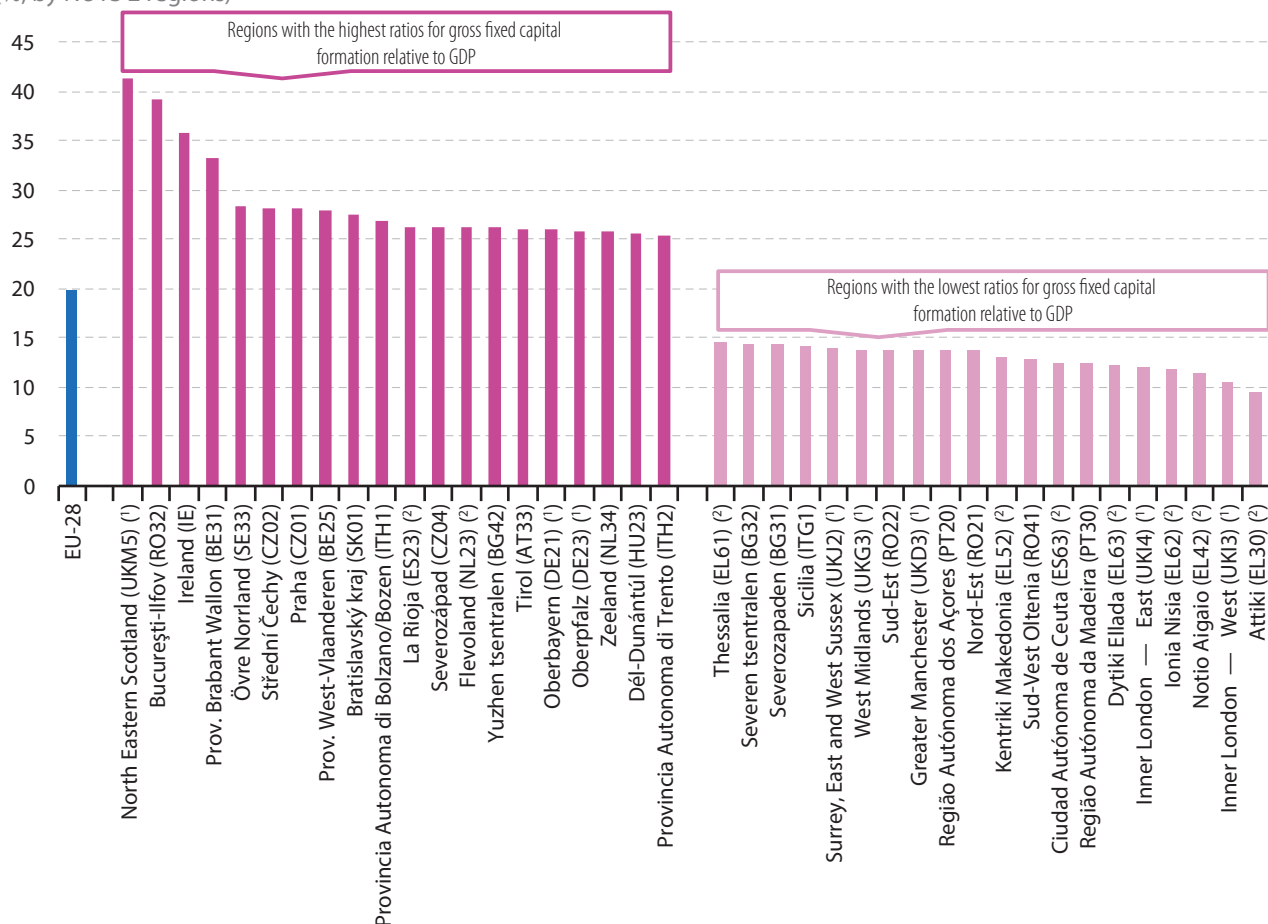
- Ireland (only national data available; 35.7 %);
- Prov. Brabant Wallon located to the south of the Belgian capital (33.2 %).

At the other end of the range, some of the lowest investment rates were concentrated in Greece and the United Kingdom:

- the lowest investment rate among NUTS level 2 regions in 2016 was recorded in the Greek capital city region of Attiki (9.4 %);
- the second lowest investment rate in the EU was recorded in Inner London — West (10.5 %), while Inner London — East (12.0 %) also featured among the bottom five regions with the lowest investment rates across the EU.

⁽¹⁾ Please note that regional data for GFCF in the United Kingdom are considered experimental.

Figure 6.2: Investment relative to gross domestic product (GDP), 2016
(%, by NUTS 2 regions)



Note: Ireland and Poland, national data.

⁽¹⁾ Estimate.

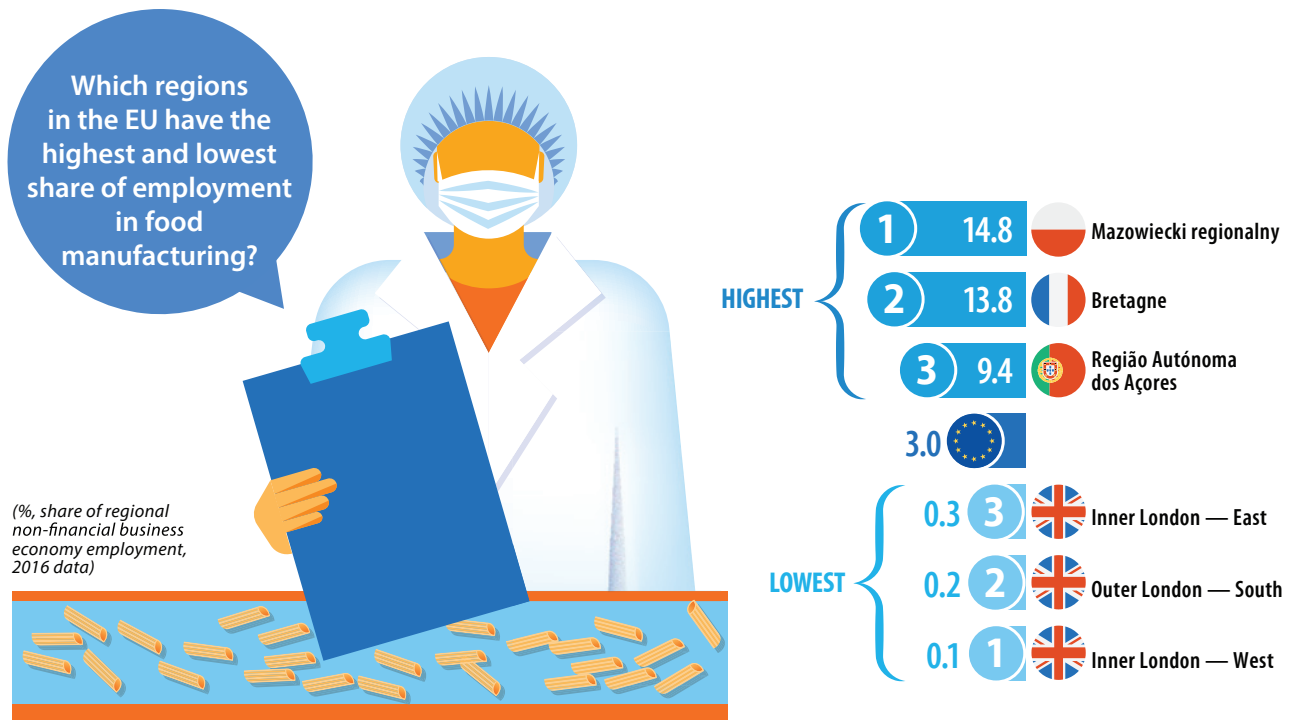
⁽²⁾ Provisional.

Source: Eurostat (online data codes: nama_10r_2gfcf, nama_10_gdp and nama_10r_2gdp)

7

Structural business statistics





Presented according to the activity classification NACE, the first part of this chapter is based on **structural business statistics (SBS)** which may be used to analyse patterns of specialisation and concentration across the **European Union's (EU's)** regional business economies. Special focuses are provided for: retail trade; computer programming, consultancy and related activities; manufacturing of food products; manufacturing of fabricated metal products. The second part of the chapter presents a selection of regional **business demography** statistics, with information provided in relation to enterprise birth and death rates, as well as high-growth enterprises.

The SBS data set can be analysed at a very detailed sectoral level (several hundred economic activities), by enterprise size class (for micro, small, medium and large-sized enterprises) or, as here, by region. 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, these activities are referred to as the **non-financial business economy** (defined as NACE Sections B to J and L to N and Division 95). Note that financial services (NACE Section K) are excluded from the analysis because of their specific nature and the limited availability of most types of business statistics for these activities.

In 2016, there were 24.4 million **enterprises** active in the **EU-28's** non-financial business economy; together, they generated EUR 7 184 billion of **gross value added** and **employed** some 142.2 million persons. An analysis of

value added — based on NACE sections — confirms the largest activity in the EU-28 was manufacturing (EUR 1 912 billion or 26.6 % of the non-financial business economy total). By contrast, an analysis based on the number of persons employed, reveals that distributive trades was the largest activity (33.3 million persons employed or 23.4 % of the non-financial business economy workforce).

Patterns of employment specialisation and concentration in non-financial services

In 2016, non-financial services accounted for just over two thirds (67.3 %) of the total number of persons employed in the EU-28's non-financial business economy; their contribution to total value added was lower, at 60.6 %. These contrasting shares suggest that non-financial services were — at an aggregated level of detail — less productive than other areas of the economy, for example, mining and quarrying, manufacturing or energy supply. However, a more detailed analysis — by NACE division — reveals that although labour productivity was relatively low for the labour-intensive activities of distributive trades, accommodation and food services, or administrative and support service activities, the opposite was true for information and communication services, real estate activities, or professional, scientific and technical activities.

Non-financial services provided work to more than 19 out of every 20 people working in the non-financial business economy of Inner London — West

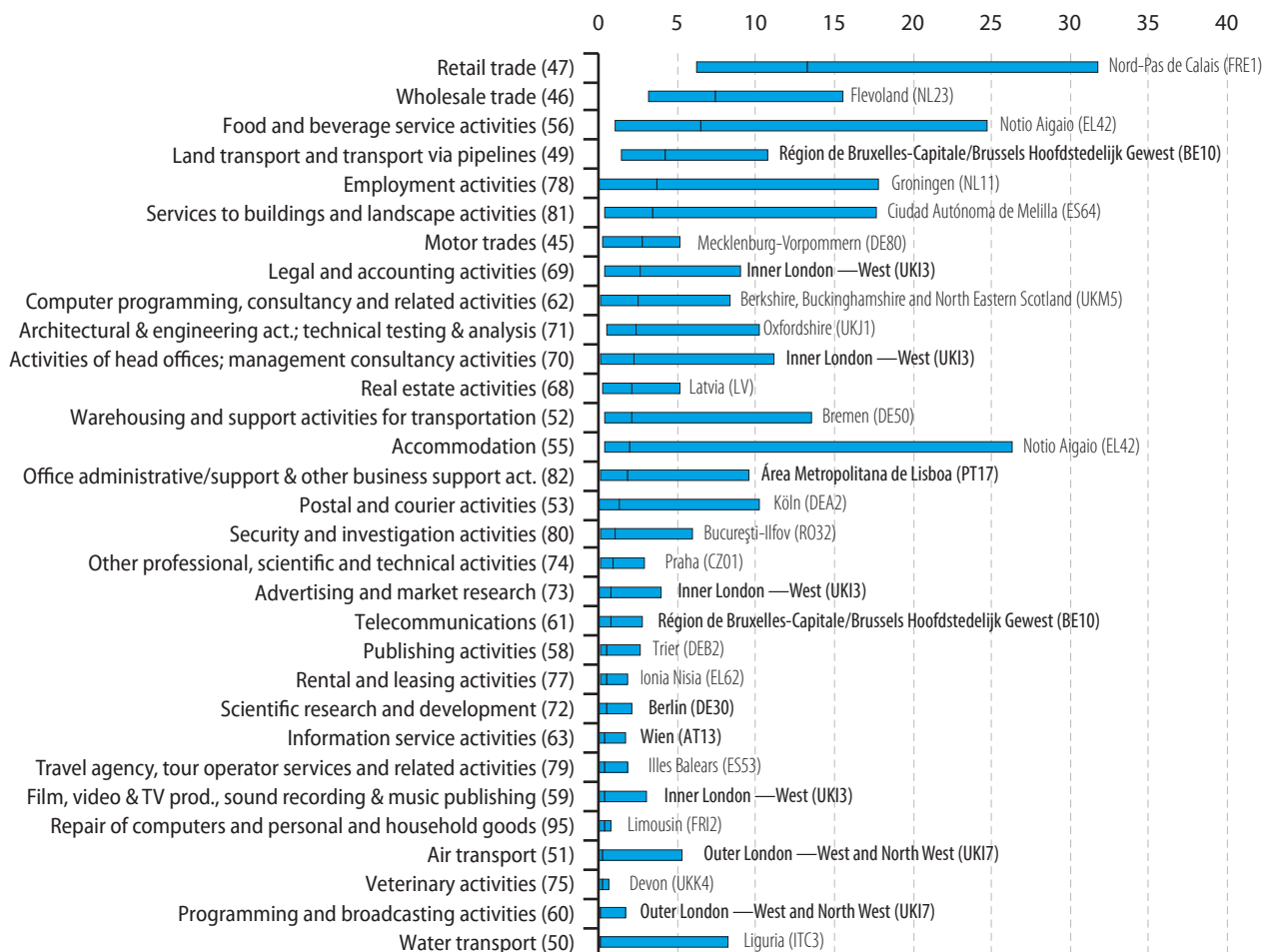
In 2016, the contribution of non-financial services to the total non-financial business economy workforce ranged — among NUTS level 2 regions — from a low of 36.2 % in Mazowiecki regionalny (which surrounds the Polish capital city region) up to a high of 95.1 % in the capital city region of Inner London — West; note that Inner London — East had the second highest share (92.1 %).

Indeed, it was commonplace to find the employment share of non-financial services peaking in capital city regions which have a high degree of specialisation in service sectors. Note the service orientation of many capital city regions would be even higher if financial

services were included; for example, London is among the world's leading financial centres, while other capitals/major cities are characterised by the broad range of financial services they provide to corporate clients and consumers.

Figure 7.1 develops this analysis further by showing — for each NACE division in the non-financial services economy — the region with the highest degree of employment specialisation (based on regional shares for each activity in the non-financial business economy workforce). There are considerable differences, which may reflect, among others: access to skilled employees; the adequate provision of infrastructure; climatic and geographic conditions; proximity to or a critical mass of customers; access to markets; or legislative constraints.

Figure 7.1: Regional specialisation within the non-financial services economy, 2016
(%, share of regional non-financial business economy employment, by NUTS 2 regions)



Note: the range of regional values across NUTS level 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 brackets 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). Mayotte (FRY5): not available. Estimates.

Source: Eurostat (online data codes: sbs_r_nuts06_r2 and sbs_na_sca_r2)

Almost one third of the non-financial business economy workforce in Nord - Pas-de-Calais was working in retail trade

Some service activities are ubiquitous, appearing in every region of the EU: for example, this is the case for retail and wholesale trade or for food and beverage services. In 2016, these were the three largest service activities in the EU-28 economy, together accounting for more than one quarter (27.1 %) of the non-financial business economy workforce.

The northern French region of Nord - Pas-de-Calais had the highest employment share (31.8 %) for retail trade in 2016, which may reflect, at least to some degree, its location — providing ease of access to cross-border shoppers from Belgium or the United Kingdom. The highest regional employment share for wholesale trade was recorded in the Dutch region of Flevoland (15.6 %), which may reflect its close proximity to Amsterdam as well as multi-modal transport and logistic developments.

In densely-populated regions and 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 food and beverage service activities. The Greek region of Notio Aigaiio (which includes, among others, the islands of Kos, Mykonos and Rhodes) had the highest share of its non-financial business economy workforce employed within food and beverage service activities (24.8 %).

Capital city regions were among some of the most specialised regions for a range of activities that rely on the close proximity of a large number of potential clients (be these other businesses or individual consumers). In 2016, Inner London — West was the most specialised region in the EU for: activities of head offices and management consultancy activities (11.1 % of the non-financial business economy workforce); legal and accounting activities (9.0 %); advertising and market research (4.0 %); film, video, TV production, sound recording and music publishing services (3.1 %). Another of the capital city regions from the United Kingdom, Outer London — West and North West, was the most specialised region in the EU for air transport (5.3 %; London Heathrow is located in this region) and for programming and broadcasting activities (1.7 %). In a similar vein:

- Région de Bruxelles-Capitale/Brussels Hoofdstedelijk Gewest in Belgium was the most specialised region in the EU for land transport and transport via pipelines (10.7 %) and for telecommunications (2.8 %);

- Área Metropolitana de Lisboa in Portugal was the most specialised region for office administrative support and other business service activities (9.5 %);
- Bucureşti-Ilfov in Romania was the most specialised region for security and investigation activities (5.9 %);
- Praha in Czechia was the most specialised region for other professional, scientific and technical activities (2.9 %);
- Berlin in Germany was the most specialised region for scientific research and development (2.1 %);
- Wien in Austria was the most specialised region for information service activities (1.8 %).

Retail trade was one of the largest employers in the EU, accounting for 13.3 % of the non-financial business economy workforce

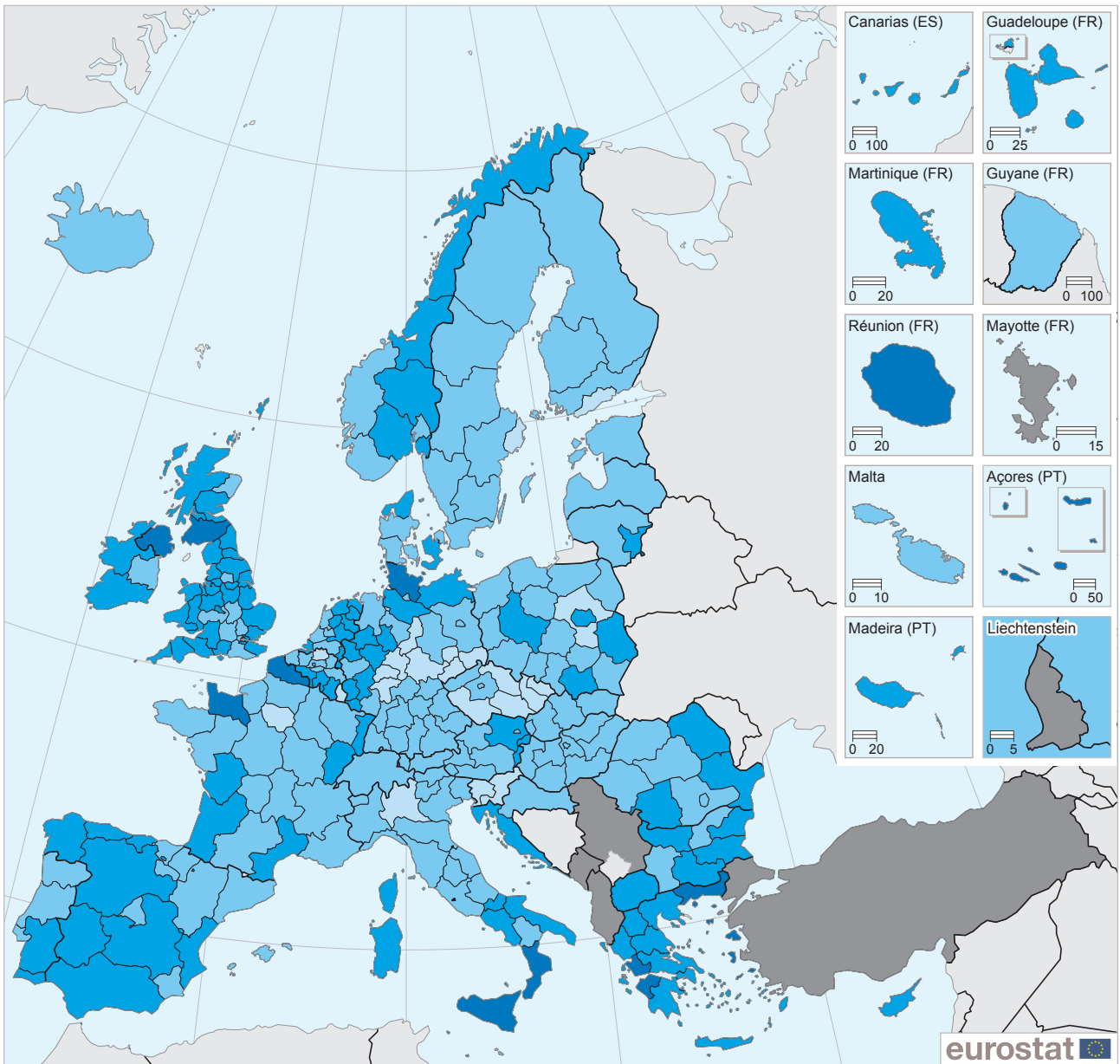
Retail trade has experienced considerable changes over recent decades, for example: a change of consumer preferences away from specialist towards more generalist retailers; the growth of supermarket chains, out-of-town shopping locations and shopping malls; the introduction of discounters; the growth of online shopping (part of e-commerce). These changes have reshaped shopping experiences and have, in some cases, led to concerns around the viability of town centre shopping, with many former retail outlets remaining unused or being converted to alternative uses.

Map 7.1 shows the share of retail trade in the non-financial business economy workforce across NUTS level 2 regions. Note that legislative differences (usually at a national level) may impact the number of persons employed in retail trade: for example, changes to Sunday trading or opening hours will likely change the number of persons employed: these jobs with atypical working hours can be of particular interest to people who wish to generate some income whilst continuing their (full or part-time) education, raising a family, in retirement or undertaking some other unpaid activity.

In 2016, there were 14 different regions in the EU where retail trade accounted for at least one fifth of the non-financial business economy workforce (as shown by the darkest shade in Map 7.1). Many of these regions were rural and sparsely-populated, highlighting that a majority of retailers in the EU remain small, often family-run businesses, many of which perform an important social function, strengthening local communities and providing proximity services.

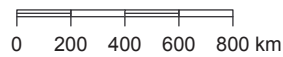


Map 7.1: Employment in retail trade (except of motor vehicles and motorcycles), 2016
 (% share of regional non-financial business economy employment, by NUTS 2 regions)



- EU-28 = 13.3
- < 10
- 10 - < 15
- 15 - < 20
- ≥ 20
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
 Cartography: Eurostat — GISCO, 06/2019



Note: retail trade is defined as NACE Division 47. Earlier reference periods have been used in some cases for compiling the non-financial business economy totals, these figures are based on non-confidential data (some activities are not available for a limited number of regions). Switzerland: national data. France: estimates. Iceland and North Macedonia: provisional.

Source: Eurostat (online data codes: sbs_r_nuts06_r2 and sbs_na_sca_r2)

Computer programming, consultancy and related activities provided work to 2.5 % of the EU's non-financial business economy workforce

Map 7.2 provides similar information on the employment share of computer programming, consultancy and related activities; in 2016, these activities provided work to 2.5 % of the EU-28's non-financial business economy workforce.

There were 30 NUTS level 2 regions across the EU where computer programming, consultancy and related activities employed at least 4.0 % of the non-financial business economy workforce (as shown by the darkest shade in Map 7.2). Many of these regions were capital city or metropolitan regions:

- the highest share was recorded in Berkshire, Buckinghamshire and Oxfordshire (to the west of London in the United Kingdom) where 8.4 % of the non-financial business economy workforce were employed in computer programming, consultancy and related activities — with these activities located along major transport arteries and clustered in places such as Reading, Bracknell or Oxford;
- the second highest share (7.5 %) was in Utrecht (the Netherlands), which is characterised by banking headquarters, a large university, and technology-based jobs in science parks;
- the third highest share (6.8 %) was in Inner London — East, characterised by traditional IT jobs often linked to financial services and creative start-ups in fashionable districts of London;
- the fourth to eighth highest shares were also recorded in capital city regions: the Swedish capital Stockholm (6.7 %), Inner London — West (6.2 %), the Hungarian capital Budapest (6.0 %), the Finnish capital Helsinki-Uusimaa (5.9 %) and the Spanish capital Comunidad de Madrid (5.8 %).

Patterns of employment specialisation and concentration in manufacturing

Manufacturing provides goods for domestic consumption and for export and has traditionally been considered a cornerstone of economic prosperity within the EU. However, in recent decades there have been wide-ranging transformations impacting on manufacturing in the EU, such as deindustrialisation, outsourcing, globalisation, changes to business paradigms (such as just-in-time manufacturing), the growing importance of digital technologies, or concerns linked to sustainable production and the environment. Furthermore, the performance of the manufacturing in the EU has become increasingly linked to the competitiveness of (business) services, insofar as many manufactured goods contain a

growing share of services inputs: for example, logistical support; research and development; design; computer services; advertising and marketing.

The EU's manufacturing base has continued to migrate gradually eastwards

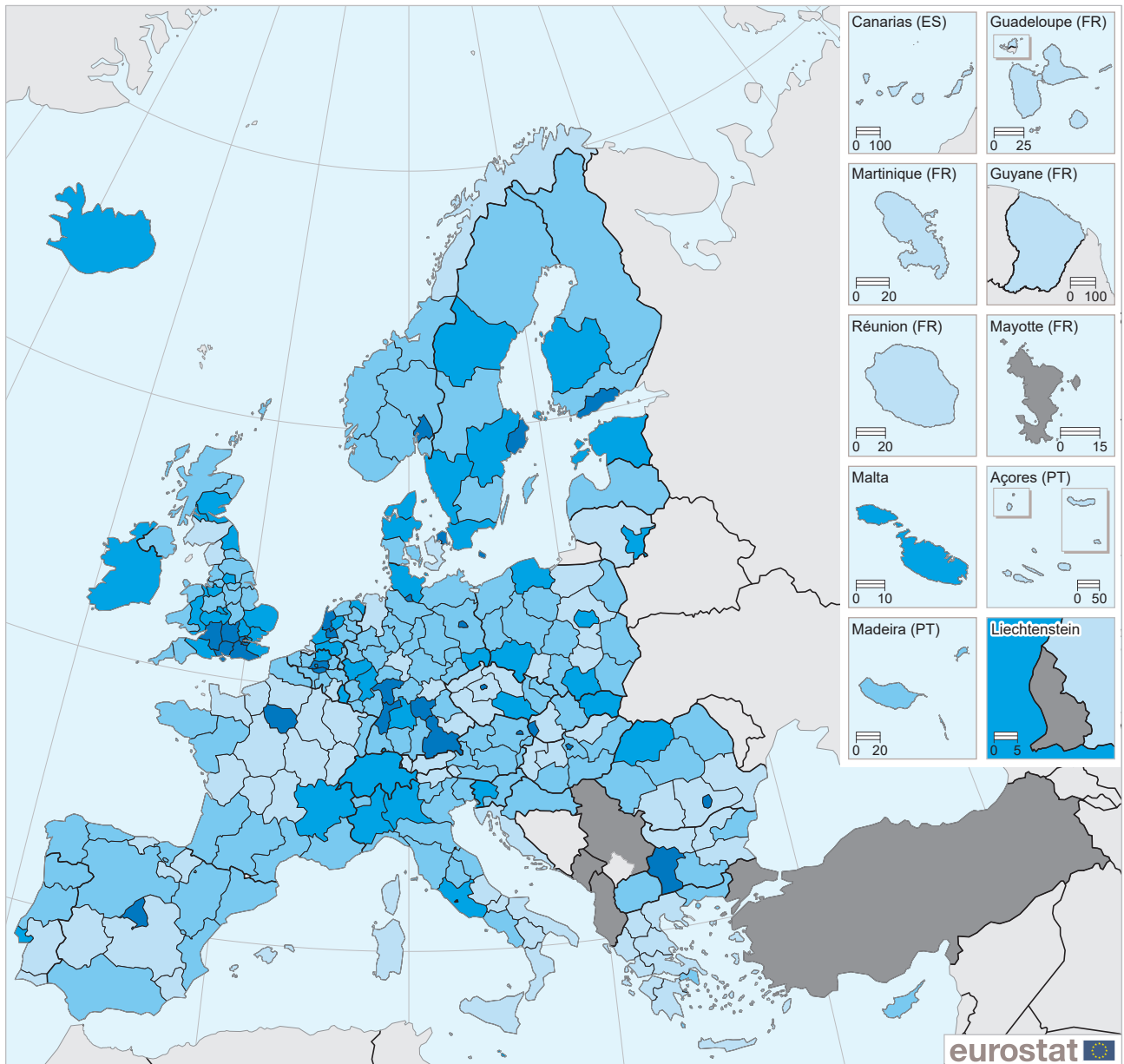
In 2016, manufacturing — defined as NACE Section C — employed more than one fifth (21.5 %) of the non-financial business economy workforce in the EU-28. Figure 7.2 shows information for 24 different manufacturing activities — as defined by NACE divisions — the vertical line within each of the bars indicates the number of persons employed by each activity as a share of the EU-28 non-financial business economy workforce.

The relative importance of manufacturing as a provider of work to those employed in the non-financial business economy ranged, across NUTS level 2 regions, from a low of just 1.1 % in the capital city region of Inner London — West up to a peak of 49.9 % in Mazowiecki regionalny (which surrounds the Polish capital city region). The principal manufacturing activities that provided employment in Mazowiecki regionalny included the manufacture of: food products (14.8 % of the non-financial business economy workforce); fabricated metal products (6.3 %); machinery and equipment (2.4 %); other non-metallic mineral products (2.3 %); rubber and plastics (2.2 %).

The high share of people employed by manufacturing in Mazowiecki regionalny was synonymous with a more general pattern, as there has been a gradual eastward shift in the EU's manufacturing base during the last couple of decades, reflecting, among other factors, differences in: labour costs; inflows of [foreign direct investment \(FDI\)](#); the presence of [multinational enterprises](#); natural resource endowments; environmental standards. There were eight more regions — all in the eastern parts of the EU — where manufacturing accounted for upwards of 40.0 % of the non-financial business economy workforce in 2016, including three regions in Czechia — Severovýchod (46.8 %), Střední Morava (46.2 %) and Jihozápad (42.1 %). These regions are increasingly used as manufacturing bases by enterprises from other EU Member States, in particularly neighbouring countries such as Germany or Austria, and they form an integral part of international supply chains, with a relatively highly-skilled but low-cost workforce.

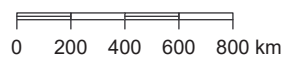
Figure 7.2 provides information for 24 different manufacturing divisions detailing their highest and lowest regional employment shares relative to the total number of persons employed in the non-financial business economy. Activities involving the primary processing stages of agricultural, fishing or forestry products tended to be concentrated in regions that were close to the source of their raw materials. In 2016, the most specialised regions for food manufacturing

Map 7.2: Employment in computer programming, consultancy and related activities, 2016
 (% share of regional non-financial business economy employment, by NUTS 2 regions)



- EU-28 = 2.5
- < 1.0
- 1.0 - < 2.5
- 2.5 - < 4.0
- ≥ 4.0
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
 Cartography: Eurostat — GISCO, 05/2019



Note: computer programming, consultancy and related activities are defined as NACE Division 62. Earlier reference periods have been used in some cases for compiling the non-financial business economy totals, these figures are based on non-confidential data (some activities are not available for a limited number of regions). Ireland and Switzerland: national data. EU-28 and France: estimates. Iceland and North Macedonia: provisional. Bretagne (FRH0), Limousin (FRI2), Corse (FRM0) and Malta: 2015.

Source: Eurostat (online data codes: sbs_r_nuts06_r2 and sbs_na_sca_r2)

(NACE Division 10) were Mazowiecki regionalny (Poland) and Bretagne (France), while the highest employment share for the manufacturing of beverages (NACE Division 11) was recorded in La Rioja (Spain). Those regions specialised in the manufacture of textiles (NACE Division 13) were often located close to an abundant supply of water, with the highest share in Norte (Portugal).

By contrast, several German and Belgian regions were relatively specialised in the production of chemicals and pharmaceuticals. For example, in 2016 the western German region of Rheinhesen-Pfalz was the most specialised region for chemicals manufacturing (NACE Division 20), while the Prov. Brabant Wallon in Belgium was the most specialised for the manufacture of pharmaceutical products and preparations (NACE Division 21). 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 (NACE Division 28) in Tübingen.

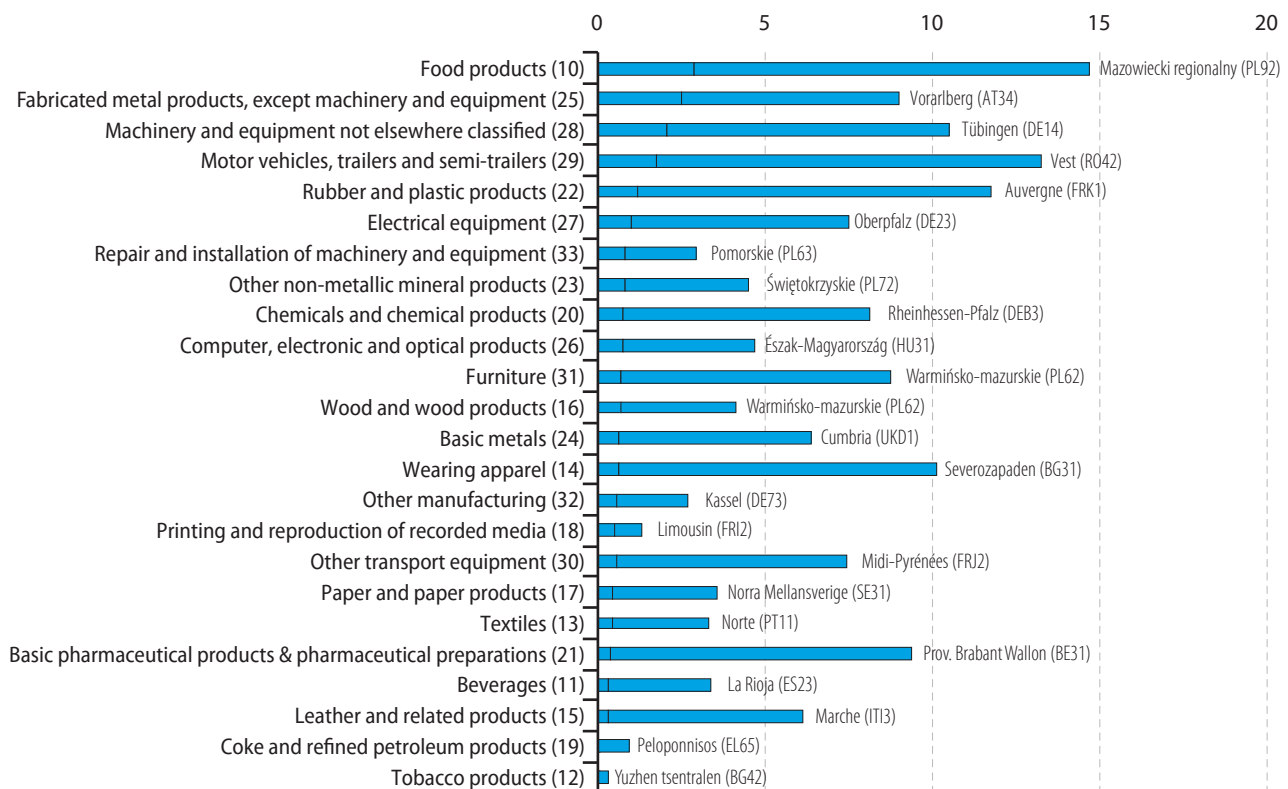
The manufacture of transport equipment is particularly characterised by clusters of economic activity and

highly-integrated production chains. In 2016, the westernmost Romanian region of Vest had the highest degree of employment 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 in south-west France, where there is a large cluster of enterprises working in aerospace.

In 2016, there were only eight regions in the EU where the share of a manufacturing division in the non-financial business economy workforce reached double figures.

- The manufacture of food products in:
 - the Polish region of Mazowiecki regionalny (14.8 %);
 - the French region of Bretagne (13.8 %).
- The manufacture of motor vehicles, trailers and semi-trailers in:
 - the Romanian region of Vest (13.2 %);
 - the Hungarian region of Nyugat-Dunántúl (11.4 %);
 - the Czech region of Střední Čechy (also 11.4 %).
- The manufacture of rubber and plastics in the French region of Auvergne (11.7 %).
- The manufacture of machinery and equipment in the German region of Tübingen (10.5 %).
- The manufacture of wearing apparel in the Bulgarian region of Severozapaden (10.1 %).

Figure 7.2: Regional specialisation within the manufacturing economy, 2016
(%, share of regional non-financial business economy employment, by NUTS 2 regions)



Note: the range of regional values across NUTS level 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 brackets after each of the activity labels. 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). Mayotte (FRY5): not available. Estimates.

Source: Eurostat (online data codes: [sbs_r_nuts06_r2](#) and [sbs_na_sca_r2](#))



Focus on the manufacture of food products

The manufacture of food products is a diverse activity, covering a range of activities from meat processing to dairy production, or the manufacture of fruit and vegetable drinks to bakery and farinaceous products. It also has a varied structure, with many **small and medium-sized enterprises (SMEs)** that operate principally in local and national markets in contrast to large multinational enterprises which produce and export goods across the European territory and beyond.

An analysis — based on the number of persons employed — reveals that the manufacture of food products was the largest manufacturing division in the EU-28: it employed 4.3 million persons in 2016, many of these in rural and peripheral regions, underlining the importance of this activity as a key provider of job opportunities for these communities.

Map 7.3 confirms this pattern, insofar as there were 24 NUTS level 2 regions where at least 6.0 % of the non-financial business economy workforce was employed in the manufacture of food products (shown by the darkest shade in the map), they included: four regions in the north-west of Poland, including Mazowiecki regionalny (which had the highest share in the EU, at 14.8 %); two regions in north-west France, Bretagne and Pays de la Loire (the former had the second highest employment share in the EU, at 13.8 %).

Focus on the manufacture of fabricated metal products (except machinery and equipment)

Fabricated metal products manufacturing (NACE Division 25) is relatively sensitive to changes in the business cycle, as it is both capital and energy-intensive, producing a broad range of goods and industrial services including: structural metal products; tanks, reservoirs and containers of metal; forging, pressing, stamping and roll forming of metal; treatment and coating of metals; and cutlery, tools and general hardware.

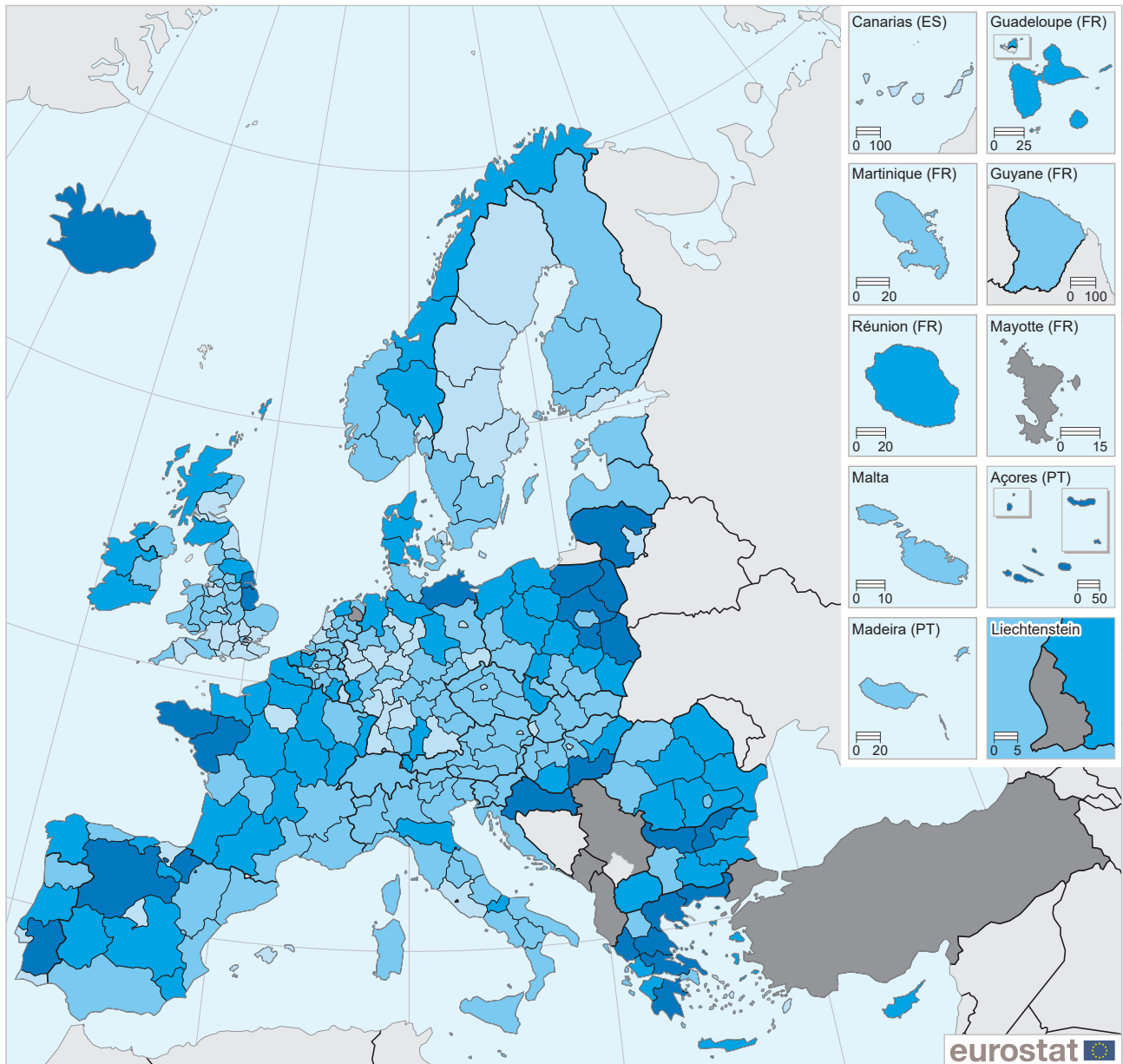
In 2016, the manufacture of fabricated metal products accounted for 2.6 % of the total number of persons employed within the EU-28's non-financial business economy. There were 55 NUTS level 2 regions in the EU (as shown by the darkest shade in Map 7.4) where the manufacture of fabricated metal products accounted for at least 4.0 % of the non-financial business economy workforce. These regions were principally located in industrial heartlands, including:

- a band of regions running from north-east France, through Germany into Czechia, Slovakia and Poland;
- another band of regions running to the south of the Alps from central and northern Italy into Slovenia and Hungary;
- isolated regions, such as Prov. Limburg in eastern Belgium or Centro in Portugal.

In 2016, the EU regions with the highest employment shares for fabricated metal products were: Franche-Comté in eastern France (8.5 %); Vorarlberg, the westernmost region of Austria (9.1 %); Střední Morava in eastern Czechia (also 9.1 %).

Map 7.3: Employment in the manufacture of food products, 2016

(% share of regional non-financial business economy employment, by NUTS 2 regions)



EU-28 = 3.0

< 2

2 - < 4

4 - < 6

≥ 6

Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019

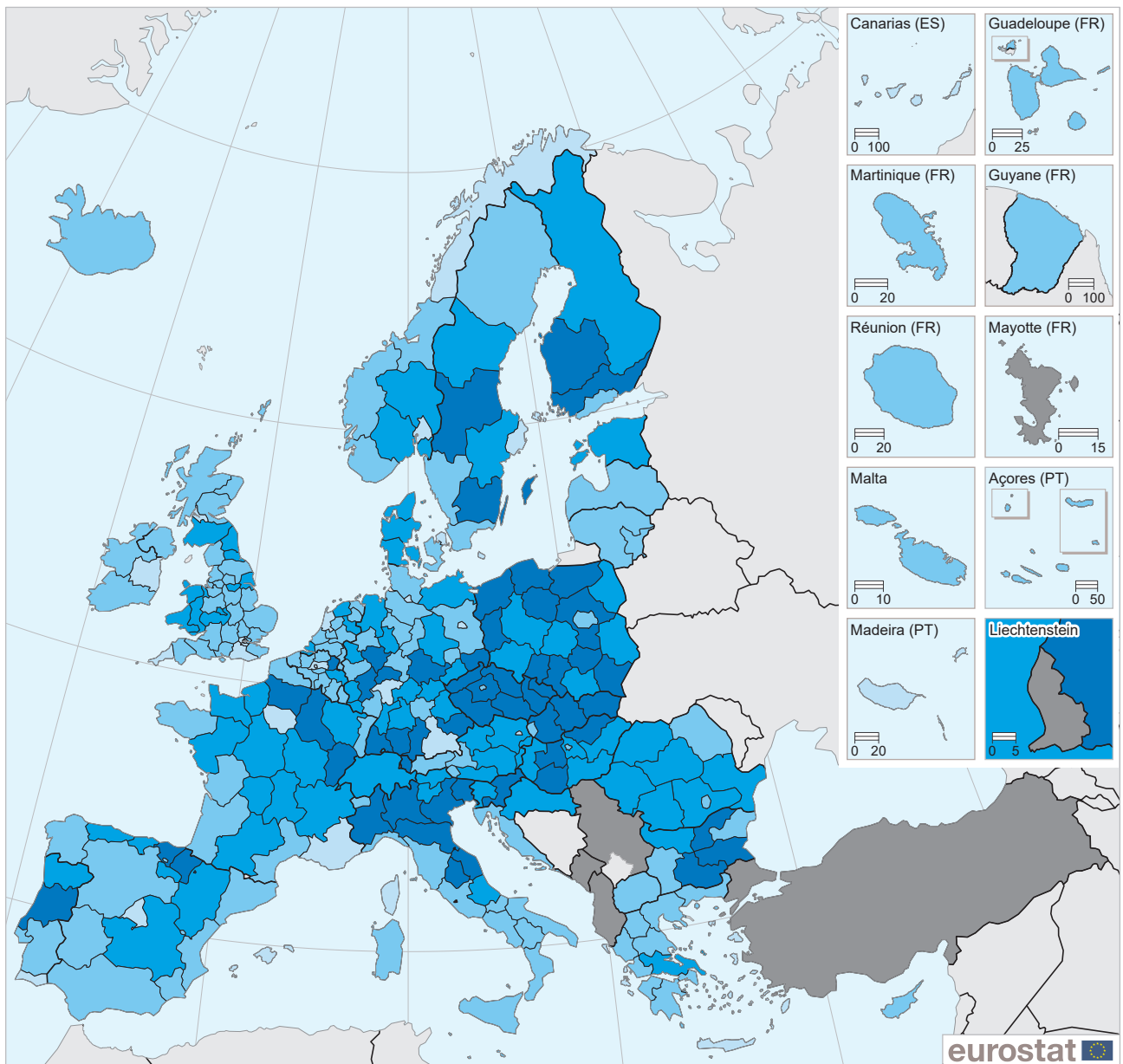
0 200 400 600 800 km

Note: the manufacture of food products is defined as NACE Division 10. Earlier reference periods have been used in some cases for compiling the non-financial business economy totals, these figures are based on non-confidential data (some activities are not available for a limited number of regions). Switzerland: national data. France: estimates. Iceland and North Macedonia: provisional. Sterea Ellada (EL64), Aquitaine (FRI1), Limousin (FRI2) and Martinique (FRY2): 2015. Dytiki Ellada (EL63): 2014.

Source: Eurostat (online data codes: sbs_r_nuts06_r2 and sbs_na_sca_r2)



Map 7.4: Employment in the manufacture of fabricated metal products (except machinery and equipment), 2016
(%, share of regional non-financial business economy employment, by NUTS 2 regions)



EU-28 = 2.6

< 1.0

1.0 - < 2.5

2.5 - < 4.0

≥ 4.0

Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019

0 200 400 600 800 km

euostat

Note: the manufacture of fabricated metal products (except machinery and equipment) is defined as NACE Division 25. Earlier reference periods have been used in some cases for compiling the non-financial business economy totals, these figures are based on non-confidential data (some activities are not available for a limited number of regions). Switzerland: national data. France: estimates. Iceland and North Macedonia: provisional. Midi-Pyrénées (FRJ2): 2015. Languedoc-Roussillon (FRJ1), Provence-Alpes-Côte d'Azur (FRL0) and Corse (FRM0): 2014.

Source: Eurostat (online data codes: sbs_r_nuts06_r2 and sbs_na_sca_r2)

Enterprise demography

Business demography statistics describe enterprise characteristics: 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 provide an important insight into business dynamics, as new enterprises/fast-growing enterprises tend to be innovators that may improve overall level of efficiency and productivity in an economy.

BIRTHS AND DEATHS

The enterprise birth rate measures the number of new enterprises born during the course of a year in relation to the total population of active enterprises in the same year. The birth rate in the EU-28's business economy (defined as NACE Sections B to N, excluding Group 64.2) was 9.8 % in 2016, while the death rate was 8.3 % in 2015; note the reference year for enterprise death rate lags that for births as statistics on deaths need to ensure that enterprises remain inactive during a period of two years (without being reactivated).

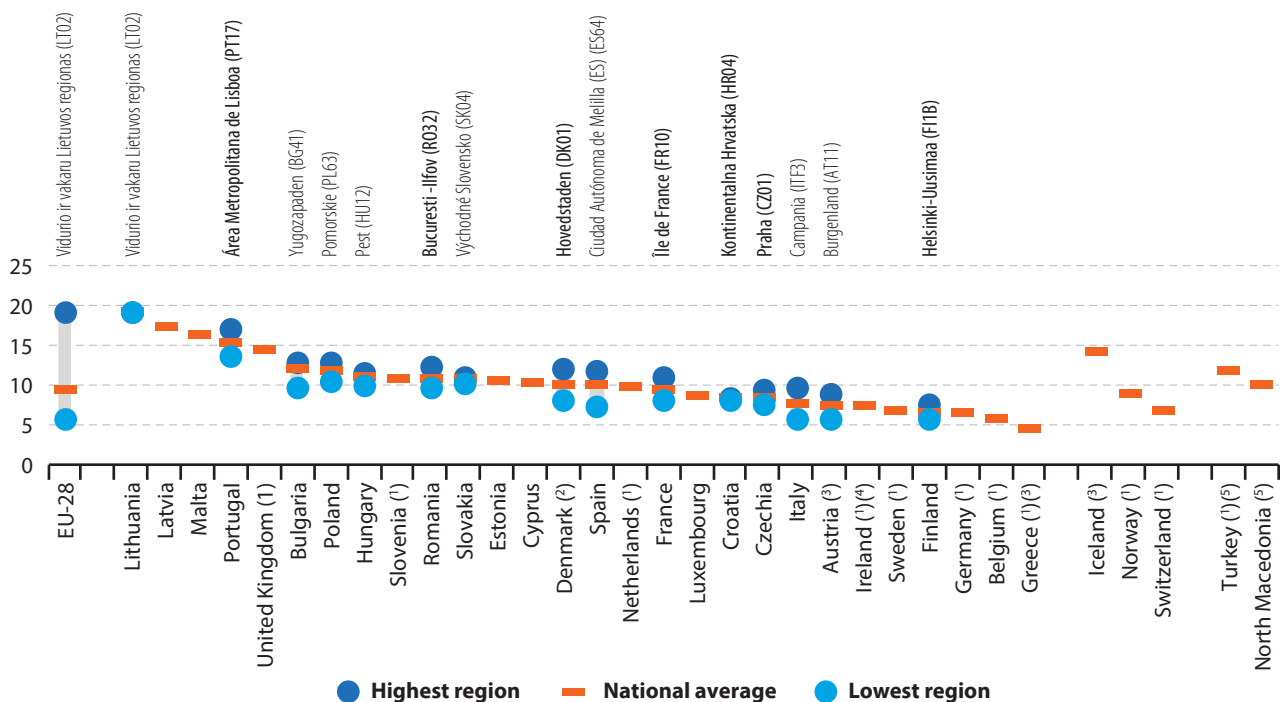
Figure 7.3 presents information on the highest and lowest enterprise birth rates for the EU Member States, as well

as national averages; note that these statistics relate to the business economy as defined by NACE Sections B to S excluding Group 64.2; they therefore have a broader activity coverage than the data presented for the EU-28, Sweden and Iceland (based on NACE Sections B to N, excluding Group 64.2). In 2016, almost one in five (19.4 %) enterprises active in the Lithuanian business economy were newly born; Latvia, Malta and Portugal were the only other EU Member States where the enterprise birth rate was above 15.0 %. At the other end of the range, there were 11 Member States where the enterprise birth rate was below the EU-28 average, with Sweden, Finland, Germany and Belgium reporting some of the lowest rates — within the range of 6.0-7.0 % — and Greece posting the lowest enterprise birth rate, at 4.7 %.

The highest regional enterprise birth rates were also recorded in Lithuania; in 2016, both regions of Lithuania had rates that were above 19.0 %. Latvia (17.6 %) and Malta (16.6 %) — note these are both single regions at this level of detail — also had relatively high enterprise birth rates, alongside the Portuguese capital city region of Área Metropolitana de Lisboa (17.4 %). At the other end of the range (and subject to data availability), there were five EU Member States (composed of more than one NUTS level 2 region) where each and every region recorded a single-digit enterprise birth rate — Croatia, Czechia, Italy, Austria and Finland.

Figure 7.3: Enterprise birth rate, 2016

(%, enterprise births as a share of active enterprises in the business economy, by NUTS 2 regions)



Note: the business economy is defined as NACE Sections B-5 (excluding Group 64.2). EU-28, Sweden and Iceland: NACE Sections B-N (excluding Group 64.2). Regions listed above the figure are those with the highest rate. Capital regions are shown with a bold font. The figure is based on non-confidential data.

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

(2) 2013. National birth rate for 2016: 11.7 %.

(3) Provisional.

(4) Estimate.

(5) 2015.

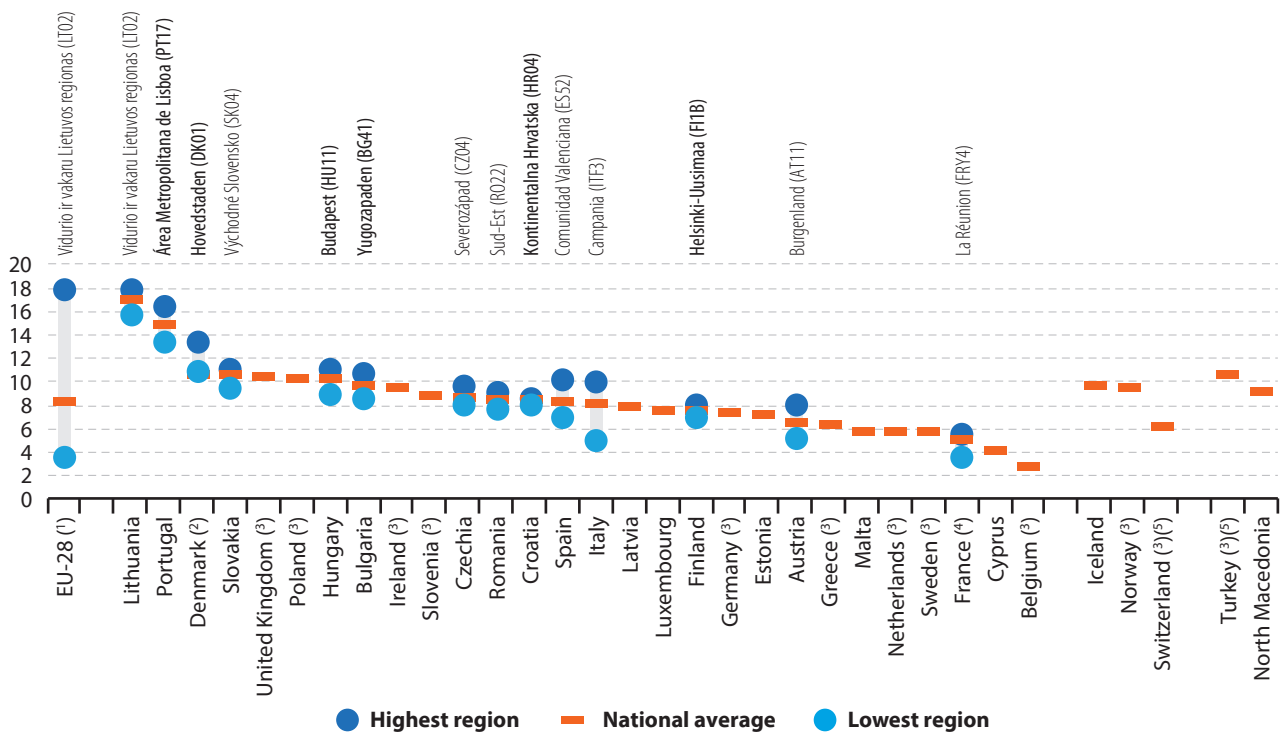
Source: Eurostat (online data codes: *bd_size_r3* and *bd_9bd_sz_cl_r2*)

Figure 7.4 confirms that it was relatively common for those regions with high enterprise birth rates to also record high enterprise death rates. This is perhaps not surprising, as dynamic and innovative enterprises entering a market may be in a position to drive inefficient incumbents out of the market (creative destruction). In 2015, the highest enterprise death rates — at both a national and a regional level — were recorded in Lithuania, therefore repeating the pattern for enterprise birth rates and confirming that Lithuania had the highest business churn rate (measured as the proportion of businesses entering and leaving the population of active enterprises).

In 2015, Vidurio ir vakaru Lietuvos regionas in Lithuania had the highest enterprise death rate (17.9 %) among any of the NUTS level 2 regions in the EU. There were six EU Member States (among those composed of more than one NUTS level 2 region for which data are available), where the capital city region recorded the highest enterprise death rate on the national territory, they were: Área Metropolitana de Lisboa in Portugal (16.6 %), Hovedstaden in Denmark (13.6 %; 2013 data), Budapest in Hungary (11.2 %), Yugozapaden in Bulgaria (10.9 %), Kontinentalna Hrvatska in Croatia (8.8 %) and Helsinki-Uusimaa in Finland (8.2 %).

Figure 7.4: Enterprise death rate, 2015

(%, enterprise deaths as a share of active enterprises in the business economy, by NUTS 2 regions)



Note: the business economy is defined as NACE Sections B-S (excluding Group 64.2). EU-28, Poland, Sweden and Iceland: NACE Sections B-N (excluding Group 64.2). Regions listed above the figure are those with the highest rate. Capital regions are shown with a bold font. The figure is based on non-confidential data. A large number of data values are provisional (too many to document).

(1) Estimate.

(2) 2013. National death rate for 2016: 10.8 %.

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

(4) The regions with the highest death rates were: Centre - Val de Loire (FRB0), Aquitaine (FRI1) and La Réunion (FRY4).

(5) 2014.

Source: Eurostat (online data codes: [bd_size_r3](#) and [bd_9bd_sz_cl_r2](#))

HIGH-GROWTH ENTERPRISES

High-growth enterprises are defined as those: born before 2013 which had survived up to 2016; with at least 10 employees in 2013 (this threshold 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); and with average employee growth of more than 10.0 % per annum between 2013 and 2016.

High-growth enterprises are of particular interest to policymakers insofar as they can rapidly change the economic structure and performance of a region. That said, the indicator presented should be analysed with caution as it fails to capture potential downsides, insofar as high-growth enterprises may displace incumbents and/or disrupt markets, possibly lowering overall economic performance.

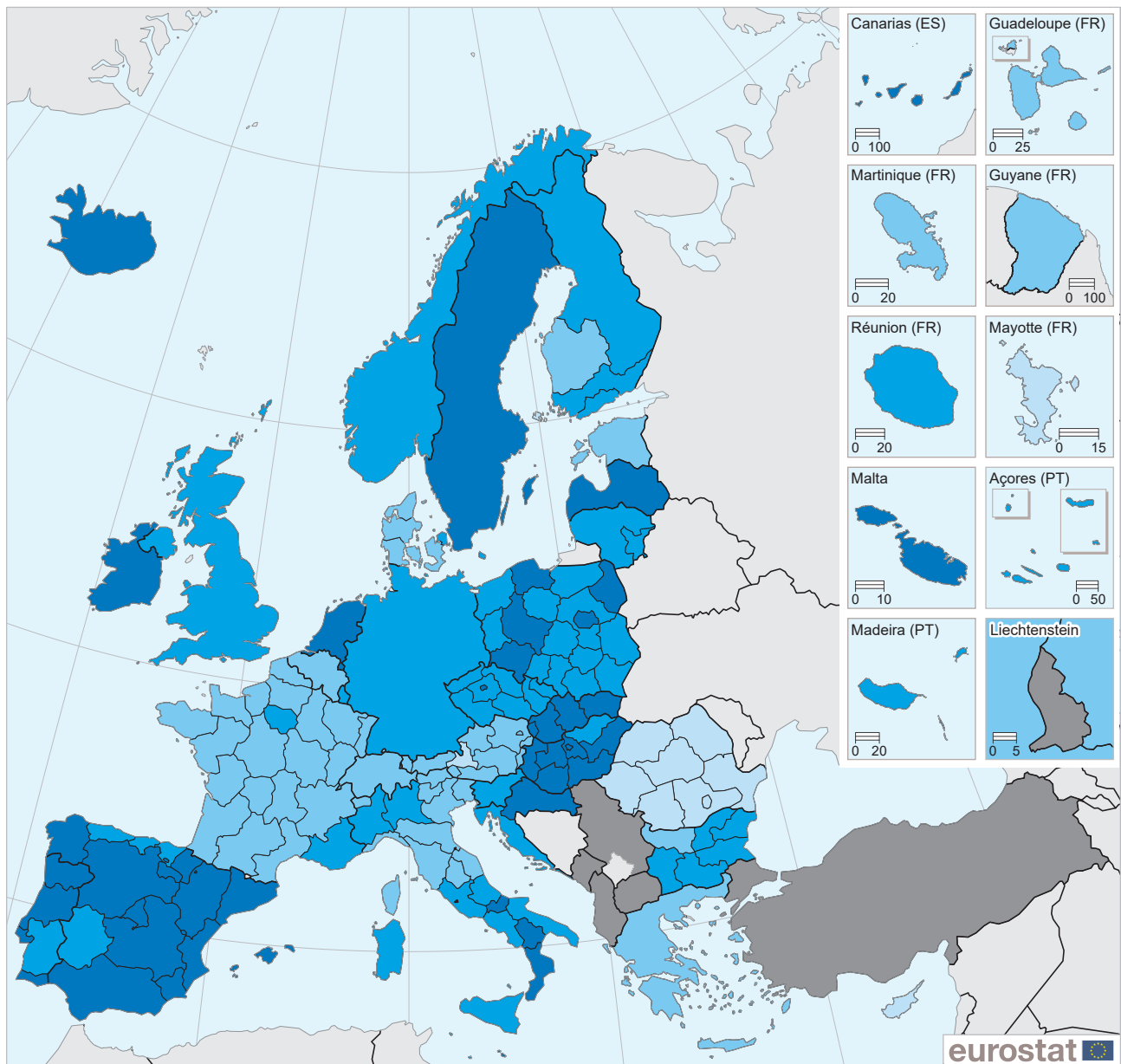
In 2016, high-growth enterprises accounted for more than 1 out of every 10 enterprises active in the EU-28's business economy. They were principally located in

southern, eastern and northern parts of the EU, as well as Ireland and the Netherlands (for which data are only available at a national level). In 2016, there were two main concentrations of high-growth enterprises: a cluster of regions in eastern parts of the EU (which contained all four regions in Slovakia, all but one of the eight regions in Hungary and five regions in Poland); the vast majority of regions on the Iberian Peninsula.

High-growth enterprises were commonly found in capital city regions, reflecting among others, the availability of: capital for business start-ups; highly-qualified people to staff rapidly growing enterprises; a critical mass of potential business and/or consumer clients. Among 15 EU Member States (composed of more than one NUTS level 2 region) and for which data are available for 2016, there were eight — Bulgaria, Czechia, Denmark, Croatia, Lithuania, Austria, Slovakia and Finland — where the capital city region recorded the highest national share of high-growth enterprises, while the capital city regions of France and Poland recorded the second highest shares in their national territories.

**Map 7.5: High-growth enterprises, 2016**

(% share of high-growth enterprises among all enterprises in the business economy, by NUTS 2 regions)



EU-28 = 10.7

< 6

6 - < 9

9 - < 12

≥ 12

Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019

0 200 400 600 800 km

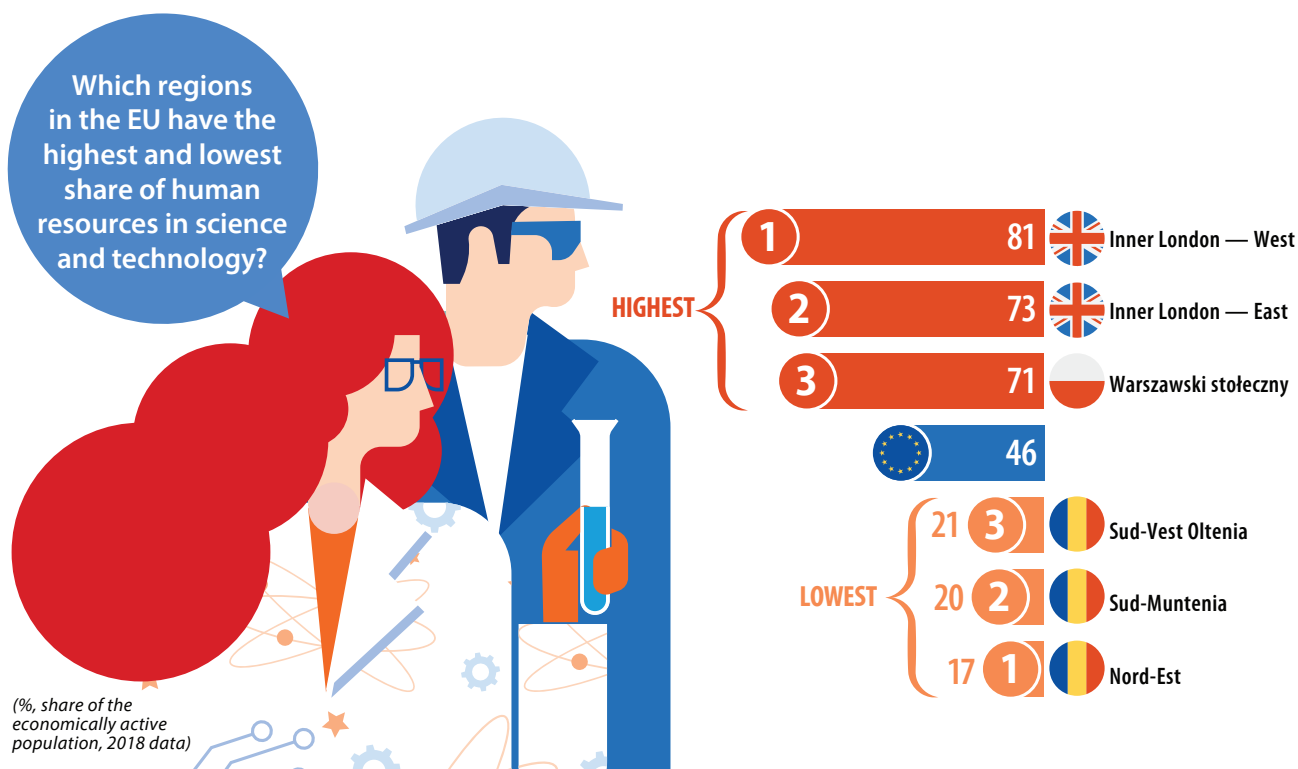
Note: high-growth enterprises are defined as enterprises meeting all three of the following criteria: i) born before 2013 and having survived to 2016; ii) with at least 10 employees in 2013; and iii) with an average employee growth rate of more than 10.0 % per annum for the period 2013-2016. The share of these enterprises is calculated relative to the total number of enterprises with at least 10 employees in 2016. 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, Slovenia, Sweden, the United Kingdom, Iceland, Norway and Switzerland: NACE Sections B-N (excluding Group 64.2). Belgium, Germany, Ireland, Greece, the Netherlands, Slovenia, Sweden, the United Kingdom, Norway and Switzerland: national data. Denmark: 2013. Greece and Iceland: provisional.

Source: Eurostat (online data codes: bd_hgnace2_r3 and bd_9pm_r2)

8

Research and innovation





Investing in research and innovation has the potential to improve the daily lives of millions of people, both within the [European Union \(EU\)](#) and elsewhere in the world, by helping to solve some of the largest societal and generational challenges. Indeed, 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, or provide an array of technologies that support communications and entertainment.

The EU is the world's leading producer of scientific knowledge: it is the most open research area in the world, welcoming [researchers](#) from all over the world, while collaborating abroad with numerous international partners. However, it is often claimed that Europe faces an innovation deficit. This is not down to an absence of new ideas or discoveries, but instead reflects a lack of success in diffusing/commercialising inventions and translating them into new markets and growth opportunities.

In 2015, the [European Commission](#) unveiled three main policy goals designed to stimulate research and innovation in the EU:

- 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.

This was followed in 2018 by *A renewed European agenda for research and innovation: Europe's chance to shape its future* (COM(2018) 306 final) which underlined the need to invest in research and innovation, by: ensuring essential public investment; supporting EU Member States to maximise their [research and development \(R & D\)](#) expenditure; stimulating private investment (for example through [InvestEU](#) and [VentureEU](#)); providing a simpler regulatory framework; supporting innovation procurement.

Innovation is 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 SMEs and the low-carbon economy. [European structural and investment funds \(ESF\)](#) are the central



pillar of the [Investment plan for Europe](#), promoting the regional spread of vital public investment through, among others, support for sustainable projects and [small and medium-sized enterprises \(SMEs\)](#).

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 intensity, the number of researchers, and the share of [human resources in science and technology \(HRST\)](#).

Research and development intensity

Research, knowledge and innovative capacity depend on a wide range of factors, including: the underlying business culture, regional infrastructure, education and training institutions, workforce skills, the mobility of researchers, innovation support services, technology transfer mechanisms or sources of finance.

As such, [research and development \(R & D\)](#) — creative work undertaken to increase the stock of knowledge to devise new applications — tends to be concentrated in clusters. Research-intensive regions are often situated around academic institutions, high-technology industrial activities and/or knowledge-based services, which attract new start-ups and highly qualified personnel, such that their competitive advantage is further intensified.

The [Europe 2020 strategy](#) is the EU's growth strategy to become a 'smart, sustainable and inclusive economy'; it set a target for [R & D intensity](#), such that expenditure on R & D should be equivalent to at least 3.00 % of the EU-28's [gross domestic product \(GDP\)](#) by 2020. The 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.

Almost half of the EU's R & D expenditure took place in just 27 regions

[Gross domestic expenditure on R & D \(GERD\)](#) includes research expenditure made by businesses, higher education institutions, government and private non-profit organisations. It was valued at EUR 317.1 billion across the EU-28 in 2017, which equated to an average of EUR 620 of R & D expenditure per inhabitant. The EU-28's R & D intensity stood (provisionally) at 2.06 % — considerably below the Europe 2020 target. This marked a marginal increase on a year before (2.04 % in 2016) and confirmed a slow pattern of gradual increases for this ratio, as R & D intensity had stood at 1.77 % a decade earlier in 2007.

The skewed nature of innovation activity is such that in 2016 almost half of the EU-28's intramural R & D expenditure took place in just 27 of the 266 NUTS level 2 regions for which data are available (see Map 8.1 for coverage). These were the only regions where R & D expenditure was in excess of EUR 3.0 billion, with nine of them located in Germany (2015 data), four in France (2013 data), three from each of Italy and the United Kingdom, two from each of Spain, the Netherlands and Sweden, and single regions from Denmark and Austria. These absolute figures underline where clusters of scientific and technological excellence have emerged across the EU — the three regions with the highest levels of R & D expenditure were:

- the French capital city region Île de France (EUR 18.7 billion; 2013 data);
- the southern German region of Stuttgart (EUR 12.2 billion; 2015 data);
- another region from southern Germany, Oberbayern (EUR 10.5 billion; 2015 data).

The highest R & D intensity was recorded in the northern German region of Braunschweig

By contrast, Map 8.1 provides a relative comparison, taking account of the different sizes of regions (as measured by their GDP). Those regions where the ratio of R & D intensity was above the 3.00 % Europe 2020 target are shaded in blue: they were principally located across Germany, Austria, Belgium, the southern half of the United Kingdom and Sweden. Looking in more detail, there were only 11 NUTS level 2 regions where R & D intensity was higher than 4.0 % in 2016, the included:

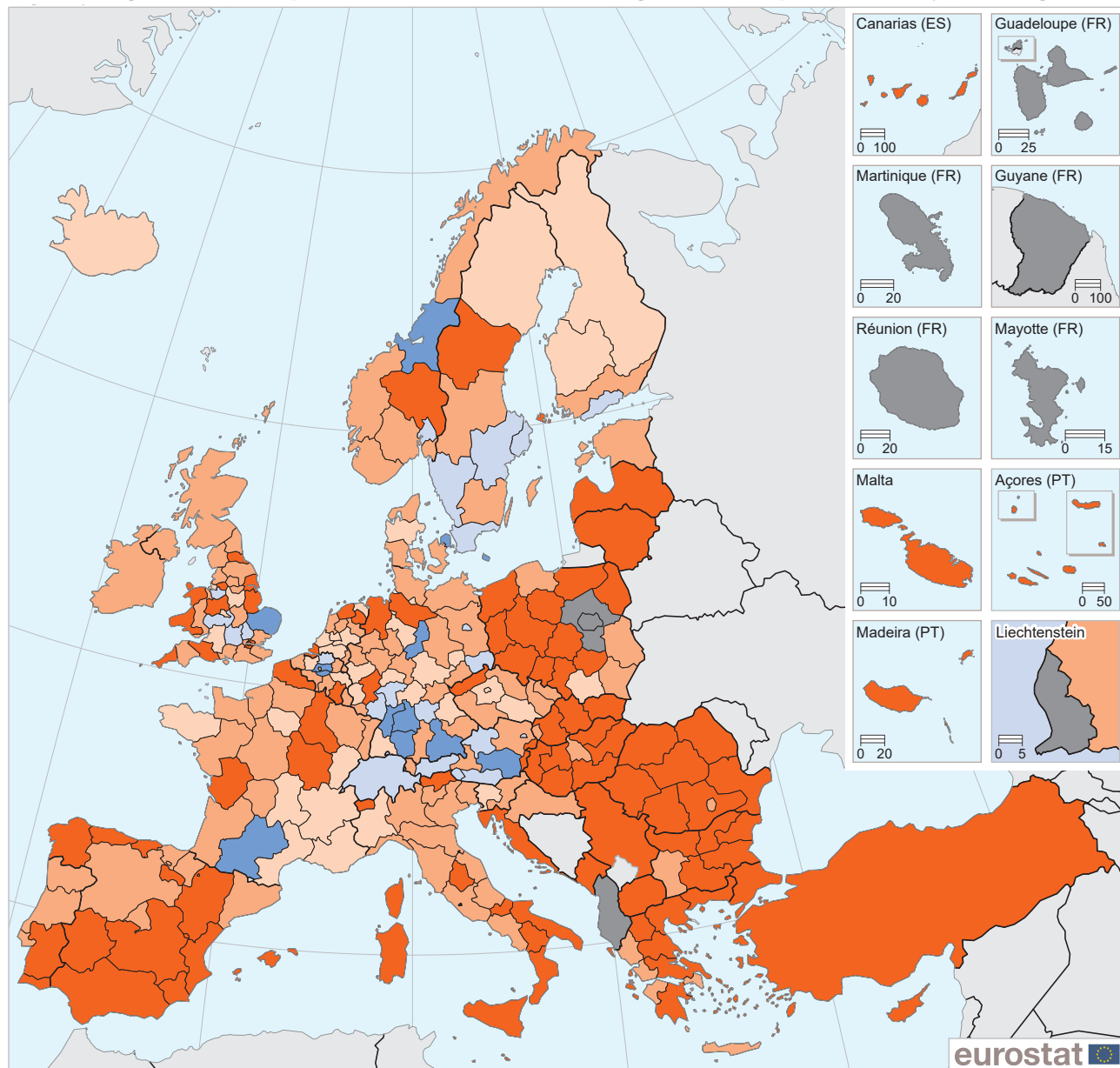
- five regions located in Germany, with the highest shares in Braunschweig (10.36 %; 2015 data) and Stuttgart (6.17 %; 2015 data);
- two regions in Belgium, surrounding the capital city region, Prov. Brabant Wallon (6.43 %; 2015 data) and Prov. Vlaams-Brabant (4.26 %; 2015 data).

The two German regions with the highest ratios for R & D intensity, Braunschweig and Stuttgart, are both characterised by clusters of innovative automotive manufacturers, engineering and component suppliers; the Braunschweig region includes Wolfsburg (which is headquarters to the Volkswagen Group), while the Stuttgart region is home, among others, to the headquarters of Bosch, Mercedes-Benz and Porsche.

In a similar vein, some of the other regions with the highest ratios for R & D intensity were also characterised by clusters of research activity that were centred on specific activities, for example: pharmaceuticals in Belgium; automotive and environmental technology clusters in Steiermark (Austria); or aerospace and aeronautic clusters in Midi-Pyrénées (France).

Map 8.1: R & D intensity, 2016

(% based on gross domestic expenditure on R & D (GERD) relative to gross domestic product (GDP), by NUTS 2 regions)



EU-28 = 2.04

< 1

1 - < 2

2 - < 3

3 - < 4

≥ 4

Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019

Note: the Europe 2020 target for the EU-28 is to attain R & D intensity of 3.00 % by 2020, while individual EU Member States have formulated national targets which may be more/less ambitious. Közép-Magyarország (HU1) and Scotland (UKM): NUTS level 1. Ireland, Lithuania, Switzerland, Serbia and Turkey: national data. Belgium, Germany, Greece, Ciudad Autónoma de Ceuta (ES63), Ciudad Autónoma de Melilla (ES64), Basilicata (ITF5), Austria, Łódzkie (PL71), Świętokrzyskie (PL72), Lubelskie (PL81), Podkarpackie (PL82), Podlaskie (PL84), Sweden, Norway and Switzerland: 2015. Molise (ITF2) and Umbria (IT12): 2014. France: 2013. Molise (ITF2), Umbria (IT12) and the United Kingdom: estimates.

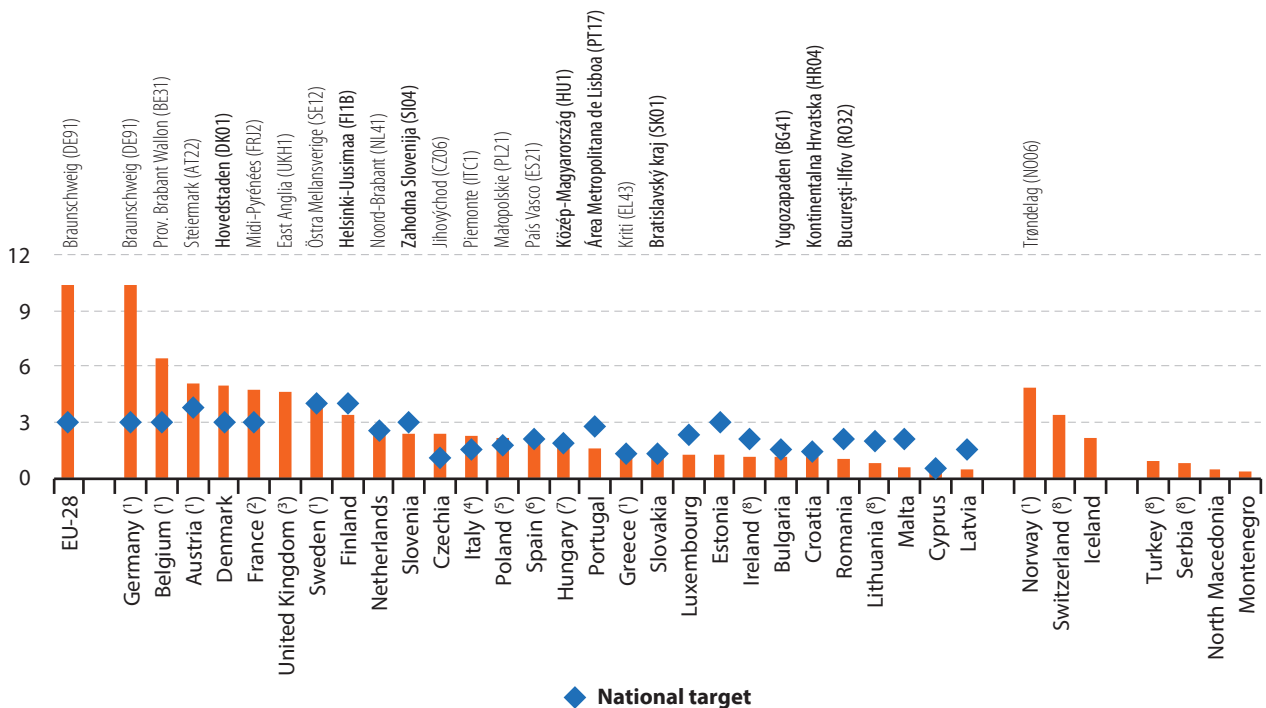
Source: Eurostat (online data code: rd_e_gerdreg)



Figure 8.1 shows — for each EU Member State — national Europe 2020 targets for R & D intensity (note the United Kingdom does not have a target) and the region with the highest ratio of R & D intensity. One of the most striking aspects is the highly skewed nature of research expenditure: Braunschweig, Prov. Brabant Wallon (and Stuttgart, not shown) were the only regions in the EU where R & D intensity was more than twice as high as the overall Europe 2020 target of 3.00 %. The highest ratio in Braunschweig (10.36 %; 2015 data) was more than 20 times as high as that in Latvia (0.44 %; a single region at this level of detail) where the lowest ratio was recorded.

There used to be a clear innovation divide in the EU between north and south, east and west. Changes over time have led to a more nuanced position, whereby clusters of scientific and technological excellence have emerged, concentrated around company research facilities, science parks and universities. Some regions — particularly in eastern parts of the EU — have made considerable progress in ‘catching up’. Their increased levels of investment reflect, at least in part, the internationalisation of business R & D. In 2016, there were five eastern regions of the EU where the share of R & D expenditure relative to GDP was higher than 2.00 % (but lower than 3.00 %): Zahodna Slovenija (Slovenia), Jihovýchod, Praha and Střední Čechy (all in Czechia) and Małopolskie (Poland).

Figure 8.1: Regions with the highest R & D intensities, 2016
(%, based on gross domestic expenditure on R & D (GERD) relative to gross domestic product (GDP), by NUTS 2 regions)



Note: the Europe 2020 target for the EU-28 is to attain R & D intensity of 3.00 % by 2020, while individual EU Member States have formulated national targets which may be more/less ambitious. Regions listed above the figure are those with the highest ratio. Capital regions are shown with a bold font.

(1) 2015.
 (2) 2013.
 (3) The United Kingdom: estimates.
 (4) Basilicata (ITF5): 2015. Molise (ITF2) and Umbria (ITI2): 2014. Molise (ITF2) and Umbria (ITI2): estimates.
 (5) Łódzkie (PL71), Świętokrzyskie (PL72), Lubelskie (PL81), Podkarpackie (PL82) and Podlaskie (PL84): 2015.
 (6) Ciudad Autónoma de Ceuta (ES63) and Ciudad Autónoma de Melilla (ES64): 2015.
 (7) Közép-Magyarország (HU1): NUTS level 1.
 (8) No regional breakdown available.

Source: Eurostat (online data code: rd_e_gerdreg)

The higher education sector accounted for a relatively high share of R & D expenditure in several Nordic regions, while a number of German regions had their expenditure relatively concentrated in the government sector

As noted above, gross domestic expenditure on R & D includes that made by business enterprises, higher education institutions, governments and private non-profit organisations. In 2017, almost two-thirds (66.0 %) of intramural R & D expenditure in the EU-28 was carried out by the business enterprise sector, while the second and third largest contributions were provided by the higher education sector (22.1 % of the total) and the government sector (11.2 %).

Figure 8.2 analyses, by sector of performance, those regions with the highest ratios of R & D intensity. It confirms the importance of the business enterprise sector in terms of its overall contribution to research performance in the EU, as its expenditure relative to GDP was above 3.00 % in 10 different regions — four of these were in Germany and three in the United Kingdom. By far the highest ratios were recorded in Braunschweig (8.06 %; 2015 data) and Stuttgart (5.71 %;

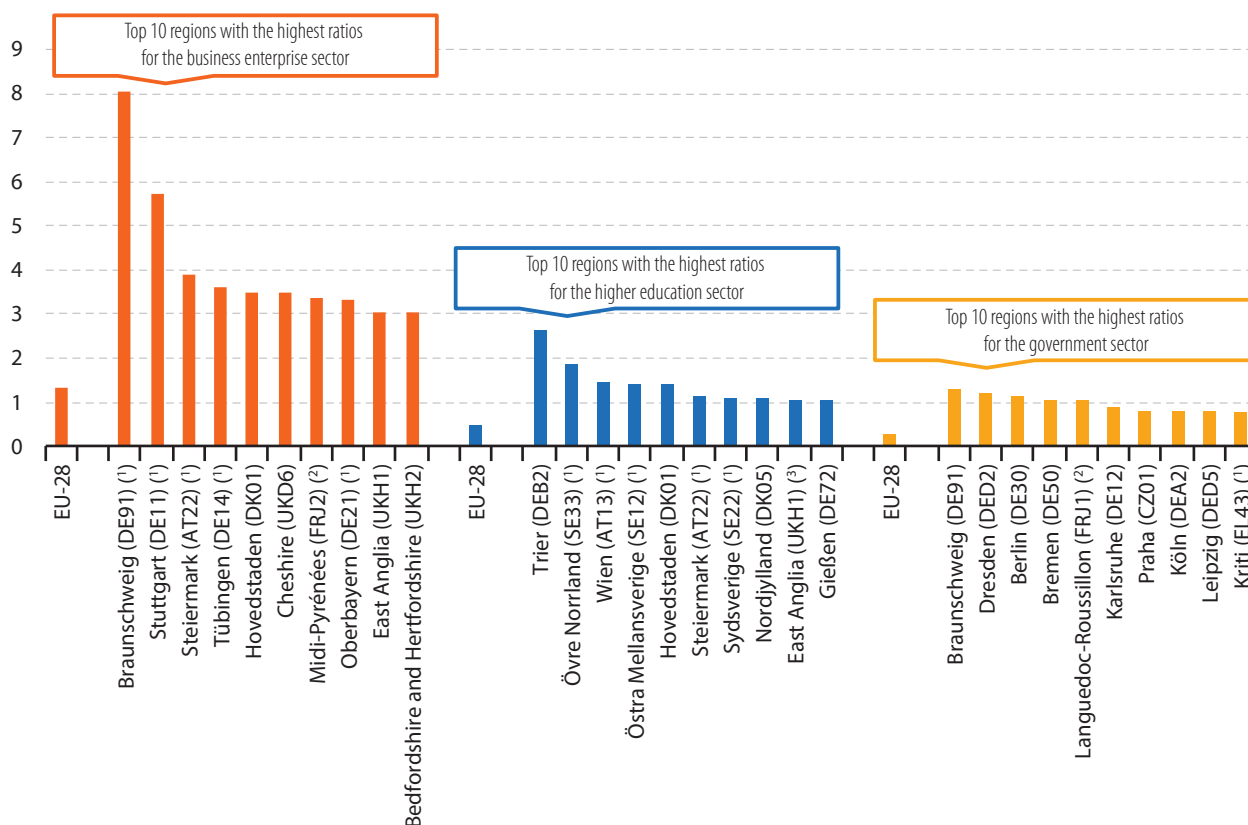
2015 data), underlining the crucial role played by the automotive sector in driving the overall research performance of the EU's business sector.

In 2016, R & D expenditure within the higher education sector (again relative to GDP) peaked at 2.62 % in the western German region of Trier. There were also relatively high ratios in several Nordic Member States, with Denmark and Sweden (2015 data) together accounting for half of the 10 regions with the highest ratios for this sector.

The final part of Figure 8.2 presents a ranking of R & D intensity for the government sector; 7 out of the top 10 regions were located in Germany, underlining the importance given by successive German administrations towards financing public research. The highest R & D intensity for the government sector was recorded in Braunschweig (1.27 %; 2016 data). This was something of an anomaly — not only in Germany, but also more widely across the EU, insofar as it was generally more common to find a relatively high share of government expenditure on research being directed towards regions that were less research-intensive; examples included Dresden and Leipzig in Germany, Languedoc-Roussillon in France (2013 data) or Kriti in Greece (2015 data).

Figure 8.2: Regions with the highest R & D intensities, by sector of performance, 2016

(%, based on gross domestic expenditure on R & D (GERD) relative to gross domestic product (GDP), by NUTS 2 regions)



Note: Közép-Magyarország (HU1), NUTS level 1. Ireland and Lithuania: national data. Government sector: Luxembourg, estimate. Higher education sector: Italy and Luxembourg, estimates.

(1) 2015.

(2) 2013.

(3) 2014.

Source: Eurostat (online data code: rd_e_gerdreg)



Researchers

Researchers are directly employed within R & D activities: they 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 2.86 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 1.89 million [full-time equivalent \(FTE\)](#) researchers in the EU-28 in 2016, an increase of 467 000 compared with a decade earlier (or an average increase of 2.9 % per annum).

In 2016, the 1.89 million full-time equivalent workers who were employed as researchers represented 0.86 % of the EU-28 workforce. The relative importance of researchers (again using the measure of FTEs) peaked at 1.62 % of the total workforce in Denmark, and was also relatively high in the other Nordic Member States (as well in Iceland and Norway); Belgium, Austria and France (2015 data) were the only other EU Member States where the share of researchers in the total workforce stood at more than 1.00 %, although the share was just below this level in several other Member States, notably Germany and the Netherlands (both 0.99 %).

Researchers accounted for almost 1 out of every 20 persons employed in Inner London — West ...

As for R & D expenditure, the distribution of researchers was highly skewed across EU regions. In 2016, it was commonplace to find researchers accounting for less than 1.00 % of the total number of persons employed across EU regions (as shown by the two lightest shades in Map 8.2); this criterion covered 207 of the 266 NUTS level 2 regions for which data are available.

Unsurprisingly, those regions where researchers accounted for a relatively high proportion of the total number of persons employed were often the same as those characterised by high R & D intensity, although they were joined by several capital city regions, which may be attributed to research and academic institutions often being located in capital cities.

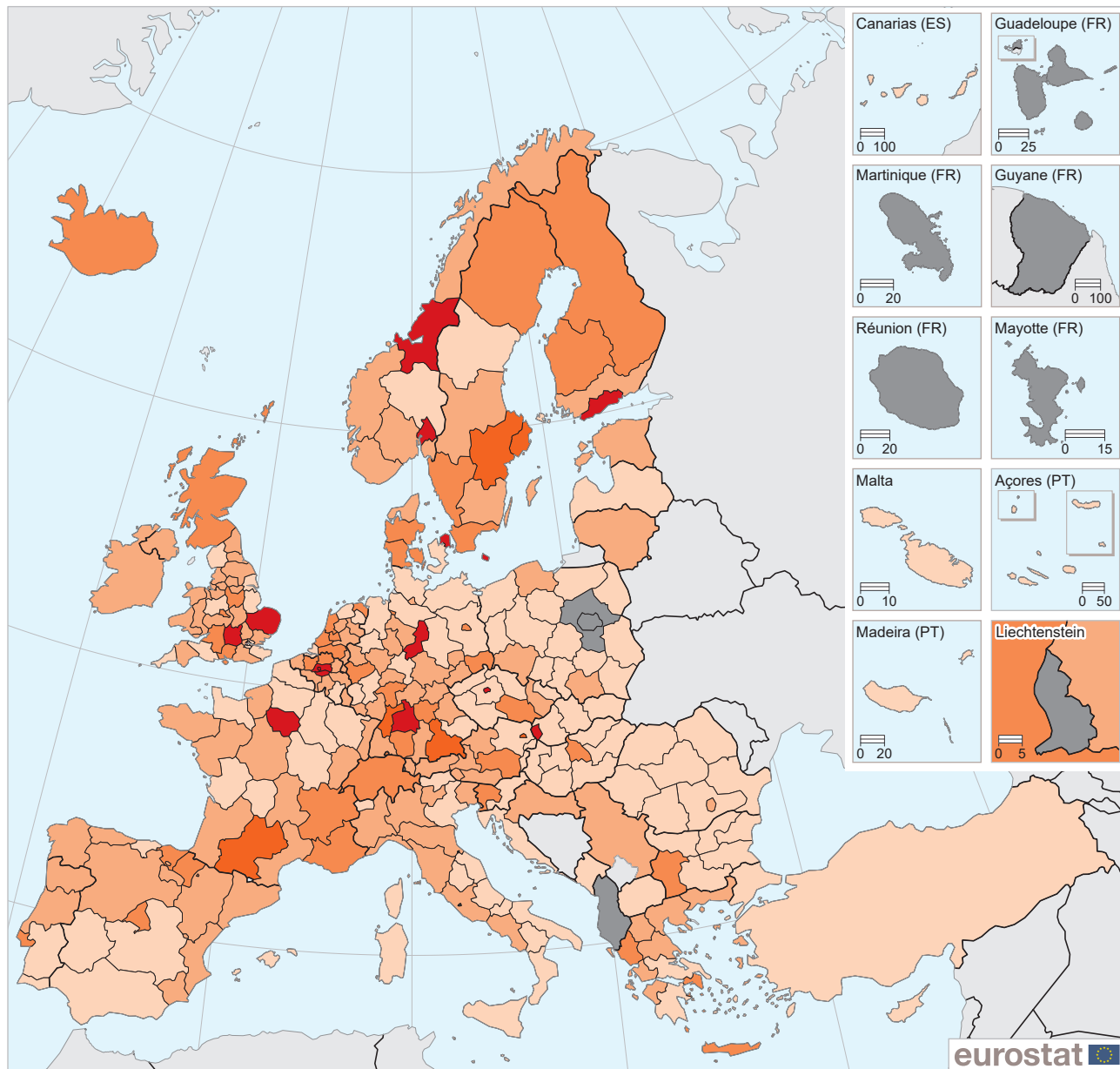
There were 13 regions in the EU where researchers accounted for 2.00 % or more of the total number of persons employed (as shown by the darkest shade in Map 8.2). This was most notable in Inner London — West (one of the capital city regions in the United Kingdom), where the share of researchers in the total number of persons employed in 2016 peaked at 4.88 %, considerably higher than in any other region; the second highest share was recorded in the Belgian region of Prov. Brabant Wallon that lies just to the south of the Belgian capital (2.80 %; 2015 data). Capital city regions accounted for just over half (7) of the 13 regions where researchers represented 2.00 % or more of the regional workforce.

... the vast majority of them were employed in the higher education sector

In 2016, there were 0.95 million researchers (in FTEs) working within the EU-28's business enterprise sector; they accounted for 0.43 % of the total number of persons employed in the EU-28. A smaller number of people were employed as researchers in the higher education sector (0.72 million, or 0.33 % of the EU-28 workforce), while the government sector employed the fewest researchers (0.20 million, or 0.09 % of the EU-28 workforce).

Map 8.2: R & D researchers, 2016

(% share of total number of persons employed, by NUTS 2 regions)



EU-28 = 0.86

< 0.5

0.5 - < 1.0

1.0 - < 1.5

1.5 - < 2.0

≥ 2.0

Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019

0 200 400 600 800 km

Note: the numerator for researchers is presented in full-time equivalents (FTE). Közép-Magyarország (HU1) and Scotland (UKM): NUTS level 1. Ireland, Lithuania, Switzerland, Serbia and Turkey: national data. Belgium, Germany, Greece, Ciudad Autónoma de Ceuta (ES63), Ciudad Autónoma de Melilla (ES64), Basilicata (ITF5), Austria, Łódzkie (PL71), Świętokrzyskie (PL72), Lubelskie (PL81), Podkarpackie (PL82), Podlaskie (PL84), Sweden and Switzerland: 2015. Molise (ITF2) and Umbria (ITI2): 2014. France: 2013. Sweden and the United Kingdom: estimates. Luxembourg: provisional.

Source: Eurostat (online data code: rd_p_persreg)

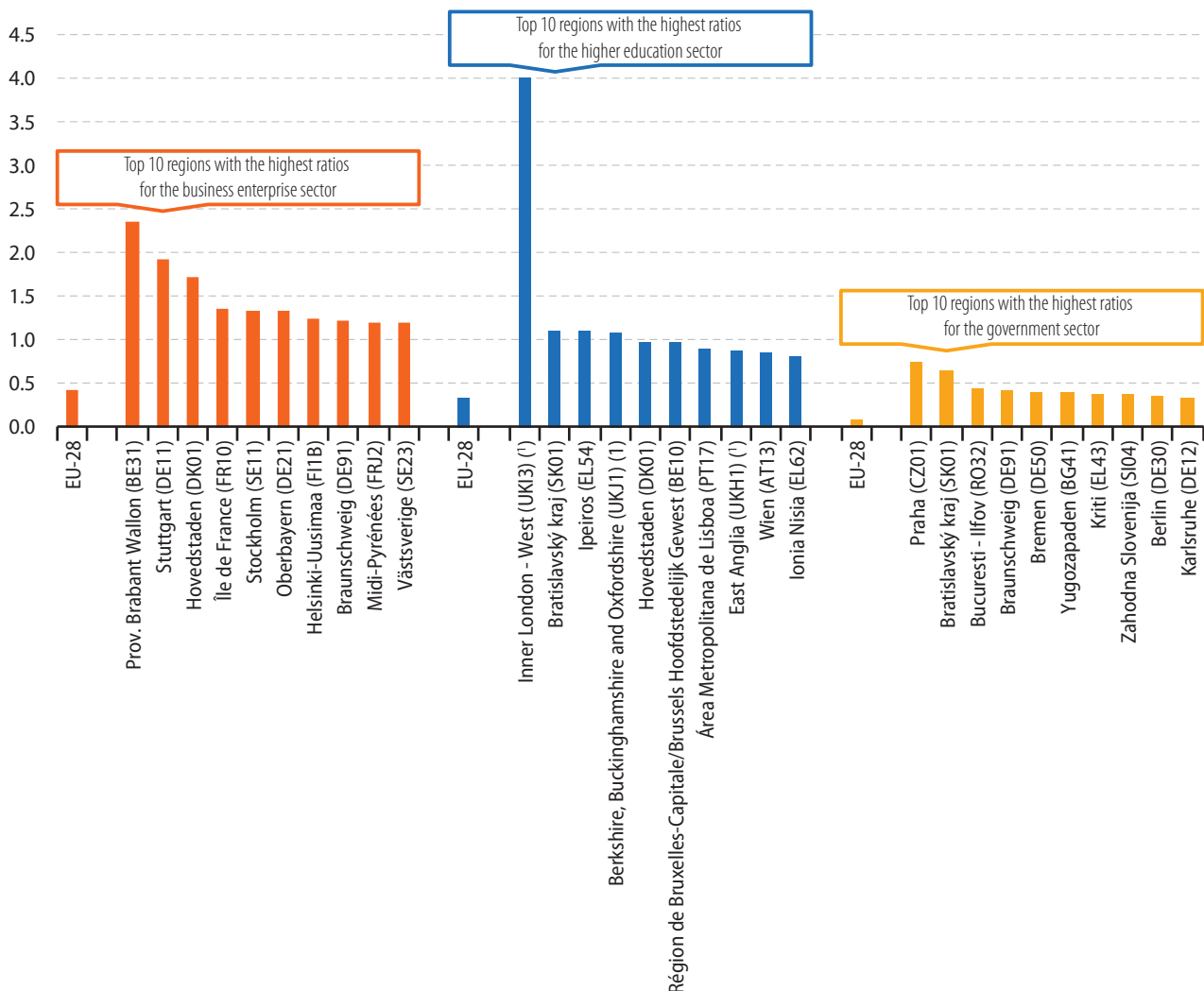


Figure 8.3 details those regions with the highest numbers of researchers (relative to the total number of persons employed in each region), with an analysis by sector of performance. In 2016, one of the most striking aspects was the dominant role played by the higher education sector in providing work to researchers in Inner London — West, some 4.01 % of total employment; several universities in London have particular strengths in science, technology, engineering and medicine. Aside from Inner London — West, the next highest shares were recorded by the Slovak capital city region Bratislavský kraj and the north-western Greek region Ipeiros, as researchers in the higher education sector accounted for 1.10 % of total employment in each of these regions.

In 2016, researchers working within the business enterprise sector accounted for 2.36 % of total employment in Prov. Brabant Wallon. The next highest share was recorded in the Stuttgart (1.93 %), followed by Hovedstaden (1.72 %); the remainder of the top 10 regions where researchers in the business enterprise sector accounted for a relatively high share of total employment were also all located in northern and western regions of the EU.

There were only two regions where the government sector employed more than 0.5 % of the total number of persons employed as researchers in 2016 and both were capital city regions of eastern Member States: Praha (0.74 %) and Bratislavský kraj (0.65 %).

Figure 8.3: Regions with the highest number of R & D researchers, by sector of performance, 2016
 (% share of total number of persons employed, by NUTS 2 regions)



Note: the numerator for researchers is presented in full-time equivalents (FTE). Excluding several regions for which data are confidential. Közép-Magyarország (HU1): NUTS level 1. Ireland, Lithuania, Switzerland, Serbia and Turkey: national data. Belgium, Germany, Greece, Ciudad Autónoma de Ceuta (ES63), Ciudad Autónoma de Melilla (ES64), Basilicata (ITF5), Austria, Łódzkie (PL71), Świętokrzyskie (PL72), Lubelskie (PL81), Podkarpackie (PL82), Podlaskie (PL84), Sweden and Switzerland: 2015. Molise (ITF2) and Umbria (ITI2): 2014. France: 2013.

(*) Estimate.

Source: Eurostat (online data code: rd_p_persreg)

Human resources in science and technology

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).

In 2018, there were 131.5 million persons employed in the EU-28 as HRST; among these, there were 53.7 million who met both the educational and occupational criteria — hereafter referred to as HRST core.

Map 8.3 shows the share of HRST in the [economically active population](#) (often referred to as the labour force): in 2018, across the whole of the EU-28 this figure stood at 45.6 %. Unlike other science and technology indicators, there was a broadly equal split between the number of regions with shares above and below the EU-28 average: 133 of the 281 NUTS level 2 regions for which data are available had a share of HRST in the labour force that was equal to or higher than the EU-28 average.

At the top end of the distribution, there were 16 regions where the share of HRST in the labour force was greater than or equal to 60.0 % in 2018 (as shown by the darkest shade in Map 8.4), they included:

- a cluster of regions in the south-east of the United Kingdom:
- Inner London — West, where HRST accounted for more than four out of every five persons (81.0 %) in the labour force, by far the highest share in the EU and Inner London — East (72.6 %), which had the second highest share;
- four more regions surrounding London: Outer London — South; Outer London — West and North West; Berkshire, Buckinghamshire and Oxfordshire; and Surrey, East and West Sussex.

- eight capital city regions (outside those in the United Kingdom), including those of Sweden, Finland, Denmark and Lithuania (in the north); France and Germany (in the west); Poland and Czechia (in the east).

One quarter of the female labour force in the EU-28 was employed as core HRST

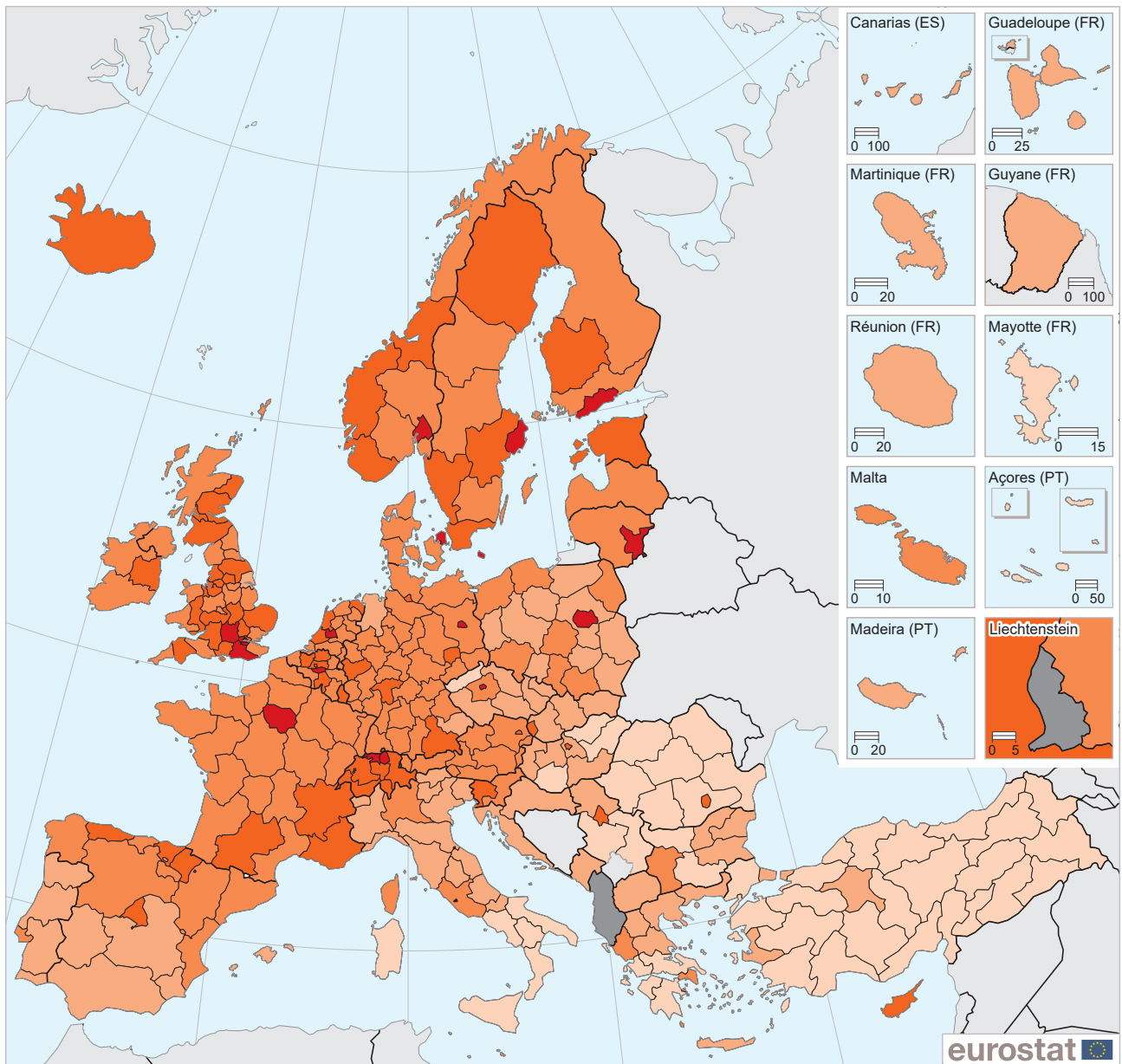
The final section in this chapter takes a closer look at employment patterns in science and technology, providing an analysis for differences between the sexes. Core HRST are defined as persons employed in science and technology occupations that are also in possession of a tertiary level of educational attainment. In 2018, one quarter (25.0 %) of the female labour force in the EU-28 were classified as core HRST, which was 6.0 [percentage points \(pp\)](#) higher than the corresponding share for men (19.0 %).

An analysis by sex and for NUTS level 1 regions reveals that core HRST accounted for 40.4 % of the female labour force in the Polish capital city region of Makroregion Województwo Mazowieckie in 2018, with the second highest share being recorded in Luxembourg (40.0 %; a single region at this level of detail); the other regions present within the top 10 were all located in northern or western regions of the EU. Overall, there were 12 regions where core HRST accounted for at least one third of the female labour force in 2018, while the corresponding count for men was just two regions, as core HRST accounted for 36.6 % of the male labour force in Luxembourg and for 35.3 % in London.

The distribution between the sexes of core HRST was generally skewed in favour of women. An analysis for NUTS level 1 regions in 2018 reveals that core HRST accounted for more than one third (34.4 %) of the female labour force in Lithuania (a single region at this level of detail), compared with a 16.5 % share within the male labour force. As such, the share of core HRST in the female labour force was more than twice as high as that recorded for men, with a gap between the sexes of 17.9 pp — the highest in the EU. The next largest differences in favour of women were recorded in the

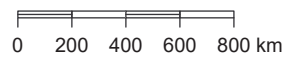


Map 8.3: Human resources in science and technology, 2018
 (% share of the economically active population, by NUTS 2 regions)



- EU-28 = 45.6
- < 30
- 30 - < 40
- 40 - < 50
- 50 - < 60
- ≥ 60
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
 Cartography: Eurostat — GISCO, 05/2019



Source: Eurostat (online data code: hrst_st_rcat)

other two Baltic Member States — Estonia (where the share of core HRST in the female labour force was 16.4 pp higher than the male share) and Latvia (15.9 pp) — while the share of core HRST in the female labour force was also relatively high (compared with shares for men) in each region of Poland.

By contrast, there were only eight NUTS level 1 regions where the share of core HRST in the male labour force was higher than the corresponding share for women; all of these regions were located in Germany. The biggest gaps in favour of men were recorded in the southern regions of Baden-Württemberg (where the share of

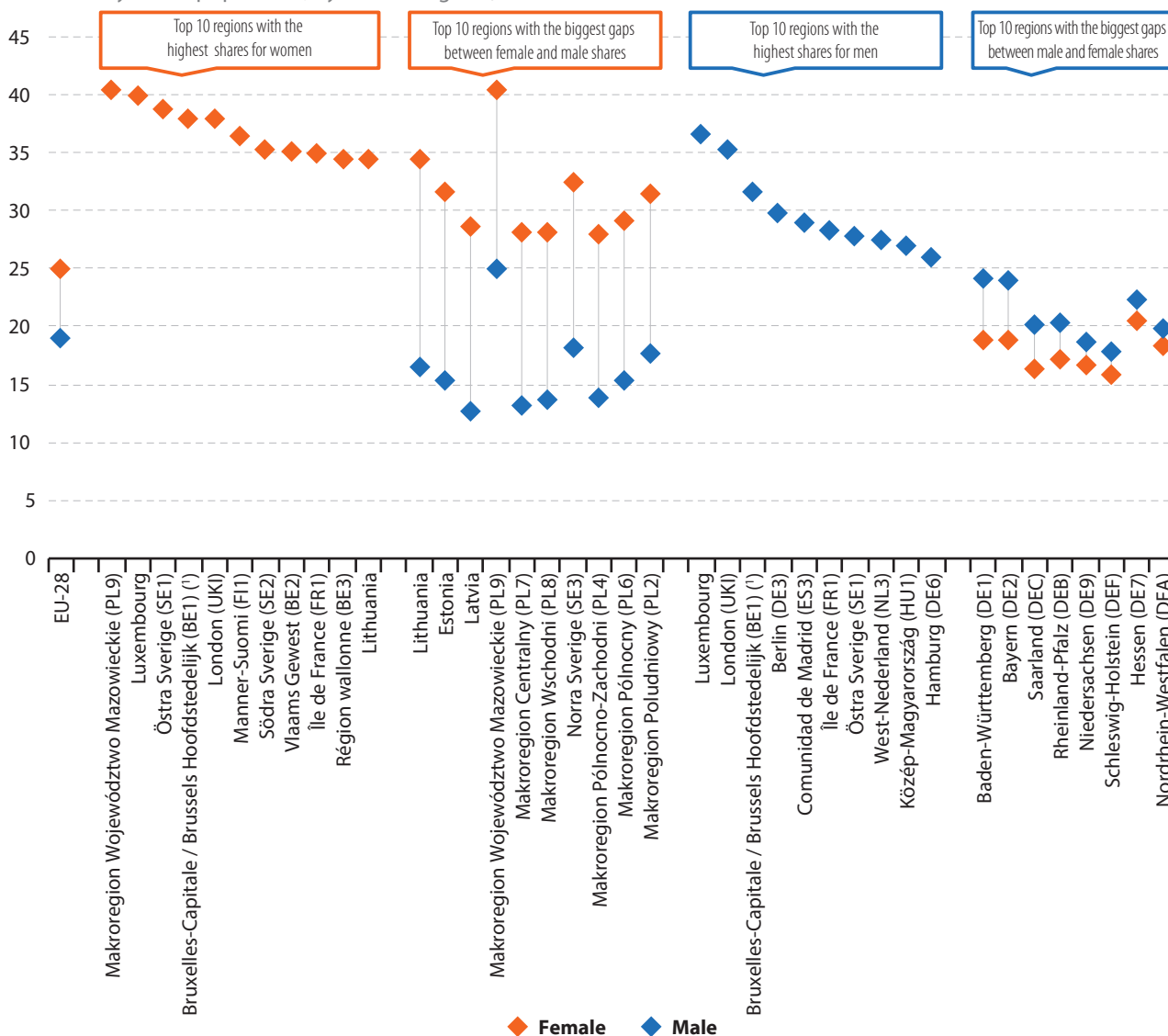
core HRST in the male labour force was 5.3 pp higher than the female share) and Bayern (5.2 pp).

Women were less likely than men to be employed as scientists and engineers

The existence of a gender gap in favour of women for HRST does not extend to all aspects of science and technology. Boys and young men continue to account for a higher share of students in scientific subjects and fields and these gender differences established at an early age persist into adult life, as men are more likely than women to have careers as ICT professionals,

Figure 8.4: Core human resources in science and technology, by sex, 2018

(%, persons employed in science and technology with a tertiary level of educational attainment as a share of the economically active population, by NUTS 1 regions)



Note: Åland (FI2), not available. Corse (FRM0): low reliability. Top 10 regions with the highest shares for women: there were two NUTS level 1 regions with the same value in tenth place (both are shown). Top 10 regions with the biggest gaps between male and female shares: there were only eight NUTS level 1 regions across the EU where the male share was higher than the female share.

(¹) The full title is: Région de Bruxelles-Capitale/Brussels Hoofdstedelijk Gewest.

Source: Eurostat (online data code: [hrst_st_rsex](#))



scientists or engineers. Policymakers have sought to redress the relatively low levels of female participation in science and engineering, by taking a number of initiatives to promote female role models and set-up programmes that seek to encourage more girls to study sciences.

In 2018, there were 18.3 million scientists and engineers in the EU-28: 10.9 million were men, which was almost three fifths (59.3 %) of the total. Scientists and engineers accounted for an 8.2 % share of the male labour force; this figure was 1.6 pp higher than the corresponding share for women (6.6 %).

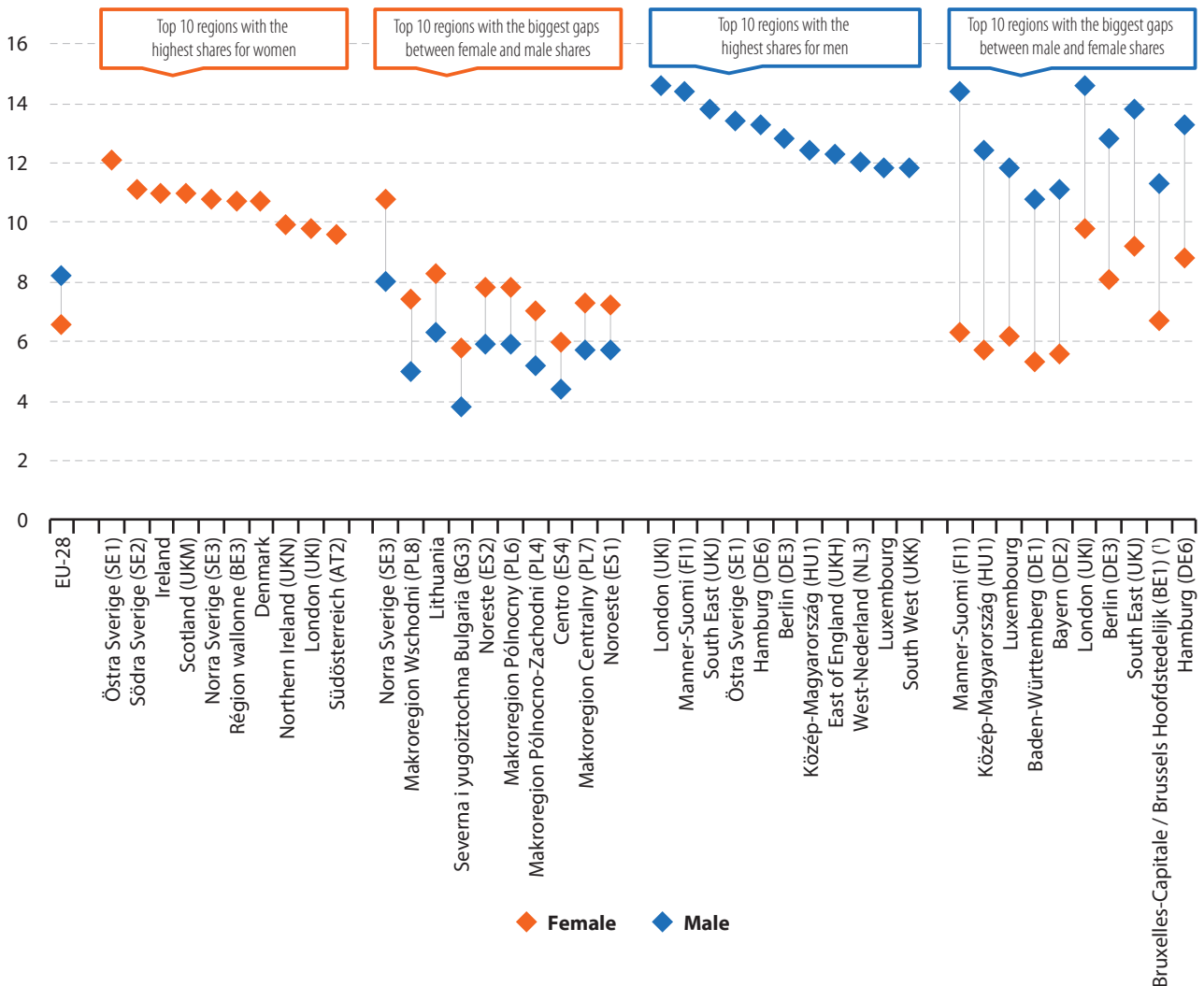
There were 29 NUTS level 1 regions where scientists and engineers accounted for a double-digit share of the male labour force in 2018. The highest share was

recorded in London, where scientists and engineers accounted for 14.6 % of the male labour force (see Figure 8.5), closely followed by Manner-Suomi (Finland; 14.4 %) and South East (the United Kingdom; 13.8 %).

By contrast, there were only seven NUTS level 1 regions in the EU where scientists and engineers accounted for a double-digit share of the female labour force in 2018:

- all three regions in Sweden — Östra Sverige had the highest share in the EU, at 12.1 %, Södra Sverige (11.1 %) and Norra Sverige (10.8 %);
- Ireland (11.0 %) and Denmark (10.7 %) — both single regions at this level of detail;
- Scotland (the United Kingdom; 11.0 %) and Région wallonne (Belgium; 10.7 %).

Figure 8.5: Scientists and engineers, by sex, 2018
(%, share of the economically active population, by NUTS 1 regions)



Note: Região Autónoma da Madeira (PT3) and Åland (FI2), not available. Corse (FRM0): low reliability. Top 10 regions with the highest shares for men: there were two NUTS level 1 regions with the same value in tenth place (both are shown).

(*) The full title is: Région de Bruxelles-Capitale/Brussels Hoofdstedelijk Gewest.

Source: Eurostat (online data code: hrst_st_rsex)

9

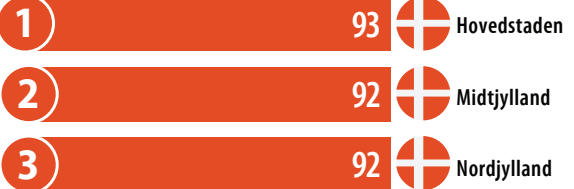
Digital economy and society



Which regions in the EU have the highest and lowest share of people interacting with public authorities over the internet?



HIGHEST



(% share of people aged 16-74 years; during the 12 months preceding the survey, 2018 data)

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, benefitting from these technological innovations depends to some extent on having 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 make completely new ways of working, socialising and sharing information possible, 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 many 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 lives of many Europeans, some people are excluded, resulting from the so-called **digital divide**. As a growing share of day-to-day 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 by NUTS level 2 region and by **degree of urbanisation**. The statistics that follow include: 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 or interacts with public authorities over the internet; the share of people possessing a range of digital skills.

For more information:

Eurostat's online publication, *Digital economy & society in the EU — a browse through our online world in figures* — 2018 edition

Broadband access

The most common 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/fibre services are less widespread, often being restricted to more densely-populated areas — explaining, at least in part, why the use of the internet is often lower in **rural areas**.



Indeed, the proportion 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; public funding initiatives are sometimes needed to ensure that fast and ultra-fast broadband services are extended to rural and peripheral regions. The digital divide is likely to be further challenged in the next couple of years, as many city-dwellers in the EU will have the opportunity to move to the next generation of internet services, 5G (fifth generation cellular network technology that provides broadband access), offering faster speeds and more reliable wireless connections in the workplace, at home and on mobile devices.

The [Digital Agenda for Europe](#) set two targets for broadband access speeds, namely that:

- everybody in the EU should have a 30 megabits per second (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.

It was followed in September 2016 by a strategy on [connectivity for a European gigabit society](#) to stimulate the availability and take-up of very high capacity networks, which included three new objectives to be achieved by 2025:

- access to a 1 gigabits per second (Gbps) service for all schools, transport hubs and main providers of public services and digitally intensive enterprises;
- access to download speeds of at least 100 Mbps to be upgraded to 1 Gbps for all households; and,
- uninterrupted 5G wireless broadband coverage for all urban areas and major roads and railways.

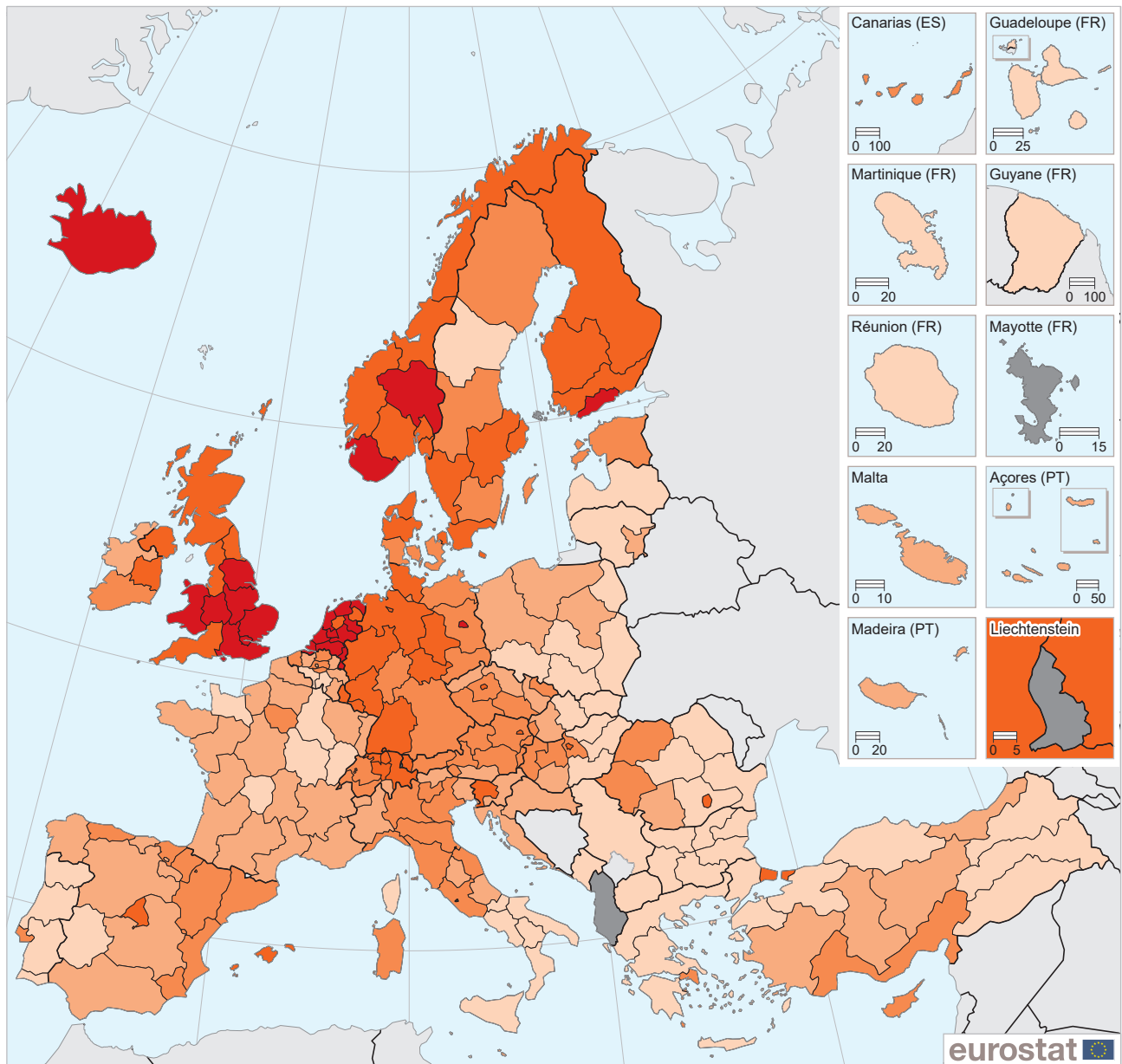
In every region of the EU, more than half of all households had broadband access at home

Map 9.1 shows the share of households with broadband access at home reached 86 % across the whole of the EU-28 in 2018. Every NUTS level 2 region in the EU reported that more than half of all households had broadband access at home, with the share ranging from 56 % to 99 % across the 209 regions for which data are available; note that statistics presented for Germany, Greece, Poland and the United Kingdom relate to NUTS level 1 regions.

In 2018, at least 95 % of households had broadband access at home in the vast majority of regions across the Netherlands and most of the southern half of the United Kingdom (NUTS level 1); there were also very high broadband connectivity rates in the German and Finnish capital city regions, Berlin and Helsinki-Uusimaa. In total, there were 19 regions across the EU where at least 95 % of households had broadband access at home (as shown by the darkest shade in Map 9.1). This share peaked in Groningen in the north of the Netherlands (99 %), followed by four more Dutch regions with a share of 98 % — Overijssel, Gelderland, Noord-Holland and Noord-Brabant.

In terms of the digital divide, it can be more revealing to analyse those regions with relatively low levels of broadband connectivity: in 2018, there were 48 regions across the EU that reported less than four out of every five households (less than 80 %) with broadband access at home. These were principally located in eastern and southern parts of the EU, although there were also relatively low rates in two southern regions of Belgium, 10 regions of France (five rural regions of mainland France, the island of Corse, four of the five outermost regions; no data available for Mayotte), Latvia (a single region at this level of detail), and single, sparsely-populated regions in Lithuania and Sweden. The lowest shares of households with broadband access at home were recorded in two outermost regions of France, Guyane (56 %) and Guadeloupe (58 %). The next lowest shares — higher than 60 % but lower than 70 % — were recorded in Limousin in central France, Severozapaden and Severen tsentralen in northern Bulgaria, Alentejo in southern Portugal, Nisia Aigaiou, Kriti (NUTS level 1) in Greece, Nord-Est and Sud-Est in eastern Romania.

Map 9.1: Households with broadband access at home, 2018
(%, share of private households, by NUTS 2 regions)



EU-28 = 86

< 80

80 - < 85

85 - < 90

90 - < 95

≥ 95

Data not available

Note: Germany, Greece, Poland, the United Kingdom and Turkey, NUTS/statistical regions level 1. Serbia: national data. Switzerland: 2017. Corse (FRM0) and Mellersta Norrland (SE32): low reliability.

Source: Eurostat (online data codes: [isoc_r_broad_h](#) and [isoc_ci_it_h](#))



Internet use and activities

At the outset, internet access was largely confined to people who worked with or owned a desktop computer. However, subsequent technological (and commercial) developments resulted in a much broader range of devices having the capability to go online, with mobile internet access becoming ubiquitous.

An **internet user** is defined as a person (aged 16-74 years) 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, smartphone, games console or e-book reader) or type of connection being used.

At least 9 out of every 10 adults made daily use of the internet in several regions across the Netherlands, the Nordic Member States and the southern half of the United Kingdom

In 2018, just over three quarters (76 %) of the EU-28 adult population (aged 16-74 years) used the internet on a daily basis (during the three months prior to being surveyed). The proportion of the adult population that made daily use of the internet ranged from a low of 45 % up to a high of 95 % across the 209 NUTS level 2 regions of the EU for which data are available; note again that statistics presented for Germany, Greece, Poland and the United Kingdom relate to NUTS level 1 regions.

There were widespread disparities between the EU Member States in terms of their share of individuals that made daily use of the internet. These differences were often along broad geographical lines with northern and western Member States generally recording higher levels of daily internet use than southern or eastern regions of the EU — thereby reaffirming the patterns already observed for broadband access at home. That said, the share of adults making use of the internet on a daily basis was particularly high (compared with broadband connectivity rates) across the **Nordic Member States**; this pattern was also apparent in Iceland and Norway.

There were 22 regions in the EU where at least 9 out of every 10 adults were daily internet users in 2018. The highest proportion of daily internet users (95 %) was recorded in the South West region of the United

Kingdom (NUTS level 1), followed by East Midlands (also in the United Kingdom; NUTS level 1) and Friesland (in the Netherlands) — both of which recorded shares of 94 %. The remaining 19 regions — where daily internet use covered at least 90 % of the adult population — were located in northern and western regions: all five regions in Denmark; 7 out of the remaining 11 regions in the Netherlands, including the capital city region, Noord-Holland; the capital city region of Finland (Helsinki-Uusimaa); two regions in Sweden, including the capital city region of Stockholm; four additional regions from the south of the United Kingdom, including the capital city region, London (NUTS level 1).

At the other end of the range, there were 19 regions in the EU where fewer than 60 % of adults made daily use of the internet in 2018 (as shown by the lightest shade in Map 9.2). These regions were predominantly located in Bulgaria (five out of six regions) and Romania (six out of eight regions), with low shares also recorded in central and northern Greece (NUTS level 1), one outermost region of France, two of the southernmost regions of Italy (2017 data), central and eastern Poland (NUTS level 1) and northern Portugal. Less than half of the adult population made daily use of the internet in six regions, with the lowest shares recorded in Nord-Est (45 %) and Sud-Est (46 %) Romania.

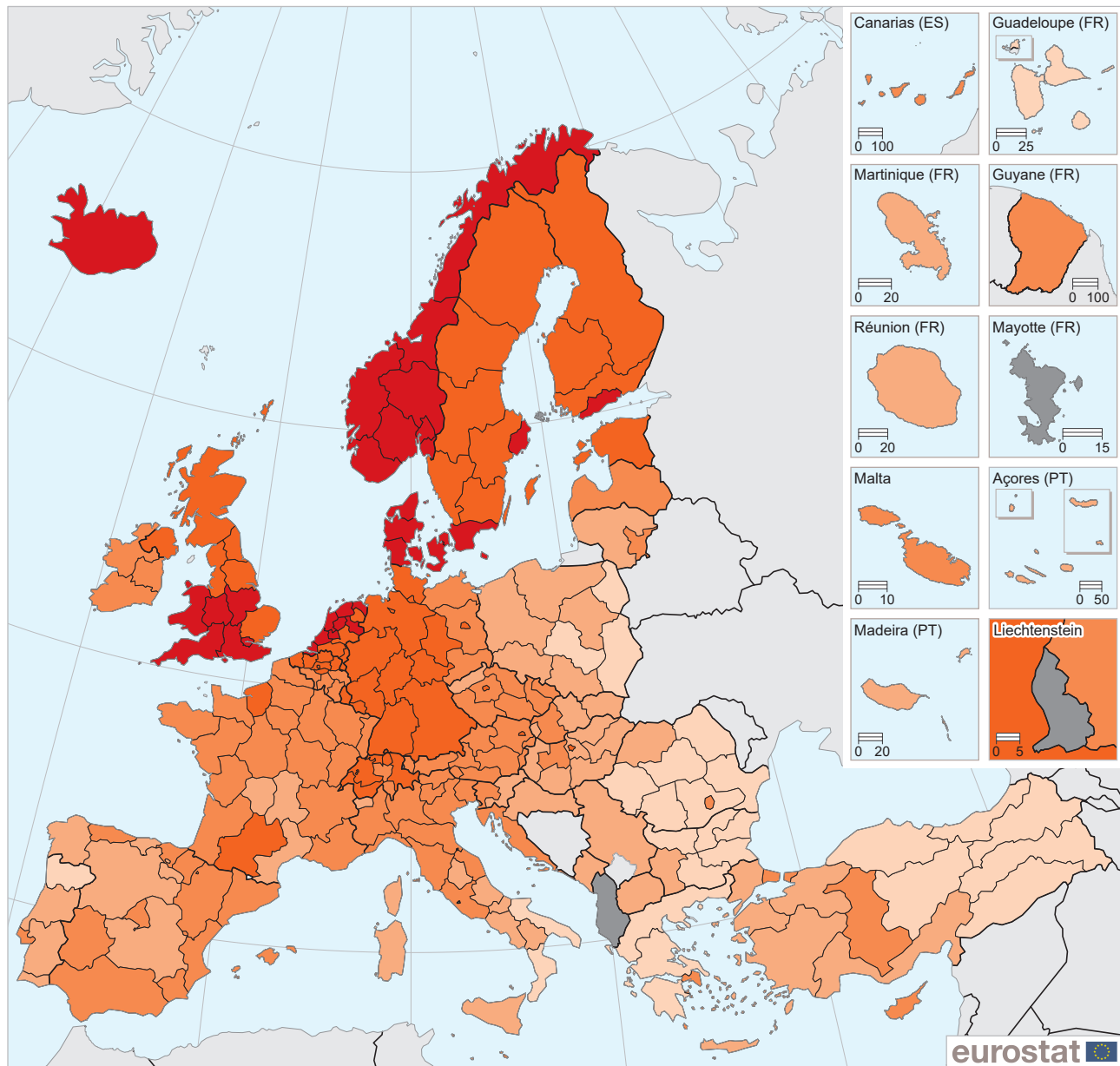
More than four out of every five adults in the Danish capital participated in social networks

With the prolific use of mobile devices such as smartphones and tablets in modern society, the frequency with which people use the internet has grown exponentially, while the ways in which they use the internet have also changed profoundly; it is only slightly more than a decade since commercially successful app stores were launched on the internet.

One of the most popular internet activities is to participate in social networks, for example by using 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 on a regular basis. Younger people are also more prone to adopt new apps/services as together with their peers they seek alternative ways of exchanging text, images, sound, video and other information (for example, Vero or Musical.ly); it is important to remember that the statistics presented below cover only persons aged 16-74 years.

Map 9.2: Daily internet users, 2018

(% share of people aged 16-74; during the three months preceding the survey, by NUTS 2 regions)



EU-28 = 76

< 60

60 - < 70

70 - < 80

80 - < 90

≥ 90

Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019

0 200 400 600 800 km

Note: Germany, Greece, Poland, the United Kingdom and Turkey, NUTS/statistical regions level 1. Serbia: national data. Italy and Switzerland: 2017. Corse (FRM0) and Mellersta Norrland (SE32): low reliability.

Source: Eurostat (online data codes: isoc_r_iuse_i and isoc_ci_ifp_fu)

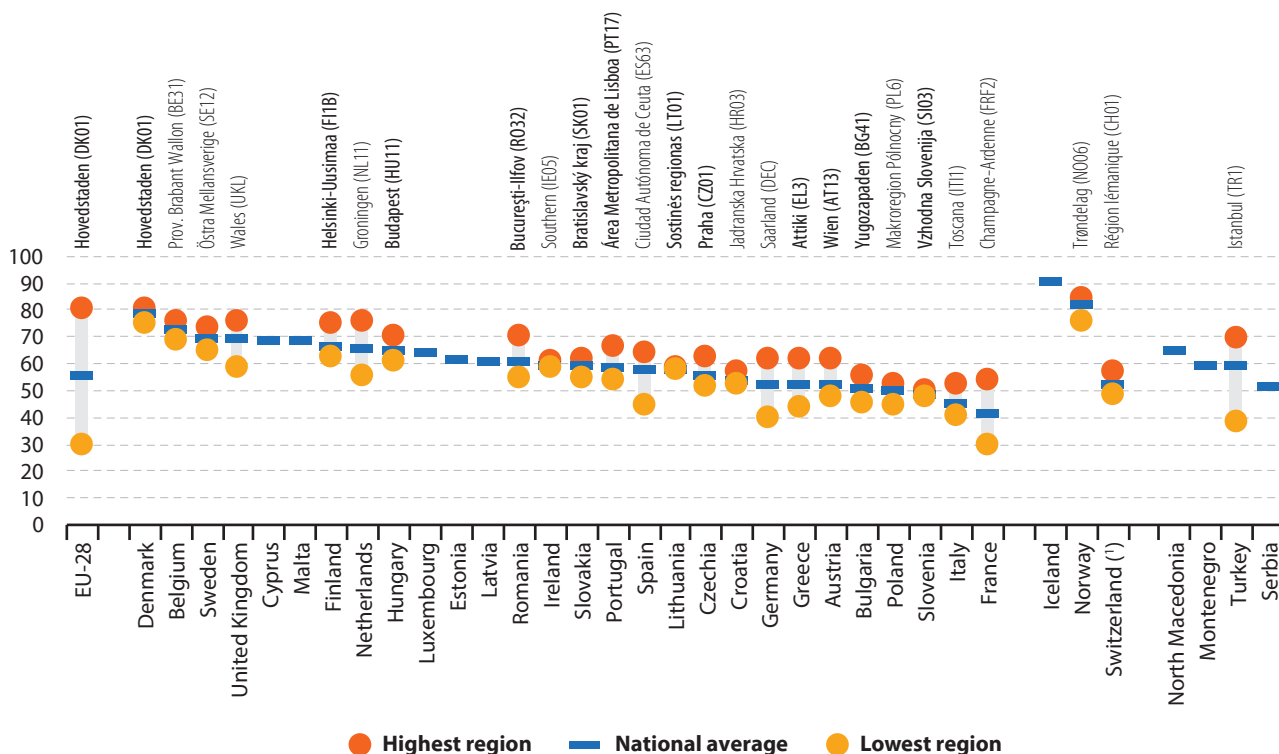
In 2018, some 56 % of the EU-28 adult population participated in social networks during the three months prior to the latest survey. There were sizeable differences in this share by age, as 88 % of people aged 16-24 years participated in social networks, compared with just 19 % for those aged 65-74 years.

At least half of the adult population participated in social networks in 150 out of the 209 NUTS level 2 regions for which data are available in 2018; note again that statistics presented for Germany, Greece, Poland and the United Kingdom relate to NUTS level 1 regions. Participation in social networks peaked at 81 % in Hovedstaden, the Danish capital city region. There were nine regions across the EU where at least three quarters of the adult population participated in social networks in 2018: all five regions in Denmark; Prov. Brabant Wallon in Belgium; Östra Mellansverige in Sweden; Wales in the United Kingdom (NUTS level 1).

Looking in more detail, it is interesting to note that aside from the Nordic Member States, Belgium and the United Kingdom — where most of the highest participation rates were recorded — there were also several regions in eastern and southern parts of the EU where a relatively high share of the adult population participated in social networks, for example, the Hungarian and Romanian capital city regions (Budapest and București-Ilfov, both 71 %), or the island regions of Cyprus and Malta (both 69 %; single regions at this level of detail).

By contrast, in 2018 less than half of the adult population participated in social networks in Slovenia (49 %), Italy (46 %) and France (42 %). Regional participation rates were particularly low in rural and outermost regions of France as all 10 regions in the EU where fewer than 40 % of the adult population participated in social networks were in France. The lowest rates of all were in Auvergne and Martinique (both 30 %).

Figure 9.1: People participating in social networks, 2018
(%, share of people aged 16-74; during the three months preceding the survey, by NUTS 2 regions)



Note: Germany, Greece, Poland, the United Kingdom and Turkey, NUTS/statistical regions level 1. National data. Corse (FRM0) and Mellersta Norrland (SE32): low reliability. Regions listed above the figure are those with the highest ratio. Capital regions are indicated by a bold typeface.

(*) 2017.

Source: Eurostat (online data codes: isoc_r_iuse_i and isoc_ci_ac_i)

Each of the five regions from Denmark had a very high share — within the range of 89 %-93 % — of adults interacting with public authorities over the internet

E-government may be defined as the use of information and communication technologies (ICTs) to improve the delivery of services by public authorities. In most of the EU Member States it is possible for private individuals to carry out a broad range of operations by interacting online with their public authorities, for example: making a tax return, requesting a birth certificate, downloading forms, or looking for information about the local transport network; note that contacts with public authorities by manually typed e-mails are excluded from the statistics presented below.

Just over half (52 %) of the EU-28's adult population (aged 16-74 years) used the internet for interacting with public authorities during the 12 months prior to the 2018 survey: 44 % used the internet to obtain information from public authority websites, 34 % to submit completed forms, and 31 % to download official forms.

Among the 209 NUTS level 2 regions across the EU for which data are available in 2018 — note again that statistics presented for Germany, Greece, Poland and the United Kingdom relate to NUTS level 1 regions — the share of the adult population interacting with public authorities over the internet ranged from a low of just 3 % in Sud-Est (Romania) up to a high of 93 % in Hovedstaden (the capital city region of Denmark).

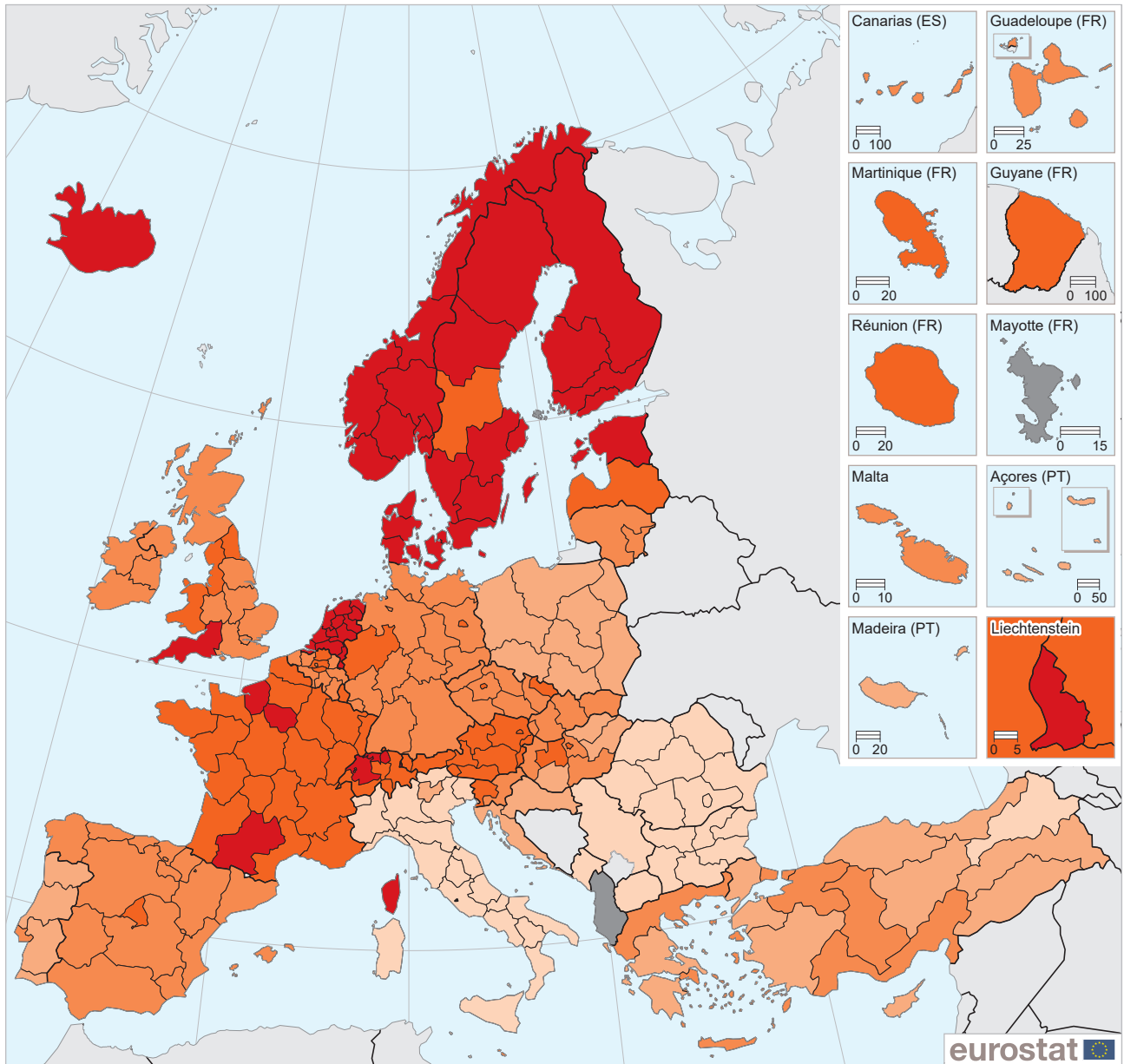
There were 34 regions in the EU where at least three quarters of the adult population used the internet to

interact with public authorities in 2018 (as shown by the darkest shade in Map 9.3). These 34 regions were exclusively located in northern and western parts of the EU — with some of the highest shares concentrated in the Netherlands and the Nordic Member States.

Regional patterns for the use of e-government services often closely reflected the patterns already observed above for social media insofar as the highest shares were recorded in northern and western regions of the EU. Nevertheless, there were some differences: for example, it was common for adults in most French or Austrian regions to make greater use of the internet for interacting with public authorities than it was to participate in social networks, while the opposite was often true in the United Kingdom.

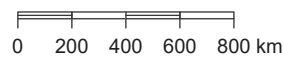
The distribution of the adult population interacting with public authorities over the internet was somewhat skewed. In 2018, there were 129 regions where this share was higher than the EU-28 average (52 %), compared with 74 regions that had a lower share and six regions with an identical share. This reflected, at least to some degree, a particularly low use of e-government services in three of the EU Member States — Bulgaria, Italy and Romania. All 34 regions in the EU where less than 30 % of the adult population interacted with public authorities over the internet were located in these three Member States (as shown by the lightest shade in Map 9.3). Looking in more detail, there were four regions — all in Romania — where the share of adults making use of e-government services fell to single digits: Vest (9 %), Sud-Vest Oltenia (also 9 %), Nord-Est (7 %) and Sud-Est (3 %).

Map 9.3: People interacting with public authorities over the internet, 2018
 (% share of people aged 16-74; during the 12 months preceding the survey, by NUTS 2 regions)



- EU-28 = 52
- < 30
- 30 - < 45
- 45 - < 60
- 60 - < 75
- ≥ 75
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
 Cartography: Eurostat — GISCO, 05/2019



Note: Germany, Greece, Poland, the United Kingdom and Turkey, NUTS/statistical regions level 1. Serbia: national data. Switzerland: 2017. Corse (FRM0) and Mellersta Norrland (SE32): low reliability.
 Source: Eurostat (online data codes: isoc_r_gov_i and isoc_ciegi_ac)

Digital skills

The increasing spread of digital technologies has already profoundly impacted labour markets and is likely to continue to do so. Robots, artificial intelligence and automation are likely to continue to replace mundane and repetitive jobs, while those seeking work will need to acquire and regularly refresh their digital skills in order to maintain their employability. The digital transformation of the economy means that almost all jobs now require some level of digital skills.

Digital skills are considered essential for global competitiveness, boosting jobs and growth, while the internet can also play a vital role in terms of providing high-quality education and training. Official statistics in this domain are based on a proxy measure of digital competences that covers four different dimensions:

- information skills (copying or moving files, saving files to an internet storage space, obtaining information from public authorities, finding information about goods or services, seeking health-related information);
- communication skills (sending/receiving e-mails, participating in social networks, telephoning/video calls over the internet, uploading self-created content to a website);
- problem solving skills (transferring files between computers or other devices, installing software and applications, changing settings of software, online purchases, selling online, using online learning resources, internet banking);
- software skills (using word processing software, using spreadsheet software, using software to edit photos/video/audio files, creating a presentation or document integrating different types of content, using advanced functions of a spreadsheet, writing code in a programming language).

For each dimension, the adult population's (aged 16-74 years) skills are assessed according to two levels ('basic skills' and 'above basic skills'), with the results combined to produce a composite indicator for overall digital skills that has four different levels ('no skills', 'low skills', 'basic skills' and 'above basic skills').

Digital skills gaps are apparent across the EU in a number of different areas: on one hand, most EU Member States have unfilled vacancies for ICT professionals, while on the other, just over a quarter (27 %) of the EU-28's adult population possessed no more than a low level of digital skills in 2017; note that digital skills could not be assessed for 16 % of the adult population (as they had not used the internet in the three months prior to the survey).

There was a considerable digital skills divide in the EU between adults living in cities and those living in rural areas

Figure 9.2 provides information on the share of the adult population with basic or above basic digital skills in 2017. An analysis by degree of urbanisation reveals that the overall level of digital skills in the EU-28 was lowest among adults who were living in **rural areas** (49 % had basic or above basic skills), rising to 57 % for adults living in **towns and suburbs**, and peaking at 63 % for adults living in **cities**. This pattern — with the highest level of digital skills recorded for those adults living in cities — was repeated in all but three of the EU Member States, the exceptions being Belgium, Luxembourg and Malta.

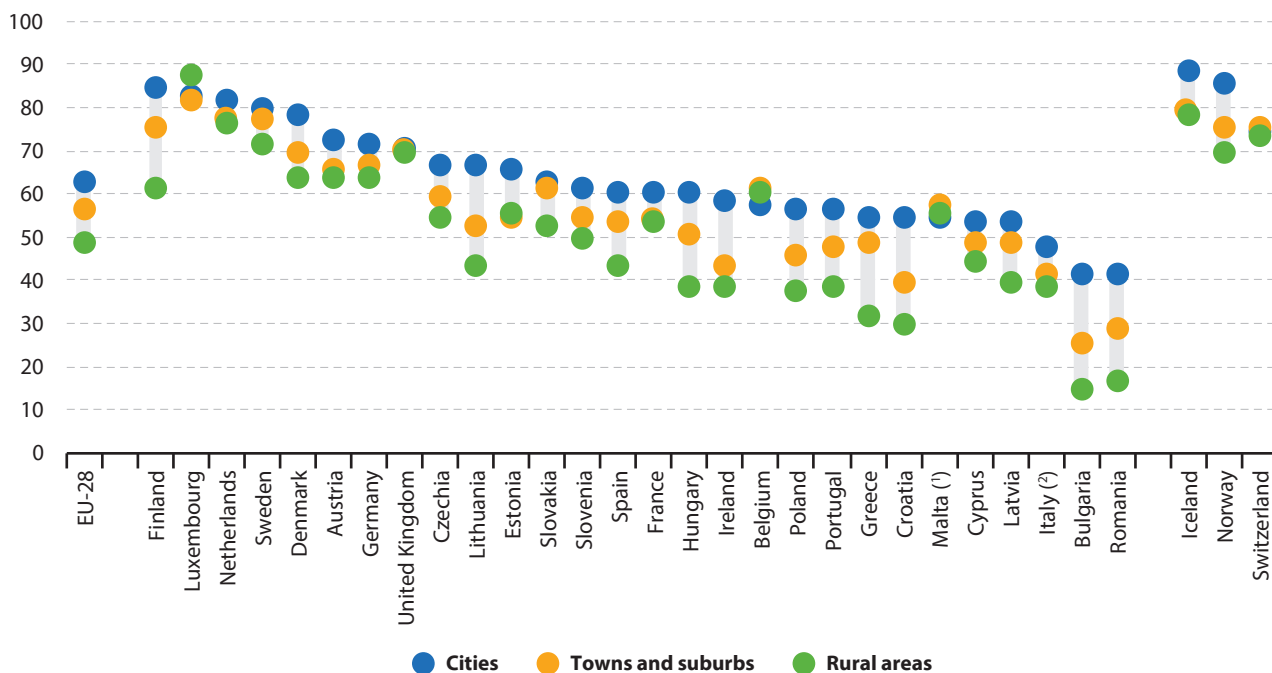
In 2017, the gap in digital skills between city-dwellers and people living in rural areas was, on average, 14 **percentage points (pp)** in the EU-28 (as measured by the difference in relative shares of adults possessing basic or above basic digital skills). This digital divide in overall skills reached 20-25 pp in seven EU Member States — Ireland, Hungary, Greece, Lithuania, Finland, Croatia and Romania — peaking at 27 pp in Bulgaria.

Figure 9.3 looks in more detail at one of the four dimensions for analysing digital skills, namely software skills. It presents the share of the adult population who created presentations or documents integrating text, pictures, tables or charts in 2017. More than two fifths (42 %) of adults living in cities across the EU-28 demonstrated an above basic level of software skills by creating presentations or documents integrating text, pictures, tables or charts. The corresponding shares among adults living in towns and suburbs (34 %) and rural areas (30 %) were much lower, underlining the digital divide between city-dwellers and people living in rural areas.

In 2017, adults living in cities were more likely (than people living elsewhere) to demonstrate an above basic level of skill when creating presentations or documents integrating text, pictures, tables or charts. This pattern was confirmed in 23 of the EU Member States: the five exceptions were Belgium, Luxembourg and Malta (which were also exceptions for overall digital skills), Latvia (where identical shares were recorded for adults living in cities and in towns and suburbs) and the United Kingdom. The gap between city-dwellers and adults living in rural areas for the share of adults demonstrating an above basic level of skill when creating presentations or documents integrating text, pictures, tables or charts was, on average, 12 pp in the EU-28; it reached 21 pp in Croatia and peaked at 28 pp in Finland.



Figure 9.2: People with basic or above basic digital skills, 2017
 (% share of people aged 16-74; during the 12 months preceding the survey, by degree of urbanisation)



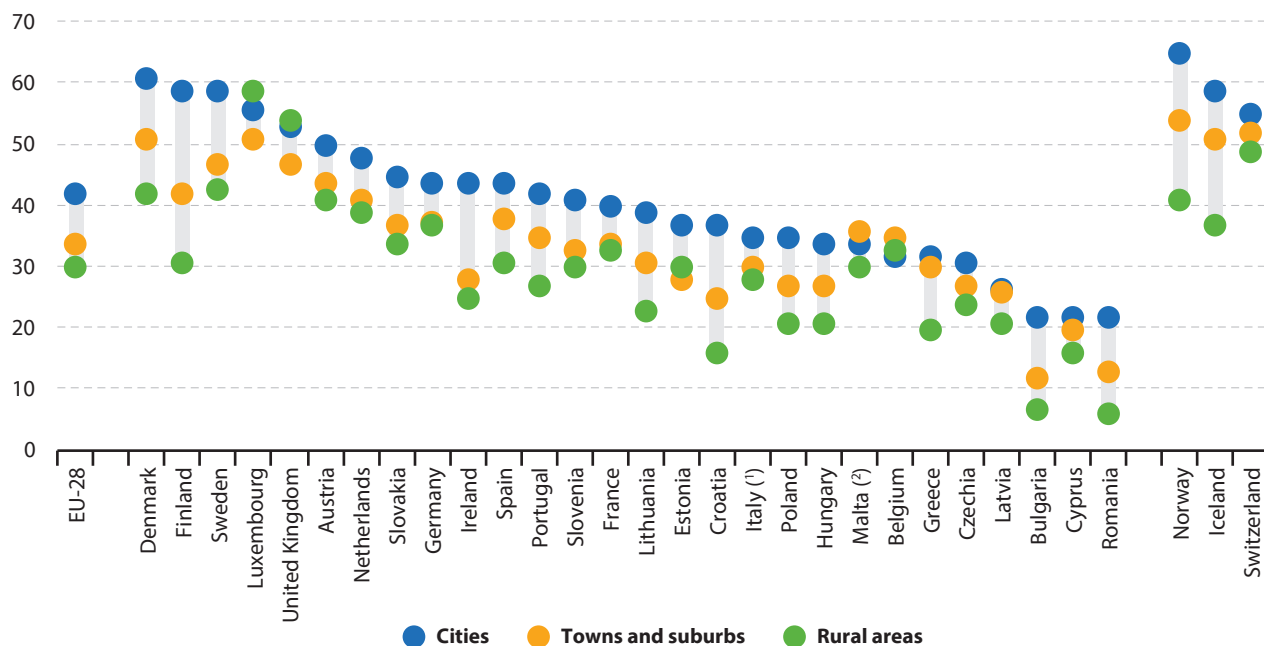
Note: ranked on cities. Basic and above basic digital skills are the two highest levels of skills (compared with low skills or no skills). The indicator presented is a composite indicator covering four different skills domains: information, communication, problem solving and software skills. Individuals with basic and above basic digital skills have at least a basic level of skills for one of these four domains and do not have no skills across all four domains.

(¹) Rural areas: low reliability.

(²) 2016.

Source: Eurostat (online data code: isoc_sk_dskl_i)

Figure 9.3: People who created presentations or documents integrating text, pictures, tables or charts, 2017
 (% share of people aged 16-74; during the 12 months preceding the survey, by degree of urbanisation)



Note: ranked on cities. Creating presentations and documents that integrate text, pictures, tables or charts demonstrates an above basic level of software skills.

(¹) 2016.

(²) Rural areas: low reliability.

Source: Eurostat (online data code: isoc_sk_cskl_i)

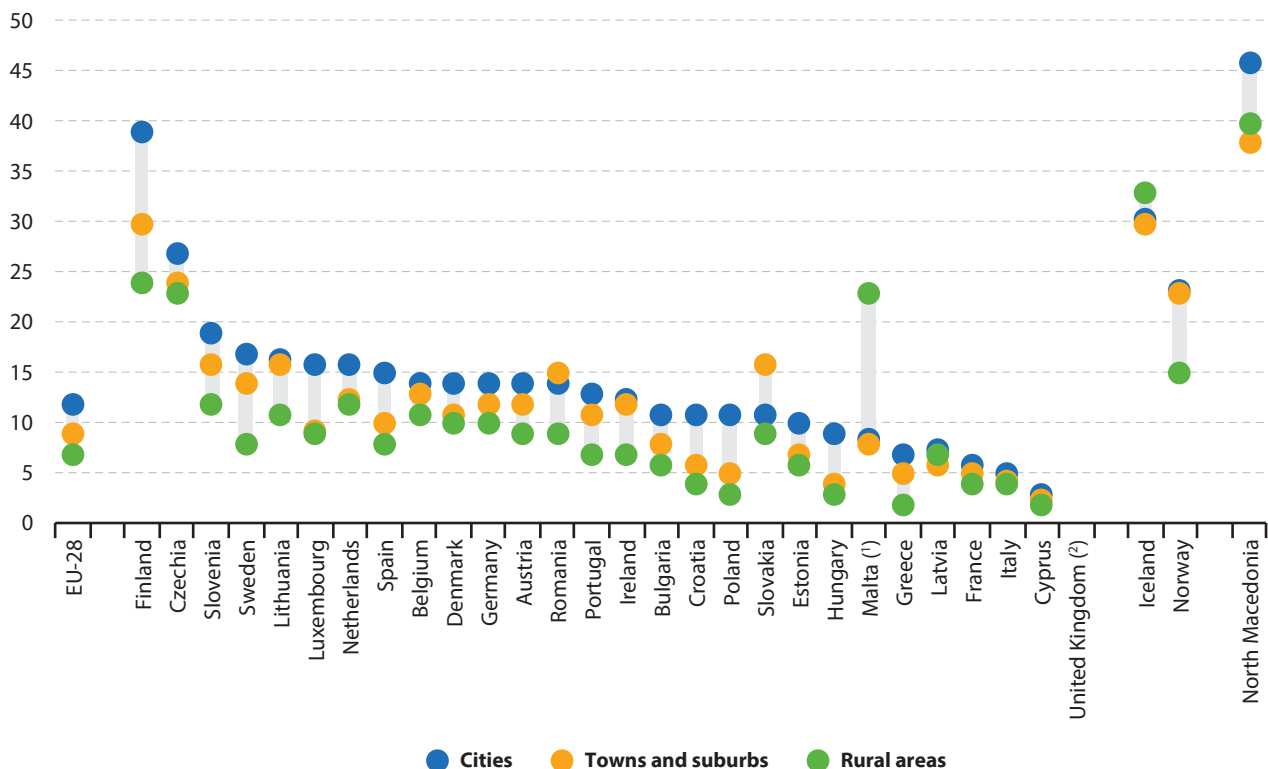
In addition to the analysis presented above for the level of digital skills, the closing focus of this chapter provides information on the share of adults (aged 16-74 years) who sought to improve their digital skills by carrying out free online training or self-study (as shown in Figure 9.4). In 2018, 12 % of adults living in cities across the EU-28 sought to do so, compared with fewer than 1 in 10 adults living in towns and suburbs (9 %) or rural areas (7 %).

Among the individual EU Member States (no data available for the United Kingdom), almost one third of all adults (32 %) in Finland and almost one quarter of all adults (24 %) in Czechia carried out free online training or self-study to improve their digital skills in 2018. Half (14) of the Member States reported that their share of adults who carried out free online training or self-study to improve their digital skills was within the range of 10-15 %, while there were five Member States where

this proportion was no higher than 5 %: Greece, France, Hungary, Italy and Cyprus (where the lowest share was recorded, at 3 %).

In 2018, adults living in cities were more likely (than those living elsewhere) to carry out free online training or self-study to improve their digital skills. This pattern was observed in 22 of the EU Member States, the six exceptions being: Ireland and Lithuania (where identical shares were recorded for adults living in cities and in towns and suburbs); Latvia (where identical shares were recorded for adults living in cities and in rural areas), Malta (note that the data for rural areas are of low reliability), Romania and Slovakia. In Finland, the share of adults living in cities and carrying out free online training or self-study to improve their digital skills was 15 pp higher than the corresponding share for adults living in rural areas, while the gaps recorded in Sweden (9 pp) and Poland (8 pp) were also relatively large.

Figure 9.4: People who carried out free online training or self-study to improve their digital skills, 2018
(%, share of people aged 16-74; during the 12 months preceding the survey, by degree of urbanisation)



Note: ranked on cities.

(1) Rural areas: low reliability.

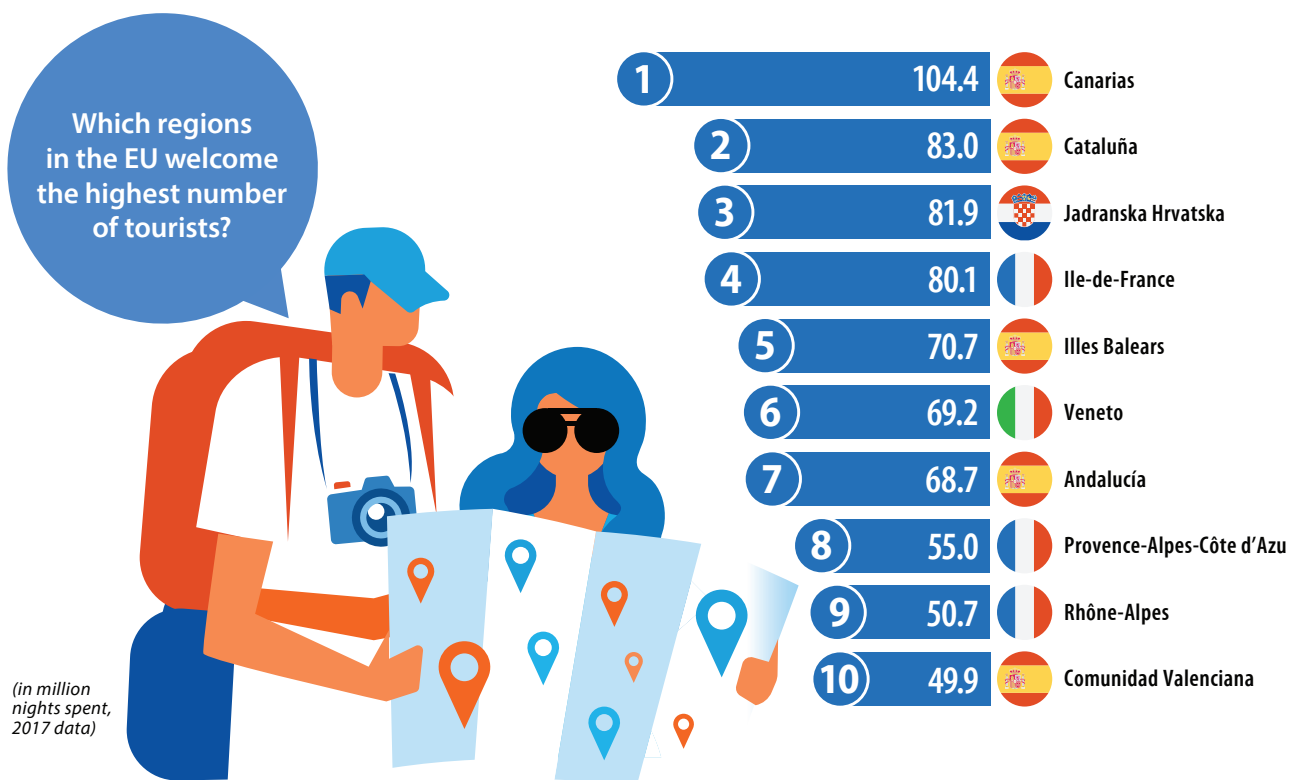
(2) Not available.

Source: Eurostat (online data code: isoc_sk_how_i)

10

Tourism





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 coastal, mountainous or outermost 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. However, (mass) tourism can have negative consequences, as excess demand puts a strain on local infrastructure and may be a nuisance to local communities, while increasing numbers of tourists may impact the environment locally (for example, noise, pollution, waste and wastewater, habitat loss) and globally (through transport-related emissions).

According to the [United Nations World Tourism Organisation \(UNWTO\)](#) publication, *Tourism highlights*, 2017 marked the most rapid growth in global tourist arrivals since 2010. [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 take their holidays in Europe.

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*; it concludes with a special focus on experimental statistics that seek to make use of new methods for producing detailed territorial information.



Number of overnight stays

The number of tourist nights spent (otherwise referred to as overnight stays) provides information relating to the total number of nights spent by all guests/tourists 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.

Figure 10.1 provides an analysis of the number of nights spent in tourist accommodation, by degree of urbanisation; the information presented covers both resident and non-resident tourists staying in all types of rented tourist accommodation. In 2017, the total number of nights spent in EU-28 tourist accommodation was relatively evenly distributed: the highest share was recorded for cities (37.7 %), while fewer nights were spent in towns and suburbs (32.2 %) and in rural areas (30.1 %).

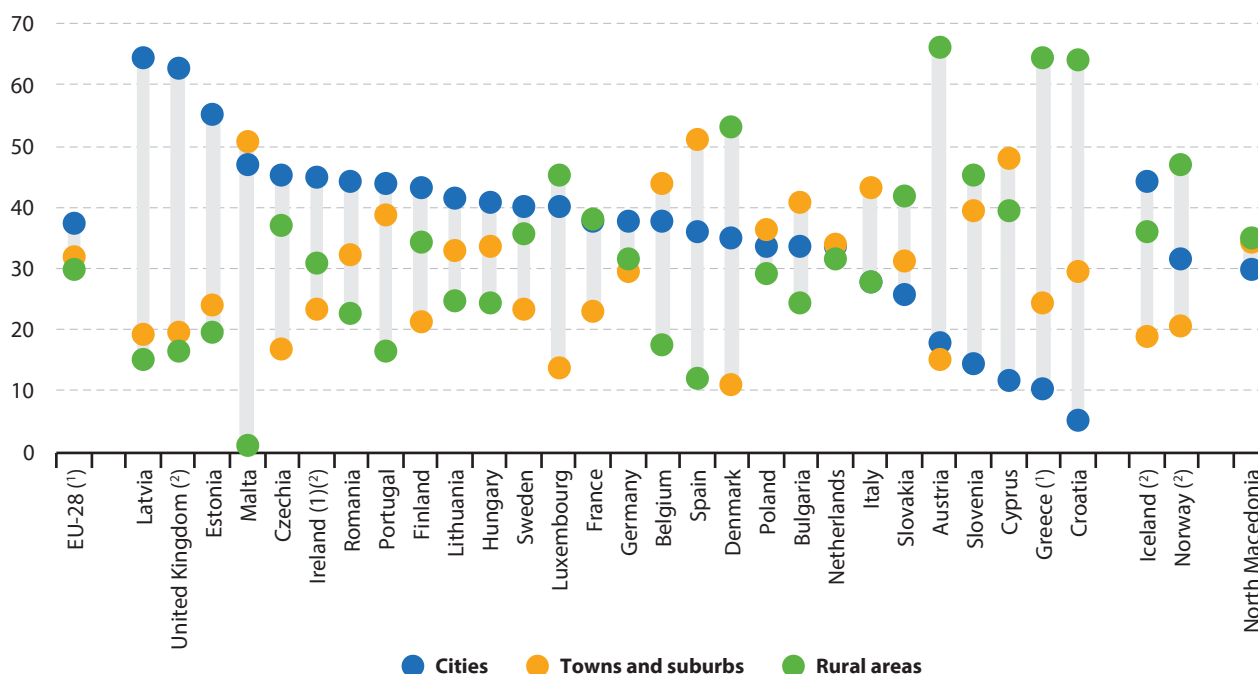
Cities were the most popular destination for tourists in 12 of the 28 EU Member States (see Figure 10.1): in 2017, they accounted for almost two thirds of the total nights spent in Latvia (64.9 %) and the United Kingdom

(63.2 %; 2016 data) and for more than half of the nights spent in another **Baltic Member State** — Estonia (55.7 %). By contrast, more than half of the tourist nights spent in Spain (51.4 %) and Malta (51.2 %) were in towns and suburbs, while an additional six Member States also reported that towns and suburbs were their most popular destination (although they did not account for an overall majority of tourist nights spent). In a similar vein, more than half of all tourist nights spent in Denmark (53.5 %) were in rural areas, with this share rising to almost two thirds in Croatia (64.6 %), Greece (64.8 %), and Austria (66.5 %) — those nights spent in Denmark, Greece and Croatia were in predominantly coastal regions, while those spent in Austria were in predominantly alpine regions.

In Bulgaria, coastal areas accounted for more than four out of five nights spent by non-residents, while the corresponding share among residents was just above one third

Coastal areas, from a statistical context, consist of **local administrative units or municipalities** that border the sea, or have at least half of their total surface area within 10 km of the sea. Note that five EU Member States —

Figure 10.1: Nights spent in tourist accommodation, 2017
(% share of total nights spent, by degree of urbanisation)



Note: ranked on cities.

(1) Estimates.

(2) 2016.

Source: Eurostat (online data code: tour_occ_ninatd)

Czechia, Luxembourg, Hungary, Austria and Slovakia — are landlocked (and are therefore have no coastline).

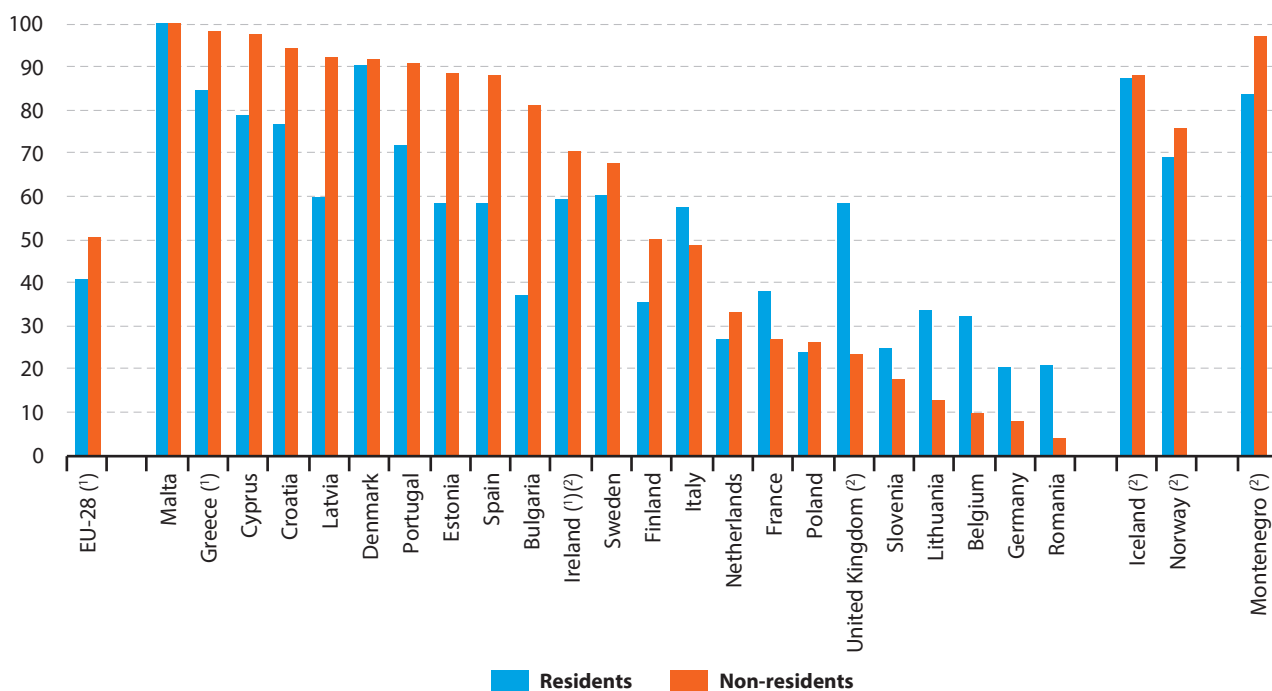
The beauty, culture and diversity of the EU's coastal areas have made them a preferred destination for many holidaymakers (both resident and non-resident). Increasing numbers of tourists have led to concerns around the sustainable development of coastal areas, especially those characterised by high-density building and expanding environmental footprints. In 2017, just over half (50.3 %) of the EU-28's tourist accommodation establishments were located in coastal areas, while their capacity — in terms of bed places — was somewhat lower, at 46.5 %.

In 2017, coastal areas accounted for 45.7 % of the total nights spent in EU-28 tourist accommodation. The inclination of holidaymakers to visit coastal areas was generally higher in southern EU Member States that are characterised by climatic conditions conducive to beach holidays. In 2017, coastal areas accounted for more than three quarters of the total nights spent in tourist accommodation across Malta, Cyprus, Greece, Croatia, Portugal and Spain; this was also the case in Denmark, Latvia and Estonia — where the capital cities lie within 10 km of the sea.

Figure 10.2 presents information on nights spent in coastal tourist accommodation, with an analysis for residents and non-residents. In 2017, approximately half (50.6 %) of the total nights spent by non-residents in the EU-28 were in coastal areas, while a greater proportion (59.1 %) of the nights spent by residents were in non-coastal areas — perhaps reflecting a higher proportion of nights spent by residents being linked to business travel or short-breaks in towns and cities.

In the popular southern holiday destinations of Greece, Cyprus, Portugal and Spain, non-residents were more likely (than residents) to visit coastal areas. In 2017, almost 9 out of every 10 (87.8 %) nights spent by non-residents in Spain were in coastal areas, whereas the corresponding share for residents was less than three fifths (58.5 %). A similar situation was observed in two popular eastern holiday destinations, Croatia and Bulgaria; the disparity between the shares for residents and non-residents was even greater in Bulgaria than in Spain, as 81.0 % of nights spent by non-residents in Bulgaria were in coastal areas, compared with 36.7 % for residents. By contrast, residents of the four largest EU Member States — United Kingdom (2016 data), Germany, France and Italy — were more inclined (than non-residents) to spend time in domestic coastal areas, as were residents of Belgium, Lithuania, Romania and Slovenia.

Figure 10.2: Nights spent in coastal tourist accommodation, 2017
(% of total nights spent, by residents and non-residents)



Note: ranked on the share of nights spent by non-residents in coastal tourist accommodation. Czechia, Luxembourg, Hungary, Austria and Slovakia, landlocked countries and therefore not shown.

(1) Estimates.

(2) 2016.

Source: Eurostat (online data code: [tour_occ_ninatc](#))

Having analysed the number of nights spent in tourist accommodation by degree of urbanisation and for coastal areas, the remainder of this chapter focuses on the more traditional territorial typology, namely, regional statistics based on NUTS.

The three most popular tourist destinations in the EU were Canarias and Cataluña in Spain and the Adriatic coastal region of Jadranska Hrvatska in Croatia

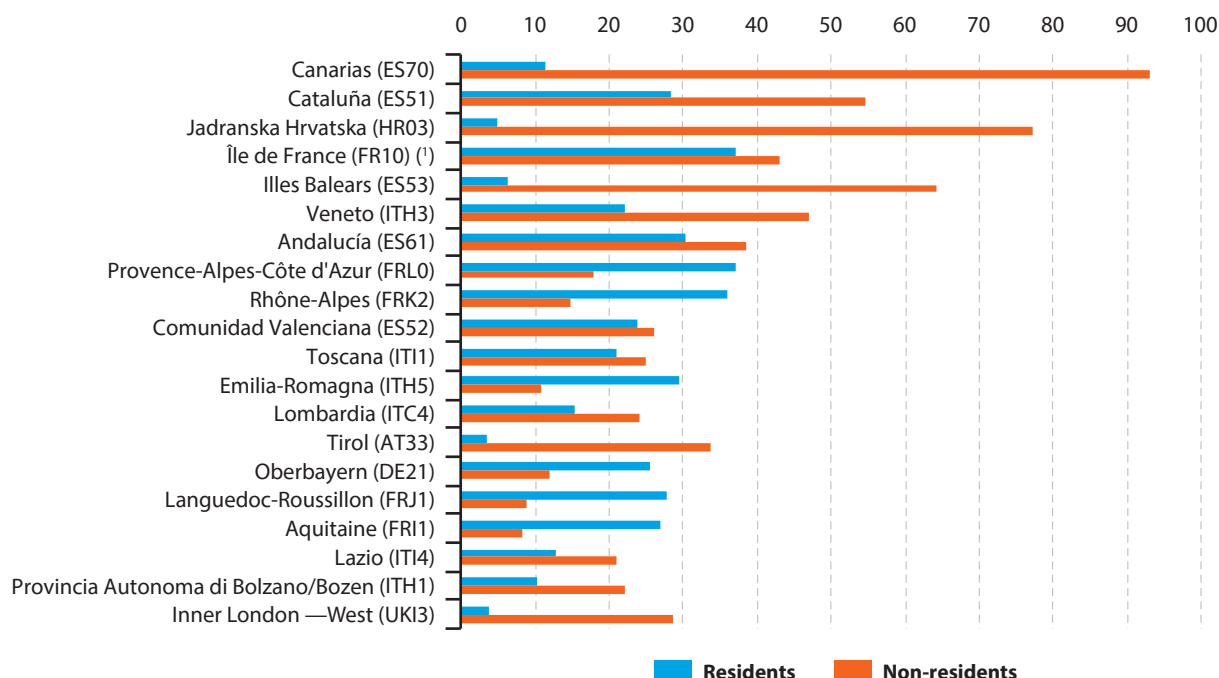
The top 20 tourist regions in the EU — in terms of nights spent in tourist accommodation by resident and international tourists in NUTS level 2 regions — are shown in Figure 10.3. The ranking for 2017 was dominated by coastal regions: the highest number of nights spent in tourist accommodation was recorded in the Spanish island destination of Canarias (104.4 million), followed by Cataluña (also Spain; 83.0 million nights spent) and the Adriatic coastal region of Jadranska Hrvatska (Croatia; 81.9 million nights spent).

International (non-resident) tourists accounted for a majority of the nights spent in many of the EU's most popular tourist destinations. This was most notably the case in Jadranska Hrvatska — where almost 19 out of

every 20 nights spent in rented tourist accommodation (94.2 %) were attributed to non-residents — as well as Illes Balears (Spain; 91.0 %), Tirol (Austria; 90.5 %), Canarias (89.1 %) and Inner London — West (88.9 %). These regions characterised by their high number of international tourists may face considerable pressures in terms of the environment and sustainability, especially as most non-resident tourists tend to travel during high/peak seasons.

By contrast, national residents accounted for a majority of the nights spent in 6 out of the 20 most popular tourist regions in the EU. Four of these were located in the southern half of France — Provence-Alpes, Rhône-Alpes, Languedoc-Roussillon and Aquitaine — underlining that a relatively high proportion of French tourists holiday in their own country. This was most notably the case in Aquitaine and Languedoc-Roussillon, where the number of nights spent by French residents was more than three times as high as that recorded for international tourists. The other two regions (among the top 20) where the number of nights spent by residents outnumbered that for international tourists were the northern Italian region of Emilia-Romagna and the southern German region of Oberbayern.

Figure 10.3: Top tourist regions in the EU, 2017
(million nights spent in tourist accommodation, by NUTS 2 regions)



Note: ranked on the total number of nights spent (residents and non-residents combined). Ireland: national data. Ireland and the United Kingdom, 2016. Eastern Scotland (UKM7), West Central Scotland (UKM8) and Southern Scotland (UKM9): not available.

(*) Low reliability.

Source: Eurostat (online data code: [tour_occ_nin2](#))



Tourism pressures in the EU were largely concentrated in coastal regions (principally, but not exclusively, in the Mediterranean), Alpine regions, and (capital) city regions

Map 10.1 extends the analysis of the total number of nights spent by residents and non-residents in tourist accommodation to all NUTS level 2 regions. In 2017, an estimated 3.2 billion nights were spent in EU-28 tourist accommodation; this marked a 4.3 % increase when compared with a year before, continuing a pattern of steady annual increases since 2009. The number of nights spent by inbound international (non-resident) tourists grew at a faster pace than the number of nights spent by domestic (resident) tourists in recent years; by 2017, their numbers were almost balanced, as non-resident tourists accounted for 49.1 % of the total nights spent in the EU-28.

In 2017, at least 15.0 million nights were spent by residents and non-residents in tourist accommodation across 55 out of the 276 NUTS level 2 regions for which data are available (as shown by the darkest shade in Map 10.1). By contrast, most of the EU regions with relatively low numbers of nights spent could be characterised as rural regions (for example, parts of mainland Greece or eastern Poland).

Aside from the top 20 tourist regions — already shown in Figure 10.3 — there were four more regions where the total number of nights spent was 30.0 million or more: the German capital city region of Berlin; Ireland (2016 data), only national data available; the Dutch capital city region of Noord-Holland; Inner London — East (in the United Kingdom), which joined its neighbouring capital city region of Inner London — West.

Outside the EU (but among the non-member countries shown in Map 10.1), there were three statistical regions which recorded at least 15.0 million nights spent in tourist accommodation, all of which were located in Turkey (2016 data): Antalya, Isparta, Burdur (56.9 million); İstanbul (15.4 million); Aydın, Denizli, Muğla, which includes the coastal resorts of Bodrum and Marmaris (15.3 million).

Tourism pressures were compounded by a lack of space in many capital city regions

Since the advent of mass tourism in the 1950s and 1960s, EU regions have been affected by tourism in different ways: while some regions continue to receive very few visitors, others have seen their numbers of tourists grow considerably; while some regions receive a steady flow of tourists year-round, many others receive the vast majority of their visitors during a single season.

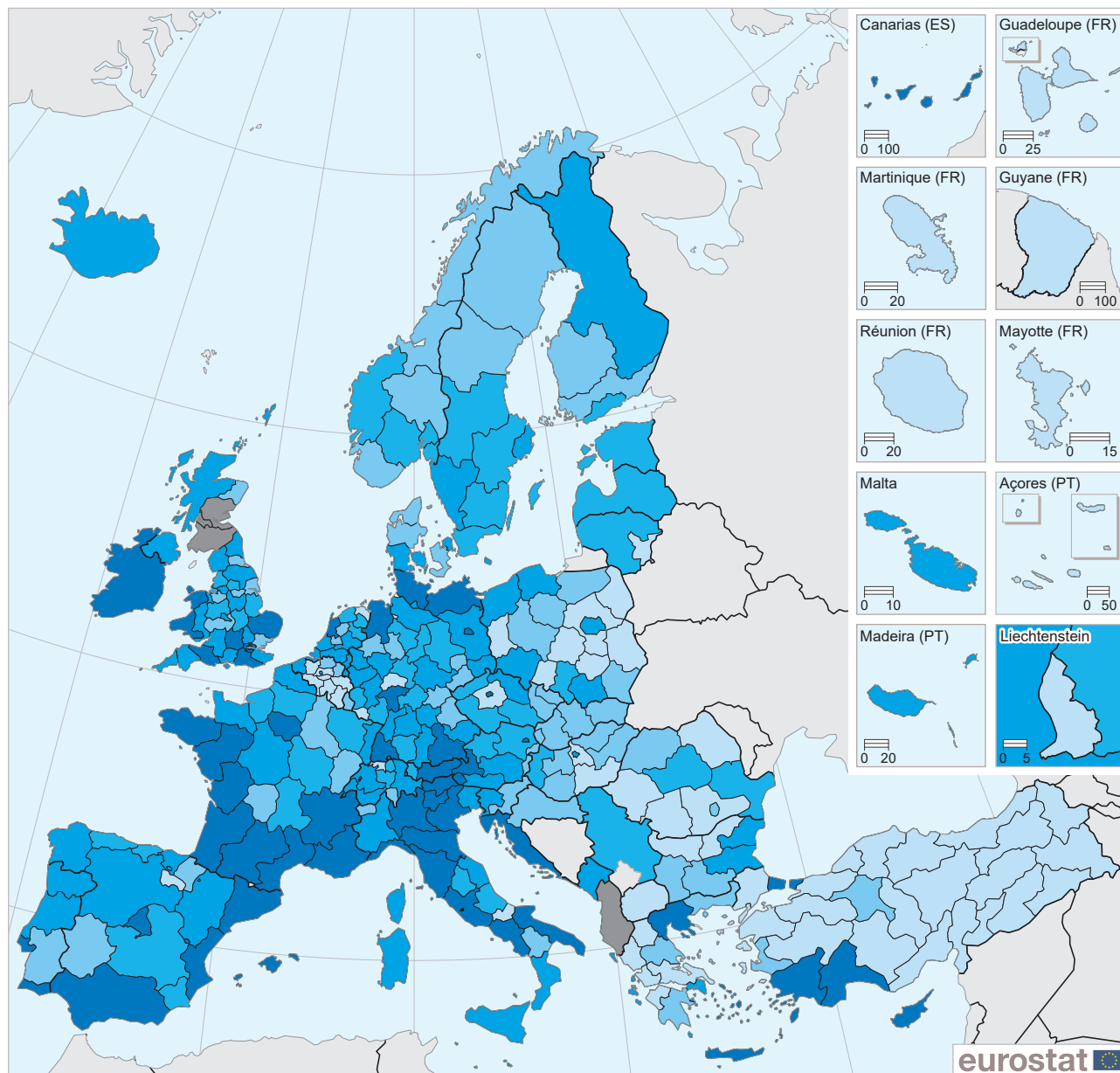
Sustainable tourism involves the preservation and enhancement of cultural and natural heritage, including the arts, gastronomy or the preservation of biodiversity. The success of tourism is, in the long-term, closely linked to its sustainability, with the quality of destinations often influenced by their natural and cultural environment and/or integration into the local community.

Tourism density — defined here as the relationship between the total number of nights spent and the total area of each region — provides one measure that may be used to analyse sustainability issues. In 2017, tourism density in the EU-28 averaged 708 nights spent per square kilometre (km²). Map 10.2 shows that tourism density usually peaked in those regions where space was at a premium: capital city regions, other major metropolitan regions, and some coastal (particularly island) regions. By contrast, tourism density was often quite low in eastern and northern regions of the EU.

In 2017, regional tourism density was above 10 000 nights spent per km² in 15 different NUTS level 2 regions of the EU (as shown by the darkest shade of blue in Map 10.2). By far the highest tourism density ratios were recorded in four out of the five capital city regions in the United Kingdom (2016 data), with the highest ratio in Inner London — West (288 015 overnight stays per km²). The next highest ratios — within the range of 30 000–40 000 overnight stays per km² — were also recorded in capital city regions, namely those of: Belgium, Czechia, Germany, Malta (a single region at this level of detail) and Austria, as well as the fifth capital city region in the United Kingdom, Outer London — West and North West (2016 data).



Map 10.1: Nights spent in tourist accommodation, 2017
 (million nights spent by residents and non-residents in tourist accommodation, by NUTS 2 regions)



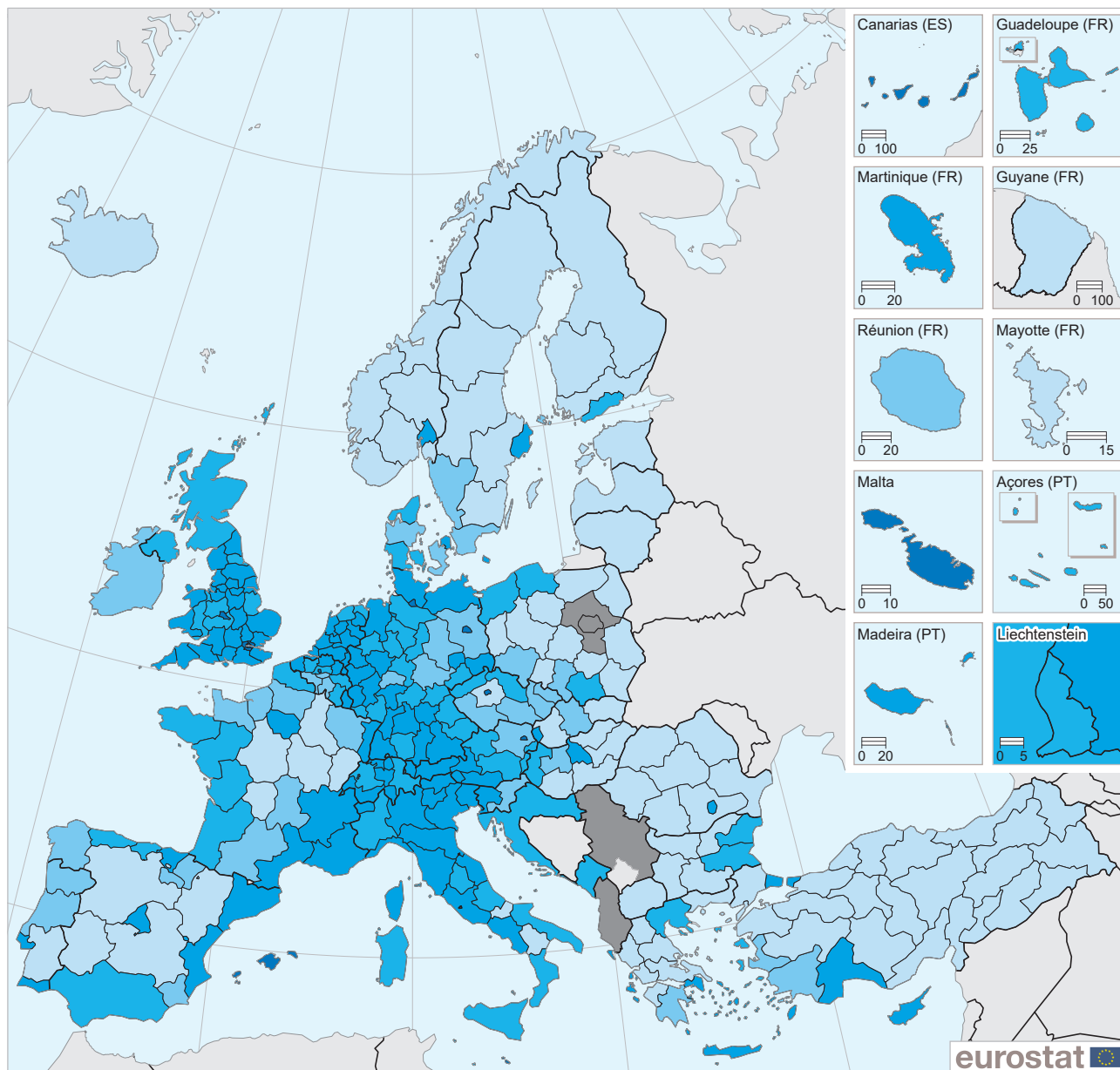
- EU-28 = 3 184
- < 2.5
- 2.5 - < 5.0
- 5.0 - < 7.5
- 7.5 - < 15.0
- ≥ 15.0
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
 Cartography: Eurostat — GISCO, 05/2019

Note: Ireland and Serbia, national data. Ireland, the United Kingdom, Iceland, Norway, Switzerland, Montenegro and Turkey: 2016. Serbia: 2015. EU-28, Ireland and Greece: estimates. Île de France (FR10), Centre — Val de Loire (FRB0), Franche-Comté (FRC2), Basse-Normandie (FRD1), Nord-Pas de Calais (FRE1), Alsace (FRF1), Lorraine (FRF3), Poitou-Charentes (FRI3), Auvergne (FRK1), Guadeloupe (FRY1), Martinique (FRY2), Guyane (FRY3) and Zürich (CH04): low reliability.

Source: Eurostat (online data code: tour_occ_nin2)

Map 10.2: Nights spent in tourist accommodation relative to total area, 2017
 (nights spent by residents and non-residents in tourist accommodation per km², by NUTS 2 regions)



eurostat

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
 Cartography: Eurostat — GISCO, 05/2019

EU-28 = 708

- < 250
- 250 - < 500
- 500 - < 1 000
- 1 000 - < 10 000
- ≥ 10 000
- Data not available

0 200 400 600 800 km

Note: Közép-Magyarország (HU1) and Scotland (UKM), NUTS level 1. Ireland and Lithuania: national data. Ireland, France, Łódzkie (PL71), Świętokrzyskie (PL72), Lubelskie (PL81), Podkarpackie (PL82), Podlaskie (PL84), the United Kingdom, Iceland, Norway, Switzerland, Montenegro and Turkey: 2016. Ireland and Greece: estimates. Île de France (FR10), Centre — Val de Loire (FRB0), Franche-Comté (FRC2), Basse-Normandie (FRD1), Alsace (FRF1), Lorraine (FRF3), Poitou-Charentes (FRJ3), Auvergne (FRK1), Guadeloupe (FRY1), Martinique (FRY2), Guyane (FRY3) and Zürich (CH04): low reliability.

Source: Eurostat (online data code: tour_occ_nin2)



Some of the highest levels of tourism intensity were recorded in island and mountainous regions

Tourism intensity — defined here as the total number of nights spent in tourist accommodation per 1 000 inhabitants — provides an alternative measure for analysing tourism pressures. In 2016, there were 5 985 nights spent in EU-28 tourist accommodation establishments per 1 000 inhabitants (in other words, an average of almost six nights per inhabitant). Tourism intensity was at least five times as high as the EU-28 average in 13 different NUTS level 2 regions — the vast majority of which were island or mountainous regions, for example: three island regions in Greece — Notio Aigaiο, Ionia Nisia and Kriti; two island regions in Spain — Illes Balears and Canarias; two mountainous regions in Italy — Provincia Autonoma di Bolzano/Bozen and Provincia Autonoma di Trento; and two Alpine regions in Austria — Tirol and Salzburg.

A high share of the most rapid growth rates for nights spent in tourist accommodation were recorded in capital city and metropolitan regions

Map 10.3 presents an analysis based on the average annual change in the total number of nights spent in tourist accommodation during the period 2007-2017. Across the EU-28, the total number of nights spent by residents and non-residents rose, on average, by 3.1 % per annum. Relatively high growth rates were recorded in the [Baltic Member States](#), Slovenia and Croatia, as well as the vast majority of regions in Bulgaria, Greece, Hungary, Poland and the United Kingdom. By contrast, there was a slower than average pace to developments in most of the [Benelux](#) regions, as well as much of Czechia, Germany, Spain, Italy, Austria, Romania, Slovakia and Sweden; below average change was also

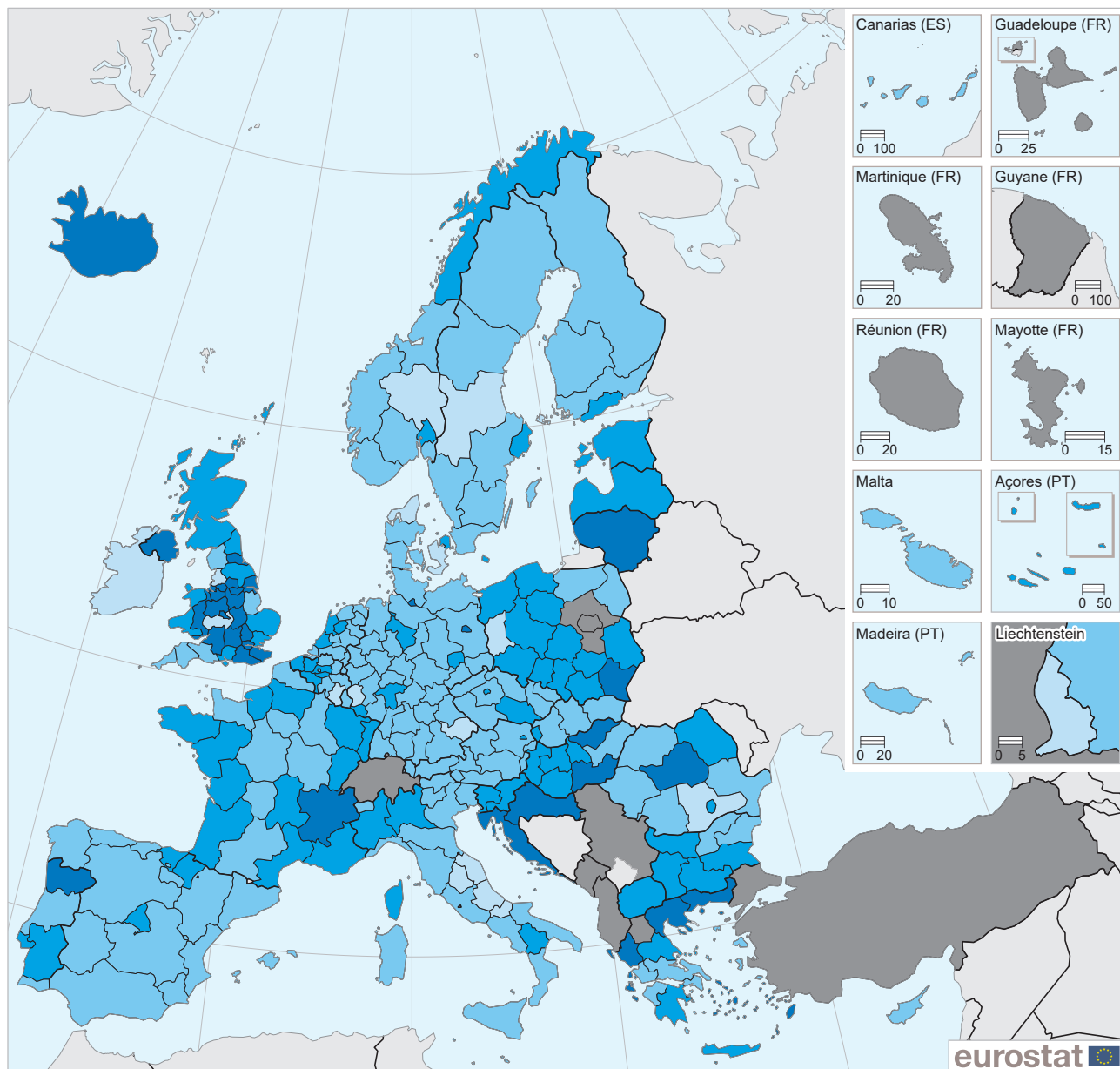
recorded in Ireland (national data), Cyprus and Malta (both single regions at this level of detail).

In 35 out of 259 regions for which data are available across the EU, the number of nights spent in tourist accommodation grew by at least 6.0 % per annum during the period 2007-2017 (as shown by the darkest shade of blue in Map 10.3). It is interesting to note that:

- many of the regions with the fastest growth rates were either capital city or metropolitan regions — for example, the number of nights spent in Hamburg and Berlin rose at a faster pace than in any other region of Germany, while Norte (that includes Porto) recorded the highest growth rate in Portugal;
- among the top 20 tourist regions in the EU (as shown in Figure 10.3), the number of nights spent in tourist accommodation only increased at a faster pace than the EU-28 average in:
 - four French regions — Rhône-Alpes, Aquitaine, Provence-Alpes-Côte d'Azur and Languedoc-Roussillon;
 - Jadranska Hrvatska in Croatia;
 - Lombardia in Italy;
 - London (growth rate only available for London as a whole, NUTS level 1).

By contrast, the overall number of nights spent in tourist accommodation fell in 16 out of 259 regions between 2007 and 2017. The average decline in the number of nights spent was more than 1.0 % per annum in seven of these: Sjælland and Nordjylland (in Denmark); Ireland (2008-2016), only national data available; four regions in Italy — Umbria, Abruzzo, Marche and Molise — the latter recording the biggest contraction for any region in the EU (down 4.0 % per annum).

Map 10.3: Average annual rate of change in nights spent in tourist accommodation, 2007-2017
(%, by NUTS 2 regions)

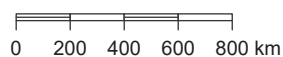


EU-28 = 3.1

- < 0
- 0 - < 3
- 3 - < 6
- ≥ 6

Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 06/2019



Note: Közép-Magyarország (HU1), London (UKI) and Scotland (UKM), NUTS level 1. Ireland and Lithuania: national data. Ireland: 2008-2016. Voreio Aigaio (EL41): 2009-2017. The United Kingdom, Iceland and Norway: 2007-2016. North Macedonia: 2008-2017. EU-28, Ireland and Greece: estimates. Ireland, Île de France (FR10), Centre — Val de Loire (FRB0), Franche-Comté (FRC2), Basse-Normandie (FRD1), Nord-Pas de Calais (FRE1), Alsace (FRF1), Lorraine (FRF3), Poitou-Charentes (FRI3) and Auvergne (FRK1): low reliability. Ireland, Croatia, Latvia, Lithuania, Luxembourg, Hungary, the Netherlands, Romania and the United Kingdom: break(s) in series.

Source: Eurostat (online data code: [tour_occ_nin2](#))



Experimental statistics: increased geographical granularity for tourism accommodation data

The bulk of the statistics presented in this chapter for nights spent in tourism accommodation are based on regular reporting by accommodation establishments to national statistical authorities. The latter transmit their data, annually, to Eurostat with a regional breakdown at NUTS level 2. As of 2021, similar data will be transmitted at the more detailed territorial level of NUTS 3. However, in the meantime alternative sources and methods are being explored for producing much more detailed geographical information.

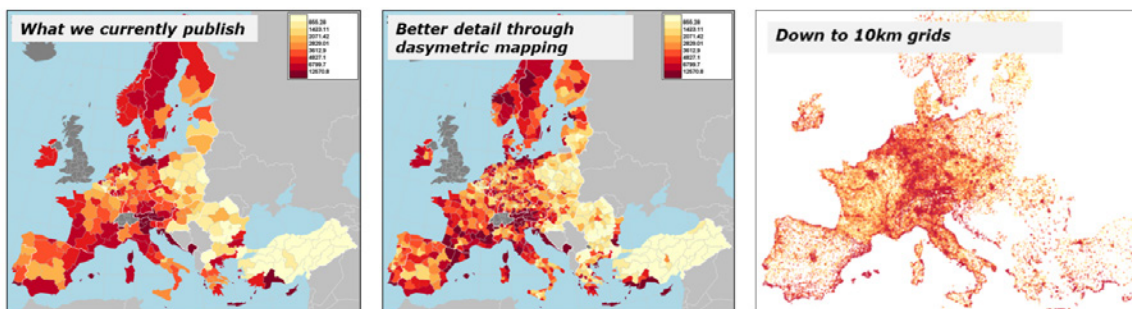
Tourism is predominantly a local or regional phenomenon. Data currently available at a national level and for NUTS level 2 regions cannot provide the necessary level of detail for monitoring the sustainability of tourism, which requires information for smaller areas to enable an analysis of the impact of tourists vis-à-vis the number of permanent inhabitants; this is equally true if monitoring the impact of tourism on various environmental issues, such as water shortages or waste treatment.

Using a technique called dasymetric mapping, geospatial data — in this case, points of interest on GPS navigational devices — is used as auxiliary information to redistribute the total number of nights spent in tourist accommodation at more detailed geographical levels. The three maps below illustrate the potential added value of these experimental statistics (data refer to 2015; note there is no information available for the United Kingdom):

- Map 10.4a shows the level of detail currently available (NUTS level 2 regions);
- Map 10.4b shows the additional detail that may be obtained from experimental statistics (NUTS level 3 regions); note, for instance, the improved granularity (detail) in Andalusia (Spain) or the identification of tourism hotspots in Sicily (Italy);
- Map 10.4c is based on 10 kilometre square (10 km²) grids and provides a level of detail that is closer to that often requested by users — namely, individual destinations. It allows tourism hotspots in and around capital city regions to be identified, as well as coastal tourism or tourism activity in river valleys (for example, the Loire or Rhône valleys in France). The latter is of particular interest, insofar as rivers often serve as administrative borders, whereby traditional data sources fail to capture concentrations of tourism, as results are usually fragmented (split between two or more administrative regions).

These data are of a very explorative nature and have yet to be published by Eurostat. However, during the course of 2019, they will be loaded onto the Eurostat website and included under a section on [experimental statistics](#).

Maps 10.4a-c: Geographical granularity of data for nights spent in tourist accommodation, 2015



Note: United Kingdom, not available

Source: Eurostat

11

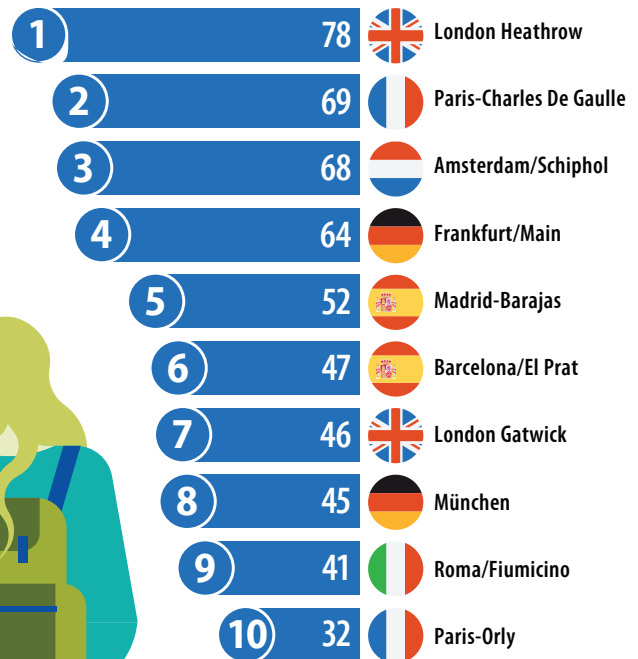
Transport



Which airports in the EU have the highest number of passengers?



(in million passengers; arrivals and departures, 2017 data)



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 air and road transport; note that information on other transport modes, such as maritime services, were covered in a [previous edition](#) and will feature again in the 2020 edition. The first part of the chapter provides a regional analysis for air passenger and freight transport while the second part focuses on road transport: the number of passenger cars relative to the total number of inhabitants (the motorisation rate), road fatalities, and road freight transport.



Air passenger transport

The rapid growth of air passenger transport has been one of the most significant developments in transport services in recent years, both in the EU and the rest of the world. These rapid changes have, at least in part, been driven by liberalisation measures covering, for example, air carrier licensing, market access and fares. These measures have led (in particular) to the growth of low-cost airlines and an expansion of smaller regional airports which are generally less congested and charge lower landing fees than main international airports.

The 26 NUTS level 2 regions which reported at least 20 million air passengers in 2017 (as shown by the largest circles on Map 11.1) were located exclusively in the Member States that were already part of the EU prior to 2004. The regions with the highest numbers of air passengers in the EU unsurprisingly reflected the locations of some of the busiest airports. The peak value for passenger numbers was recorded in the French capital city region, Île de France, with 101.5 million passengers. This was followed by Outer London — West and North West, Noord-Holland and the German region of Darmstadt with between 64.4-78.0 million passengers; Darmstadt includes Frankfurt/Main airport. Note that the two main airports in Paris — Charles De Gaulle and Orly — are both located within the Île de France, whereas there were several major capital city airports that were located outside of the administrative boundaries that delineate their capital city, for example, London Gatwick and London Stansted are situated in Surrey, East and West Sussex (45.5 million passengers) and in Essex (27.0 million passengers) respectively, while Brussels airport is situated in Prov. Vlaams-Brabant (24.8 million passengers) and Wien-Schwechat airport is situated in Niederösterreich (24.3 million passengers).

The highest numbers of air passengers relative to population were often recorded in sparsely populated island regions that are tourist destinations or in or near capital city regions

Map 11.1 also provides information concerning the ratio of air passengers to the number of inhabitants; this indicator may be used to analyse environmental pressures associated with a high number of flights/air passengers. There were 20 NUTS level 2 regions in the EU which recorded an average ratio of at least 8.0 air passengers per inhabitant in 2017 (as shown by the darkest shade of green). This ratio peaked at 24.9 per inhabitant in Outer London — West and North West (the region with the second highest number

of passengers). The next three highest ratios were recorded in relatively sparsely populated island regions that are tourist destinations, namely Notio Aigaio and Ionia Nisia (both in Greece) and Illes Balears (Spain), with 16.9-22.2 air passengers per inhabitant. The fifth and sixth highest ratios were again recorded in regions with high passenger numbers, namely Noord-Holland and Prov. Vlaams-Brabant. Overall, 7 out of these 20 regions were capital city regions and 15 were coastal regions (eight of which were island regions).

Air freight transport

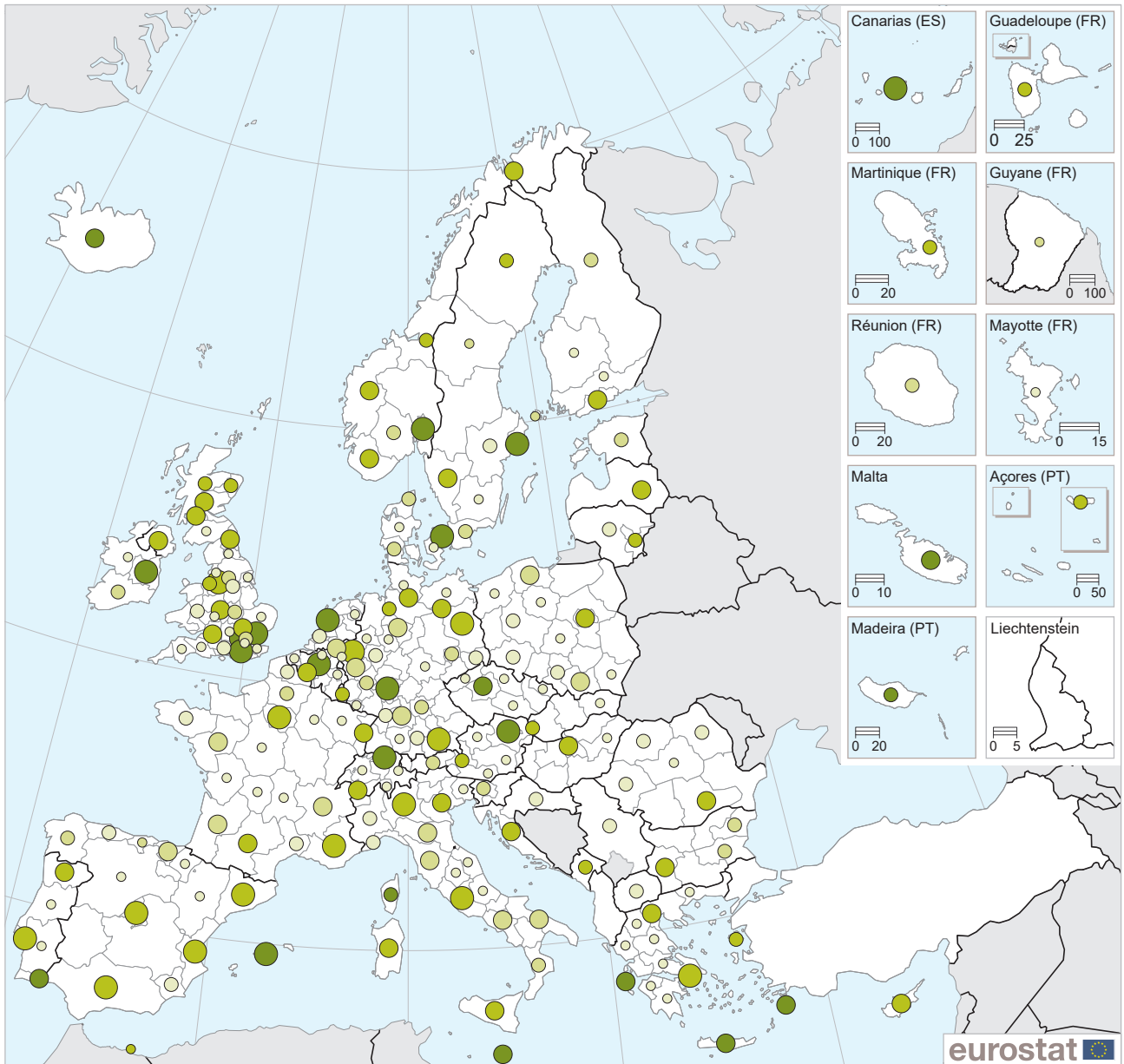
The air freight sector is cyclical and largely dependent on global economic conditions and the level of world trade; its business model is driven by the increasing demand for rapid deliveries and associated logistical services. With a considerable fall in the price of oil during 2015, cargo carriers and their customers transporting goods by air faced lower costs, with air freight becoming more competitive against shipping (which dominates freight transport markets, especially for heavy, bulky goods of relatively low value).

The total quantity of air freight and mail in the EU-28 reached 16.3 million tonnes of goods loaded and unloaded in 2017. The 37 NUTS level 2 regions which reported at least 50 000 tonnes of air freight in 2017 (as shown by the largest circles on Map 11.2) were located mainly in the Member States that were already part of the EU prior to 2004, along with the capital city regions of Czechia, Hungary and Poland. The four regions with the highest quantity of air freight carried were the same as for the number of air passengers: Ile-de-France, Darmstadt, Outer London — West and North West and Noord-Holland. The peak value — in the French capital city region — was 2.3 million tonnes.

The highest quantities of air freight and mail relative to population size were in or near capital and other large cities in western parts of the EU

Like the previous map, Map 11.2 also provides information concerning the ratio of air freight to the number of inhabitants. There were 10 NUTS level 2 regions in the EU which recorded an average ratio of at least 100 kg of air freight per inhabitant in 2017 (as shown by the darkest shade of green). This ratio peaked at 995 kg per inhabitant in Luxembourg. The remaining nine regions were distributed as follows: three regions from Germany; two regions from each of Belgium and the United Kingdom; the capital city regions of France and the Netherlands.

Map 11.1: Number of air passengers carried (arrivals and departures), 2017
(passengers per inhabitant and thousand passengers, by NUTS 2 regions)



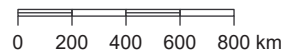
Average number of passengers per inhabitant
EU-28 = 2.0

- < 1
- 1 - < 2
- 2 - < 8
- ≥ 8

Number of passengers (thousands)
EU-28 = 1 043 137

- < 1 000
- 1 000 - < 5 000
- 5 000 - < 20 000
- ≥ 20 000

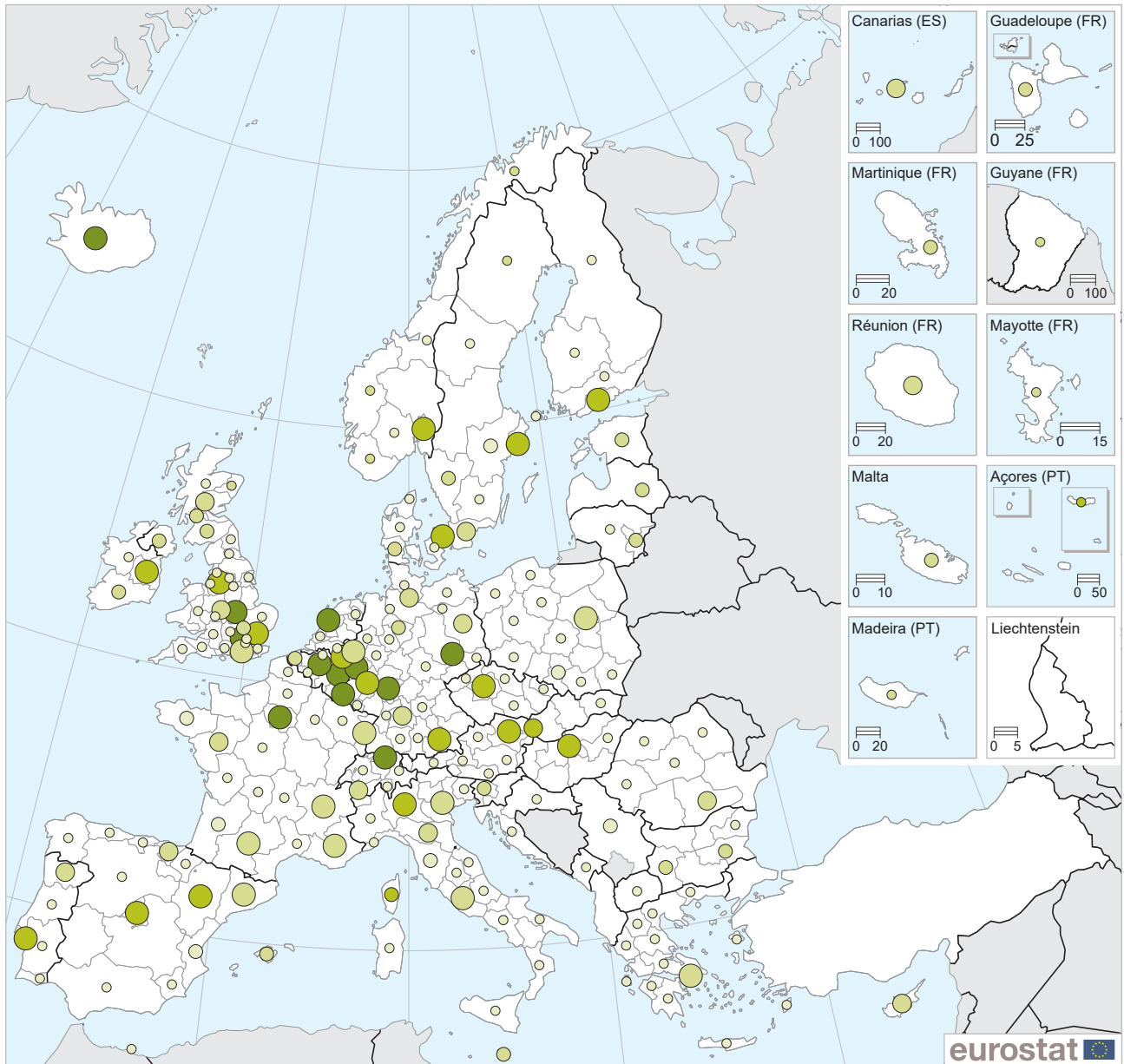
Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019



Note: Serbia, national data. Schleswig-Holstein (DEF0), Champagne-Ardenne (FRF2), Herefordshire, Worcestershire and Warwickshire (UKG1), Kent (UKJ4) and Serbia: 2016. Comunidad Foral de Navarra (ES22): 2015.

Source: Eurostat (online data codes: tran_r_avpa_nm, avia_paoc and demo_r_d2jan)

Map 11.2: Air freight and mail (loaded and unloaded), 2017
(kg per inhabitant and thousand tonnes, by NUTS 2 regions)



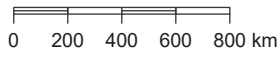
Average freight and mail per inhabitant (kg)
EU-28 = 31.9

- < 5
- 5 - < 25
- 25 - < 100
- ≥ 100

Quantity of freight and mail (thousand tonnes)
EU-28 = 16 315

- < 10
- 10 - < 25
- 25 - < 50
- ≥ 50

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019



Note: Serbia, national data. Schleswig-Holstein (DEF0), Champagne-Ardenne (FRF2), Herefordshire, Worcestershire and Warwickshire (UKG1), Kent (UKJ4) and Serbia: 2016. Comunidad Foral de Navarra (ES22): 2015.
Source: Eurostat (online data codes: tran_r_avgo_nm, avia_gooc and demo_r_d2jan)

Airports

Figure 11.1 presents information relating to the top 20 passenger airports in the EU, as measured by the total number of passengers carried (arrivals plus departures); note the statistics presented provide a single count of passengers on each flight (with a unique flight number), irrespective of its individual stages. Using this measure, London Heathrow (in the United Kingdom) was the busiest airport in the EU with a total of 78.0 million passengers carried in 2017. There were three other airports which carried more than 60 million passengers the same year (all of which act as hubs): Paris-Charles de Gaulle (France), Amsterdam/Schiphol (the Netherlands) and Frankfurt/Main (Germany).

The seven airports that appear in the top 20 ranking for passengers but not in the ranking for freight and mail (see Figure 11.2) were: Stockholm/Arlanda (Sweden), Paris-Orly (France), Palma de Mallorca (Spain), Manchester, London Gatwick (both the United Kingdom), Lisboa (Portugal) and Düsseldorf (Germany); some of these airports are in popular tourist destinations and others are predominantly used for package holidays.

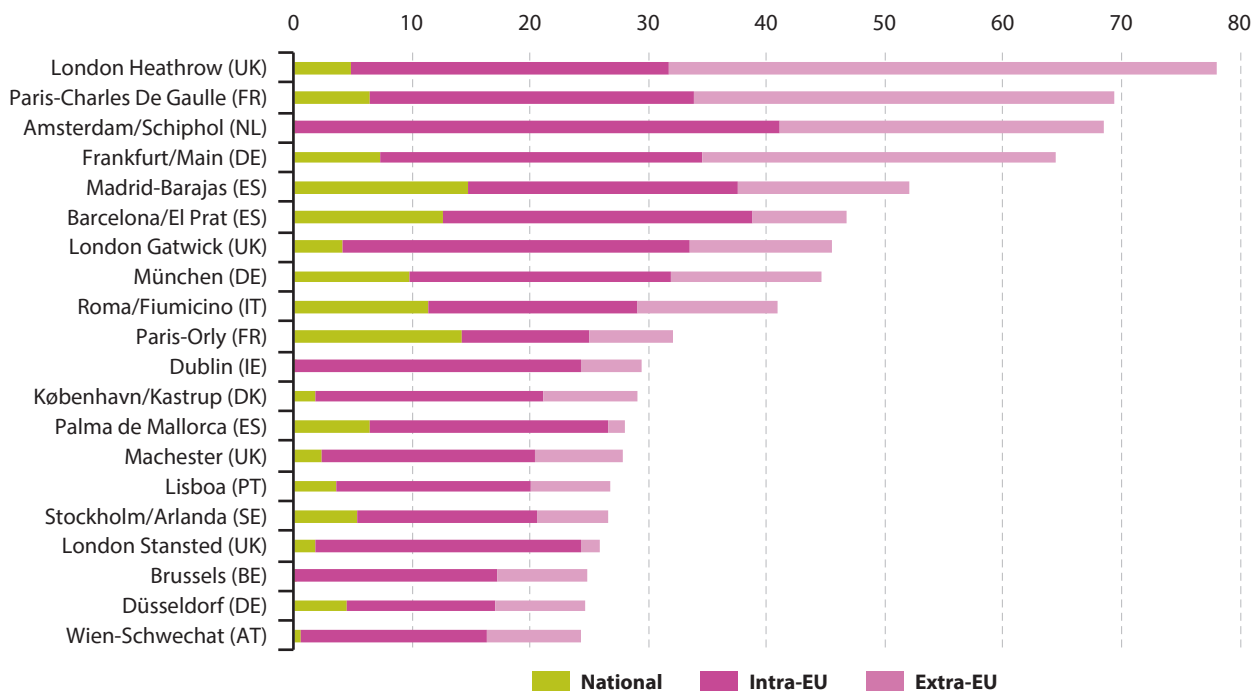
A high proportion of the passengers using the largest airports in the EU were carried to medium and long-haul destinations

In 2017, a total of 809 million passengers passed through the top 20 EU airports, approximately half (48.8 %) of

the total number of air passengers that were carried through all airports in the EU-28. Given their size, choice of destinations, and prestige as headquarters for large international carriers, it is perhaps unsurprising that passengers using these 20 airports had a much higher propensity to travel to medium or long-haul destinations: the top 20 airports accounted for more than two thirds (70.3 %) of the total number of EU-28 passengers arriving from/departing to destinations that were outside the EU. By contrast, their share of the total number of passengers on flights to/from other EU Member States was close to half (46.1 %), while this share was just under a third (32.4 %) for passengers travelling on national flights; for the latter there was a much higher degree of competition from regional and local airports.

In 2017, more than half of the passengers carried through London Heathrow (59.3 %) and Paris-Charles de Gaulle (51.2 %) were arriving from/destined to airports in non-member countries. By contrast, extra-EU arrivals/departures accounted for less than 10 % of the total number of passengers that passed through London Stansted (6.1 %) or Palma de Mallorca (4.8 %) airports. Paris-Orly stood out as more than two fifths (44.3 %) of its passengers in 2017 were travelling on national flights; the next highest share for national passengers was recorded for Madrid-Barajas (28.3 %). In the majority of the top 20 airports, intra-EU (but not national) flights accounted for more than half of all passengers, this share peaking in London Stansted at 87.2 %.

Figure 11.1: Top 20 EU airports for air passengers carried (arrivals and departures), 2017
(million passengers)



Source: Eurostat (online data code: [avia_tf_ala](#))



The busiest cargo airports in the EU were generally located within close proximity of a large population base and highly developed transport infrastructures; several were hubs for courier activities

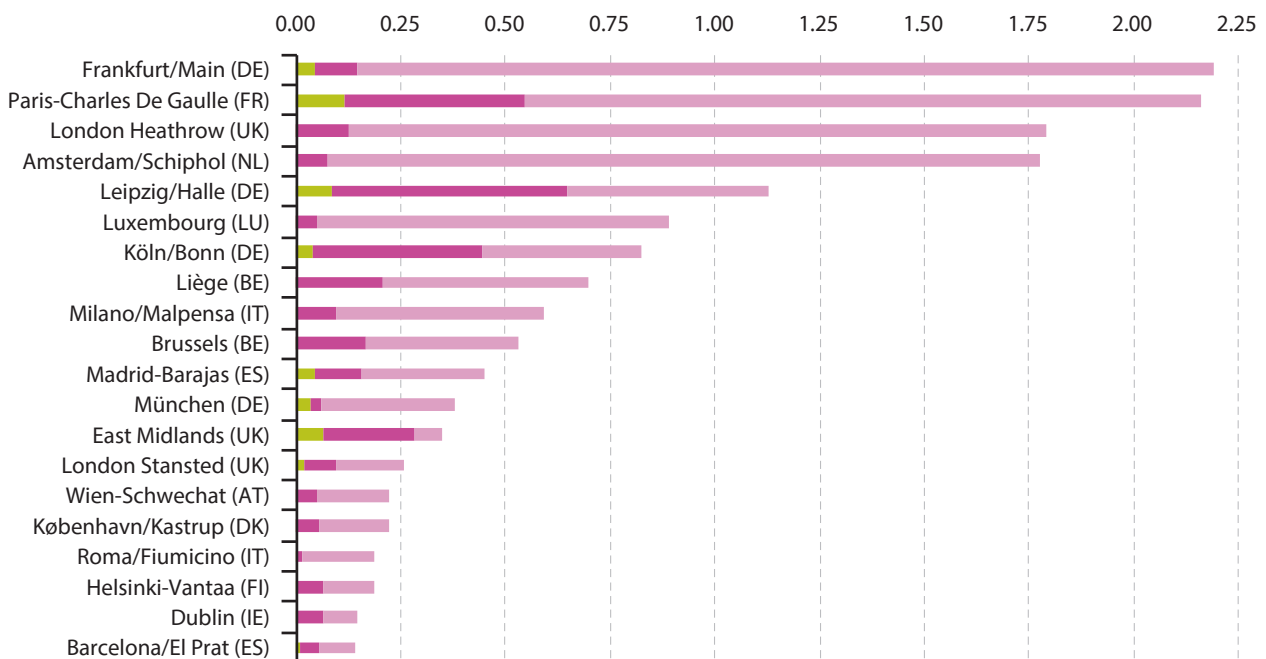
A similar ranking is shown in Figure 11.2 for the top 20 EU airports handling (loaded and unloaded) freight and mail. In 2017, the busiest cargo airport was Frankfurt/Main (2.19 million tonnes), closely followed by Paris-Charles de Gaulle (2.16 million tonnes), while London Heathrow (1.79 million tonnes), Amsterdam/Schiphol (1.78 million tonnes) and Leipzig/Halle (1.13 million tonnes) were the only other airports to record in excess of a million tonnes of freight and mail. As such, the four largest airports in the EU were the same for air freight and mail as they were for air passengers, albeit in a different order.

The relative specialisation of airports in air freight and mail may, at least to some degree, reflect the geographical proximity of a large population base, as well as spare runway capacity to allow cargo planes to fill slots that would otherwise be occupied by passenger flights. In 2017, the seven airports that were in the top 20 ranking for freight and mail but were not for in the top 20 ranking for passengers included: Leipzig/Halle (Germany), Luxembourg, Köln/Bonn (Germany), Liège (Belgium), Milano/Malpensa

(Italy) — these ranked from 5th to 9th place among the top cargo airports in the EU — East Midlands (13th; the United Kingdom) and Helsinki-Vantaa (18th; Finland). Some of these airports were particularly specialised in air freight services (with relatively low numbers of air passengers), as a result of developing their freight business as logistics centres. Examples include Luxembourg airport which is the headquarters of Europe’s largest all-cargo airline (Cargolux), Leipzig/Halle airport which is a hub for DHL, Köln/Bonn airport which is a hub for UPS, or Paris-Charles de Gaulle, Köln/Bonn and Liège airports which are all hubs for FedEx.

Given the relatively high cost of transporting goods by air, it is perhaps unsurprising to find that the majority of air freight and mail that was loaded and unloaded in the EU’s top 20 cargo airports destined for/arrived from non-member countries. This was particularly true for airports near capital cities and also for airports in the most densely populated areas of the EU, with extra-EU air freight and mail accounting for more than 90 % of the goods loaded and unloaded in Amsterdam/Schiphol, Luxembourg, Frankfurt/Main, London Heathrow and Rome/Fiumicino. Three exceptions were Köln/Bonn, Leipzig/Halle and East Midlands, where there was more freight and mail from intra-EU flights than extra-EU flights.

Figure 11.2: Top 20 EU airports for air freight and mail (loaded and unloaded), 2017
(million tonnes)



Source: Eurostat (online data code: avia_tf_ala)

Road transport

Road transport plays an essential role 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 — dependent to a greater or lesser degree on the use of a car. Roads are by far the most common transport mode in the EU for passenger and inland freight transport.

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

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.

This section examines equipment rates for [passenger cars](#). The availability/use of passenger cars may be expected, at least to some degree, to be inversely related to the availability of public transport: people living in regions with efficient and extensive public transport systems with frequent services may be less inclined to own a vehicle (or multiple vehicles within one household), especially when the regions where they live/work are characterised by congestion and/or difficulties to find a place to park.

There were approximately 262 million passenger cars circulating on the roads of the EU-28 in 2017 (this figure is based on summing the latest information available for the EU Member States and includes 2016 data for Italy, Luxembourg and Romania), with the largest stocks of vehicles in Germany (46.5 million), Italy (37.9 million; 2016 data), France (32.0 million) and the United Kingdom (31.2 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 distribution of motorisation rates across the 258 regions for which data are available was relatively balanced insofar as 121 regions had rates that were below the EU-28 average, while 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.

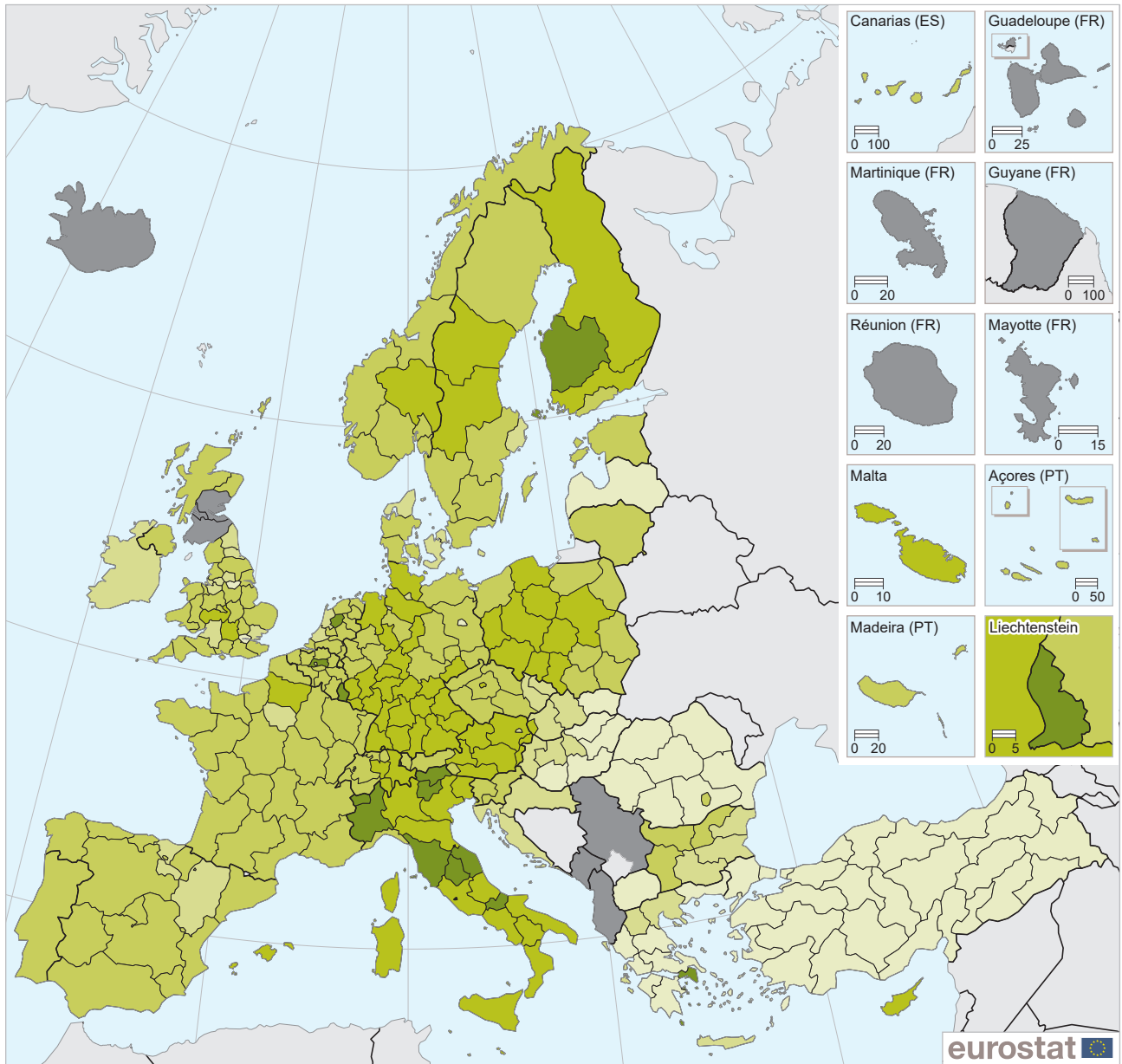
Regional motorisation rates in the EU ranged in 2016 from a high of 1 173 passenger cars per 1 000 inhabitants in Valle d'Aosta/Vallée d'Aoste (north-western Italy) down to 178 passenger cars per 1 000 inhabitants in Peloponnisos (southern mainland Greece). As such, relative to population size, the availability 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 11.3 identifies the 14 regions across the EU where the motorisation rate was at least 650 passenger cars per 1 000 inhabitants in 2016. Aside from the four regions mentioned above, these included five additional Italian regions (Umbria, Molise, Piemonte, Toscana and Marche).

Several island regions reported relatively high motorisation rates, including Åland (799 passenger cars per 1 000 inhabitants, the highest rate in Finland), Sicilia (635), Sardegna (619), Malta (615), the Illes Balears (595, the highest rate in Spain), Cyprus (595) and Corse (558, the second highest rate in France). 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 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

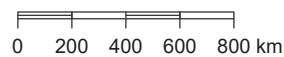
At the lower end of the range, there were 24 regions in the EU where the motorisation rate was less than 350 passenger cars per 1 000 inhabitants in 2016 (these are shown in the lightest shade in Map 11.3). They were principally located in Greece (eight regions), Romania (seven out of eight regions) and Hungary (four regions) — by contrast, relatively high motorisation rates were recorded in the Greek and Romanian capital city regions.

Map 11.3: Motorisation rate, 2016
(number of passenger cars per 1 000 inhabitants, by NUTS 2 regions)



Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019

- EU-28 = 506
- < 350
 - 350 - < 450
 - 450 - < 550
 - 550 - < 650
 - ≥ 650
 - Data not available



Note: Közép-Magyarország (HU1), Makroregion Województwo Mazowieckie (PL9) and London (UK1), NUTS level 1. Ireland, Lithuania and Portugal: national data.

Source: Eurostat (online data codes: tran_r_vehst, road_eqs_carage and demo_pjan)

Many of the western and northern capital city regions recorded motorisation rates that were close to or below the EU-28 average in 2016, including those from Belgium, Denmark, Germany, France, the Netherlands, Austria, Finland, Stockholm and the United Kingdom. A closer analysis reveals that each of these capital city regions had the lowest motorisation rate within their national territory, except for London — which had the second lowest rate in the United Kingdom (with a lower rate in South Yorkshire — a metropolitan region that includes the city of Sheffield).

By contrast, some of the highest motorisation rates in eastern and southern parts of the EU were recorded in capital city regions: the capital city regions of Bulgaria, Czechia, Greece, Romania, Slovenia and Slovakia recorded the highest motorisation rates within their national territory; furthermore, motorisation rates in most of these regions were higher than the EU-28 average.

The risk of dying in a road traffic accident was 19 times as high in Severozapaden (Bulgaria) as in Outer London — West and North West in the United Kingdom

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 while using a mobile device or while under the influence of alcohol or drugs).

Road safety is a major societal issue: in 2016, there were 25 643 road fatalities in the EU-28, while there were no fewer than 1.45 million road injuries. 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, for business or other reason. As such, and other things being equal, regions that have transit corridors or regions with high numbers of visitors may well experience a higher incidence of injuries and fatalities. Among the 267 regions for which data are available (see Map 11.4),

the incidence of road fatalities was somewhat skewed, as there were 120 regions with ratios below the EU-28 average, compared with 146 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.

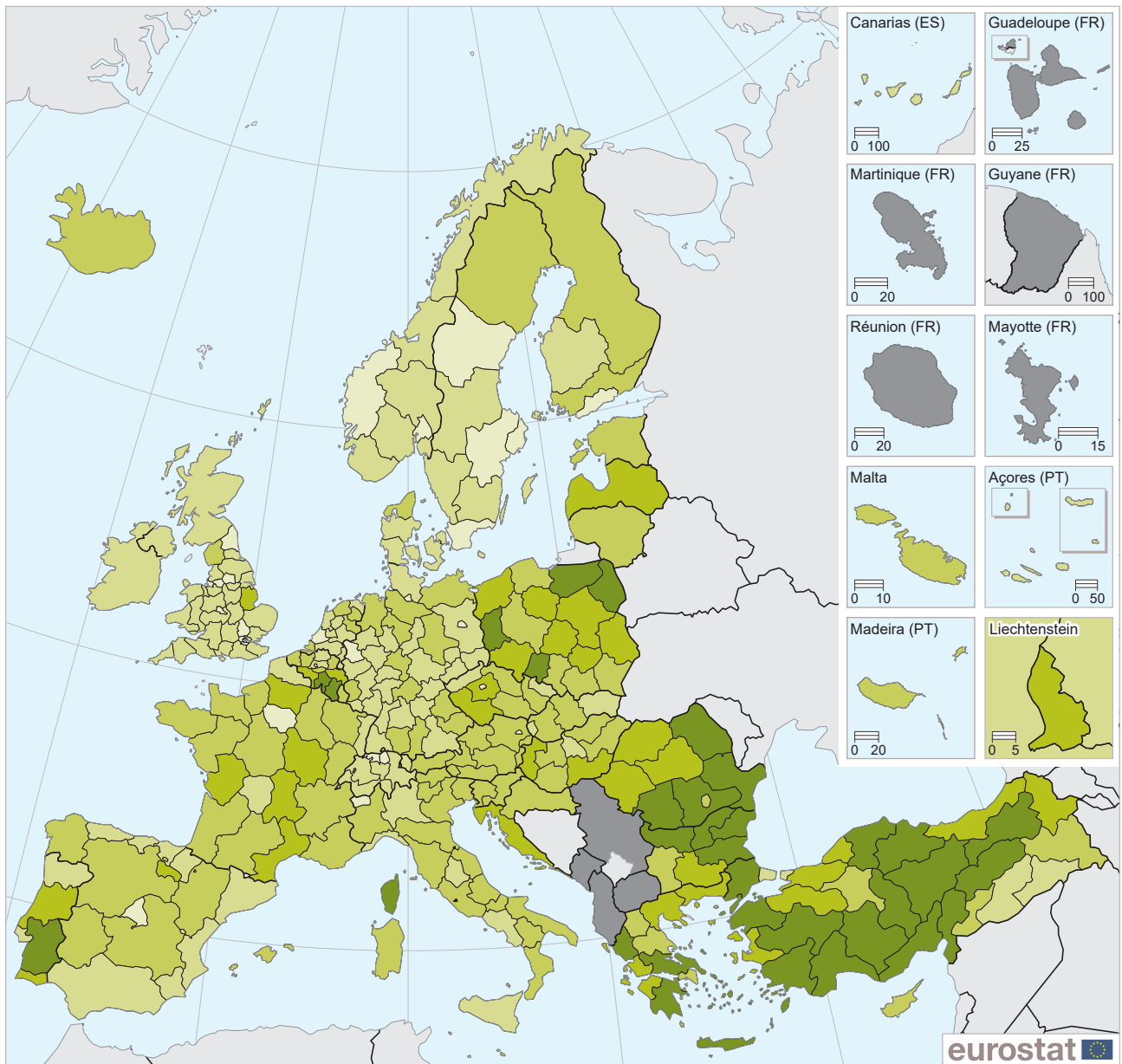
There were 21 regions across the EU where the number of road fatalities was at least 100 deaths per million inhabitants in 2016. These regions with the highest incidence rates for road fatalities were concentrated in eastern and southern parts of the EU, with five regions in Greece and four regions from each of Bulgaria, Poland and Romania. Relatively high ratios were also recorded for two regions in 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), with 153 road fatalities per million inhabitants in 2016. Alentejo (142 road fatalities per million inhabitants), 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 above 125 deaths per million inhabitants.

In 2016, there were 28 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 Map 11.4). The lowest incidence rate was recorded in the British capital city region of Outer London — West and North West (8 deaths per million inhabitants), while there were 15 more regions in the EU where the number of road fatalities was less than 20 per million inhabitants, the vast majority of which were urban areas, including:

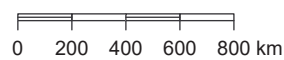
- three more capital city regions covering London (the exception was Inner London — West);
- the capital city regions of Belgium, Germany, Spain, Austria and Sweden;
- the metropolitan regions of Bremen and Hamburg (both Germany), Northumberland and Tyne and Wear, Merseyside and West Yorkshire (all in the United Kingdom), Zuid-Holland (which includes the cities of the Hague and Rotterdam).

Map 11.4: Fatal road accidents 2016
(per million inhabitants, by NUTS 2 regions)



Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019

- EU-28 = 50
- < 25
 - 25 - < 50
 - 50 - < 75
 - 75 - < 100
 - ≥ 100
 - Data not available



Note: Közép-Magyarország (HU1), Makroregion Województwo Mazowieckie (PL9) and Scotland (UKM), NUTS level 1. Ireland and Lithuania: national data. Liechtenstein: 2014.

Source: Eurostat (online data codes: tran_r_acci, tran_sf_roadse and demo_pjan)

Road transport: freight

In 2017, the total weight of goods loaded for road freight transport in the EU-28 was 14.7 billion tonnes; when taking account of the distance travelled for each goods operation, this equated to 1 921 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 (such as raw materials) are also likely to report higher values.

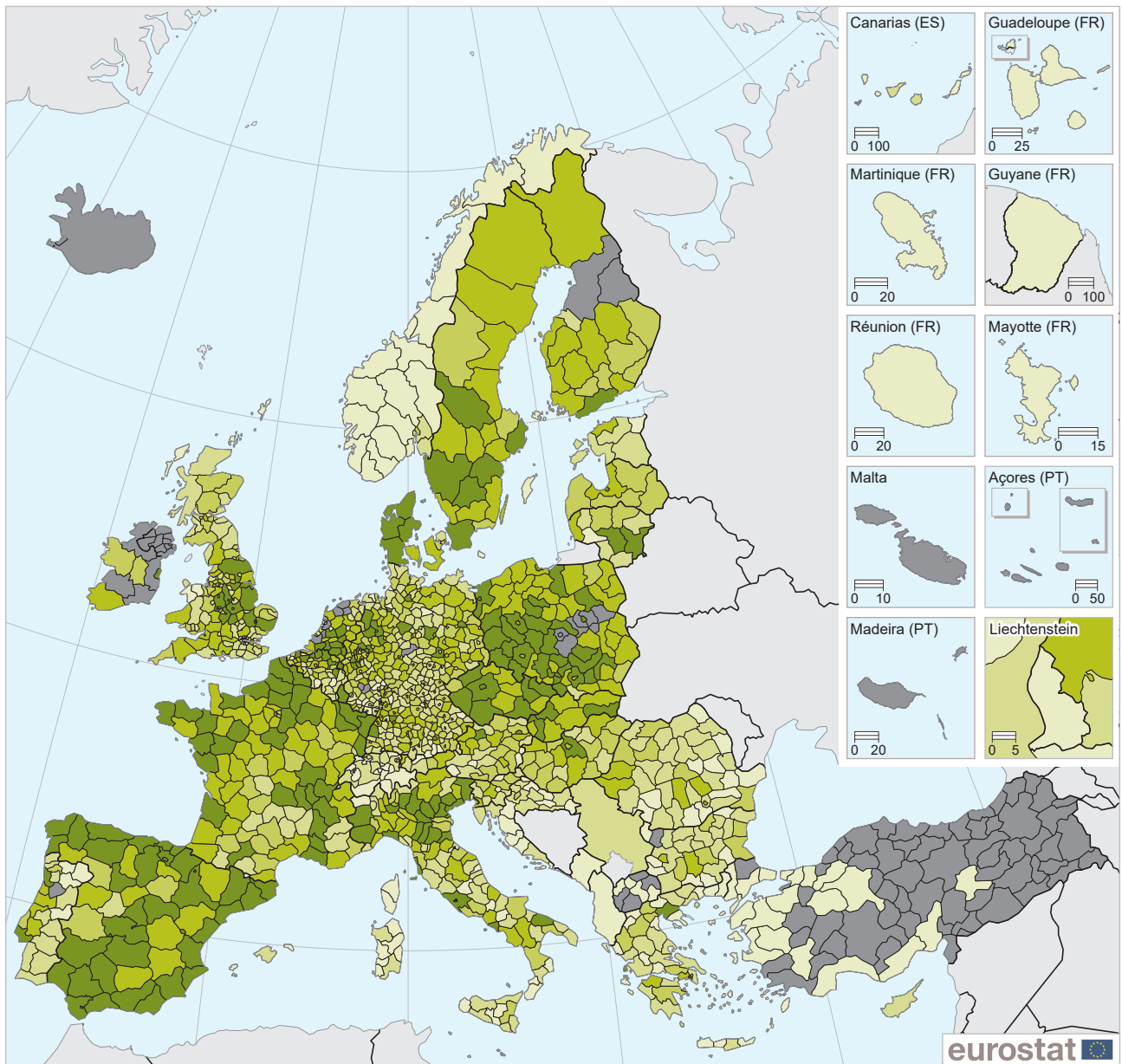
The highest quantity of road freight loaded for transportation within the EU-28 was in Barcelona (Spain)

In 2017, Barcelona (Spain) was the NUTS level 3 region with the highest level (22.7 billion tkm) of road freight loaded and transported within the EU-28; it was followed by two other Spanish regions, Valencia/ València (17.0 billion tkm) and Madrid (14.3 billion tkm).

There were four more regions in the EU where the level of road freight loaded and transported within the EU-28 was higher than 10 billion tkm: Hamburg in northern Germany (12.4 billion tkm), Murcia in south-eastern Spain (12.2 billion tkm), the Nord region of France (10.8 billion tkm), Arr. Antwerpen in Belgium (10.1 billion tkm). Together these seven regions accounted for approximately 5.4 % of the total road freight that was loaded and transported in any of the 1 306 regions within the EU-28 for which data are available.

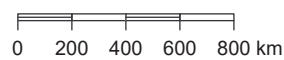
Map 11.5 confirms that many of the regions with the highest levels of road freight transport were characterised by the presence of freight ports, a relatively high population density, or were located on major road arteries. Road freight transport appeared to be particularly concentrated in Spanish and 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 (other than Spain and northern Italy) parts of the EU.

Map 11.5: Road freight transport for goods loaded within the EU-28, 2017
(million tonne-kilometres, by NUTS 3 region of loading)



Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019

- EU-28 = 1 920 613
- < 250
 - 250 - < 750
 - 750 - < 1 250
 - 1 250 - < 2 500
 - ≥ 2 500
 - Data not available



Note: Albania and Serbia, national data. Several regions make use of an earlier reference period (2015 or 2016): too many to document.

Source: Eurostat (online data codes: road_go_ta_rl and road_go_ta_tott)

Figure 11.3 is based on the quantity of road freight loaded (in tonnes), with the information presented limited to goods that are transported within national borders; unlike for Map 11.5 the data are not presented in absolute values but relative to the size of the population. The northern Greek region of Grevena, Kozani recorded the highest level of freight loaded for national road transport relative to its population size, 603 tonnes per inhabitant. This was by far the highest ratio among all regions within the EU:

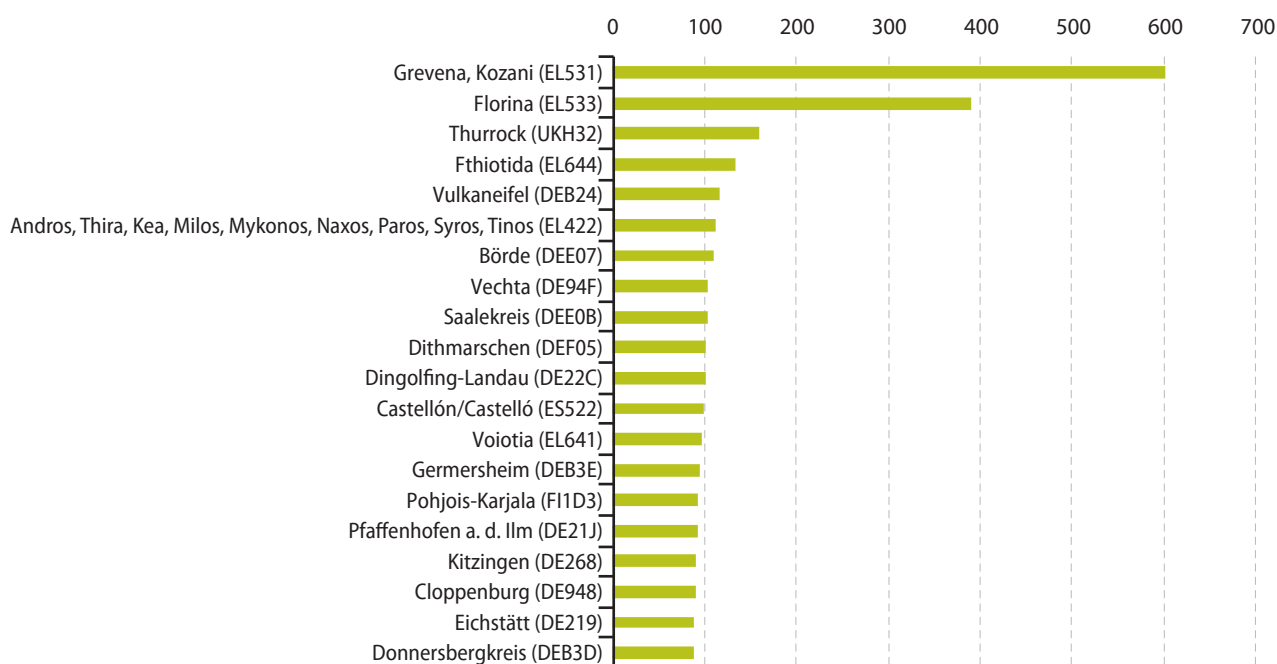
- the second highest level of national road freight transport was 389 tonnes per inhabitant in Florina,

which is situated further north still in Greece, close to the border with North Macedonia;

- the third highest level was recorded in Thurrock (158 tonnes per inhabitant) on the Thames, east of London.

While the remainder of the top 20 regions for national road freight transport included three other Greek regions, and one region from each of Spain and Finland, it was dominated by 12 German regions (four from Bayern, three from Rheinland-Pfalz, two each from Weser-Ems (in Niedersachsen) and Sachsen-Anhalt and one from Schleswig-Holstein).

Figure 11.3: Top 20 regions for national road freight transport, 2017
(tonnes of goods loaded per inhabitant, by NUTS 3 region of loading)



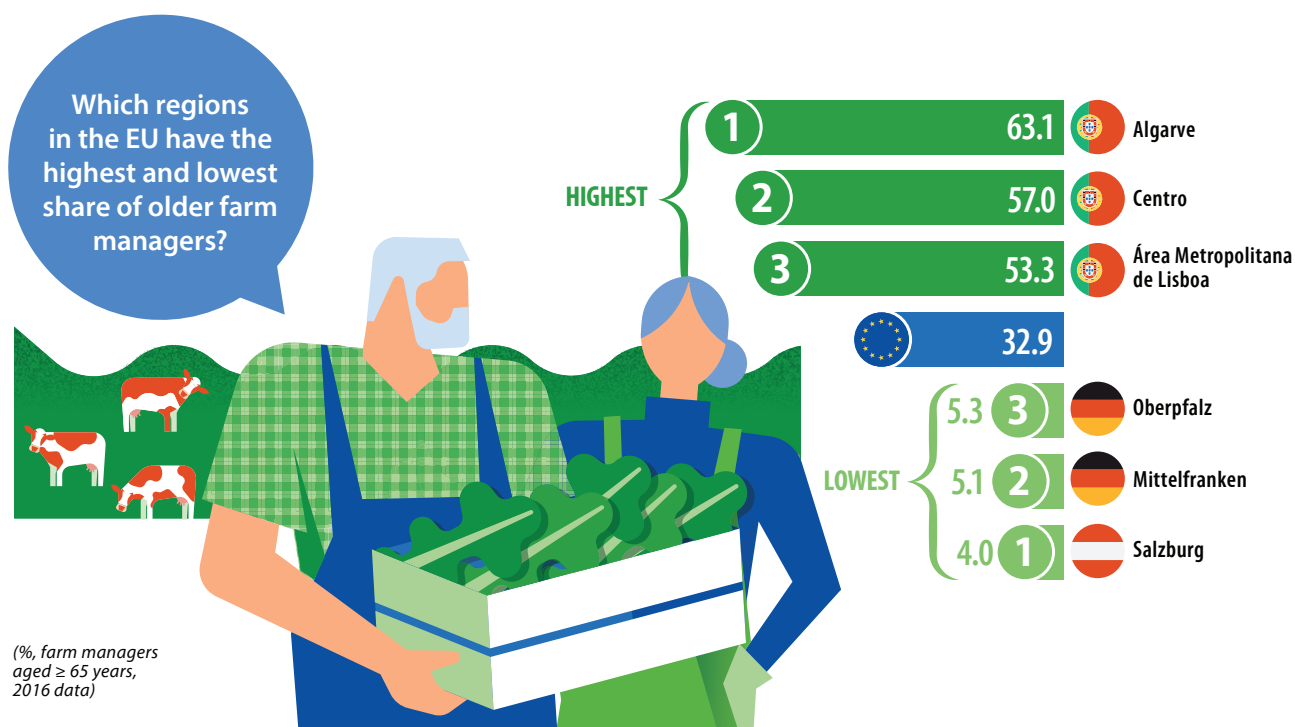
Note: based on those NUTS level 3 regions for which data are available. Several regions make use of an earlier reference period (2015 or 2016): too many to document.

Source: Eurostat (online data codes: [road_go_na_rl3g](#) and [demo_r_pjangrp3](#))

12

Agriculture





Agricultural products, food and culinary traditions are 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. A growing share of [European Union \(EU\)](#) consumers give importance to the provenance of their food, for example choosing regional products or traditional specialities, as witnessed in the growth of farmers' markets and food fairs. This may be contrasted with the growing share of consumers who choose to shop in discount retailers that have radically changed the market for groceries in several Member States.

Around two fifths 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 \(CAP\)](#) covers all EU Member States. It is managed directly by the EU and funded from the EU's budget. 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 510 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. There are environmental, economic and social dimensions, among which: impacts of climate change on agriculture and of agriculture on climate change; water pollution and scarcity; soil erosion and compaction; the impact of agriculture on air quality; preserving landscapes and biodiversity; pressures on farm income; weaknesses in productivity; imbalances in value chains; ensuring vibrant rural communities; development prospects for rural economies; setting-up young farmers in business; and territorial cohesion. The future CAP wants to prioritise small and medium-sized farms and encourage young farmers to join the profession.

This chapter presents regional agricultural statistics within the EU and provides a selection of [Eurostat's](#) data within this domain, including information covering the structure of agriculture (average farm size and the importance of older [farm managers](#)), [cereals](#), as well as animal production ([livestock specialisation](#) and [cows' milk production](#)).



Structure of agriculture

There were 10.5 million farms in the EU-28 in 2016. Approximately one third (32.7 %) were located in Romania, with a further one eighth (13.5 %) in Poland. The next highest shares were recorded in Italy (10.9% of the farms in the EU-28), Spain (9.0 %) and Greece (6.5 %).

A majority of farms in the EU are small. In 2016, two thirds of all EU farms were either very small (defined here as those farms with a [standard output](#) of less than EUR 2 000 per year) or small (with output in the range of EUR 2 000 to EUR 8 000 per year). Very small and small farms are commonly located across eastern and southern parts of the EU.

The 4.0 million farms in the EU that are classed as very small were responsible for only 1 % of the EU's total agricultural economic output. They can be considered at the (semi-)subsistence end of the farming scale: about three quarters of such farms consumed more than half of their production themselves.

Map 12.1 presents an analysis of average farm size (in terms of standard output) for NUTS level 2 regions in 2016. The average (mean) size of the EU's farms was EUR 34 800 of standard output. In the map, the average size of farms in each of the regions is presented in comparison with the average for the EU-28, which has been given a value of 100 (effectively 100 %); regions with an average farm size that is greater than or equal to the EU-28 average are coloured green and those where the average is lower are coloured yellow. 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 their average size.

The EU's agricultural industry is broadly distinguished by three distinct groups of farms: (i) semi-subsistence farms; (ii) small and medium-sized farms; and (iii) large agricultural enterprises, which are more likely to have a legal form or be cooperatives. These three groups are clearly shown along geographic lines in Map 12.1.

The smallest average sizes of farms in the EU — as measured by standard output — were most commonly found in eastern and southern regions

There were 43 regions in the EU where the average farm size was less than half the EU-28 average in 2016 (as shown by the darkest shade of yellow). All of the Greek, Romanian and Slovenian regions figured in this list, along with a number of regions in Poland, Hungary, Portugal and Bulgaria as well as Lithuania (national data) and Malta (one region at this level of detail). The region with the lowest level of standard output per farm (EUR 2 710) was Sud-Vest Oltenia in Romania.

The largest average size of farms in the EU were most commonly found in western regions

There were 64 regions across the EU where the average standard output per farm was at least five times as high as the EU-28 average, in other words at least EUR 174 000 (as shown by the darkest shade in Map 12.1). These regions were located mainly in Germany, the [Benelux](#) Member States, the United Kingdom, France and Czechia. Among these 64 regions, there were 15 where the average farm size was at least 10 times as high as the EU-28 average; eight of these were in the Netherlands, six in Germany and one in Denmark (Syddanmark). The region with the highest level of standard output per farm (EUR 680 700 – nearly 20 times the EU-28 average) was Zuid-Holland.

More than half of all farm managers in the EU-28 in 2016 were aged 55 years or over

Farm managers are those responsible for the normal daily financial and production routines of running a farm, such as what and how much to plant or rear and what labour, materials and equipment to employ. Often the farm manager is also the owner (also known as the 'holder') of the farm but this need not be the case, especially when the farm has a legal form.

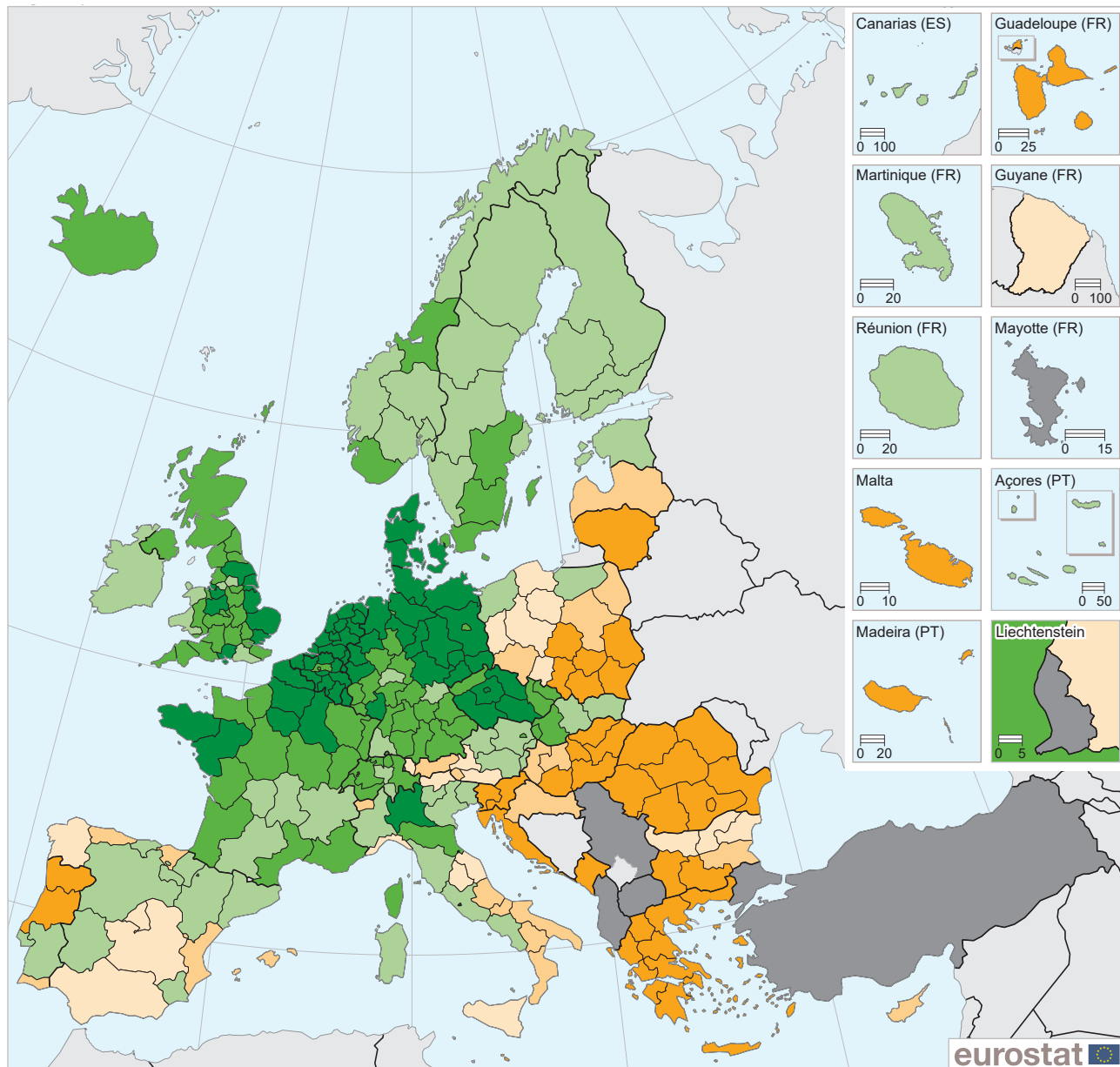
Slow generational renewal and a high average age for farmers is a widespread issue in the EU's farming sector. In May 2018, a [report](#) from the [European Parliament](#) looked at existing and potential new policies to support young farmers, such as providing incentives for older farmers to retire, addressing barriers to entry and increasing business skills among young farmers.

As there is only one farm manager per farm, the number of managers and farms is the same, 10.5 million across the EU-28 in 2016. Among these, 1.1 million (10.6 %) were aged less than 40 years, and so are considered for policy purposes as young farm managers. In the vast majority of regions in the EU the share of young farmers was less than 20.0 % in 2016, with just 17 reporting higher shares. They were principally located in Poland (eight regions) and Austria (six regions — including Salzburg with the highest share in the EU, at 27.6 %).

In 2016, more than one half (57.9 %) of all the EU's farm managers were aged 55 years or over, and nearly one third (32.9 %) were aged 65 years or over. Map 12.2 focuses on this oldest age group, showing the share of farm managers in each NUTS level 2 region who were aged 65 years or over. Elderly farm managers were particularly common in Portuguese regions: in Algarve, almost two thirds (63.1 %) of farm managers in 2016 were aged 65 years or more, with shares that were close to or over 50 % in Centro, Área Metropolitana de Lisboa, Alentejo, Região Autónoma da Madeira and Norte. Aside from Portugal, at least 40.0 % of farm managers

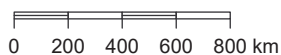
Map 12.1: Average economic size of farm holdings, 2016

(EU-28 = 100, based on the standard output of the average farm in relation to the EU-28 average, by NUTS 2 regions)



- EU-28 = 100
- < 50
- 50 - < 75
- 75 - < 100
- 100 - < 250
- 250 - < 500
- ≥ 500
- Data not available

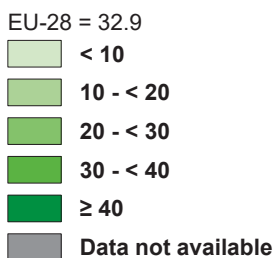
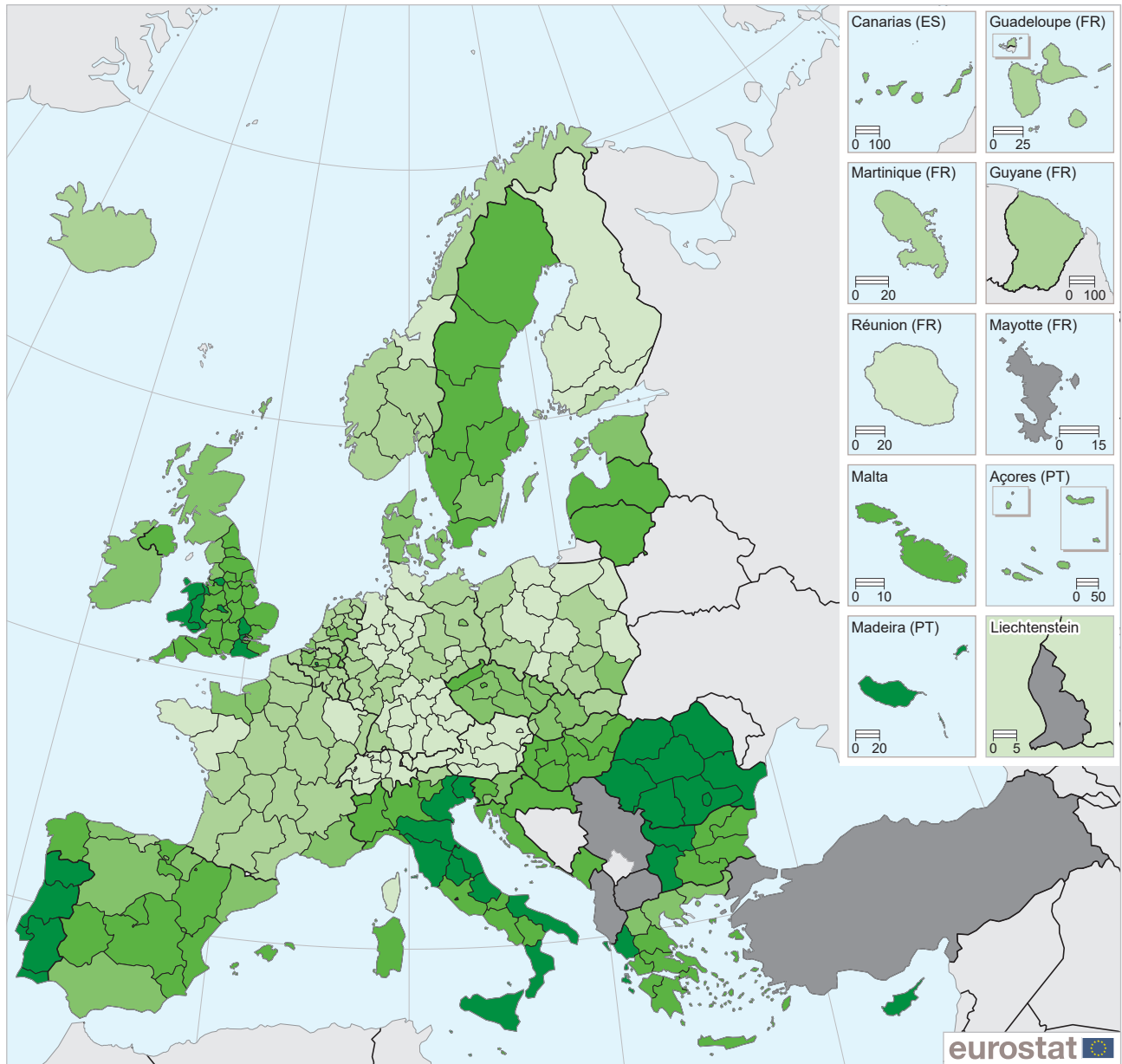
Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019



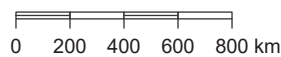
Note: the standard output of the average farm in the EU-28 was EUR 34 785 in 2016. Közép-Magyarország (HU1), Makroregion Województwo Mazowieckie (PL9), London (UKI) and Scotland (UKM): NUTS level 1. Ireland and Lithuania: national data. Norway: 2013. Iceland, Switzerland and Montenegro: 2010.

Source: Eurostat (online data code: ef_m_farmleg)

Map 12.2: Older farm managers, 2016
 (% share of farm managers aged ≥ 65 years, by NUTS 2 regions)



Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
 Cartography: Eurostat — GISCO, 05/2019



Note: Közép-Magyarország (HU1), Makroregion Województwo Mazowieckie (PL9) and Scotland (UKM): NUTS level 1. Ireland and Lithuania, national data. Norway: 2013. Iceland, Switzerland and Montenegro: 2010. Ireland and Italy: provisional.

Source: Eurostat (online data code: ef_m_farmang)

were aged 65 years or over in 31 regions, principally located in: Italy (10 regions, including Umbria which had the highest share (48.9 %) outside of Portugal); Romania (all eight regions); and the United Kingdom (seven regions).

These top-heavy age structures underline the policy interest in farm succession and the need to encourage a new generation of farmers. Elderly farm managers tend to work on the smallest farms (measured in economic terms) which are characterised by subsistence households and low levels of agricultural income.

Less than 10 % of farm managers were aged 65 years or over in 2016 in 46 of the EU's regions, with Salzburg recording the lowest share at 4.0 %. These regions, where less than 1 in 10 farm managers were elderly, were principally located in: Germany (21 regions, of which only one was in eastern Germany); Austria (all nine regions); and Poland (eight regions).

Cereals and oilseeds

The French region of Centre — Val de Loire harvested more cereals in 2017 than any other region in the EU

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 2017, EU-28 harvested production of cereals was 310.6 million tonnes. The level of cereals production in the EU's NUTS level 2 regions is shown by the size of the circles in Map 12.3. The highest levels of production, at least 3.5 million tonnes, were principally located in:

- nine French regions, mainly in the west and the north, including the French region of Centre — Val de Loire which harvested more cereals (8.9 million tonnes) in 2017 than any other region in the EU, producing mainly common wheat and spelt;
- nine German regions (note that these are NUTS level 1 regions and therefore normally larger in area than NUTS level 2 regions);
- three Romanian regions and two Polish regions.

In the EU, the most commonly grown category of cereals was common wheat and spelt, which was also the most common cereal crop in 111 regions

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 region in 2017, Map 12.3 also provides information on the most commonly grown cereal in each NUTS level 2 region (as shown by the colour of each circle).

In 2017, the most commonly grown category of cereals in the EU was common wheat and spelt. This was the most common cereal crop in as many as 111 regions across the EU, most of which can be broadly grouped into:

- one arc running up from northern Spain, through most of the regions of France and the Benelux countries, England and Wales except for London (NUTS level 1 regions), through several German (NUTS level 1) regions, to most of the Danish regions and the Swedish regions (not the northernmost ones), as well as two southernmost Finnish regions;
- another group including all regions in the Baltic Member States, the majority of Polish regions, all Czech and Slovak regions, three eastern Austrian regions (as well as one in the west) and two northern Hungarian regions;
- all Bulgarian regions.

There were also a large number of regions (52) in the EU where grain maize and corn-cob mix was the most commonly grown cereal in 2017. The regions specialising in grain maize and corn-cob mix were principally located in:

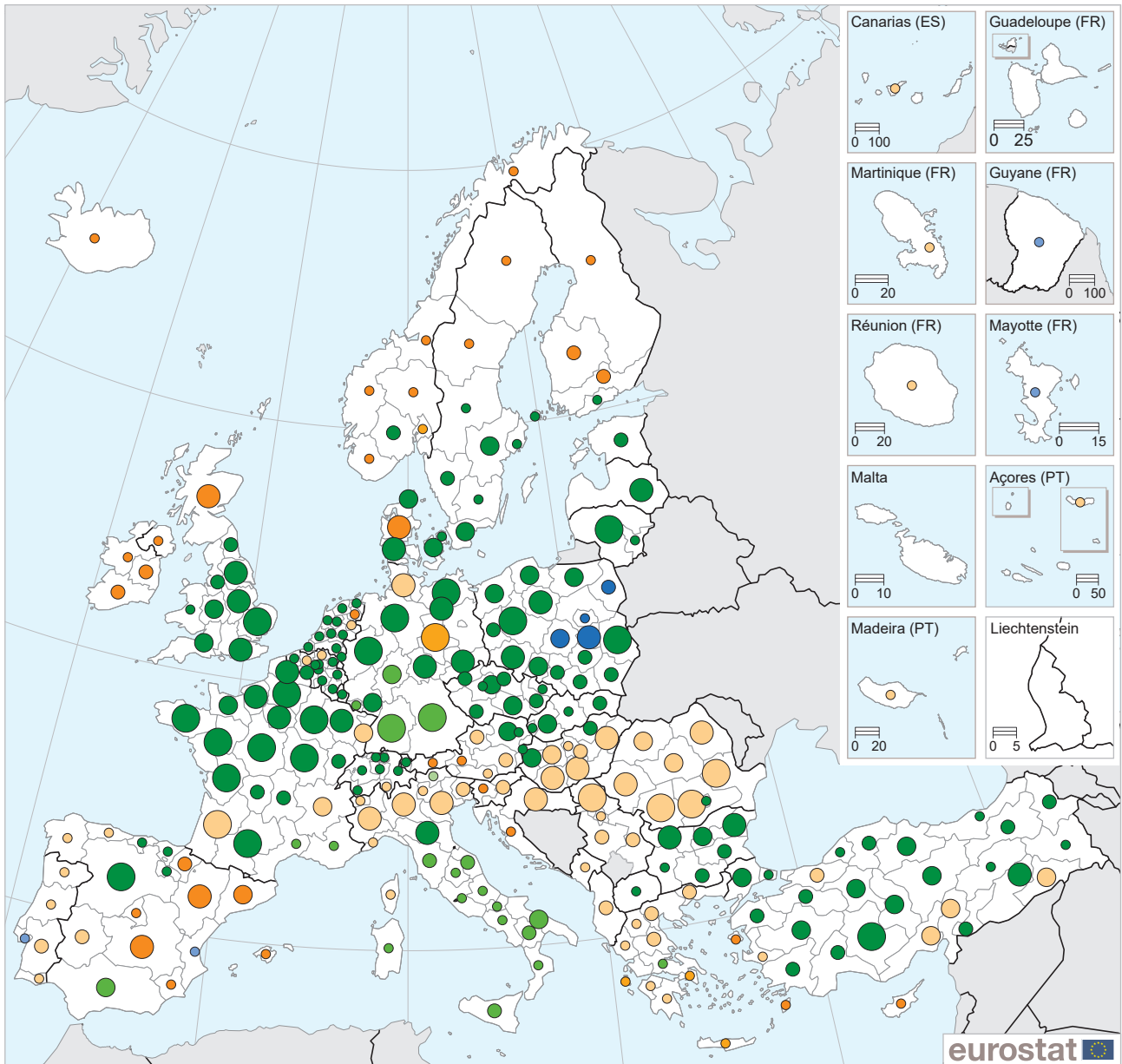
- the Iberian Peninsula — most regions of Portugal as well as four Spanish regions, most of which bordered or were close to Portugal;
- northern regions of Italy (2016 data), central parts of neighbouring Austria, into eastern parts of Slovenia and Croatia, and onto most of Hungary and Romania, as well as most of mainland Greece.

The regions where barley was the most commonly grown cereal were often, but not always, characterised as being more remote or mountainous regions of the EU, for example: central and northern Finland and Sweden; several parts of Spain, the Greek islands and Cyprus; all Irish regions, Northern Ireland and Scotland (NUTS level 1 regions in the United Kingdom).

Durum wheat was the most commonly grown type of cereal in several southern and western regions of the EU, for example: central and southern parts of Italy and the Italian islands (2016 data); Andalucía in the south of Spain; two regions in southern France — Languedoc-Roussillon and Provence-Alpes-Côte d'Azur.

In contrast to the situation for the four groups of cereals mentioned above, there were relatively few regions in the EU where any of the other cereals shown in Map 12.3 were the most commonly grown crop:

Map 12.3: Harvested production of cereals (including seed) and most commonly grown cereals, 2017
(million tonnes, by NUTS 2 regions)



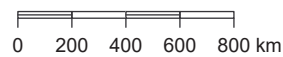
Most commonly grown cereal
EU-28 = common wheat and spelt

- Common wheat and spelt
- Durum wheat
- Rye and winter cereal mixtures
- Barley
- Oats
- Grain maize and corn-cob-mix
- Triticale
- Rice

Harvested production of cereals (including seed)
EU-28 = 310.6

- < 0.5
- 0.5 - < 1.5
- 1.5 - < 2.5
- 2.5 - < 3.5
- ≥ 3.5

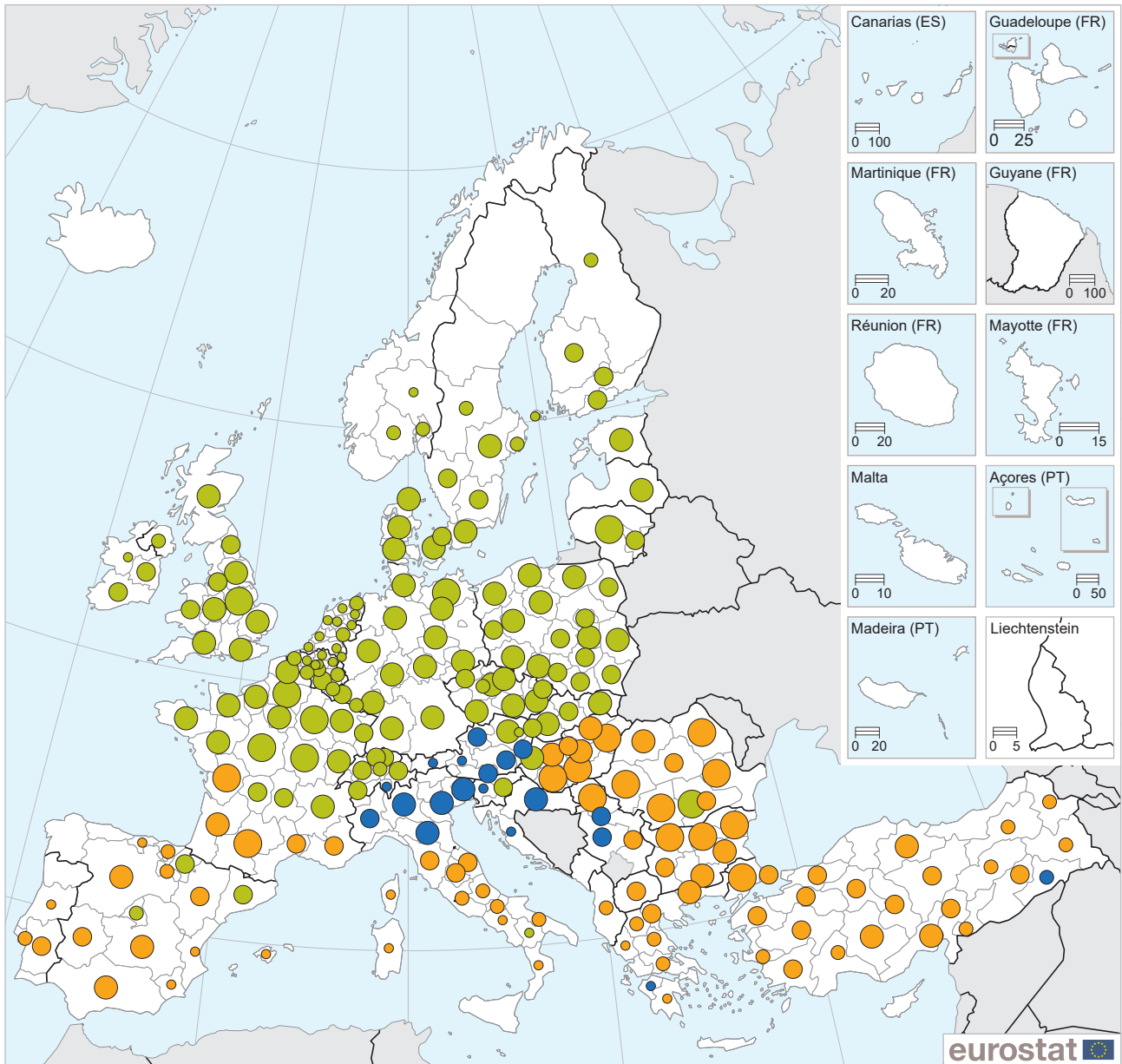
Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019



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. Italy, Norway, Albania and Turkey: 2016. Montenegro: provisional.

Source: Eurostat (online data code: [apro_cpnhr](#))

Map 12.4: Harvested production of oilseeds and most commonly grown oilseeds, 2017
(thousand tonnes, by NUTS 2 regions)



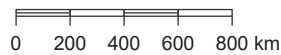
Most commonly grown oilseeds
EU-28 = rape and turnip rape
seeds

- Rape and turnip rape seed
- Sunflower
- Soya

Harvested production of
oilseeds
EU-28 = 36 121

- < 1
- 1 - < 10
- 10 - < 100
- 100 - < 500
- ≥ 500

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019



Note: the map shows the harvested production of all oilseeds as proportional circles for each region, while the colour of each circle denotes the most commonly grown oilseed in that region; note the total harvested production for each region is for all types of oilseed including those that are not among the most commonly grown, for example, cotton and linseed. Germany and the United Kingdom: NUTS level 1. Albania: national data. Italy, Norway and Turkey: 2016.

Source: Eurostat (online data code: [apro_cpnhf](#))



- the Provincia Autonoma di Bolzano/Bozen in Italy was the only region where rye and winter cereal mixtures (maslin) was the most commonly grown crop (2016 data);
- oats were the most commonly grown crop in Sachsen-Anhalt (Germany) as well as in two island regions and the capital city region of Greece;
- triticale was the most commonly grown crop in four Polish regions running from the centre to the north-east of the country, including the capital city region;
- rice was the most commonly grown crop in two French overseas regions (Guyane and Mayotte), in Comunidad Valenciana in eastern Spain and in the metropolitan area around the Portuguese capital city.

Sunflower was the most common oilseed crop in much of the south of the EU and in the more southerly of the eastern Member States

Some oilseeds crops are processed for use in products for human consumption; however, much of the harvested production from oilseeds crops is used for animal feed. Oils extracted from some oilseed products may also be used for industrial purposes, for example to produce biodiesel, inks or paints.

In 2017, the EU-28's harvested production of oilseed crops was 36.1 million tonnes. Rape and turnip rape seeds were together the most widely grown oilseed crop in the EU, accounting for 60.7 % of the total, followed by sunflower seeds with 28.9 %, soya with 7.6 %, cotton seed with 2.4 % and linseed with 0.4 %.

At a regional level (NUTS level 2), harvested production of oilseed crops in 2017 peaked at 1.5 and 1.4 million tonnes in the Romanian regions of Sud-Muntenia and Sud-Est. The only other NUTS level 2 region with a level of production above 750 000 tonnes was the French region of Centre — Val de Loire (1.2 million tonnes). An additional 17 regions recorded production of at least 500 000 tonnes in 2017, they were principally located in France (five regions), Bulgaria, Hungary and Romania (three regions each).

The production of rape, turnip rape and sunflower seeds was uncommon in the southern regions of Europe and in the Nordic countries, with the vast majority of production running in a band between these two extremes. Indeed, there were 28 regions in the EU where there was no production of oilseeds and these were generally located in southern parts of the EU. By contrast, there were a few exceptions in southern countries, where the production of oilseed crops was at least 100 000 tonnes, for example: Andalucía, Castilla y León and Castilla-La Mancha (in Spain); Anatoliki Makedonia, Thraki (in Greece); and Veneto, Friuli-Venezia Giulia, Lombardia and Emilia-Romagna (in Italy; 2016 data).

Aside from providing information on the overall level of harvested production of oilseeds, Map 12.4 also details the most commonly grown oilseeds in each region (based on production). Rape and turnip rape seed was, by far, the most commonly grown type of oilseed: this was the case in 124 of the 196 regions across the EU that had some oilseed production. In 2017, the highest levels of harvested production were in:

- Centre - Val de Loire (1.03 million tonnes) and Champagne-Ardenne in France (699 000 tonnes);
- Sud-Muntenia in Romania, where production peaked at 733 000 tonnes.

In 2017, sunflower was the most commonly grown oilseed crop in 57 regions, mainly in the south of the EU or in the more southerly of the eastern Member States. These regions included: all of the regions in Bulgaria, Hungary (except for Nyugat-Dunántúl) and Romania (except for Sud-Muntenia), as well as 11 regions from Spain and 10 central, southern and island regions of Italy. The highest level of harvested production of sunflowers in the EU was recorded in Sud-Est (Romania; 951 000 tonnes).

Soya was the most commonly grown oilseed crop in several Austrian regions, northern Italian regions and Croatia

Soya is a dual-purpose crop used both for producing oil and as a source of vegetable protein in food and feed sectors. A total of 15 regions across the EU reported soya as their most commonly grown oilseed in 2017, including: six regions in Austria; five regions in northern Italy (2016 data); and both Croatian regions.

Livestock and milk

The information presented in Map 12.5 covers livestock farming in the EU, with statistics for **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 339 million head in 2017. Pigs were the most commonly reared animals (150.3 million head of swine), followed by 88.8 million head of bovine animals, 86.9 million head of sheep and 12.7 million head of goats (the latter two figures being estimates made specifically for the purpose of this publication).

In 2017, Spain, Germany, France and the United Kingdom held the largest overall populations of livestock: Spain and Germany raised the greatest numbers of pigs, France raised the greatest number of bovine animals, the United Kingdom had the largest population of sheep, while Greece had the largest number of goats.

Map 12.5 shows patterns of regional specialisation for livestock for NUTS level 2 regions; note this is not based simply on a count of the number of heads 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; data for Germany and the United Kingdom are shown for NUTS level 1 regions; some predominantly urban areas with very little agriculture may report particularly high specialisation ratios from a very small total number of animals.

Several EU Member States had clear livestock rearing specialisations that were common to most or even all of their regions in 2017: this was the case for goats in Greece, swine in Denmark, bovines in Czechia, Lithuania, Slovenia and Sweden, as well as sheep in the United Kingdom. By contrast, a more diverse picture was apparent in a number of Member States, including Belgium, Spain, France, Italy, the Netherlands, Austria, Portugal or Slovakia, with no clear national specialisation across different regions.

Half of the 12 regions with at least one million bovine animals were in France

Among the 86 regions in the EU which were relatively specialised in rearing bovines in 2017, there were 12 where the number of head rose above one million: half of these were located in France (Pays de la Loire, Basse-Normandie, Auvergne, Bourgogne, Limousin and Rhône-Alpes), while two were in Ireland (Eastern and Midland as well as Southern) — the latter had the highest count (3.6 million) of bovine animals across all regions in the EU-28.

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. These 12 regions with the highest numbers of swine were located in:

- Denmark — Midtjylland, Syddanmark and Nordjylland;
- Germany — Nordrhein-Westfalen and Niedersachsen (both NUTS level 1 regions), the latter having the highest count in the EU, at 8.7 million heads;
- Spain — Aragón and Cataluña;
- Prov. West-Vlaanderen (Belgium), Bretagne (France), Lombardia (Italy), Noord-Brabant (the Netherlands) and Wielkopolskie (Poland).

There were 47 regions in the EU where the rearing of goats was the most specialised (relative to the EU

average) form of livestock farming in 2017. 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 and the Greek island region of Kriti the only other two regions where the population of goats was higher than half a million.

Finally, there were 40 regions across the EU where rearing sheep was the most specialised (relative to the EU average) form of livestock farming in 2017. A total of 16 of these regions had more than one million head of sheep, among which eight regions had more than two million head. Half of the largest sheep populations were in the west and north of the United Kingdom (NUTS level 1 regions), with the highest counts in Wales (5.7 million heads) and Scotland (4.9 million heads). The remaining four regions with more than two million head of sheep were Extremadura and Castilla y León in Spain, Sardegna in Italy and Centru in Romania.

The 14 regions in the EU with the largest production of cows' milk contributed 29 % of the total EU-28 production in 2017

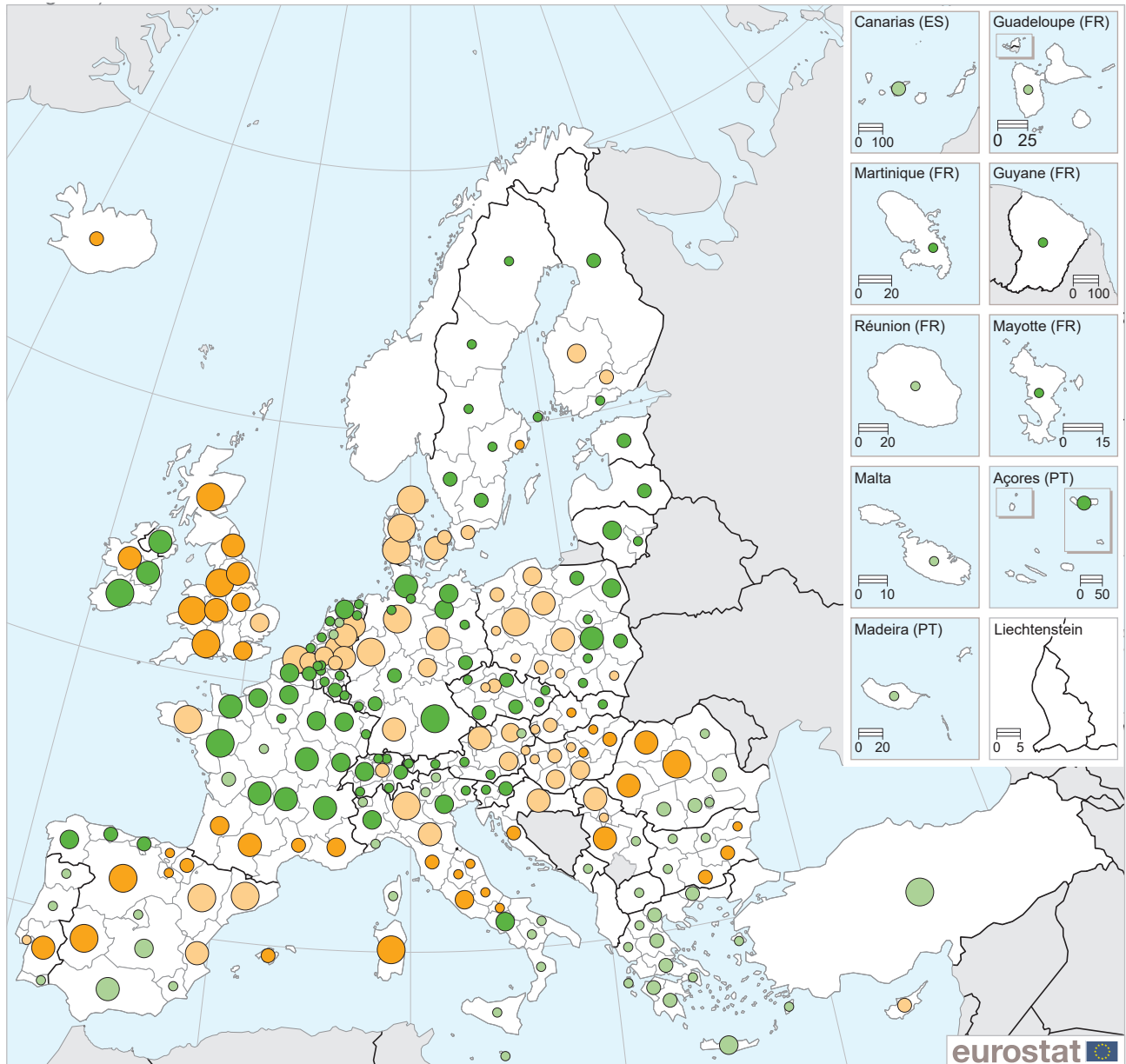
Cows' milk production is generally high in regions with dairy pasture and arable land available for fodder crops. These are typically found in regions characterised by temperate climates with a relatively high degree of rainfall.

EU-28 production of cows' milk was 165 million tonnes in 2017. In general, cows' milk production was relatively high in regions across Denmark, Germany, Ireland, parts of France, northern Italy, the Netherlands and Poland, as well as some Alpine regions and much of western England, Wales, Scotland and Northern Ireland (in the United Kingdom). In regions where grassland is scarcer (for example, around the Mediterranean or in south-eastern parts of the EU) dairy cow farming tends to be relatively uncommon.

There were 45 NUTS level 2 regions in the EU where cows' milk production reached a million or more tonnes in 2017 and together these regions accounted for 57 % of the milk produced in the EU. Among these, 14 regions reported production of at least 2.5 million tonnes (those shown with the largest circle in Map 12.6); together they contributed 29 % of the EU-28 total. These 14 regions — with the largest production of cows' milk — were principally located in north-western Germany, north-western France, northern Italy and north-eastern Poland. The highest regional levels of production were recorded in Bretagne (France; 5.6 million tonnes), Southern (Ireland; 5.4 million tonnes) and Lombardia (Italy; 4.9 million tonnes).

Map 12.5: Relative livestock specialisation and head of livestock, 2017

(based on % share of different livestock in relation to the EU-28 average; thousand head of livestock; by NUTS 2 regions)



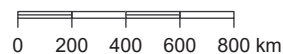
Most commonly reared animal type (relative to EU-28)
EU-28 = Swine

- Bovines
- Goats
- Sheep
- Swine

Head of livestock for most commonly reared animal type (thousand head)
EU-28 = 150 258

- < 250
- 250 - < 500
- 500 - < 1 000
- 1 000 - < 2 000
- ≥ 2 000

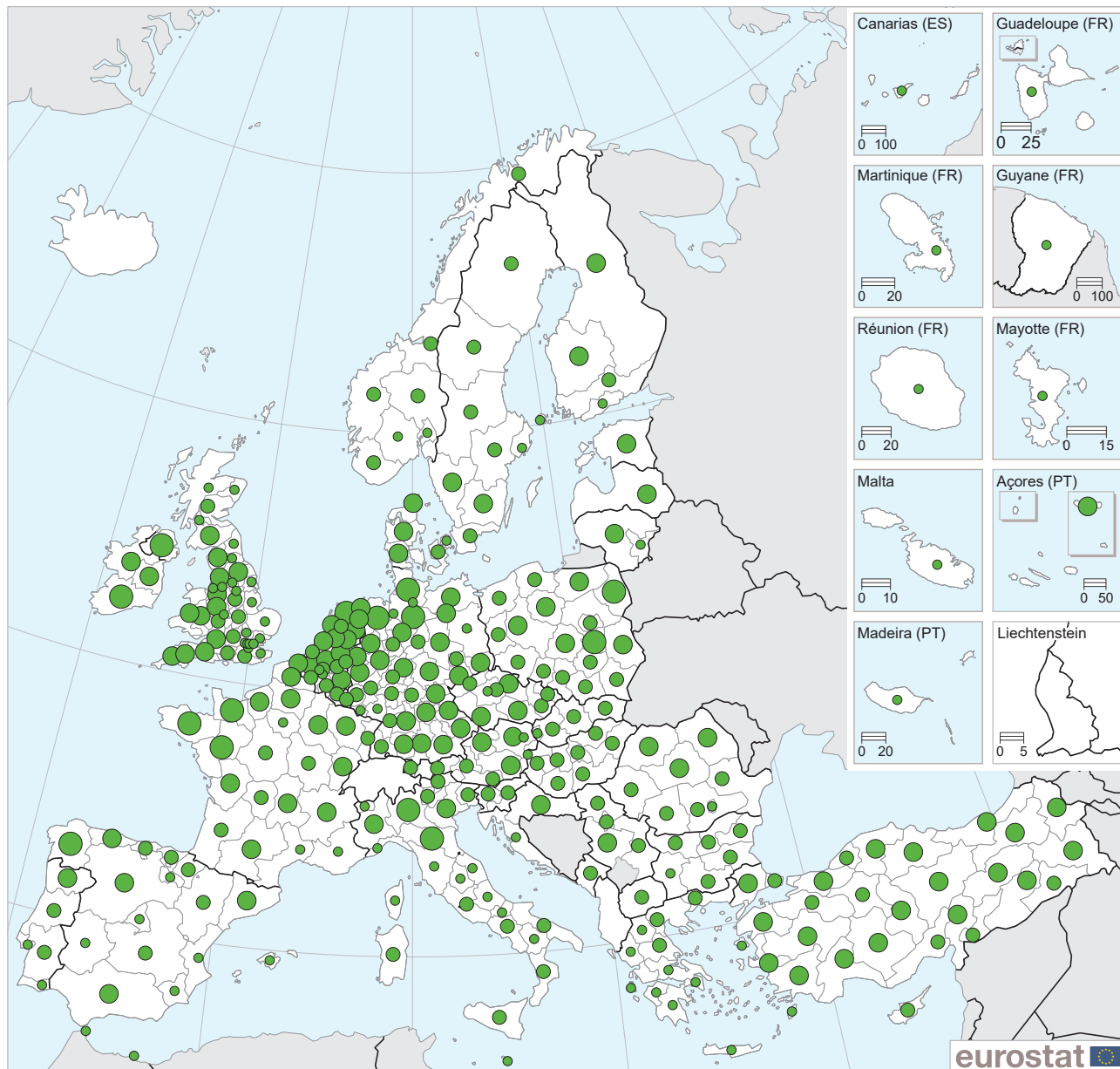
Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019



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). Based on available data. Germany and the United Kingdom: NUTS level 1. Turkey: national data. Belgium: sheep and goats, 2016. Germany: goats, 2016. EU-28 totals for sheep and goats: Eurostat provisional estimates made for the purpose of this publication. Attiki (EL30), Comunidad de Madrid (ES30), Canarias (ES70), Cyprus (CY00), Latvia (LV00), Região Autónoma dos Açores (PT20), Região Autónoma da Madeira (PT30) and Northern Ireland (UKN): provisional.

Source: Eurostat (online data codes: [agr_r_animal](#), [apro_mt_lscat1](#), [apro_mt_lspig](#), [apro_mt_lssheep](#) and [apro_mt_lsgoat](#))

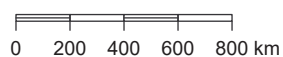
Map 12.6: Cows' milk production, 2017
(thousand tonnes, by NUTS 2 regions)



EU-28 = 165 251

- < 100
- 100 - < 500
- 500 - 2 500
- ≥ 2 500

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019



Note: Közép-Magyarország (HU1), NUTS level 1. Outer London — West and North West (UK17), Norway, North Macedonia and Serbia: 2016. Brandenburg (DE40) and Sachsen-Anhalt (DEE0): 2015. Belgium: estimates. EU-28, Spain, France and Montenegro: provisional.

Source: Eurostat (online data codes: agr_r_milkpr and apro_mk_farm)

13

Focus on
European cities





More than half the world's population resides in **urban areas**: cities continue to attract an increasing share of 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 some cities may be 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 who are living in close proximity to others who face considerable challenges.

This expansion of population numbers both within and around some of the metropolises in the **European Union (EU)** — sometimes referred to as urban sprawl — is accompanied by a range of complex challenges, such as issues relating to sustainability, social cohesion, an ample supply of housing, or the provision of efficient transport services. After looking at the size and age structure of the population of cities, this chapter subsequently focuses on two areas: living conditions (including information on the **risk of poverty or social exclusion** and **housing costs**) and labour markets.

Population

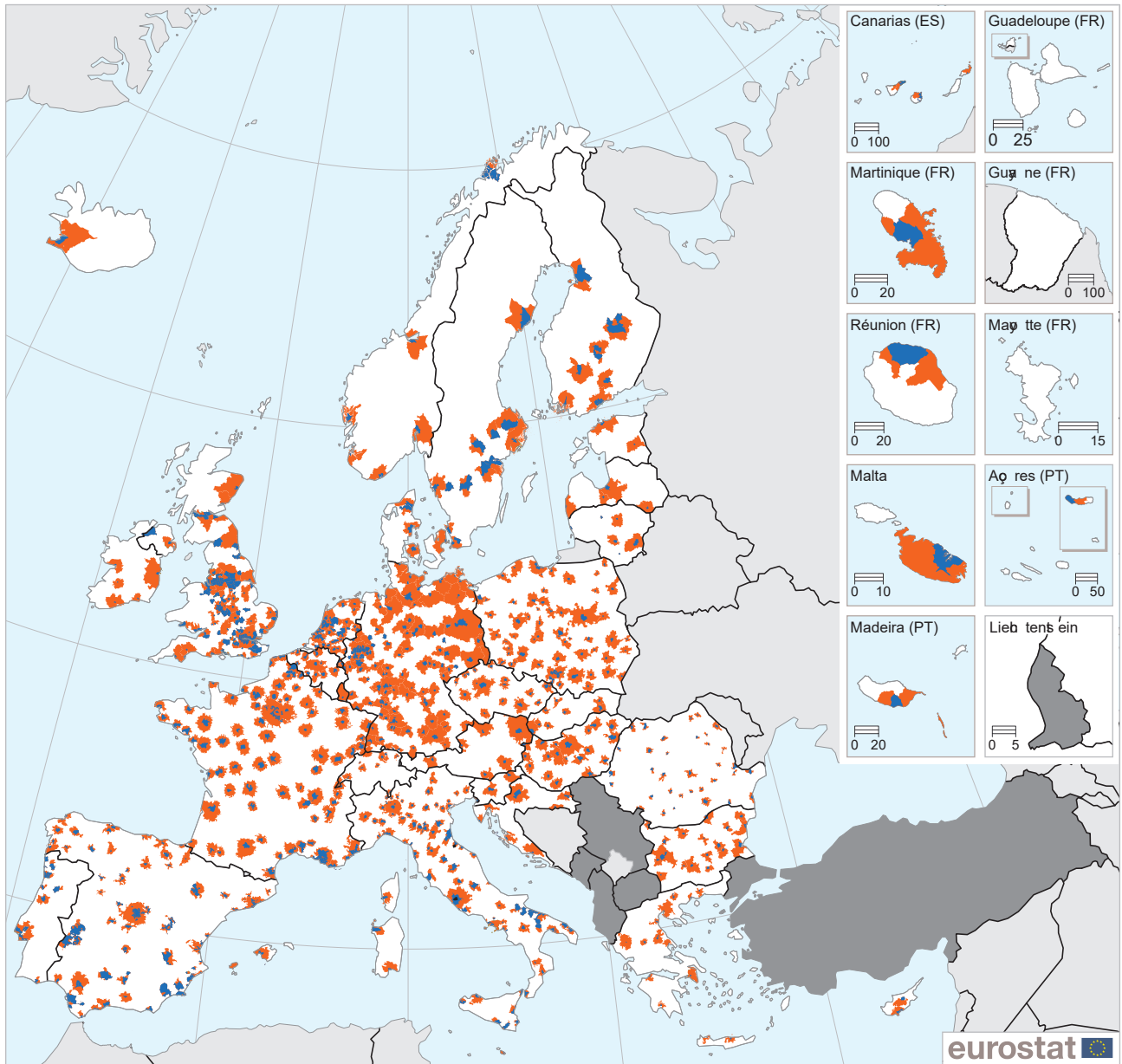
Population statistics presented in this chapter are principally based on cities, with some additional information for **commuting zones** — these are shown in Map 13.1. Statistics for cities refer to the total number of inhabitants according to their **usual residence**, in other words, the place where 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. Detailed information concerning the definition of concepts for cities and other urban entities is provided in Chapter 3 of a **methodological manual on territorial typologies**.

Although population numbers in and around some of the EU's largest cities are often growing at a fast pace, there are other cities in the EU, for example, those characterised by their location in former industrial heartlands, where population numbers are in decline.

The EU has a diverse mix of cities: at one end of the scale are the global metropolises of London in the United Kingdom and Paris in France, while approximately half of the cities in the EU had a relatively small urban centre of between 50 000 and 100 000 inhabitants. Many of the EU's largest cities (especially capital cities) attract both national and international migrants and their population numbers therefore tend to increase at a faster pace than national averages.

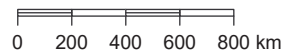


Map 13.1: Cities and commuting zones



- City
- Commuting zone
- Other areas
- Data not available

Administrative boundaries © EuroGeographics © UN-FAO © Turksat Cartography Eurostat — GISCO, 06/2019



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

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

Cities in Belgium, the Netherlands, western parts of Germany, northern Italy and the southern half of the United Kingdom are often close together

One of the most striking aspects of the distribution of cities across some parts of the EU is their close proximity to each other: this can be seen over much of Belgium, the Netherlands, western parts of Germany, northern Italy and the southern half of the United Kingdom. By contrast, the [Nordic EU Member States](#), France and the interior of Spain and Portugal are characterised by a more sparse distribution of cities over a greater area.

These differences in spatial distribution may reflect levels of centralisation. On one hand, there are EU Member States like France which appear to have a relatively monocentric structure based on Paris. This may be contrasted with the polycentric structure of cities that is observed in Germany, where there is no single dominant city and many administrative and/or legislative functions are undertaken at the level of regional Länder.

Figure 13.1 compares the overall size of the 20 largest functional urban areas in the EU, as well as presenting the

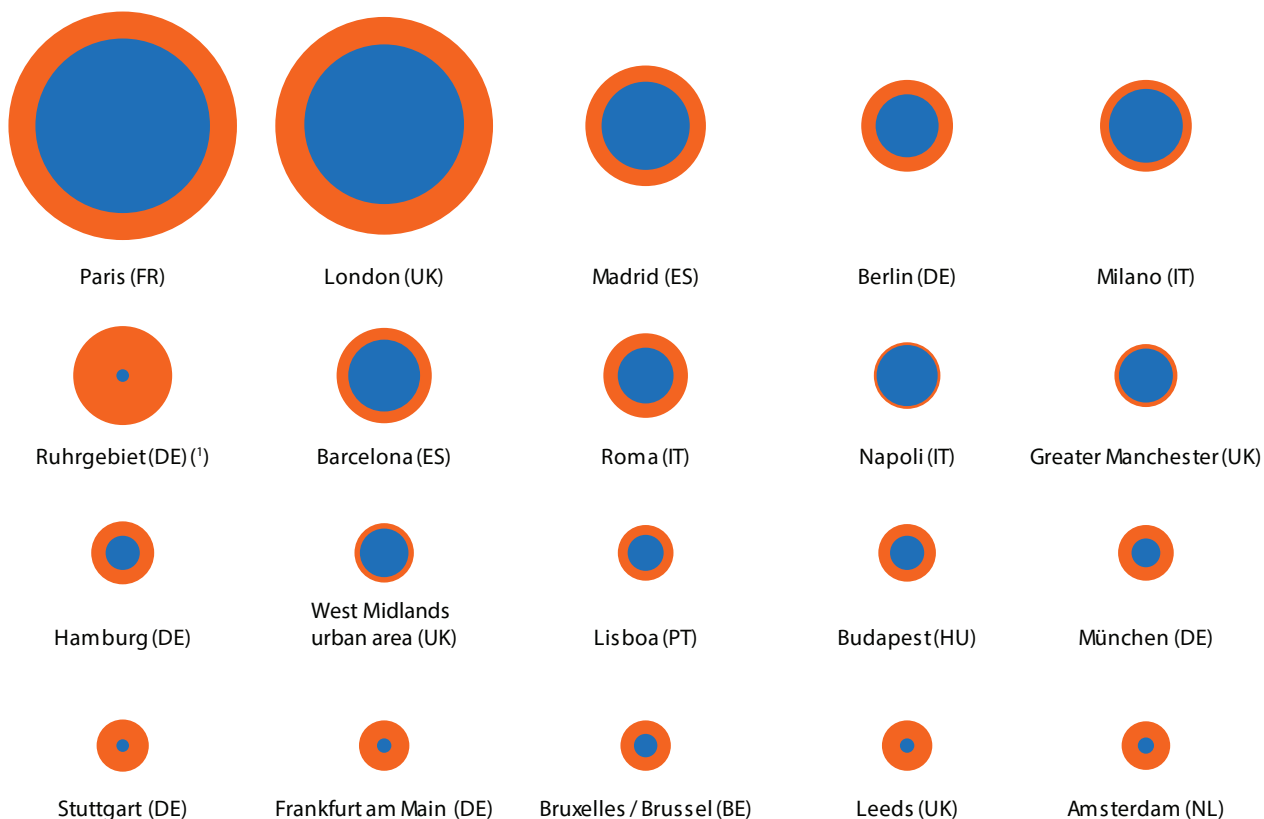
relative importance — in population terms — between cities and their surrounding commuting zones.

Milano in northern Italy was the largest functional urban area in the EU that did not contain a capital city

In 2017, 9 of these 20 functional urban areas contained capital cities: the largest area that was not centred upon a capital city was Milano in northern Italy. Six of the top 20 functional urban areas were in Germany, four in the United Kingdom, three in Italy and two in Spain. Budapest in Hungary was the only functional urban area from the eastern EU Member States that figured in the list and there were none from the northern Member States.

The largest populations in functional urban areas of the EU in 2017 were recorded in Paris (12.8 million; 2015 data) and London (12.1 million), followed — at some distance — by Madrid (Spain; 6.6 million). The next largest concentrations of population — all with 5.1 million inhabitants — were in Berlin (Germany), Milano (Italy) and the German urban agglomeration of the Ruhrgebiet (which includes, among others, Bochum, Dortmund, Duisburg, Essen and Oberhausen).

Figure 13.1: The 20 largest functional urban areas of the EU, by cities and commuting zones, 2017
(million inhabitants)



Note: Bruxelles / Brussel and Budapest: 2016. Paris: 2015. Amsterdam: 2014.

(*) The functional urban area of the Ruhrgebiet does not have an administrative centre. However, the Regionalverband Ruhr is located in Essen, data for which are shown here (under the heading for city).

Source: Eurostat (online data codes: [urb_cpop1](#) and [urb_lpop1](#))

Figure 13.2 shows examples of how the age structure of the population varies across four capitals in the EU. Looking at developments for the total number of residents living in these four capitals, the fastest growth was recorded in Roma, with the number of inhabitants living within the city boundaries rising overall by 11.7 % between 2008 and 2018, while an even higher rate of change (14.4 %) was recorded among those living in the neighbouring commuting zone. The number of residents living in the commuting zone around the Spanish capital of Madrid also grew at a rapid pace, up by 9.8 % overall between 2010 and 2018 (note that the time interval is shorter than for Roma); this was in stark contrast to the situation within the city boundaries, where the number of residents fell by 1.5 %. The populations of the French and German capitals of Paris and Berlin grew at a more modest pace — with an increase in the number of residents living both within their city boundaries and their neighbouring commuting zones.

In Madrid, the share of the population aged 15-44 years fell between 2010 and 2018, while the share of older age groups increased

The statistics presented in Figure 13.2 cover two reference years for each city: the darker colours — next to the central axis — show the share of the resident population in each functional urban area that was living within city boundaries, while the lighter colours show the share of the resident population living within the commuting zone.

- In Paris: the commuting zone accounted for a relatively small part of the total population. The population grew older between 2010 and 2015, with the share of the population aged 65-74 increasing notably; this increase was observed both within the city and the commuting zone.
- In Madrid: there was a particularly large fall in the share of the population aged 25-34 years; this age group accounted for 17.6 % of the population in 2010 but just 12.4 % in 2018. The neighbouring age groups — 15-24 years and 35-44 years — also recorded a fall in their shares, with all of the older age groups (from 45-54 years upwards) recording an increase in their shares.
- In Berlin: the share of the population aged 15-24 years, 35-44 years and 65-74 years all fell between 2007 and 2017, while the shares of all other age groups increased, most strongly in the age groups 75 years and over and 25-34 years.

- In Roma: the share of the population aged 25-34 years and 35-44 years fell, as did the shares of the youngest age group (0-4 years) and one of the older age groups (65-74 years). The largest increase was recorded for the share of those aged 45-54 years.

Cities with the highest young-age dependency ratios were often characterised by relatively large populations of manual workers and/or migrant populations ...

Map 13.2 provides information on the age structure of 919 cities in the EU and a further 16 cities in 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).

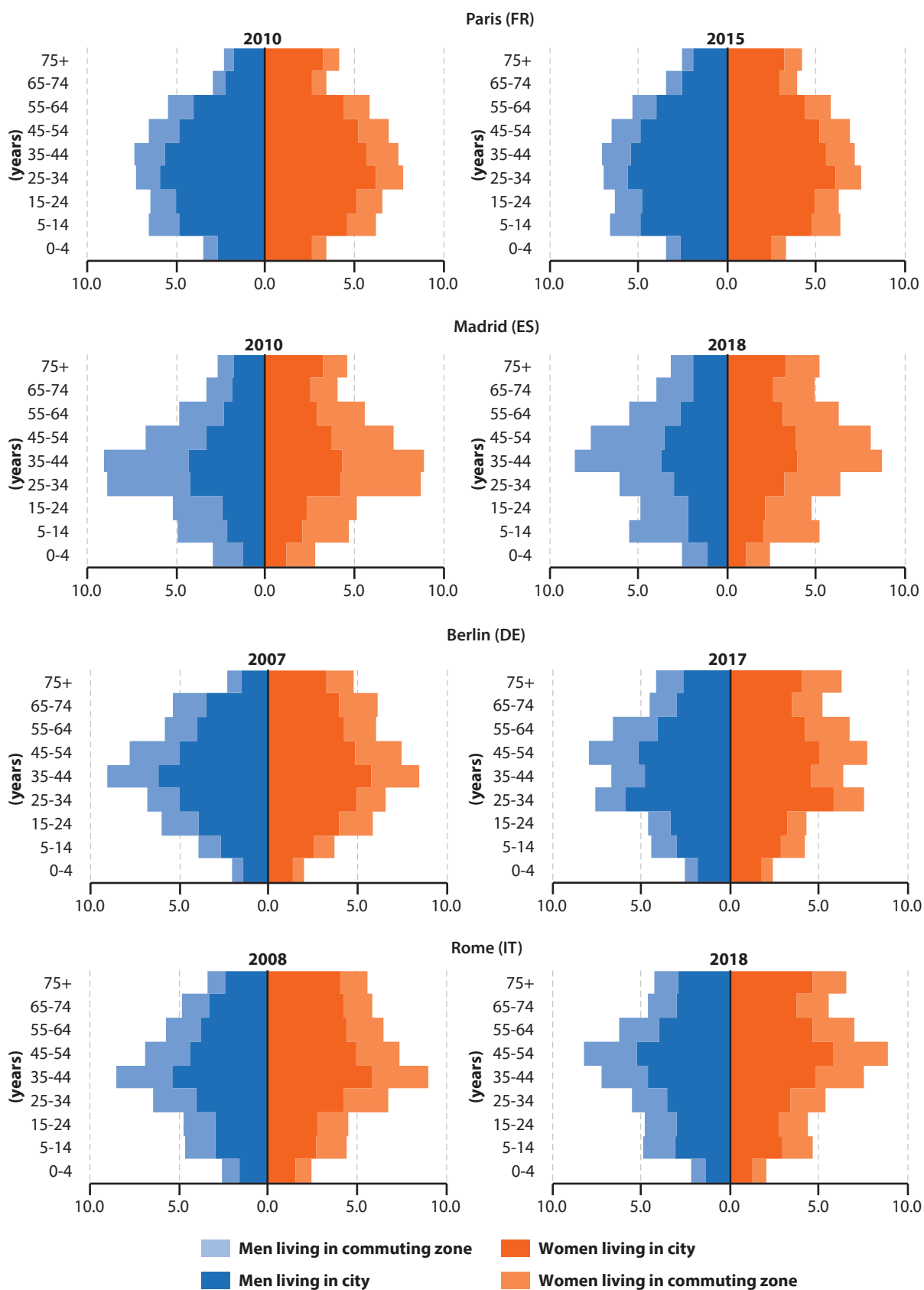
Across the EU-28 as a whole, the young-age dependency ratio was 35.0 % in 2017. The highest ratio was 58.4 % (2014 data) in Communauté d'agglomération Val de France, near Paris (France), while the joint lowest ratio was 22.6 % in Würzburg (Germany), Cagliari (Italy) and Braïla (Romania).

The age structure of EU cities was somewhat skewed insofar as 556 recorded ratios that were below the EU-28 average, compared with 358 that had higher than average young-age dependency ratios; five cities had the same ratio. 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.

Young-age dependency ratios were highest in a large number of cities in France (2014 or 2015 data) and the United Kingdom. The only city with a ratio of 45.0 % or higher that was not in these two EU Member States was the atypical case of the autonomous Spanish city of Melilla.



Figure 13.2: Population pyramids, selected cities, 2007 and 2017
(% share of total population)

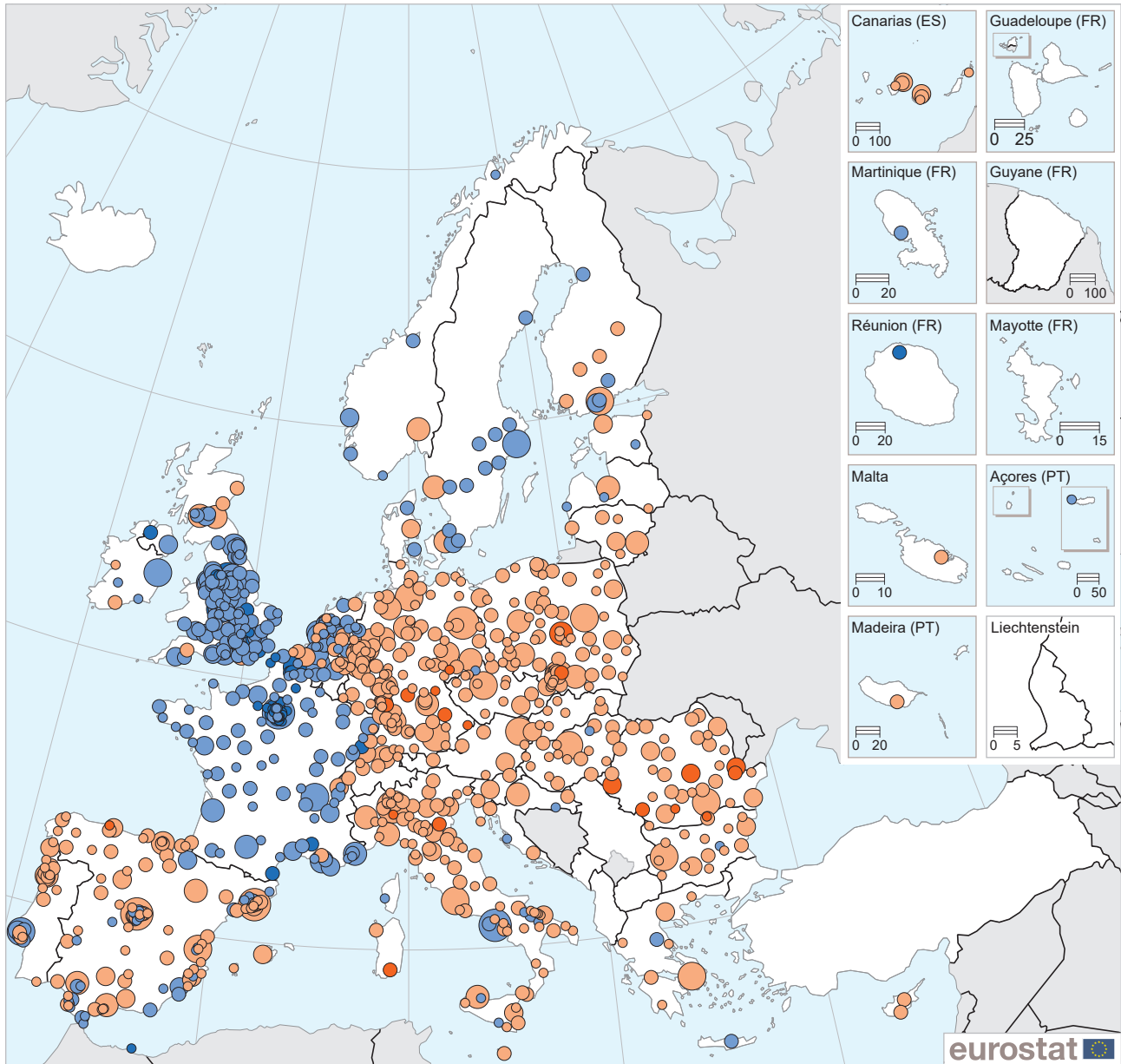


Note: the two reference periods used for each capital city are different.

Source: Eurostat (online data codes: urb_cpop1 and urb_lpop1)



Map 13.2: Young-age dependency ratio, selected cities, 2017
(%)



EU-28 = 35.0

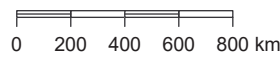
Young-age dependency ratio (%)

- < 25
- 25 - < 35
- 35 - < 45
- ≥ 45

Population (inhabitants)

- < 100 000
- 100 000 - < 250 000
- 250 000 - < 500 000
- 500 000 - < 1 000 000
- 1 000 000 - < 3 000 000
- ≥ 3 000 000

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 06/2019



Note: based on the ratio of the population aged 0-19 years / population aged 20-64 years, expressed in percentage terms.
Hungary, Slovenia, Greater Belfast (UK) and Switzerland (most cities): 2016. Belgium, Plauen (DE), Görlitz (DE), Zwickau (DE) and France (most cities): 2015. France (various cities), the Netherlands, Austria, Poland, Winterthur (CH) and Biel/Bienne (CH): 2014. Denmark and Stavanger (NO): 2013. Ireland, Greece, Cyprus, Luxembourg and Norway (most cities): 2011. Germany (various cities), Ireland, Lithuania and Poland: estimates.

Source: Eurostat (online data codes: urb_cpopstr, urbcpop1 and demo_pjanind)

... while many of the cities with low shares of young people were in Germany or Romania

In Germany, Cyprus (2011 data), Lithuania, Luxembourg (2011 data), Malta, Austria, Poland (2014 data), Romania, Slovenia (2016 data) and Slovakia — every city had a young-age dependency ratio that was below the EU-28 average. Around two thirds of the 19 cities with the lowest ratios (below 25.0 %) were in Romania or Germany.

Map 13.3 complements Map 13.2, providing information on the old-age dependency ratio, in other words the ratio between the number of people aged 65 years and over and the number of people aged 20 to 64 years. Across the EU-28 as a whole, the old-age dependency ratio was 32.5 % in 2017.

The existence of greater opportunities for higher education and employment offered by many large cities might lead to a lower old-age dependency ratio. Equally, it is conceivable that older persons (aged 65 and over) might be tempted to move away from capital and other large cities for their retirement, in order to avoid some of the perceived disadvantages often associated with living in big cities, such as congestion, crime and a higher cost of living. Furthermore, in many countries coastal destinations attract older people. However, some cities in the EU have a relatively high proportion of older people because of an outflow of younger people, reflecting in some cases the high cost of property (for rent or to buy) in many city centre locations and in other cases limited educational and/or employment opportunities.

A majority of cities across the EU with an old-age dependency ratio of at least 45 % were in Italy, Germany or France, with the highest rates often in coastal cities or in eastern Germany

The highest old-age dependency ratio was recorded in the French resort of Fréjus (63.7 %; 2015 data). There were seven other cities where this rate reached or exceeded 50.0 %:

- the coastal cities of Cannes (2014 data) in France, Savona, Genova and Trieste in Italy, and Waveney (which includes Lowestoft) in the United Kingdom;

- Dessau-Roßlau and Görlitz in eastern Germany, the former between Leipzig and Berlin and the latter on the border between Germany and Poland.

In 2017, the majority (26 from 34) of the EU cities with an old-age dependency rate of 45.0 % or more (as shown by the darkest shade of blue in Map 13.3) were located in Italy (12 cities), Germany (eight cities) or France (six cities; 2014 or 2015 data). The other cities were in Spain, the United Kingdom (three each), Belgium (2015 data) and Portugal (one each).

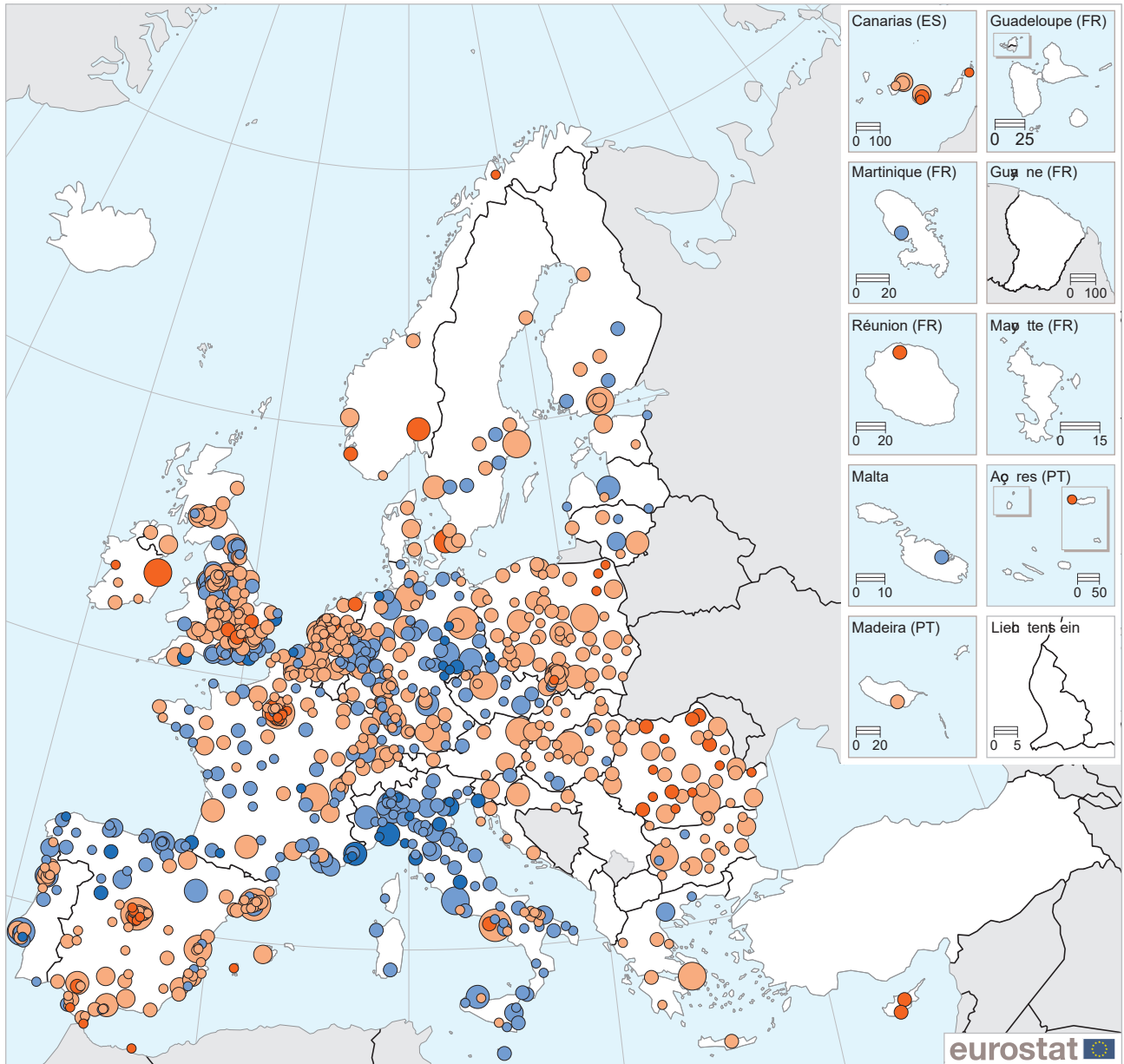
Aside from in Germany (where all but one of these cities were in eastern Germany), the cities with relatively high old-age dependency ratios were often located close to a coastline — including popular retirement destinations — with several on the Italian Adriatic coast or the Mediterranean coast in an area running from southern France into northern Italy. Among some of the largest cities in the EU — those with a population of at least 500 000 inhabitants — old-age dependency ratios of at least 45.0 % were recorded in Genova (north-west of Italy) and Nice (2015 data; south-east France).

Relatively few old persons living in satellite cities around the Spanish and French capitals

In 2017, there were 57 cities across the EU with an old-age dependency ratio that was less than 20 % (as shown by the lightest shade in Map 13.3). The two lowest old-age dependency ratios were in Rivas-Vaciamadrid and Valdemoro (9.9 % and 13.6 % respectively), both close to Madrid; there were several other cities with relatively low old-age dependency ratios around the Spanish capital. A similar situation was observed in a number of smaller cities around Paris. Several reasons may underlie these patterns: young people may be unable to afford to buy or rent in city centres (especially in capital cities) and instead live in the surrounding areas; families may move to the suburbs to have additional (and more affordable) living space; older people may move out of the suburbs to retire to the countryside or coast.

These 57 cities with the lowest old-age dependency ratios were concentrated principally in Spain (14 cities), Romania (13 cities), France (11 cities), the Netherlands (2014 data), Poland (2014 data) and the United Kingdom (four cities each).

Map 13.3: Old-age dependency ratio, selected cities, 2017
(%)



EU-28 = 32.5

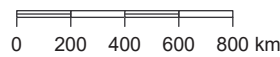
Old-age dependency ratio (%)

- < 20.0
- 20.0 - < 32.5
- 32.5 - < 45.0
- ≥ 45.0

Population (inhabitants)

- < 100 000
- 100 000 - < 250 000
- 250 000 - < 500 000
- 500 000 - < 1 000 000
- 1 000 000 - < 3 000 000
- ≥ 3 000 000

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 06/2019



Note: based on the ratio of the population aged ≥ 65 years / population aged 20-64 years, expressed in percentage terms.
Hungary, Slovenia, Greater Belfast (UK) and Switzerland (most cities): 2016. Belgium and France (most cities): 2015. France (various cities), the Netherlands, Austria, Poland, Winterthur (CH) and Biel/Bienne (CH): 2014. Denmark and Stavanger (NO): 2013. Ireland, Greece, Cyprus, Luxembourg and Norway (most cities): 2011. Germany (various cities), Ireland, Lithuania and Poland: estimates.

Source: Eurostat (online data codes: [urb_cpopstr](#), [urbcpop1](#) and [demo_pjanind](#))

Socioeconomic conditions

The remaining analyses in this chapter — based on Figures 13.3 to 13.7 — present several indicators concerning living conditions and the labour market, each presented by *degree of urbanisation*. Detailed information concerning the definition of concepts used for assessing the degree of urbanisation is provided in Chapter 2 of a [methodological manual on territorial typologies](#).

In western 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

One of the five headline targets for the [Europe 2020 strategy](#) is to lift at least 20 million people in the EU out of the risk of poverty or social exclusion by 2020 (compared with the number in 2008). 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 at risk of poverty or social exclusion are in at least one of the following situations:

- at risk of poverty after social transfers (income poverty);
- severely materially deprived; or

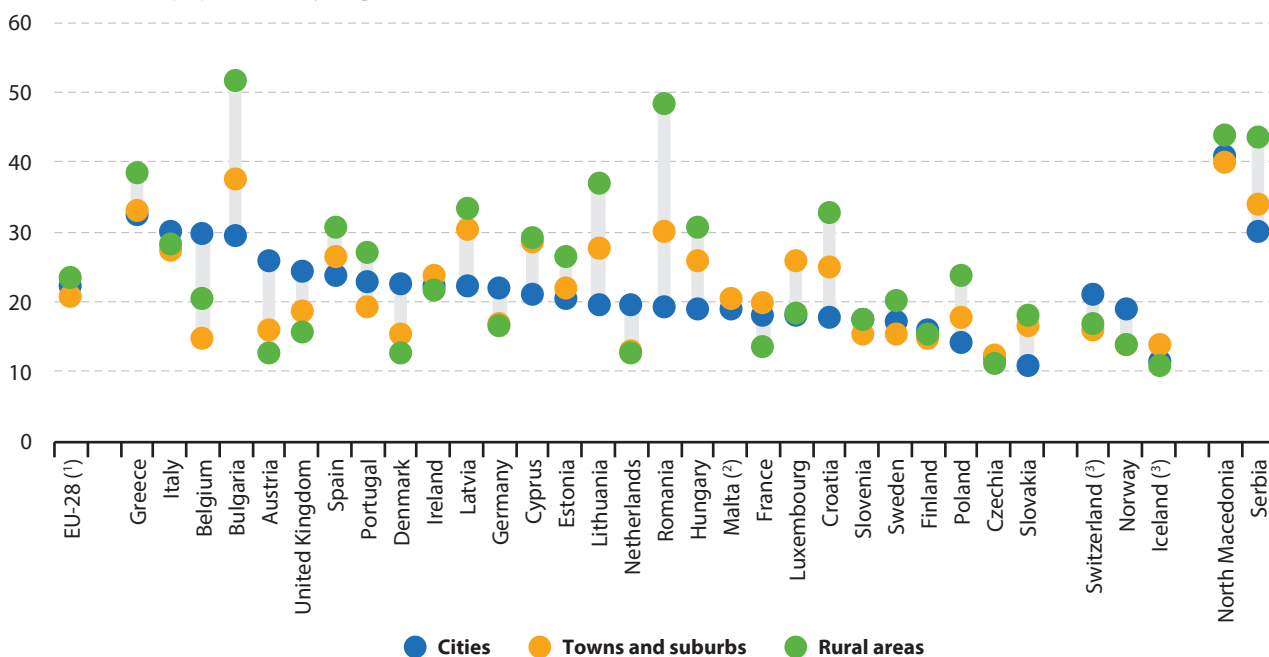
- living in households with very low work intensity.

In 2017, almost one quarter (22.4 %) of the EU-28 population was living at risk of poverty or social exclusion. An analysis by degree of urbanisation (see Figure 13.3) reveals that people living in [towns and suburbs](#) had the lowest risk of poverty or social exclusion (21.0 %), a share which was 22.6 % for city-dwellers and peaked at 23.9 % among people living in [rural areas](#).

In half (14) of the EU Member States, the highest proportion of people living at risk of poverty or social exclusion in 2017 was recorded in rural areas; these 14 Member States were located in eastern (six), southern (four) or northern (four) parts of the EU. A closer examination reveals that more than half of the rural population was at risk of poverty or social exclusion in Bulgaria (51.9 %), while the share was only slightly lower in Romania (48.5 %).

In nine EU Member States the proportion of people at risk of poverty or social exclusion in 2017 was higher in cities than elsewhere: a majority of these were located in western parts of the EU —Belgium, Austria, the United Kingdom, Germany and the Netherlands. As such, western European cities were often characterised by an urban paradox, insofar as while they generated high levels of wealth, they also commonly reported that relatively large shares of their populations were living with the risk of poverty or social exclusion.

Figure 13.3: People at risk of poverty or social exclusion, 2017
(% share of total population, by degree of urbanisation)



Note: ranked on cities.

(1) Rural areas: estimate.

(2) Rural areas: low reliability

(3) 2016.

Source: Eurostat (online data codes: [ilc_peps13](#) and [ilc_peps01](#))

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

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. While housing costs are not directly a component of the risk of poverty or social exclusion, they may indirectly play a role: high housing costs can result in households having only a limited budget available for other expenditure, leading to material deprivation. Real estate prices and rents vary considerably, not just between and within EU Member States, but also at a more local level.

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 10.4 % in 2017: an analysis by degree of urbanisation reveals that this burden was lowest in rural areas (7.8 %), with a slightly higher rate recorded for people living in towns and suburbs (9.8 %) and a peak among those living in cities (12.5 %) — see Figure 13.4. Note that people living in cities are often prepared to pay more for less space in order to live centrally or in a location with particular amenities

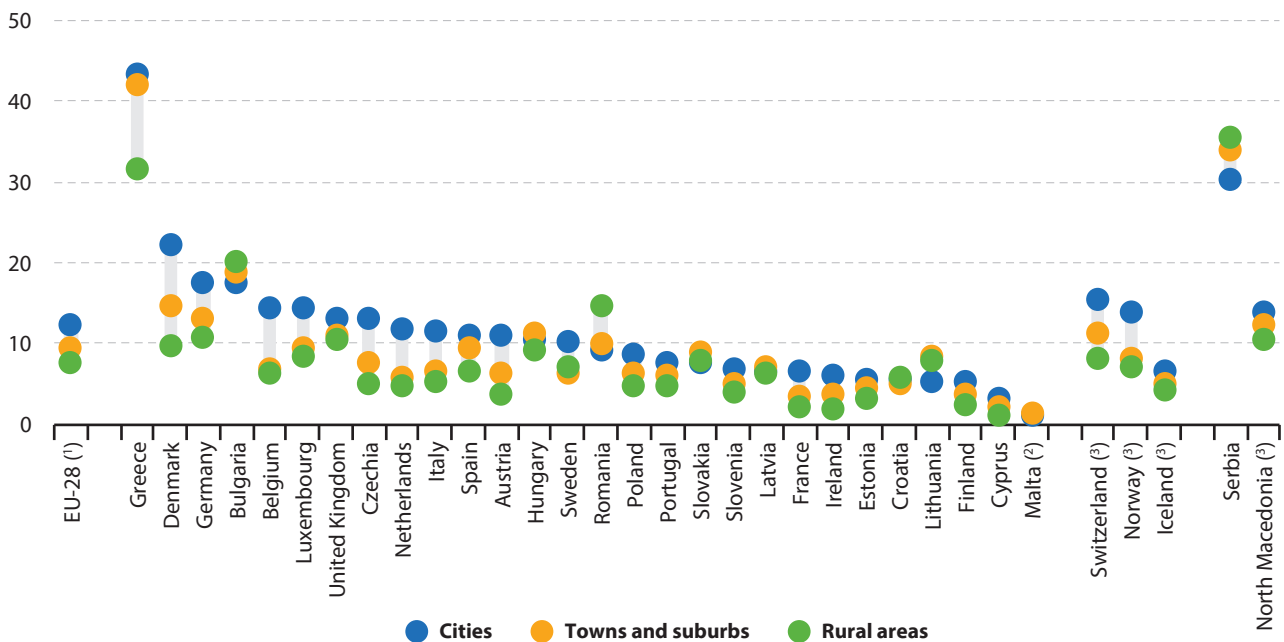
or transport connections. This pattern has led to the gentrification (displacement of lower-income families as a result of rising property prices) of some inner city areas and considerable changes in their demographic and social make-up. In a similar vein, popular rural or coastal locations may also experience high property prices, especially when supply is constrained by local planning authorities seeking to maintain the original character of an area.

In five EU Member States — Greece, Bulgaria, Romania, Germany and the United Kingdom — the share of the rural population in 2017 that was overburdened by the cost of housing was in double-digits; particularly high rates were observed in Greece (31.9 %) and Bulgaria (20.4 %). Furthermore, there were seven Member States where a double-digit share of the population living in towns and suburbs was overburdened by housing costs, with Greece (42.2 %) and Bulgaria (19.2 %) again recording particularly high shares.

By contrast, the share of the population living in cities that was overburdened by housing costs exceeded 10.0 % in half (14) of the EU Member States in 2017. Again, Greece had the highest share (43.7 %), approximately double the next highest in Denmark (22.4 %), which was followed by Germany (17.9 %) and Bulgaria (17.7 %).

Figure 13.4: Housing cost overburden rate, 2017

(% share of people living in households where total housing costs represent more than 40 % of disposable income, by degree of urbanisation)



Note: ranked on cities.

(1) Rural areas: estimate.

(2) Rural areas: low reliability

(3) 2016.

Source: Eurostat (online data codes: [ilc_lvho07d](#) and [ilc_lvho07a](#))

Within cities, all northern Member States reported relatively high employment rates and all southern Member States relatively low ones

In a majority of the eastern EU Member States, cities tended to outperform rural areas economically and record some of the highest rates of economic growth. By contrast, in some western Member States — for example, Belgium, France or the United Kingdom — it was common to find a number of cities had been ‘left behind’ by globalisation; places that developed rapidly during the industrial revolution but which subsequently did not adapt when their traditional activities moved elsewhere or were replaced by new technologies. These differences are often reflected in labour market indicators such as the employment and unemployment rates.

The Europe 2020 target for the employment rate (the ratio of employed persons compared with the population of the same age group) is to ensure that 75 % of people aged 20-64 years are employed by 2020. This age range provides some compatibility taking account of different practices concerning the proportion of young persons remaining within education systems as well (statutory) retirement or pension ages across the EU.

Across the EU-28, the employment rate for people aged 20-64 years stood at 72.1 % in 2017. There was very little difference between the rates recorded for the three different degrees of urbanisation: they ranged from 72.0 % in cities and 72.1 % in towns and suburbs to 72.6 % in rural areas. Northern EU Member States reported employment rates that were above the average for the whole of the EU-28 (72.1 %), with Sweden reporting the highest rate of all (81.8 %).

(¹) In Sweden the employment rate for rural areas was the same as that for towns and suburbs.

Equally, most southern Member States reported below average employment rates, with Italy (62.3 %) and Greece (57.8 %) recording the lowest.

Considering just the data for cities, a similar pattern emerges, with all northern Member States reporting relatively high employment rates in 2017 (74.3 % in Finland was the lowest) and all southern Member States reporting relatively low rates (72.9 % in Portugal was the highest). The highest employment rate for people living in cities was 82.0 % for Lithuania while in Greece the rate was 25.7 percentage points (pp) lower, at 56.3 %.

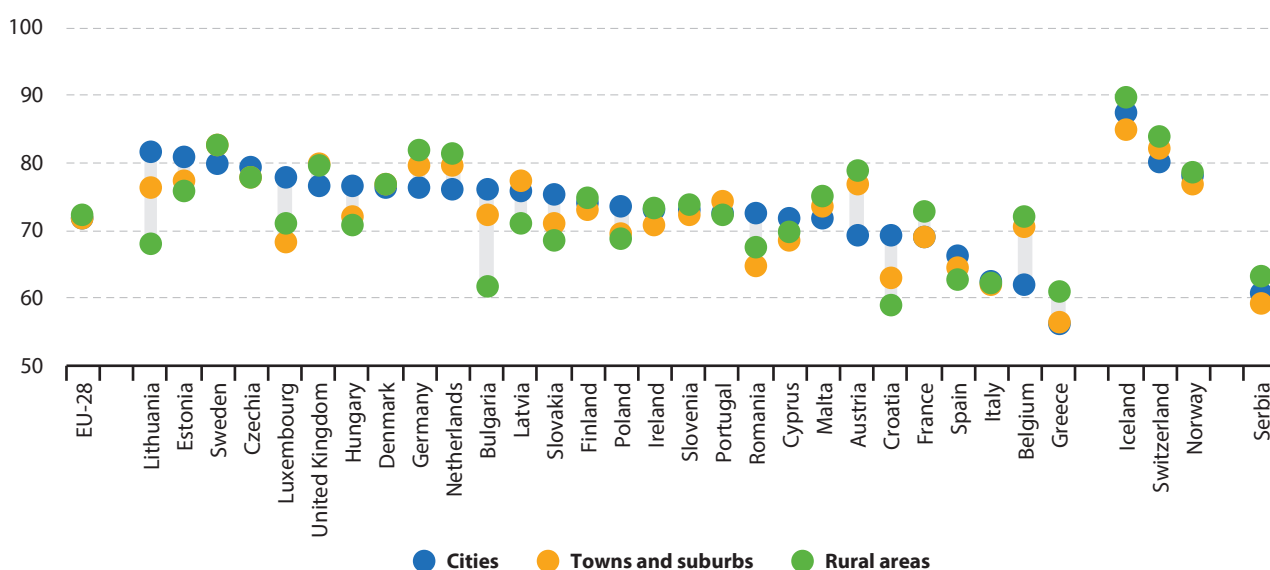
In most of the western Member States the lowest employment rates were recorded in cities, while in eastern Member States the highest rates were in cities

In 2017, 12 of the EU Member States recorded their highest employment rate within rural areas: these included most of the western Member States (neither Luxembourg nor the United Kingdom), the three Nordic Member States (¹), Greece, Malta and Slovenia. In Belgium, the employment rate for cities was 8.5 pp lower than for either of the other two degrees of urbanisation, while in Austria the difference was 7.4 pp.

By contrast, in nearly all of the eastern Member States, as well as in two of the **Baltic Member States** and three southern Member States (Cyprus, Spain and Italy) the highest employment rates in 2017 were recorded for cities. In Luxembourg, the employment rate for cities was 6.8 pp higher than for either of the other two degrees of urbanisation, while in Croatia, Lithuania and Romania the difference was also more than 5.0 pp.

Figure 13.5: Employment rate, 2017

(%, people aged 20-64 years in employment as a share of the total population aged 20-64 years, by degree of urbanisation)



Note: the y-axis does not start at 0. Ranked on cities.

Source: Eurostat (online data code: [lfst_r_ergau](#))



In all of the eastern Member States, except for Czechia, the lowest shares of people living in households with very low work intensity were in cities

An issue closely related to the employment rate is work intensity: this refers to the ratio between the number of months that household members of working age (18-59 years, not being a student aged 18-24) were employed during the income reference year and the total number of months that the same household members could theoretically have worked. People living in households with very low work intensity are defined as persons aged 0-59 years living in households where the adults worked 20 % or less of their total potential during the previous 12 months. Households composed only of children, of students aged less than 25 years and/or people aged 60 years or more are completely excluded from the calculation.

Just less than one tenth (9.5 %) of the EU-28 population aged 0-59 years lived in households with very low work intensity in 2017. In rural areas the rate was 8.2 %, in towns and suburbs it was 9.0 % and in cities it was 10.8 % (see Figure 13.6). As such, cities combined the lowest employment rate with the highest share of people living in households with low work intensity, while the reverse was true for rural areas.

Among the EU Member States, the lowest shares of people living in households with very low work intensity in 2017 were recorded in several eastern Member States, Estonia and Luxembourg. The lowest shares were 5.4 % in Slovakia and 5.5 % in Czechia, while the highest shares were 15.6 % in Greece and 16.2 % in Ireland. Focusing on the part of the population living

in cities, Slovakia again recorded the lowest share of people living in households with low work intensity (1.9 %), while Greece and Ireland (both 16.2 %) again recorded high shares, although these were notably smaller than in Belgium (20.9 %).

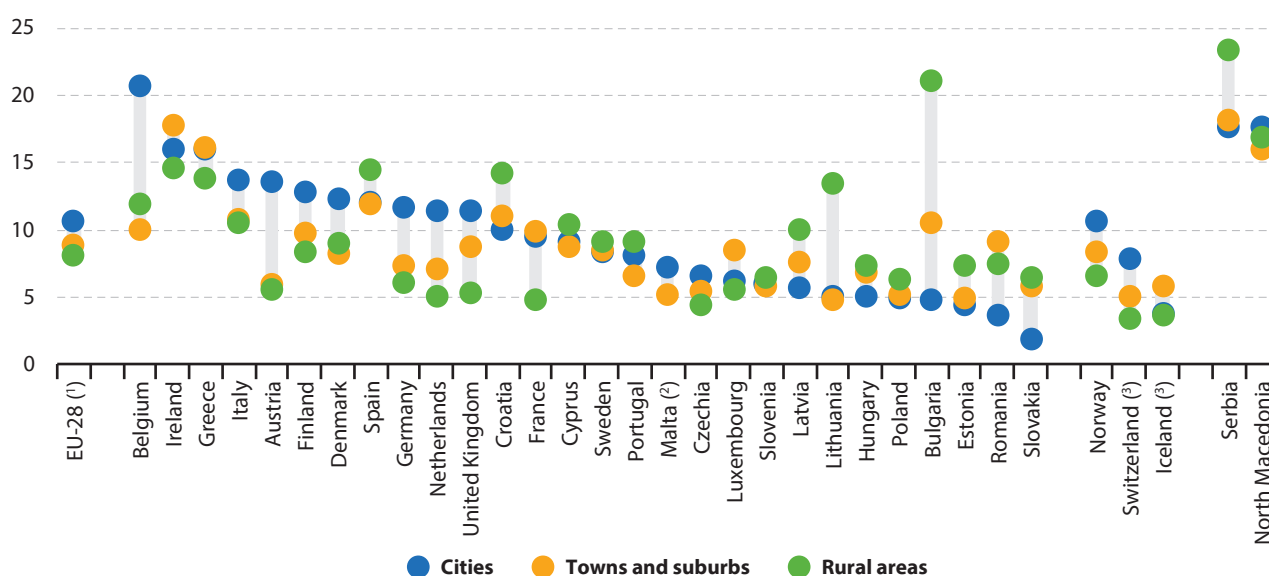
Rural areas had the highest shares of people living in households with very low work intensity in 2017 in 13 EU Member States, including all of the eastern and northern Member States except for Czechia, Denmark, Romania and Finland, as well as three southern Member States (Spain, Cyprus and Portugal), but none of the western Member States. Cities recorded the highest shares of people living in households with very low work intensity in most of the western EU Member States (not France, Ireland or Luxembourg), as well as in two of the southern and Nordic Member States (Italy, Malta, Denmark and Finland). Aside from Belgium (mentioned above), the share of people living in households with very low work intensity was more than 5.0 pp higher for cities than for either of the other two degrees of urbanisation in Austria, the Netherlands, the United Kingdom and Germany.

The four largest Member States — in population terms — all recorded their lowest unemployment rates among people living in rural areas and their highest among people living in cities

Unemployed persons are defined on the basis of guidelines provided by the [International Labour Organisation \(ILO\)](#), as:

- someone aged 15-74 years;

Figure 13.6: People living in households with very low work intensity, 2017
(% share of people aged 0-59 years, by degree of urbanisation)



Note: ranked on cities.

(1) Rural areas: estimate.

(2) Rural areas: low reliability

Source: Eurostat (online data codes: [ilc_lvhl23](#) and [ilc_lvhl11](#))

(3) 2016.

- without work during the reference week;
- available to start work within the next two weeks (or has already found a job to start within the next three months); and,
- actively having sought employment at some time during the previous four weeks.

The **unemployment rate** is the number of unemployed people as a percentage of the labour force (those employed or unemployed). Note that the unemployment rate takes into account people who would like to (or have to) work after the age of 64 but are unable to find a job. As such, the upper age limit is usually set to 74 years (in contrast to the upper age range for the employment rate, which is generally set to 64 years).

In 2017, the EU-28 unemployment rate stood at 7.6 %. The highest unemployment rate, by degree of urbanisation, was recorded for people living in cities (8.3 %), while somewhat lower rates were registered for those living in towns and suburbs (7.5 %) and rural areas (6.6 %). This pattern was consistent with what was observed for the share of people living in households with very low work intensity (also highest in cities).

In 2017, the overall unemployment rates in Greece (21.5 %) and Spain (17.2 %) were clearly above those in other EU Member States, with Italy, Croatia and Cyprus recording the next highest rates, just over 11 %. With the exception of Malta (4.0 %), all of the southern Member States had unemployment rates above the EU-28 average.

When considering just the population living in cities: Greece (23.0 %), Spain (16.6 %) and Italy (11.9 %) had

the highest unemployment rates in 2017, closely followed by Belgium (11.7 %). All five of the lowest unemployment rates for people living in cities were in eastern EU Member States, with the lowest rate in Czechia (2.8 %); Croatia was the only eastern Member State to report an unemployment rate for people living in cities that was above the EU-28 average. As for the overall unemployment rate, Malta was the only southern Member State to report a rate for people living in cities that was below the EU-28 average.

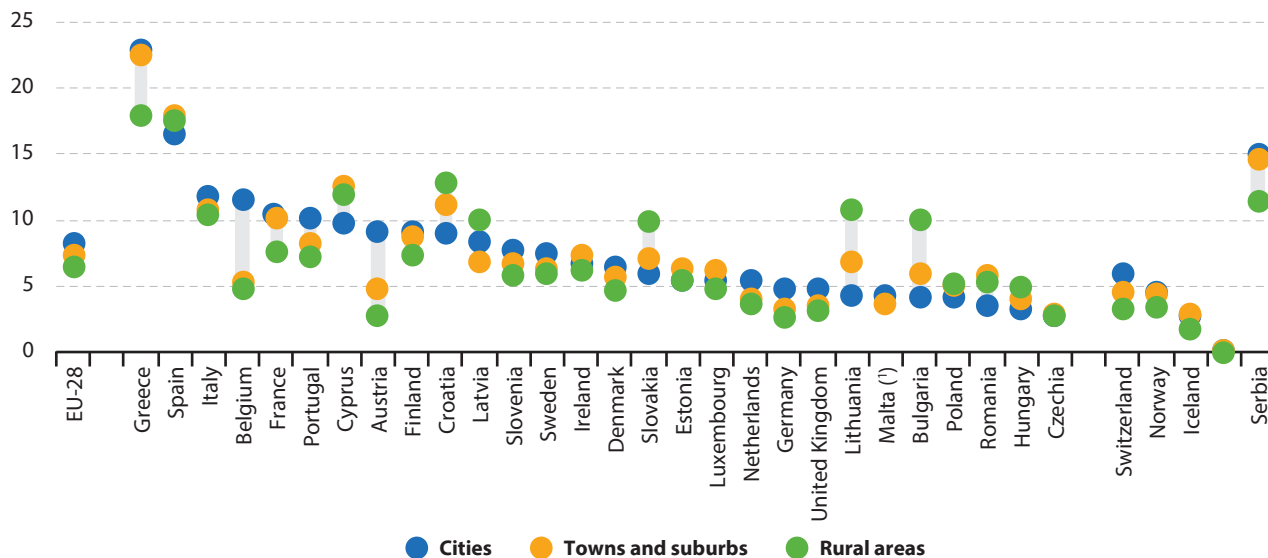
Latvia was the only EU Member State where the lowest unemployment rate in 2017 was in towns and suburbs. There were 16 Member States where the unemployment rate was lowest among people living in rural areas:

- all of the western Member States;
- all three Nordic Member States and Lithuania from the north of the EU;
- Greece, Italy and Portugal from the south of the EU;
- Slovenia from the east of the EU.

In 2017, people living in cities had the lowest unemployment rates in all of the eastern EU Member States (except for Slovenia), as well as in two of the southern and one of the Baltic Member States (Spain, Cyprus and Lithuania). By contrast, the four largest EU Member States in population terms — Germany, France, Italy and the United Kingdom — all recorded their lowest unemployment rates among people living in rural areas and their highest rates among people living in cities, thereby collectively greatly influencing the overall EU-28 figures. In Belgium, the unemployment rate for people living in cities was 6.3 pp higher than for either of the other two degrees of urbanisation, while in Austria the difference was 4.4 pp.

Figure 13.7: Unemployment rate, 2017

(%, unemployed people aged 15-74 years as a share of the total labour force aged 15-74 years, by degree of urbanisation)



Note: ranked on cities.

(*) Rural areas: low reliability

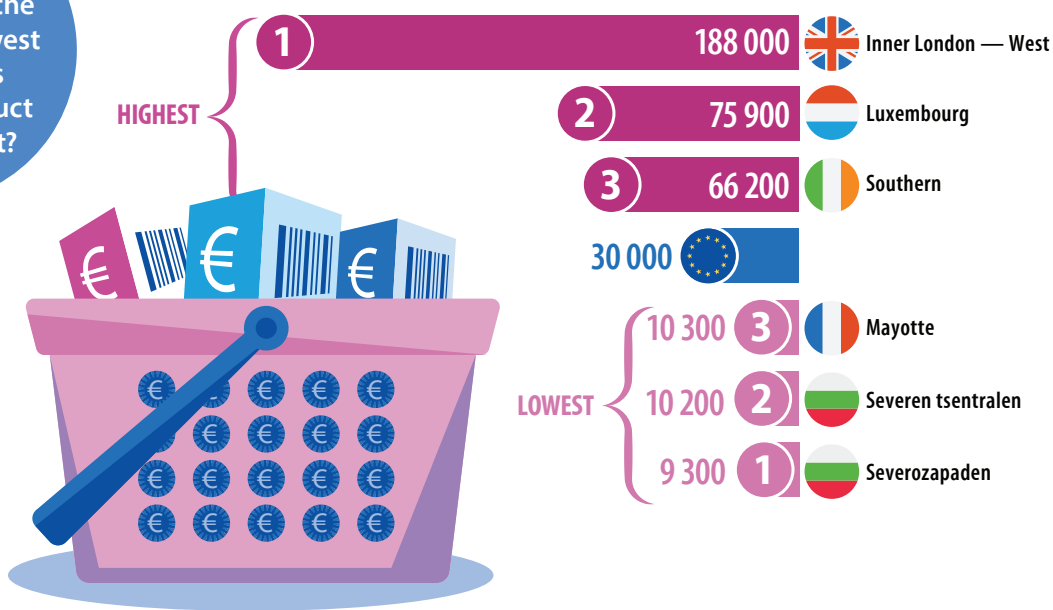
Source: Eurostat (online data code: lfst_r_urgau)

14

Focus on regional socioeconomic developments



Which regions in the EU have the highest and lowest level of gross domestic product per inhabitant?



(in purchasing power standard, 2017 data)

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.

At the time of writing, just over a decade has passed since the global financial and economic crisis started. The analysis in this chapter aims to give an idea — based on a small selection of indicators — how resilient or vulnerable the regions in the EU were. The main focus of the analyses is the combined impact of the crisis and the subsequent recovery, to see how well the regions bounced back: have some leapt ahead while others have not yet returned to their pre-crisis levels?

This chapter uses key indicators from a variety of datasets to analyse socioeconomic developments within the EU-28 from 2008 — when the global financial and economic crisis was first felt in the EU — through until the most recent period, namely 2016, 2017 or 2018 (depending on the indicator concerned).

The first section is based on regional gross domestic product (GDP), the principal aggregate for measuring the economic output of an economy. It is followed by a regional analysis of gross value added, which is the main component of GDP (when compiled from the output approach). Two more national accounts indicators follow: household disposable income per inhabitant and labour productivity. The next section starts with information on population developments before moving on to an indicator of tertiary educational

attainment among adults. This is followed by a measure of the working-age population, while the chapter concludes with two analyses concerning the employment rate.

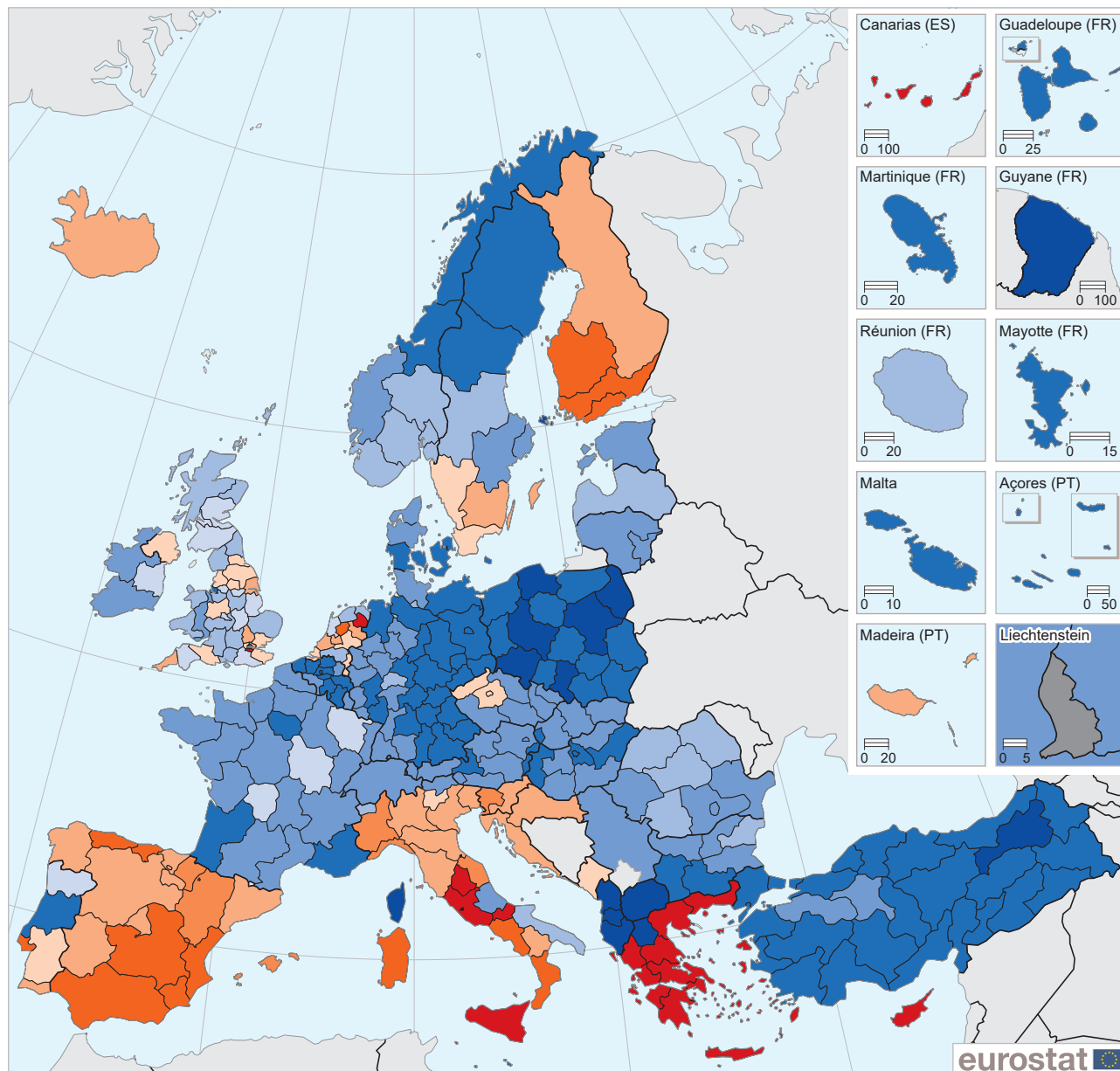
Regional GDP per inhabitant

The first analysis — see Map 14.1 — focuses on GDP per inhabitant. In order to compensate for price level differences across countries, the GDP data presented here have been 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).

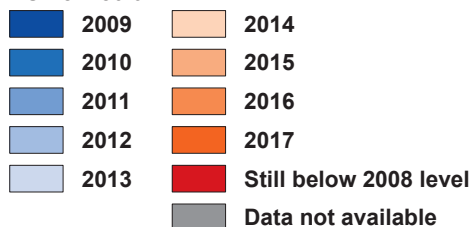
The idea behind the analysis in Map 14.1 is that, having peaked in 2008, the value of this indicator fell in 2009 (and possibly also one or more subsequent years) as a result of the crisis and then subsequently rose as regional economies recovered. The map shows in which year (therefore how quickly) each region had recovered to the extent that its GDP per inhabitant had surpassed its 2008 level. However, 10 of the 280 NUTS level 2 regions were exceptions in that their GDP per inhabitant actually rose rather than fell in 2009: six of these regions were in Poland, two in France and one each in Greece and Finland. Most of them experienced an uninterrupted increase in their GDP per inhabitant despite the crisis, as was the case in Corsica (France) and the six Polish regions. The other three regions — Dytiki Makedonia (Greece), Guyane (France) and Åland (Finland) — recorded a fall one year later, in other words their GDP per inhabitant peaked in 2009 rather than in 2008.

Map 14.1: GDP per inhabitant, pace of economic recovery since 2008

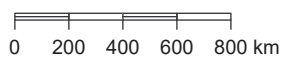
(first year after the crisis when GDP per inhabitant in PPS was above its 2008 level, by NUTS 2 regions)



EU-28 = 80.6



Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 06/2019



Note: Makroregion Województwo Mazowieckie (PL9), NUTS level 1. Switzerland and Serbia: national data. Germany, Ireland, Croatia and Slovakia: estimates. France, Lithuania, the Netherlands and Poland: Eurostat estimates. Greece, Spain, Cyprus, Romania and Albania: provisional. Romania: break in series.

Source: Eurostat (online data codes: nama_10r_2gdp and nama_10_pc)

Leaving these 10 exceptions aside, GDP per inhabitant in approximately half of the remaining 270 regions had moved back above its 2008 level within two years, 66 regions achieving this in 2010 (in other words, after just one year below the 2008 level) and 70 in 2011. A total of 111 of the remaining 134 regions had spent between three and eight years with their GDP per inhabitant below its 2008 level: 28 had recovered by 2012, 16 by 2013, 20 by 2014, 27 by 2015, 7 by 2016 and 14 by 2017.

The remaining 22 regions recorded nine consecutive years — from 2009 up to the most recent year (2017) — with GDP per inhabitant below its 2008 level. These included:

- all of the remaining 12 Greek regions (other the Dytiki Makedonia mentioned above);
- three Spanish regions (Canarias and the Ciudades Autónomas de Ceuta y Melilla);
- four central, southern and island regions of Italy.

Looking more generally at Map 14.1 it can be seen that GDP per inhabitant in most regions in the north, west and east of the EU had stayed above or returned above their 2008 level by 2013 at the latest, with the exceptions of:

- much of Finland and several regions in Sweden among the northern EU Member States;
- several regions in the Netherlands and the United Kingdom among the western Member States;
- Croatia, Slovenia and a few regions of Czechia among the eastern Member States.

The main concentration of regions whose GDP per inhabitant was still below its 2008 level by 2014 was in the southern EU Member States of Greece, Spain, Italy, Cyprus and Portugal. Along with Malta (one region at this level of detail), the only other regions in the southern Member States where GDP per inhabitant had in fact returned above its 2008 level before 2014 included:

- four Italian regions — Valle d'Aosta/Vallée d'Aoste, Abruzzo, Puglia and the Provincia Autonoma di Bolzano/Bozen;
- three Portuguese regions — Norte, Centro and the Região Autónoma dos Açores.

GDP per inhabitant in Inner London — West was more than 6.3 times as high as the EU-28 average

The information presented in Map 14.2 is based on the same indicator, namely GDP per inhabitant in PPS. This map shows the level of GDP per inhabitant for the most recent year, 2017, as well as its annual average change between 2008 and 2017. As such, the rate of change covers a relatively long period of time including the crisis and the subsequent recovery, insofar as nearly all regions have recovered at least to the level they were at in 2008. Note a previous chapter on [GDP at](#)

[regional level](#) provides a detailed analysis of the latest data for GDP per inhabitant and so the analysis here starts with just a few key points concerning 2017 before concentrating on the change between 2008 and 2017.

Regions which may be considered as relatively 'rich' — with GDP per inhabitant above the EU-28 average in 2017 — are shown in blue, while those that may be considered as relatively 'poor' are shown in orange. The lightest shade of orange and of blue indicate regions whose GDP per inhabitant in 2017 was (still or again) below its 2008 level, in other words with a negative rate of change between these years in relation to the EU-28. The other three shades of orange and of blue show regions that experienced a more positive development than the EU-28 during the period under consideration, with darker shades for regions with stronger growth.

Economic activity across the EU in 2017 was somewhat skewed insofar as 105 out of the 280 regions for which data are available recorded a level of GDP per inhabitant 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 inhabitant. 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, Eastern and North-Eastern Scotland, and Southern Ireland, and in the other direction towards the [Nordic EU Member States](#). Other regions with GDP per inhabitant above the EU-28 average were often capital city regions (for example in Bulgaria, Czechia, Spain, France, Lithuania, Hungary, Poland, Portugal, Romania, Slovenia and Slovakia) as well as in north-east Spain and Rhône-Alpes in France.

The highest GDP per inhabitant was in one of the two capital city regions of the United Kingdom, Inner London — West, where GDP per inhabitant was more than six times as high as the EU-28 average in 2017. Luxembourg (one region at this level of detail), Southern Ireland and Hamburg (Germany) were the only other regions across the EU where GDP per inhabitant was at least twice as high as the EU-28 average.

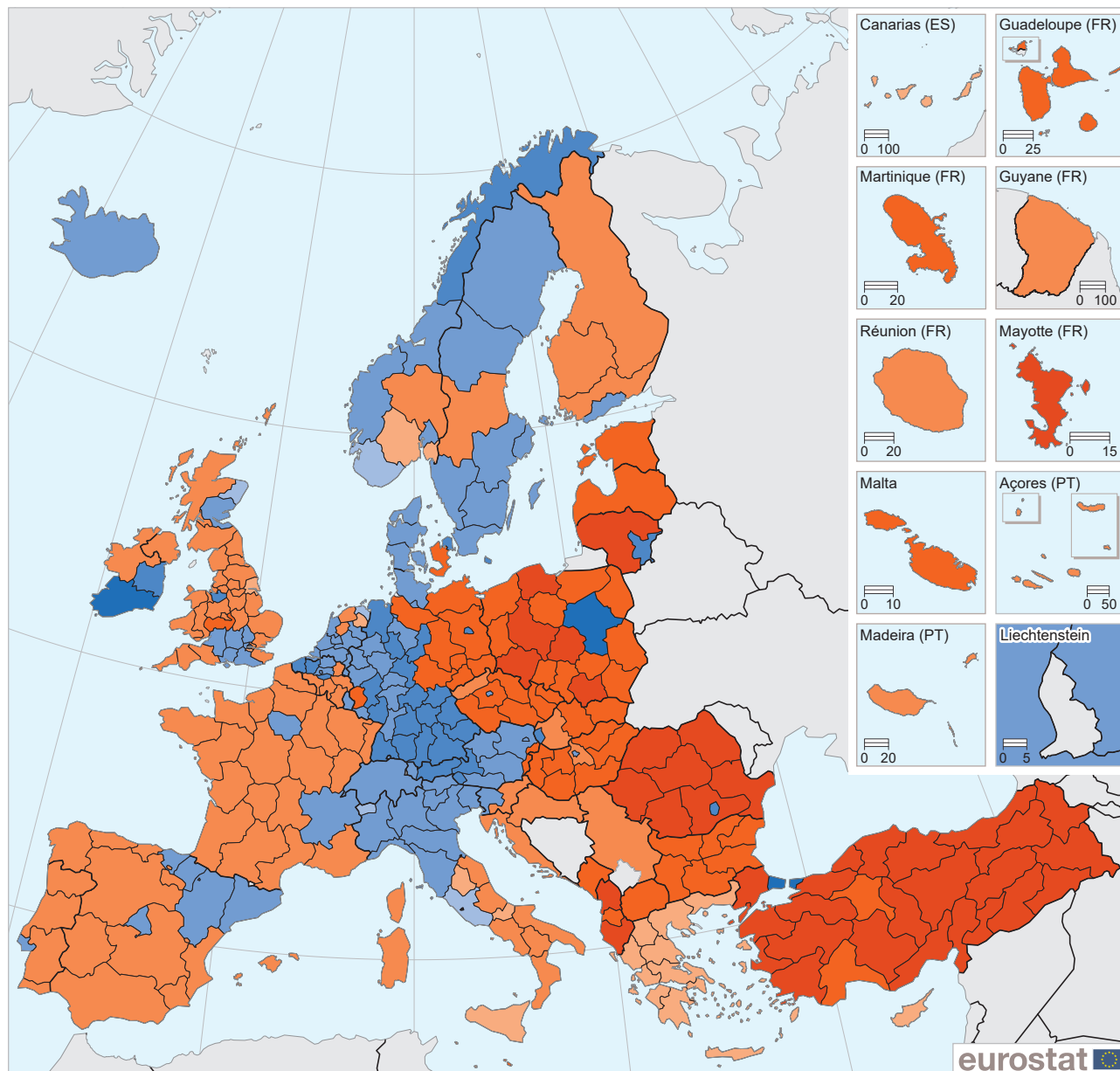
While the highest levels of GDP per inhabitant were generally recorded in capital city regions of EU Member States, the contrast between the economic performance of capital city regions and their surrounding regions was in some ways particularly stark in several eastern Member States, notably in Czechia, Hungary, Poland, Romania and Slovakia.

The list of regions where GDP per inhabitant was lower in 2017 than in 2008 was largely comprised of regions with low levels of GDP per inhabitant

There were 27 regions that had lower GDP per inhabitant in 2017 than in 2008. These included the

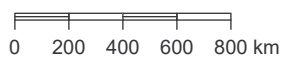
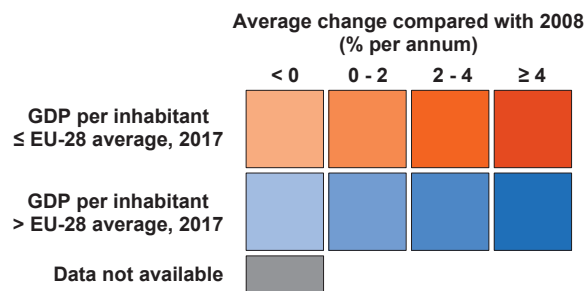
Map 14.2: GDP per inhabitant, 2017

(PPS; %, average change per annum of this ratio between 2008 and 2017; by NUTS 2 regions)



EU-28: 2017 = 30 000 PPS; 2008-2017 = 1.6 % per annum

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019



Note: Makroregion Województwo Mazowieckie (PL9), NUTS level 1. Switzerland and Serbia: national data. Norway, Montenegro and Albania: 2008-2016. Germany, Ireland, Croatia and Slovakia: estimates. France, Lithuania, the Netherlands and Poland: Eurostat estimates. Greece, Spain, Cyprus, Romania and Albania: provisional. Romania: break in series.

Source: Eurostat (online data codes: [nama_10r_2gdp](#) and [nama_10_pc](#))

22 regions identified in Map 14.1 as having not yet (by 2017) recovered their 2008 level of GDP per inhabitant, as well as:

- Dytiki Makedonia in Greece (whose GDP per inhabitant did not start to fall until 2010);
- Valle d'Aosta/Vallée d'Aoste in Italy;
- Groningen in the Netherlands;
- East Yorkshire and Northern Lincolnshire, and North Eastern Scotland, both in the United Kingdom.

GDP per inhabitant had recovered above its 2008 level in each of these five additional regions, but had subsequently fallen back below it again. Among the 27 regions with lower GDP per inhabitant in 2017 than in 2008, 85 % of them had a level of GDP per inhabitant in 2017 that was below the EU-28 average, the exceptions being Valle d'Aosta/Vallée d'Aoste, Groningen, North Eastern Scotland and Lazio.

The most rapid growth in wealth generation during the period 2008-2017 was among regions that had relatively low GDP per inhabitant, mainly in Poland and Romania

As such, 253 regions recorded a higher level of GDP per inhabitant in 2017 than in 2008. Of these, 161 different regions recorded annual average growth of less than 2.0 % per year. A total of 76 regions recorded annual average growth of at least 2.0 % per year but less than 4.0 % per year. The remaining 16 regions recorded annual average growth of at least 4.0 % per year. The proportion of regions with GDP per inhabitant below the EU-28 average in 2017 was particularly high among those with the strongest average growth, as was the case among those with a negative rate of change (below 0 %).

Among the 16 regions with the highest rate of increase in GDP per inhabitant between 2008 and 2017 were two with above average GDP per inhabitant in 2017, namely Southern Ireland and the Polish capital city region (Makroregion Województwo Mazowieckie; a NUTS level 1 region). The other 14 regions — all with below average GDP per inhabitant — included:

- five more Polish regions (Małopolskie, Wielkopolskie, Dolnośląskie, Pomorskie and Łódzkie);
- seven Romanian regions (Nord-Vest, Centru, Nord-Est, Sud-Est, Sud-Muntenia, Sud-Vest Oltenia and Vest).

As such, Poland was the only EU Member State whose capital city region recorded annual average growth of 4.0 % or more. Most of the 16 regions with the highest annual average growth recorded growth in the range of 4.0-4.7 %, with the Sud-Est region of Romania (5.2 %) and Southern Ireland (8.0 %) above this.

A comparison of EU Member States composed of more than one NUTS level 2 region reveals GDP per inhabitant grew at an equal or faster pace than the EU-28 average in every region of Bulgaria, Denmark,

Lithuania, Poland, Romania and Slovakia, as well as every region except one in Czechia (Severozápad), Ireland (Northern and Western), Hungary (Pest) and Austria (the capital city region, Wien). The vast majority of regions in Germany also recorded an increase in their relative living standards. There was also higher than average growth in Estonia, Latvia and Malta (each covered by a single region at this level of detail).

The east-west divide in terms of wealth creation in the EU-28 has become less pronounced

Although there remains an east-west divide in terms of wealth creation in the EU-28, this has become less pronounced. Among the 54 regions in eastern EU Member States that are shown in Map 14.2, six (all of which were capital city regions) had average GDP per inhabitant that was above the EU-28 average in 2017 and 48 were below average. Only six of these 54 regions recorded slower growth in GDP per inhabitant between 2008 and 2017 than recorded for the EU-28 as a whole:

- Severozápad in Czechia;
- Pest in Hungary;
- both Croatian and both Slovenian regions.

All regions in southern EU Member States had below average growth in GDP per inhabitant, except for Malta and the Portuguese region of Norte

Among the 62 regions in southern EU Member States, 17 had average GDP per inhabitant that was above the EU-28 average in 2017 and 45 had a below average ratio. Only two of these 62 regions — Malta and the Portuguese region of Norte — recorded faster growth in GDP per inhabitant between 2008 and 2017 than recorded for the EU-28 as a whole.

The situation for western regions was much more varied. Among these, there were 54 regions, with lower than average GDP per inhabitant in 2017 and slower than average growth (or even a contraction) between 2008 and 2017, including:

- four regions within the Région Wallonne of Belgium;
- 20 regions across France;
- 26 regions across the United Kingdom.

By contrast, there were 21 regions in western EU Member States where GDP per inhabitant in 2017 below the EU-28 average was combined with growth between 2008 and 2017 that was equal to or higher than the EU-28 average, including:

- nine regions in Germany, mainly in the eastern part of the country;
- five French regions, comprising four overseas regions as well as Midi-Pyrénées;
- four regions in the United Kingdom (Herefordshire, Worcestershire and Warwickshire; West Midlands; East Wales; Southern Scotland).

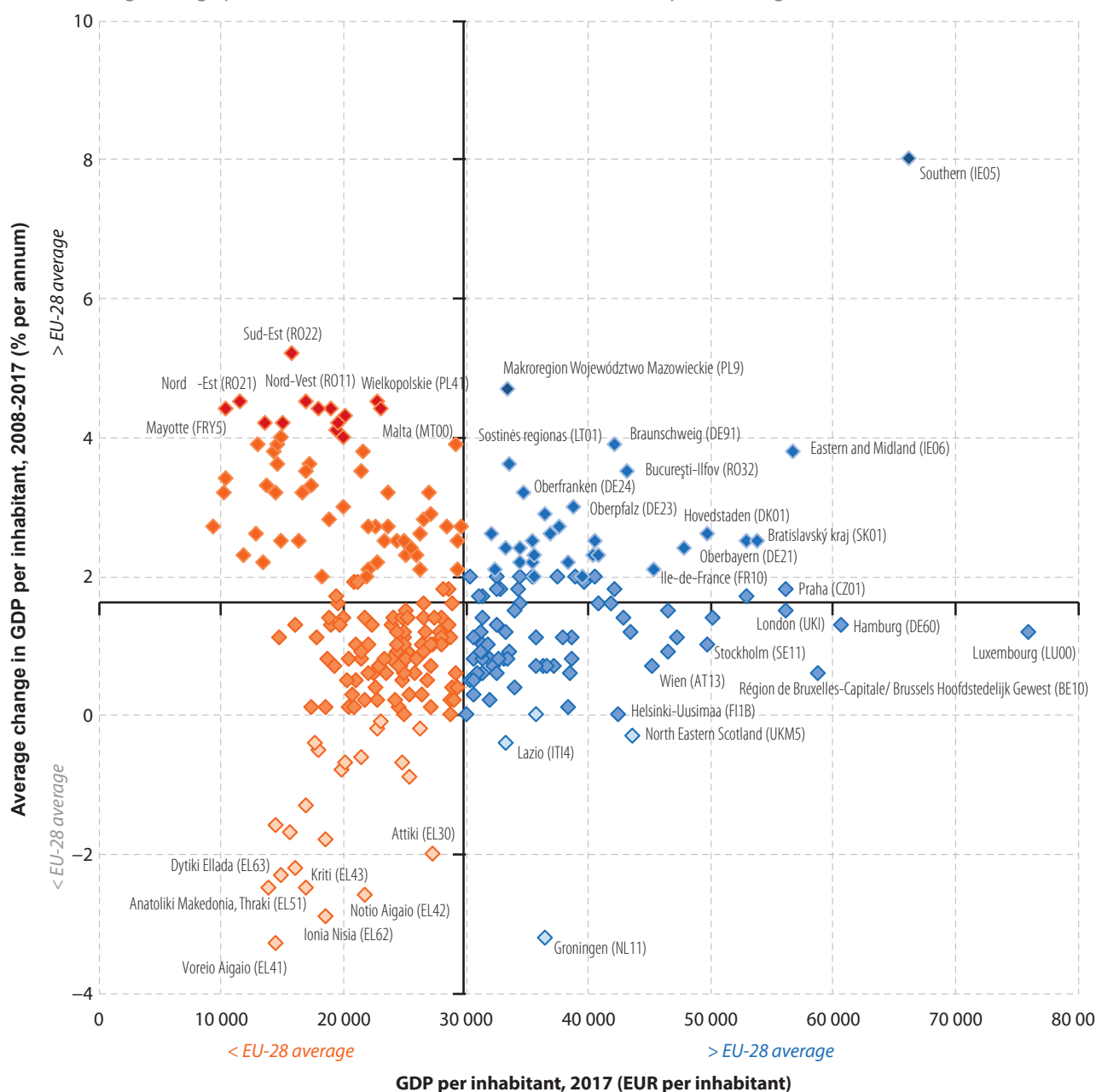


Although there is some evidence, at a national level, of economic convergence across the EU now that the EU Member States most affected by the global financial and economic crisis have started to show persistent signs of recovery, there remain contrasting patterns of regional development. During the past decade, some of the most rapid economic growth has been recorded in capital city regions; their expansion has often, at a national level, hidden much slower growth in other

regions. Regional divergences since the crisis have largely been driven by the continued move towards services-based economies: highly productive sectors are concentrated in capital city or other metropolitan regions, and these tend to attract and retain the most highly-skilled employees. By contrast, former industrial heartlands and rural regions have, to some degree, been 'left-behind'.

Figure 14.1: GDP per inhabitant, 2017

(PPS; %, average change per annum of this ratio between 2008 and 2017; by NUTS 2 regions)



Note: Makroregion Województwo Mazowieckie (PL9) and London (UKI): NUTS level 1. Germany, Ireland, Croatia and Slovakia: estimates. France, Lithuania, the Netherlands and Poland: Eurostat estimates. Greece, Spain, Cyprus and Romania: provisional. Romania: break in series. The axes intersect at the EU-28 average.

Source: Eurostat (online data codes: nama_10r_2gdp, nama_10_pc and nama_10r_3popgdp)

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 Figure 14.2 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 2008 and 2017 was an increase of 0.8 % per year (equivalent to an overall increase of 7.7 % for the period under consideration).

The majority of the 52 regions in the EU where a real contraction in value added was recorded in the decade from 2008 were in Greece, Spain and Italy

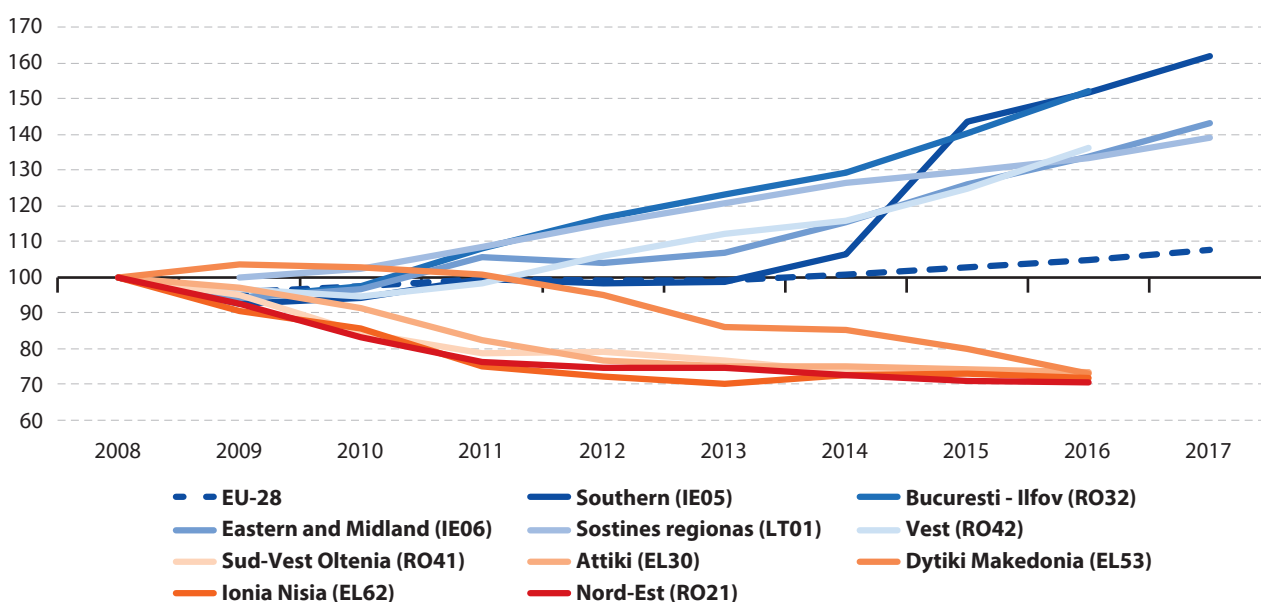
The majority of the 52 regions in the EU where a contraction in value added in real terms was recorded between 2008 and 2017 (time series for some regions start a year later and others finish a year earlier) were in Greece (all 13 regions), Spain (nine regions) and Italy (17 regions), while there were also multiple regions in each of Finland, Portugal and Romania.

The five regions in the EU to report the strongest contractions in value added in real terms were located in Greece and Romania. Value added in the Nord-Est region of Romania declined by 29.5 % between 2008 and 2016 (an average of 4.3 % per year), more than in any other region. The contraction in GDP in most of these five regions was mainly concentrated in the period from 2008 to 2011 or 2012, since when the real development of value added was relatively stable. The one exception was the Greek region of Dytiki Makedonia whose value added increased in 2009 before subsequently declining each and every year through until 2016.

The Irish region of Southern had the strongest growth, its value added increasing by 61.8 % overall between 2008 and 2017

The five regions in the EU to report the strongest growth in value added in real terms also included two Romanian regions, alongside two Irish regions and the Lithuanian capital city region. The Irish region of Southern had the strongest growth, value added increasing by 61.8 % overall between 2008 and 2017 (an average of 5.5 % per year). Interestingly it was not until 2014 that value added in the Irish region of Southern returned above its 2008 level; its leading position was achieved through exceptionally strong growth in 2015 assisted by further strong growth in 2016 and 2017.

Figure 14.2: Real developments for gross value added at basic prices, 2008-2017
(2008 = 100, by NUTS 2 regions)



Note: France, the Netherlands and Poland, national data. Germany, Ireland and Slovakia: estimates. Greece, Spain, Cyprus and Romania: provisional. The axis does not start at 0. The figure shows, in real terms, the five NUTS 2 regions with the highest and lowest rates of change for the period 2008-2017. Greece, Hungary and Romania, 2008-2016; Lithuania, 2009-2017.

Source: Eurostat (online data code: nama_10r_2gvagr)



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 results in people living in suburban areas that may be in neighbouring NUTS regions. Commuter flows between regions (or across borders) lead employees to contribute to the wealth created in one region (where they work), while their household income is classified to another region (where they live). The high levels of value added (or GDP) per inhabitant that are recorded in some metropolitan regions characterised by large numbers of net incoming commuters overstate the true economic well-being in these regions. 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 value added (or GDP) per inhabitant.

An alternative analysis is presented in Map 14.3, which provides information for household disposable income per inhabitant in NUTS level 2 regions; data are presented in euro and so are influenced by price differences between countries. Household disposable income is the total amount of money households have available for spending and saving after subtracting income taxes and pension contributions. Regions with household disposable income per inhabitant above the EU-28 average in 2016 are shown in blue in Map 14.3, while those with below average income are shown in orange. The lightest shade of orange and of blue indicate regions whose household disposable income per inhabitant in 2016 was below its 2008 level, in other words with a negative rate of change between these years. The other three shades of orange and of blue show regions with growth, with darker shades indicating those regions with stronger growth.

The highest regional household disposable income in the EU was EUR 55 200 per inhabitant in Inner London — West and the lowest EUR 2 900 per inhabitant in Severozapaden

In 2016, household disposable income in the EU-28 averaged EUR 15 600 per inhabitant. It ranged from a high of EUR 55 200 per inhabitant in Inner London — West (the United Kingdom) down to EUR 2 900 per inhabitant in Severozapaden (Bulgaria), a factor of 19.0 to 1. As such, the highest and lowest ratios were recorded for the same regions as GDP per inhabitant, where the difference between the two regions was 20.2 to 1 in 2017.

In 2016, 138 out of the 225 regions in the EU for which data are available recorded a level of household disposable income per inhabitant above the EU-28 average; as such, above average income was recorded

in a majority of regions whereas the reverse was true for GDP per inhabitant. However, it should be noted that only national data are available for Ireland, France, the Netherlands and Poland and so they are each only counted once, despite the fact that collectively they have 59 NUTS level 2 regions. Bearing this in mind, it appears that the regional distribution of household disposable income per inhabitant was somewhat less skewed than that of GDP per inhabitant.

High household disposable income per inhabitant was mainly concentrated in western and Nordic EU Member States, but was also recorded in some Spanish and Italian regions

As for GDP per inhabitant, the regions with relatively high household disposable income per inhabitant were largely found in a band that ran from central and northern Italy, up through Austria and Germany before splitting in one direction towards the Benelux countries, the United Kingdom and Ireland, and in the other direction towards the Nordic EU Member States. The only other regions with household disposable income per inhabitant above the EU-28 average were in Spain: País Vasco, Comunidad Foral de Navarra, Comunidad de Madrid and Cataluña.

There were 43 regions that had lower household disposable income per inhabitant in 2016 than in 2008. Among these, 12 regions had above average household disposable income per inhabitant in 2016:

- País Vasco in Spain;
- Ireland;
- 10 central and northern Italian regions, including Lazio, the capital city region.

The 31 regions with below average household disposable income per inhabitant in 2016 and lower disposable income per inhabitant in 2016 than in 2008 included:

- all but one (Notio Aigaio) of the 13 regions of Greece;
- six southern and island regions in Italy.

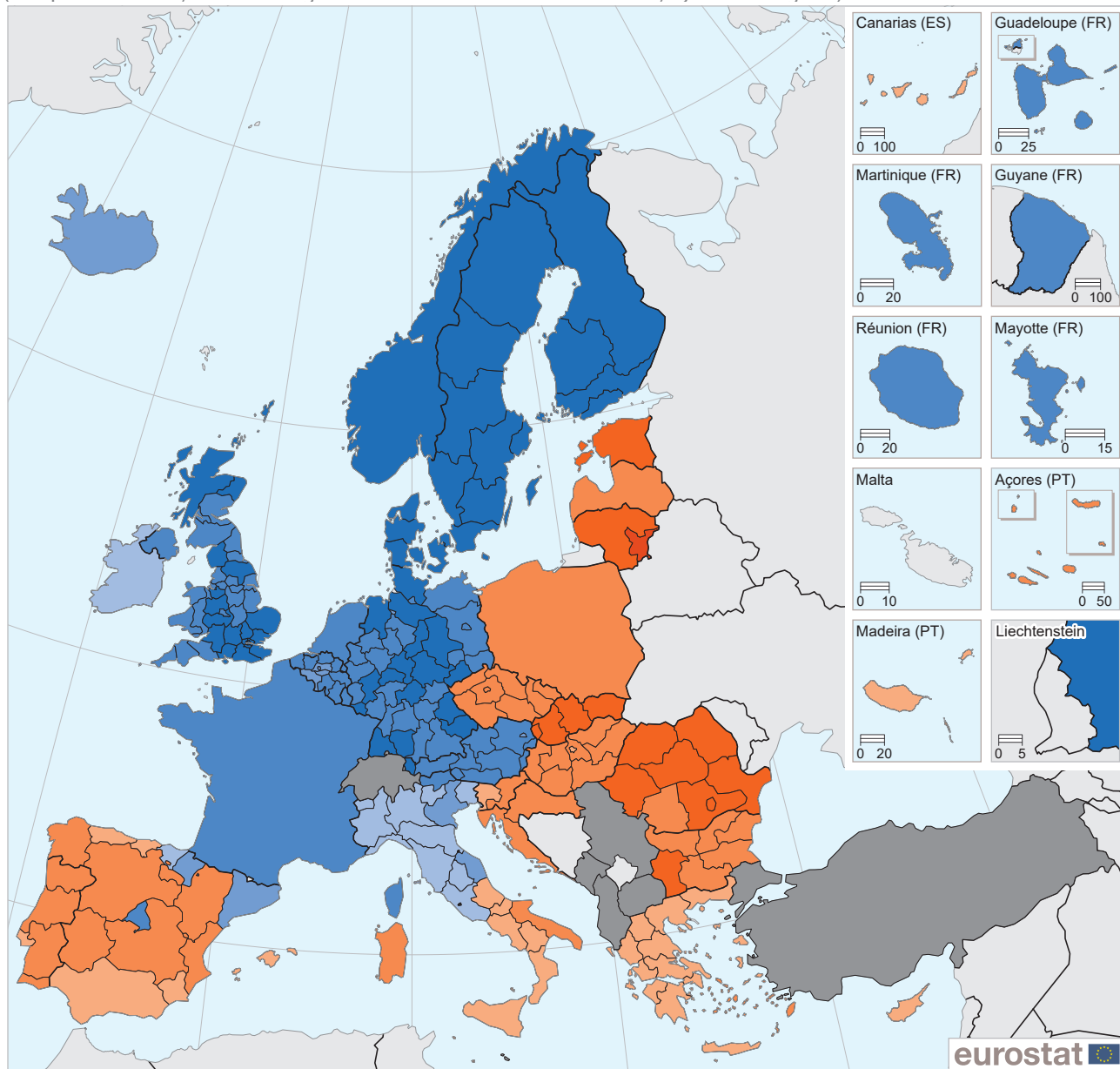
The largest falls in household disposable income per inhabitant between 2008 and 2016 were in Greek regions and in Cyprus

In 11 of the 13 Greek regions, household disposable income per inhabitant fell by at least EUR 3 400 per inhabitant between 2008 and 2016, with the largest fall in Attiki (down EUR 5 800 per inhabitant). In Cyprus, disposable income fell by EUR 2 400 per inhabitant.

By contrast, 182 of the regions shown in Map 14.3 recorded a higher level of household disposable income per inhabitant in 2016 than in 2008. Of these, 51 regions recorded growth of less than EUR 1 000 per inhabitant, while 75 recorded growth of at least

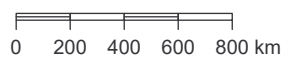
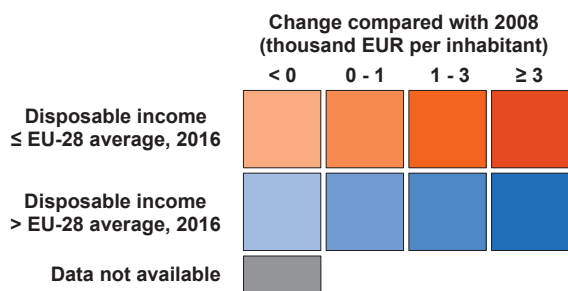
Map 14.3: Household disposable income, 2016

(EUR per inhabitant; overall change of this ratio between 2008 and 2016; by NUTS 2 regions)



EU-28: 2016 = EUR 15 600; 2008-2016 = EUR 1 500

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2019



Note: Ireland, France, the Netherlands, Poland and Norway, national data. Lithuania: 2010-2016. Iceland: 2008-2014. Germany: estimates. Greece, Spain and France: provisional. Romania: break in series.

Source: Eurostat (online data codes: [nama_10r_2hhinc](#), [nasa_10_nf_tr](#) and [nama_10_pe](#))



EUR 1 000 per inhabitant but less than EUR 3 000 per inhabitant. The remaining 56 regions recorded growth of at least EUR 3 000 per inhabitant, among which just one had household disposable income per inhabitant below the EU-28 average, namely the Lithuanian capital city region. Indeed, the vast majority of regions with relatively large increases in household disposable income per inhabitant also reported a level of income per inhabitant that was above the EU-28 average.

The highest increases in household disposable income per inhabitant between 2008 and 2016 were in regions of Germany, Austria, the United Kingdom and the northern EU Member States

The 56 regions with the highest rate of increase in household disposable income per inhabitant between 2008 and 2016 included:

- all regions of Denmark, Finland and Sweden;
- 20 British regions, mainly in southern England;
- 16 German regions.

In summary, the highest increases were all recorded in regions of northern EU Member States (all Nordic regions and one Baltic region), Germany, Austria and the United Kingdom. The largest increases of all were recorded in Inner London — West (where household disposable income rose by EUR 8 500 per inhabitant) and Outer London — West and North West (up EUR 6 000 per inhabitant), while 15 other regions recorded increases ranging between EUR 4 500 and EUR 5 700 per inhabitant, all of which were in London (two more regions), Denmark (all five regions) or Sweden (all eight regions).

Labour productivity

Labour productivity may be defined as [gross value added](#) at basic prices expressed in relation to employment: in the analysis used in Map 14.4 the number of hours worked is used as the measure of labour input. 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, extraction of oil and gas as well as business and financial services — are characterised by higher levels of labour productivity than others.

As for the previous maps, regions which have a relatively high productivity — above the EU-28 average in 2016 — are shown in blue, while those that have a relatively low productivity are shown in orange. The lightest shade of orange and of blue indicate regions whose labour productivity in 2016 was below its 2008 level, in other words with a negative rate of change between these years. The other three shades of orange and of blue show regions with growth, darker shades

indicating regions with stronger productivity growth. Information on labour productivity for Ireland, France, the Netherlands and Poland concern national rather than regional data, as is the case for Norway and Switzerland.

The highest labour productivity was EUR 76.26 per hour in Luxembourg and the lowest was EUR 5.42 per hour in Yuzhen tseentralen

Across the EU-28, there was an average of EUR 30.27 of added value for each hour worked in 2016. Among the 226 regions of the EU shown in Map 14.4 there were 85 with below average productivity and the remaining 141 were above average. The highest values recorded for this indicator were EUR 76.26 per hour in Luxembourg and EUR 70.91 per hour in Ireland, both countries that are strongly specialised in financial services. The lowest productivity was EUR 5.42 per hour in Yuzhen tseentralen (Bulgaria), resulting in a factor of 14.1 to 1 between the highest and lowest regions in the EU.

Higher than average labour productivity was concentrated in western and Nordic regions of the EU, as well as in parts of Spain and Italy

In 2016, the regions with labour productivity per hour above the EU-28 average included:

- all regions of Belgium, Denmark, Germany, Luxembourg, Austria, Finland and Sweden;
- Ireland, France and the Netherlands (only national data available);
- all regions of the United Kingdom, except for Cornwall and Isles of Scilly;
- 14 (out of 21) Italian regions, mainly northern and central, but also including Abruzzo;
- 7 (out of 19) Spanish regions (the capital city region and several regions in the north and east).

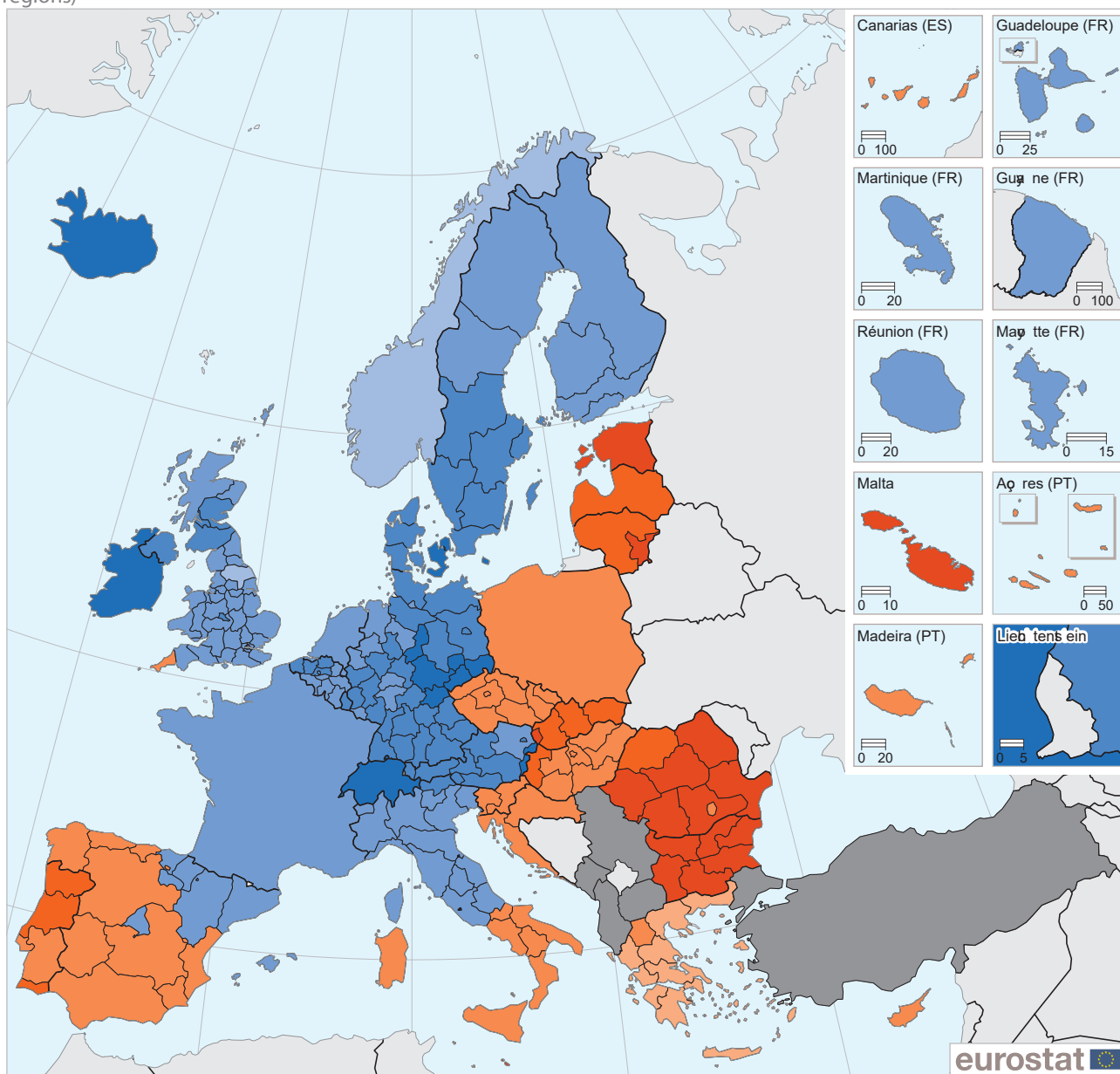
Therefore, none of the regions in eastern EU Member States or the Baltic Member States recorded above average productivity, while most southern regions also recorded below average productivity.

In nearly all EU Member States, the highest level of regional labour productivity was recorded in the capital city region. The four exceptions (among the Member States for which regional data are available) in 2016 were:

- Germany, where Hamburg had the highest labour productivity and Berlin the 26th highest out of 38 regions;
- Spain, where País Vasco had the highest productivity just ahead of the Comunidad de Madrid;
- Croatia, where Kontinentalna Hrvatska had higher productivity than Jadranska Hrvatska;
- Italy, where Lombardia had the highest productivity and Lazio the 6th highest out of 21 regions.

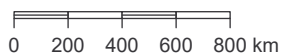
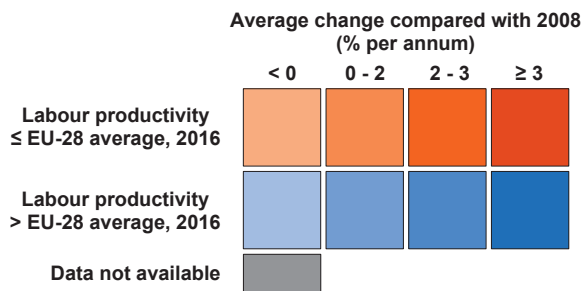
Map 14.4: Labour productivity per hour worked, 2016

(EUR, gross value added per hour worked; %, average change per annum of this ratio between 2008 and 2016; by NUTS 2 regions)



EU-28: 2016 = EUR 30.27; 2008-2016 = 1.9 % per annum

Administrative boundaries © EuroGeographics © UN-FAO © Turkbstat Cartography Eurostat — GISCO, 05/2019



Note: Ireland, France, the Netherlands, Poland, Norway and Switzerland, national data. Lithuania: 2010-2016. Germany: estimates. Greece, Spain, France, the Netherlands and Iceland: provisional.

Source: Eurostat (online data codes: nama_10r_3gva, nama_10_a10, nama_10r_2emhrw and nama_10_a10_e)



The regions where labour productivity was less than half the EU-28 average were exclusively from eastern or Baltic regions of the EU or from Greece

There were 34 regions in Map 14.4 where labour productivity was less than half the EU-28 average in 2016, including:

- Latvia (a single region at this level of detail) and one of two Lithuanian regions;
- Poland (only national data available);
- three Czech regions;
- all Bulgarian, Croatian and Hungarian regions;
- seven of eight Romanian regions;
- five Greek regions.

Turning to developments between 2008 and 2016, the average change in labour productivity in the EU-28 was an increase of 1.9 % per year. A total of 92 regions matched or bettered this increase, while 121 regions recorded smaller increases and 13 regions recorded decreases. Note that these changes are based on data in current prices.

The regions with lower productivity in 2016 than in 2008 were North Yorkshire in the United Kingdom and almost all Greek regions

The 13 regions with lower productivity in 2016 than in 2008 were North Yorkshire in the United Kingdom and 12 Greek regions; the only Greek region that recorded an increase in its labour productivity was Dytiki Makedonia. The only one of these 13 regions with a fall in productivity that had a level of productivity above the EU-28 average in 2016 was North Yorkshire.

Average increases of less than 2.0 % per year were recorded in 126 regions, in other words more than half of the regions. Somewhat faster increases were recorded in 61 regions, where productivity increased by at least 2.0 % but less than 3.0 % per year.

The fastest increase in productivity was in Yugoiztochen

There were 26 regions that recorded the fastest increases in productivity, averaging at least 3.0 % per year:

- 16 regions had a level of labour productivity in 2016 that was below the EU-28 average; they were mainly located in Bulgaria and Romania;
- 10 regions had above a level of labour productivity in 2016 that was above the EU-28 average; they were principally located in Denmark and Germany.

In fact, all six Bulgarian regions were in this group of regions with fast productivity growth, including Yugoiztochen which had the fastest average growth (7.2 % per year) among all regions of the EU.

Population developments

The next analysis provides a description of changes in the total number of inhabitants living in NUTS level 2 regions between 2008 and 2018. Population change is driven by **natural population change** (the total number of births minus the total number of deaths) and **net migration** (the difference between the number of immigrants and emigrants); note that in the context of regional demography statistics, Eurostat produces net migration figures by taking the difference between total population change and natural change — hereafter referred to as net migration plus (statistical) adjustment.

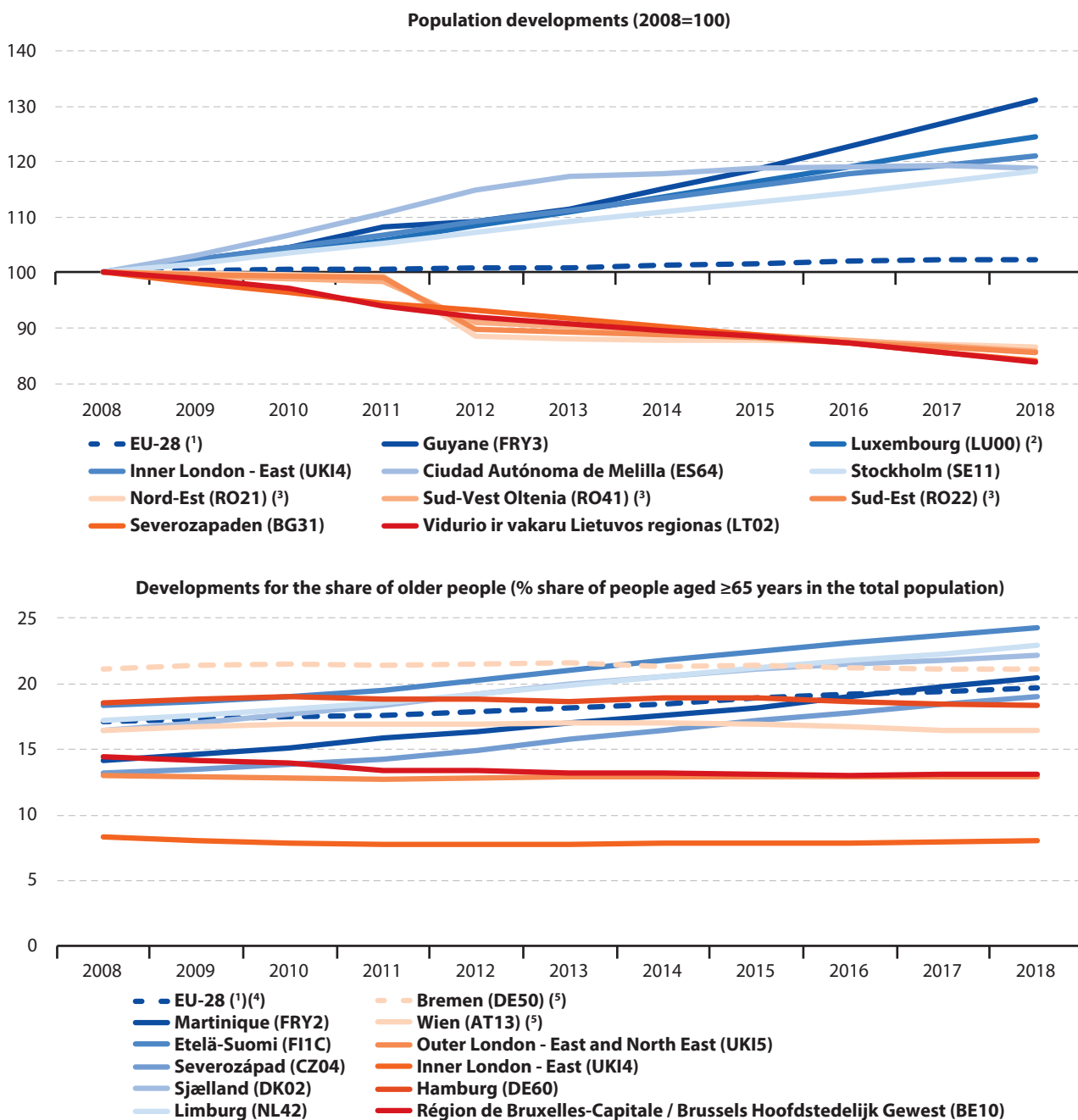
There are wide-ranging differences in patterns of demographic change across the EU. Some of the most common medium-term developments may be summarised as follows:

- 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, as well as the potential to live a particular lifestyle;
- 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 declines;
- 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.

About one third of EU regions recorded a lower level of population in 2018 than in 2008

In 2018, the EU-28's population was 2.4 % higher than in 2008, up from 500 million to 512 million. About one third of the regions of the EU for which data are available recorded a lower population in 2018 than in 2008. EU Member States where at least half of the regions reported a fall included:

- Bulgaria, Estonia, Croatia, Latvia and Lithuania, where all regions reported a decline in population numbers;
- Hungary and Romania, where all of the regions except the capital city region reported a fall (for Hungary the data concerning the capital city region relate to NUTS level 1);
- Greece, Poland and Portugal, where a majority of the regions followed this pattern.

Figure 14.3: Population developments, by NUTS2 regions, 2008-2018

Note: the axis in the first part of the figure does not start at 0. The first part of the figure shows the five NUTS 2 regions with the highest and lowest rates of change for the period 2008-2018. The second part of the figure shows the five NUTS 2 regions with the highest and lowest changes in percentage point terms for the share of older people in the total population over the period 2008-2018.

⁽¹⁾ Break in series: 2010-2012, 2014-2015 and 2017.

⁽²⁾ Break in series: 2017.

⁽³⁾ Break in series: 2012.

⁽⁴⁾ 2018: provisional.

⁽⁵⁾ Joint fifth lowest change in percentage point terms.

Source: Eurostat (online data codes: [demo_r_d2jan](#), [demo_r_pjanind2](#) and [demo_pjanind](#))



None of the regions in Belgium, Denmark, Ireland, Cyprus, Luxembourg, Malta, Austria and Sweden had a lower population in 2018 than in 2008

By contrast, every region of Belgium, Denmark, Ireland, Cyprus, Luxembourg, Malta, Austria and Sweden reported an increase in population numbers between 2008 and 2018. Six regions reported average growth of more than 1.5 % per year (including four capital city regions): Guyane (France), Luxembourg, Inner London — East, Ciudad Autónoma de Melilla (Spain), Stockholm and Malta.

In many of the EU Member States composed of more than one NUTS level 2 region the fastest population growth was recorded in the capital city region, although there were eight exceptions, including:

- Germany, where Oberbayern had faster growth than Berlin;
- Greece, where Voreio Aigaio had the fastest growth and Attiki had, in fact, the second fastest decrease among the 13 Greek regions;
- Spain, where the Ciudades Autónomas de Melilla y Ceuta, Illes Balears and Canarias had faster growth than the Comunidad de Madrid;
- France, where Guyane and eight other regions had faster growth than the Île de France.

In 2018, one fifth of the EU-28 population was aged 65 years or older

The bottom half of Figure 14.3 looks at the issue of ageing, in this case based on the share of the population aged 65 years or older. In the EU-28, this share was 19.7 % in 2018, up from 17.1 % in 2008. Changes in this share can reflect a number of different factors, such as developments for life expectancy, birth rates or migration. For example, an increase in the share of older people in a particular region might reflect older people moving into the region when they retire or younger people leaving the region (for example, to look elsewhere for education, work or other opportunities).

The Belgian capital city region, Hamburg and two London regions were the only regions in the EU to record a fall in their share of people aged 65 years or older

Only four regions in the EU recorded a fall in their share of older people (aged 65 years or older) between 2008 and 2018 (for some regions the time series is shorter): the Belgian capital city region (which had the largest reduction, down 1.4 percentage points (pp) from 14.5 % to 13.1 %), Hamburg and two London regions (all down 0.1-0.2 pp). In Bremen (Germany) and the Austrian capital city region the share of older people in the total population was stable, while elsewhere (275 regions) it increased.

There were 12 regions across the EU where the share of older people was at least 5.0 pp higher in 2018 than in 2008, for example:

- Severozápad, Severovýchod and Moravskoslezsko in Czechia;
- Friesland, Drenthe, Zeeland and Limburg in the Netherlands;
- Etelä-Suomi and Pohjois- ja Itä-Suomi in Finland.

As can be seen from the bottom half of Figure 14.3, the largest increase in this share was recorded in the French overseas region of Martinique, where the proportion of older people in the total population rose 6.3 pp from 14.2 % (below the EU-28 average of 17.1 %) in 2008 to 20.5 % in 2018 (above the EU-28 average of 19.7 %).

Working-age population — tertiary educational attainment

There is a range of policy challenges in relation to tertiary (higher) education (ISCED levels 5-8), 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 proportion of the labour force overqualified.

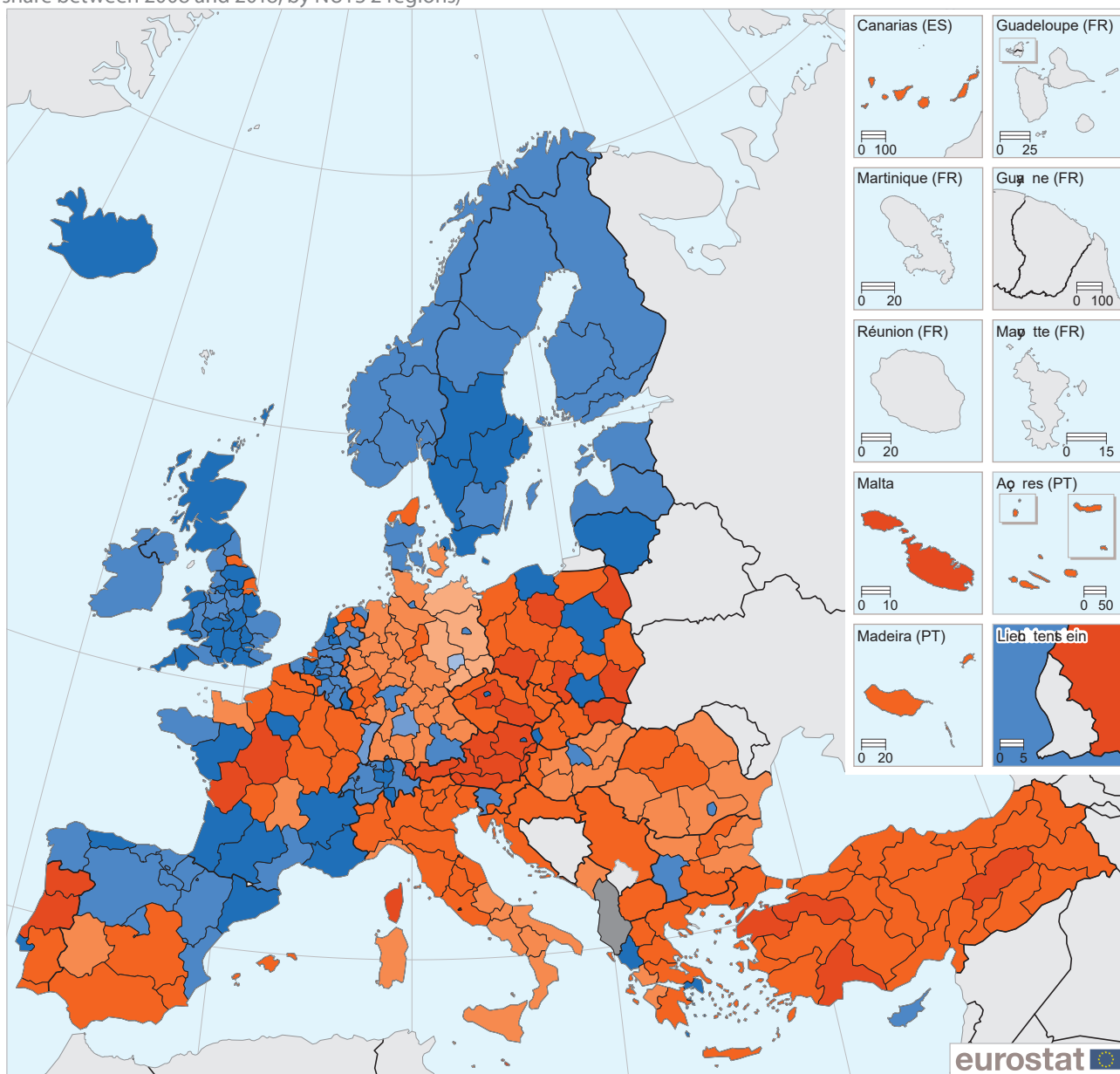
The tertiary educational attainment data shown in Map 14.5 are based on the share of the working-age population — defined here as 25-64 years — who had successfully completed a tertiary education programme; the lower age limit of 25 is used as most students have completed their tertiary education programmes before the age of 25.

Regions which have a relatively high level of tertiary educational attainment — above the EU-28 average in 2018 — are shown in blue, while those that have a relatively low level are shown in orange. The lightest shade of orange and of blue indicate regions whose level of tertiary educational attainment in 2018 was below its 2008 level, in other words with a negative rate of change between these years. The other three shades of orange and of blue show regions with growth in tertiary educational attainment, with darker shades indicating the regions with the strongest growth. The information in this map for Ireland and Lithuania relates to national rather than regional data, as is the case also for Serbia; the data for two Polish and two British regions are based on NUTS level 1 rather than level 2 regions.

In 2018, almost one third (32.3 %) of the EU-28 working-age population possessed a tertiary level of educational attainment; this was 8.1 pp higher than the corresponding share from a decade earlier.

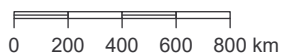
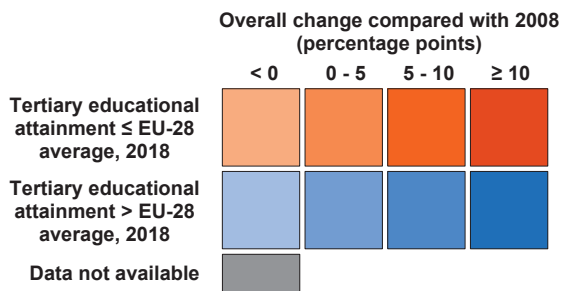
Map 14.5: Tertiary educational attainment, 2018

(%, share of persons aged 25-64 years with a tertiary level of educational attainment; percentage points, change of this share between 2008 and 2018; by NUTS 2 regions)



EU-28: 2018 = 32.3 %; 2008-2018 = 8.1 points

Administrative boundaries © EuroGeographics © UN-FAO © Turkbstat Cartography Eurostat — GISCO, 05/2019



Note: Közép-Magyarország (HU1), Makroregion Województwo Mazowieckie (PL9), London (UKI) and Scotland (UKM), NUTS level 1. Ireland, Lithuania and Serbia: national data. Slovenia and Serbia: 2010-2018. Montenegro: 2011-2018. Breaks in series for a majority of regions (too many to document).

Source: Eurostat (online data code: edat_lfse_04)



The main characteristic of Map 14.5 is that capital city regions 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. This movement of graduates occurs not just within countries but also across national borders, with a growing share of the EU-28's highly-qualified working-age population having moved internationally (in particular, moving from east to west within the EU).

More than half of the working-age population living in the Nordic capital city regions had a tertiary level of educational attainment

In 2018, there were 109 NUTS level 2 regions where the share of the working-age population (25-64 years) that had a tertiary level of educational attainment was above the EU-28 average, among which there were eight where the share passed 50 %. Three of these regions — London (NUTS level 1) and two of its neighbouring regions (Berkshire, Buckinghamshire and Oxfordshire; Surrey, East and West Sussex) — were in the United Kingdom. Three more were capital city regions of the Nordic Member States (Denmark, Finland and Sweden), while Utrecht in the Netherlands and Prov. Brabant Wallon neighbouring the Belgian capital city region completed the list.

By contrast, among the 154 regions where the share of the working-age population that had a tertiary level of educational attainment was equal to or below the EU-28 average, 26 regions reported that this share was below 20 %. These were often rural regions characterised as local economies concentrated on agriculture, with a generally low level of demand for highly-skilled labour, including:

- Közép-Dunántúl, Dél-Dunántúl, Észak-Magyarország and Észak-Alföld in Hungary;
- 12 regions across Italy;
- all Romanian regions except for the capital city region.

There were six regions in eastern Germany where the share of the working-age population with a tertiary level of educational attainment declined between 2008 and 2018

Looking at the change between 2008 and 2018 in the share of the population aged 25-64 that had a tertiary level of educational attainment, the vast majority of regions recorded an increase. In fact, only six regions reported a lower share in 2018 than in 2008, all of them within Sachsen or Sachsen-Anhalt in eastern Germany. Leipzig — which was the only one of the six with a share above the EU-28 average in 2018 — and

Mecklenburg-Vorpommern recorded falls of 1.1 pp, the smallest declines among these six regions. The largest fall was in Chemnitz where the share of the working-age population with a tertiary level of educational attainment fell from 30.4 % in 2008 to 24.7 % in 2018.

Increases of less than 5.0 pp between 2008 and 2018 were observed in 53 regions, while increases of at least 5.0 pp but less than 10.0 pp were recorded in 136 regions. At the other end of the range, some 68 regions reported increases of 10.0 pp or more. They were distributed across northern (seven regions), southern (eight), eastern (13), and western (40) EU Member States — the latter including every region of Austria.

Relative size of the working-age population

Map 14.6 also focuses on the working-age population, in this case using a slightly broader age range, from 20-64 years. Within this age range some people, particularly younger ones may still be studying and so not actually in the labour force. Equally, some people in the labour force are outside this age range if they are working before the age of 20 years or still working when aged 65 years or older. The share of working-age people in the population is influenced by many factors, such as changes in birth rates, death rates, life expectancy and net migration (plus statistical adjustment).

The issue of an ageing population has already been mentioned with respect to Figure 14.3, which provided information for regional developments in the share of the population aged 65 years and over. Many of the comments noted there can be expected to apply here, but in reverse, as those regions with a relatively high or increasing share of older people tend to have a relatively low or falling share of people of working age.

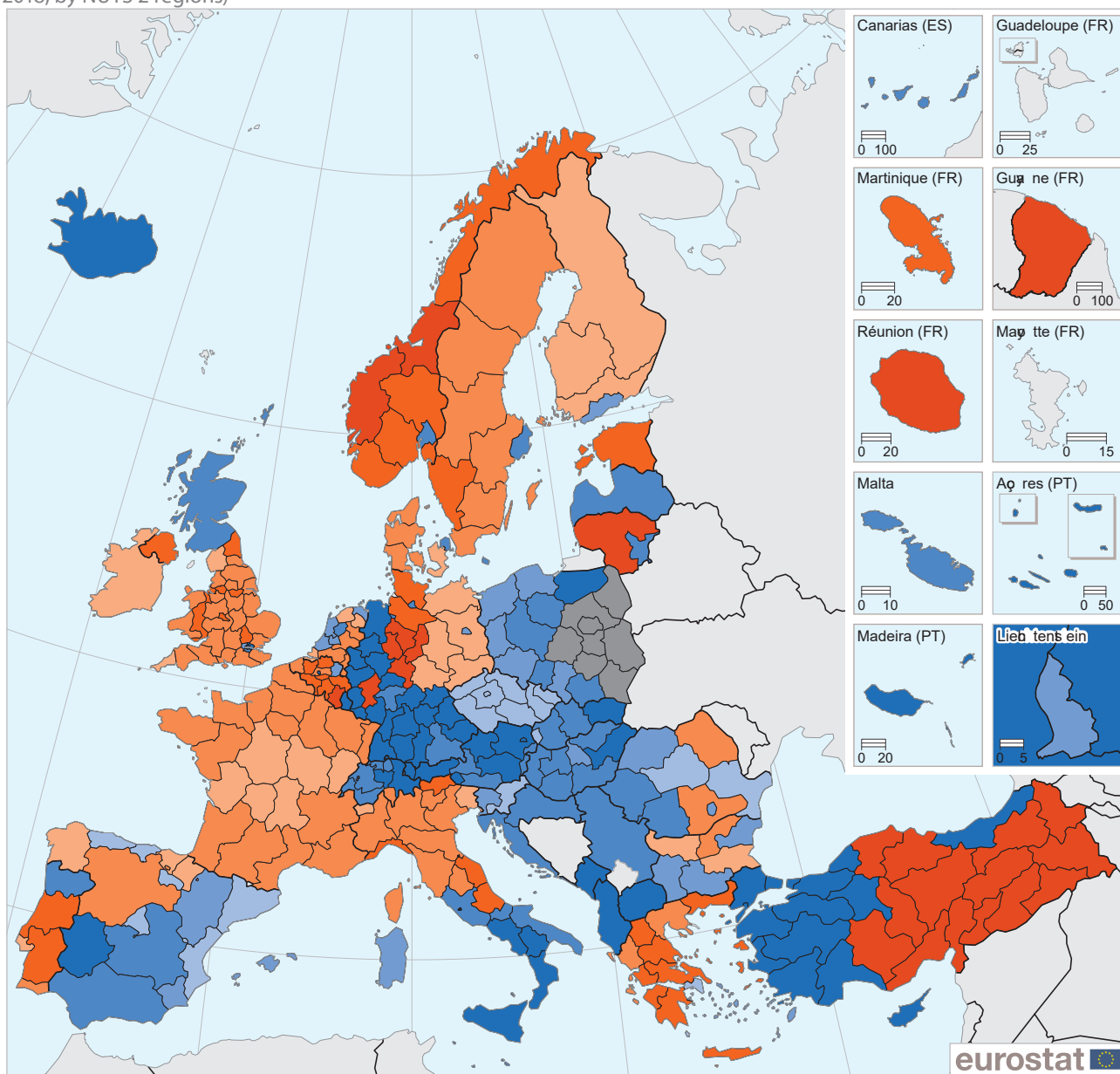
In 2018, the average share of the working-age population in the total number of inhabitants was 59.5 % in the EU-28, which was 1.7 pp lower than in 2008. Among the 281 NUTS level 2 regions for which 2018 data are available, 137 recorded a share above the EU-28 average in and 144 equal to or below the EU-28 average. Of the 272 regions that are represented in Map 14.6 (some regions are shown at NUTS level 1 to allow a time series analysis), nine are not available (due to missing data for 2008), leaving 125 regions coloured blue (with above average shares) and 138 regions coloured orange.

In 2018, the highest shares of the working-age population were in Inner London regions

Considering all 272 of regions across the EU (as shown in Map 14.6), the highest shares of the working-

Map 14.6: Working-age population, 2018

(%, people aged 20-64 years as a share of the total population; percentage points, change of this share between 2008 and 2018; by NUTS 2 regions)

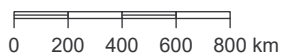
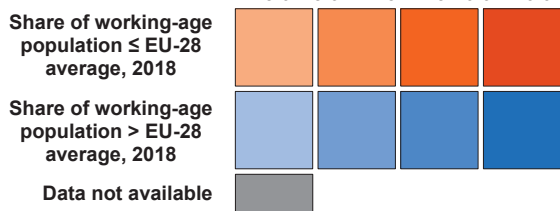


EU-28: 2018 = 59.5 %; 2008-2018 = -1.7 points

Administrative boundaries © EuroGeographics © UN-FAO © Turkbstat Cartography Eurostat — GISCO, 05/2019

Overall change compared with 2008 (percentage points)

< -3.0 -3.0 -1.5 -1.5 -0.0 ≥ 0.0



Note: Sachsen (DED), Közép-Magyarország (HU1) and Scotland (UKM), NUTS level 1. Ireland, Albania and Serbia: national data.
Source: Eurostat (online data codes: [demo_r_pjanind2](#) and [demo_pjanind](#))



age population in 2018 were in two of the British capital city regions, Inner London — East and Inner London — West (68.2 % and 67.3 % respectively). The Romanian capital city region (București-Ilfov) and the Spanish island region Canarias also recorded shares above 65.0 %. By far the lowest share in 2018 was in Mayotte (shown as not available in Map 14.6 as data for 2008 are missing), which was the only region in the EU where less than half (43.5 %) of the population were of working age. The next five lowest shares for the working-age population were also in France, with shares ranging from 52.9 % in Guyane to 54.0 % in Bourgogne. In fact, the bottom 25 regions with the lowest shares — no higher than 55.5 % — were all located in France, the United Kingdom or the Nordic EU Member States; most of them were coastal regions, although five of the French regions were exceptions to this rule.

A total of 49 regions — mainly in Germany, Austria and Italy — recorded an increase or no change in the share of the working-age population between 2008 and 2018

The intensity of the blue and orange shading in Map 14.6 indicates the speed with which the share of the working-age population changed between 2008 and 2018 in the 263 regions of the EU for which data are available. A total of 49 regions recorded an increase or no change in this share. Nearly half of these regions (24) were in Germany while six more were in Austria and four in Italy; 11 other EU Member States had either one or two regions that experienced an expansion or stability in the share of their working-age population. The only region in the northern Member States to record an increase in the share of the working-age population was Vidurio ir vakarų Lietuvos regionas in Lithuania, while Warmińsko-mazurskie in Poland and Východné Slovensko in Slovakia were the only such regions in the eastern Member States. The single largest increase was in the Portuguese Região Autónoma dos Açores, where the share rose 2.5 pp from 60.9 % in 2008 to 63.4 %. The increase of 2.1 pp in Luxembourg was the second highest increase, followed by an increase of 1.7 pp in neighbouring Trier (Germany).

The largest fall in the share of the working-age population was in País Vasco in Spain, where the share decreased from 64.6 % in 2008 to 59.0 % in 2018

The share of the working-age population fell by at most 1.5 pp between 2008 and 2018 in 72 regions, while some 93 regions reported a fall in the share that was larger than 1.5 pp, but at most 3.0 pp. The final group of regions — those with the lightest shade of blue and orange in Map 14.6 — recorded falls of more than 3.0 pp in this share. These 49 regions were spread across 16 different EU Member States, most notably Spain (nine regions), Czechia (all eight regions), France (six), Germany (five), the Netherlands, Finland and the United

Kingdom (three each). The largest fall of all was in País Vasco (Spain), where the share of the working-age population decreased 5.6 pp from 64.6 % in 2008 to 59.0 % in 2018. The next largest falls (between 4.3 and 4.9 pp) were recorded in five Czech regions (including the capital city region), as well as in the capital city regions of Slovakia, Portugal and Spain.

Employment rate

The final analyses in this chapter move on from the population of working age to employment within the same age range. 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 rate for 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 some parts of 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.

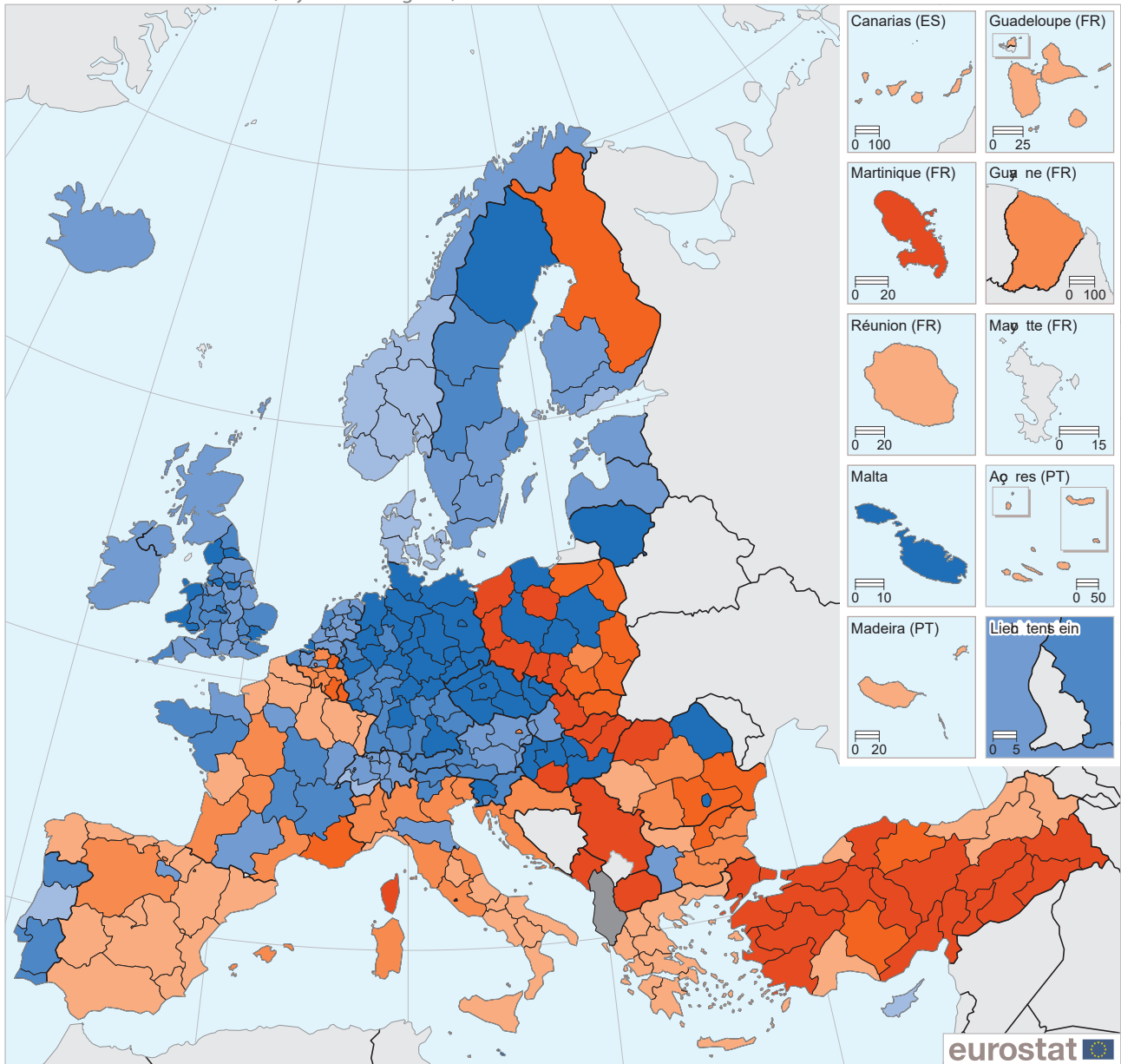
The Europe 2020 strategy set a benchmark target, as part of its agenda for growth and jobs, whereby 75 % of all 20-64 year-olds should be employed by 2020. The EU-28 employment rate for people aged 20-64 stood at 73.1 % in 2018, marking its fifth consecutive increase since a relative low of 68.3 % in 2013. The EU-28 employment rate in 2018 was 2.9 pp higher than 10 years earlier.

Map 14.7 presents employment rates for people aged 20-64 across NUTS level 2 regions. The 158 regions with rates above the EU-28 average are shown in blue and the 109 regions with rates equal to or below the average are shown in orange. The lightest shades show regions with rates that were lower in 2018 than in 2008, while the other shades show regions where rates increased over this period, with the largest increases shown in the darkest shades.

Apart from Pohjois- ja Itä-Suomi in Finland, all regions in northern EU Member States reported above average employment rates; note that only national data are available for Lithuania. By contrast, most regions in southern Member States had below average employment rates, as was the case in all regions of Greece and nearly all of Spain and Italy; nevertheless, Cyprus and Malta had above average employment rates as did most Portuguese regions. Among eastern EU Member States, Croatian regions had below average employment rates as did most regions in Bulgaria,

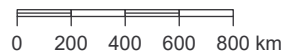
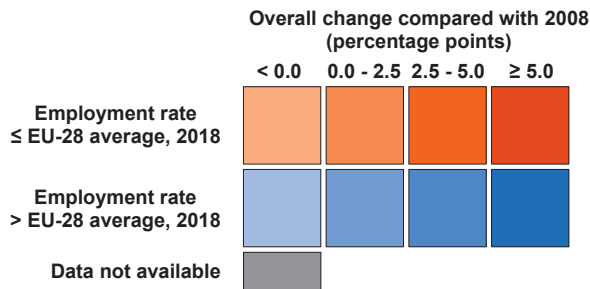
Map 14.7: Employment rate, 2018

(%, people aged 20-64 years in employment as a share of all people aged 20-64 years; percentage points, change of this share between 2008 and 2018; by NUTS 2 regions)



EU-28: 2018 = 73.1 %; 2008-2018 = 2.9 points

Administrative boundaries © EuroGeographics © UN-FAO © Turkeys at Cartography Eurostat — GISCO, 06/2019



Note: Közép-Magyarország (HU1), Makroregion Województwo Mazowieckie (PL9), London (UKI) and Scotland (UKM), NUTS level 1. Ireland, Lithuania and Serbia: national data. Slovenia and Serbia: 2010-2018. Montenegro: 2011-2018. Breaks in series for a majority of regions (too many to document).

Source: Eurostat (online data code: [lfst_r_lfe2emprtn](#))



Poland and Romania. Half the Slovakian regions had above average employment rates, as did a small majority of Hungarian regions and all regions in Czechia and Slovenia. Among western Member States, the situation was also mixed: Luxembourg had a below average employment rate as did most Belgian and French regions; all but one (the capital city region) of the Austrian regions had above average employment rates, as did all regions in Germany, Ireland (only national data available), the Netherlands and the United Kingdom.

The highest regional employment rates in the EU were recorded in Stockholm and Åland

The regions with the highest employment rates had some of the most dynamic labour markets, often characterised by low levels of unemployment and a relatively high share of women in work. In 2018, the highest rate across all EU regions was 85.7 % in Stockholm, followed closely by Åland (85.1 %). In general, the highest employment rates were in regions of Germany, Finland, Sweden and the United Kingdom, along with the Czech capital city region. By contrast, the lowest employment rates were recorded in regions of Belgium, Greece, Spain and Italy, as well as the French overseas regions. Five regions recorded employment rates below 50 %, four of which were southern or island regions of Italy and the fifth — with the lowest rate of all (40.8 %) — was Mayotte (shown as not available in Map 14.7 as 2008 data are missing).

The largest increases in the employment rate were in Hungarian regions

There were 68 regions in the EU where the employment rate rose by at least 5.0 pp between 2008 and 2018. Among these, there were 15 where the increase was at least 10.0 pp, with six regions in Hungary and three in Poland. The top half of Figure 14.4 shows the five regions with the largest increases in percentage terms — which also had the largest increases in percentage point (pp) terms — four of which were in Hungary. The largest increase was in Észak-Alföld, where the employment rate rose by 16.6 pp, from 54.7 % in 2008 to 71.3 % in 2018.

The employment rate increased by at least 2.5 pp but less than 5.0 pp between 2008 and 2018 in 63 regions, while 77 regions reported a stable or moderate increase (less than 2.5 pp).

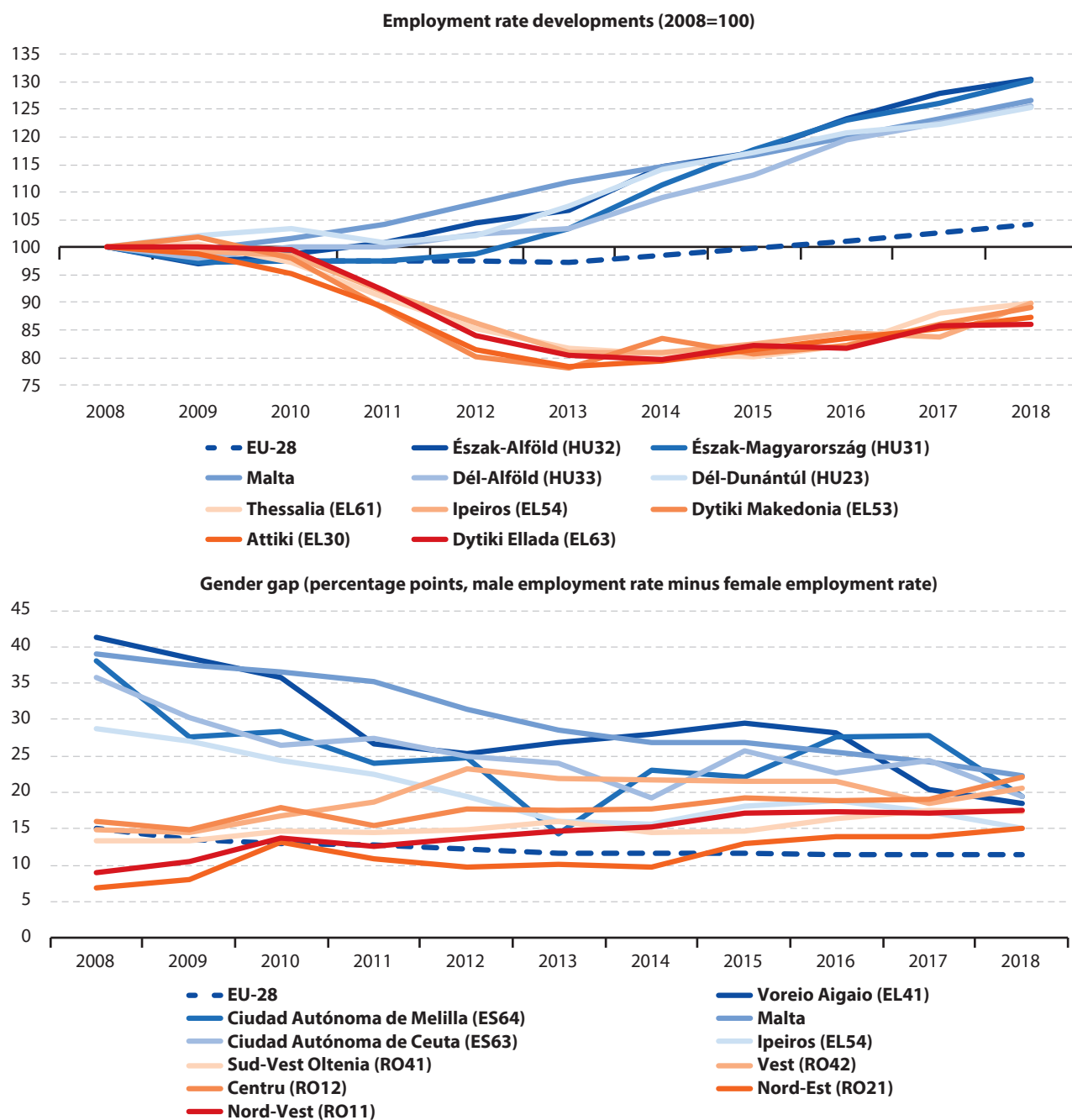
The largest decreases in the employment rate were in Greek regions

The final group of regions — those with the lightest shade of blue and orange in Map 14.6 — recorded a lower employment rate in 2018 than in 2008. This group included 59 regions, mainly in Spain (15 regions), Greece (all 13 regions), France (nine), Italy (nine) and Denmark (all five regions), although there were also three regions in Portugal, two in Finland and one each in Bulgaria, Cyprus and Romania. The nine regions with the largest falls in employment rates were all in Greece, eight of which had a decline that was in excess of 6.0 pp. The largest fall was recorded in Dytiki Ellada where the employment rate in 2018 was 53.7 %, down 8.8 pp from 62.5 % in 2008.

The bottom half of Figure 14.4 provides an insight into the gender imbalance of the labour market. During the financial and economic crisis the gender gap for the EU-28's employment rate narrowed rapidly, falling from 15.1 pp in 2008 to 11.7 pp in 2013, before stabilising at 11.5 pp between 2016 and 2018. The regions that are shown in the bottom half of the figure are those where the gender gap for the employment rate narrowed or widened at its fastest pace during the period 2008 to 2018 (based on changes in percentage point terms).

In fact, there were only 26 NUTS level 2 regions in the EU where the gender gap for the employment rate widened between 2008 and 2018 and three more where it was the same in both years. These regions were mainly in Poland, Romania and Hungary, with a few regions also in France, Germany, the United Kingdom and Sweden. The largest expansions in this gender gap were 8.6 and 8.3 pp in the Nord-Vest and Nord-Est regions of Romania; the gender gaps recorded in these regions were approximately twice as high in 2018 as they had been in 2008.

In the remaining 232 regions, the gender gap for the employment rate was narrower in 2018 than in 2008. In 11 regions the gap narrowed by more than 10 pp, with this difference reaching 23.0 pp in Voreio Aigaio (Greece). These regions with a particularly large contraction in the gender gap for the employment rate were nearly all in southern EU Member States — Spain, Greece, Portugal and Malta — but included also Haute-Normandie (France).

Figure 14.4: Employment rate developments, by NUTS2 regions, 2008-2018

Note: the first part of the figure shows the five NUTS 2 regions with the highest and lowest rates of change for the period 2008-2018, as well as developments for the EU-28 average. The second part of the figure shows the five NUTS 2 regions where the gender gap for the employment rate (male employment rate minus female employment rate) narrowed or widened at its fastest pace during the period 2008-2018 (based on changes in percentage point terms). The employment rate is calculated by dividing the number of people (or men / women) aged 20-64 years in employment by the total population (or total male / female population) of the same age group.

Source: Eurostat (online data code: lfst_r_lfe2emprtn)

Annex 1 — Classification of territorial units for statistics, 2016 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
BG41	Югозападен/Yugozapaden
BG42	Южен централен/Yuzhen tsentralen

CZECHIA

CZ01	Praha
CZ02	Střední Čechy
CZ03	Jihozápad
CZ04	Severozápad
CZ05	Severovýchod
CZ06	Jihovýchod
CZ07	Střední Morava
CZ08	Moravskoslezsko

DENMARK

DK01	Hovedstaden
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
DE30	Berlin
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

IE04	Northern and Western
IE05	Southern
IE06	Eastern and Midland

GREECE

EL30	Αττική/Attiki
EL41	ΒόρειοΑιγαίο/Voreio Aigaio
EL42	ΝότιοΑιγαίο/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	ΣτερεάΕλλάδα/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	Ile-de-France
FRB0	Centre — Val de Loire
FRC1	Bourgogne
FRC2	Franche-Comté
FRD1	Basse-Normandie
FRD2	Haute-Normandie
FRE1	Nord-Pas-de-Calais
FRE2	Picardie
FRF1	Alsace
FRF2	Champagne-Ardenne
FRF3	Lorraine
FRG0	Pays-de-la-Loire
FRH0	Bretagne
FRI1	Aquitaine
FRI2	Limousin
FRI3	Poitou-Charentes
FRJ1	Languedoc-Roussillon
FRJ2	Midi-Pyrénées
FRK1	Auvergne
FRK2	Rhône-Alpes
FRL0	Provence-Alpes-Côte d'Azur
FRM0	Corse
FRY1	Guadeloupe
FRY2	Martinique
FRY3	Guyane
FRY4	La Réunion
FRY5	Mayotte

CROATIA

HR03	Jadranska Hrvatska
HR04	Kontinentalna Hrvatska

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
ITI4	Lazio

CYPRUS

CY00	Κύπρος/Kýpros
-------------	----------------------

LATVIA

LV00	Latvija
-------------	----------------

LITHUANIA

LT01	Sostinės regionas
LT02	Vidurio ir vakarų Lietuvos regionas

LUXEMBOURG

LU00	Luxembourg
-------------	-------------------

HUNGARY

HU11	Budapest
HU12	Pest
HU21	Közép-Dunántúl
HU22	Nyugat-Dunántúl
HU23	Dél-Dunántúl
HU31	Észak-Magyarország
HU32	Észak-Alföld
HU33	Dél-Alföld

MALTA

MT00	Malta
-------------	--------------

NETHERLANDS

NL11	Groningen
NL12	Friesland (NL)
NL13	Drenthe
NL21	Overijssel

NL22	Gelderland
NL23	Flevoland
NL31	Utrecht
NL32	Noord-Holland
NL33	Zuid-Holland
NL34	Zeeland
NL41	Noord-Brabant
NL42	Limburg (NL)

AUSTRIA

AT11	Burgenland
AT12	Niederösterreich
AT13	Wien
AT21	Kärnten
AT22	Steiermark
AT31	Oberösterreich
AT32	Salzburg
AT33	Tirol
AT34	Vorarlberg

POLAND

PL21	Małopolskie
PL22	Śląskie
PL41	Wielkopolskie
PL42	Zachodniopomorskie
PL43	Lubuskie
PL51	Dolnośląskie
PL52	Opolskie
PL61	Kujawsko-pomorskie
PL62	Warmińsko-mazurskie
PL63	Pomorskie
PL71	Łódzkie
PL72	Świętokrzyskie
PL81	Lubelskie
PL82	Podkarpackie
PL84	Podlaskie
PL91	Warszawski stołeczny
PL92	Mazowiecki regionalny

PORTUGAL

PT11	Norte
PT15	Algarve
PT16	Centro (PT)
PT17	Área Metropolitana de Lisboa
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
RO32	București-Ilfov
RO41	Sud-Vest Oltenia
RO42	Vest

SLOVENIA

SI03	Vzhodna Slovenija
SI04	Zahodna Slovenija

SLOVAKIA

SK01	Bratislavský kraj
SK02	Západné Slovensko
SK03	Stredné Slovensko
SK04	Východné Slovensko

FINLAND

FI19	Länsi-Suomi
FI1B	Helsinki-Uusimaa
FI1C	Etelä-Suomi
FI1D	Pohjois- ja Itä-Suomi
FI20	Åland

SWEDEN

SE11	Stockholm
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
UKI3	Inner London — West
UKI4	Inner London — East
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
UKM5	North Eastern Scotland
UKM6	Highlands and Islands
UKM7	Eastern Scotland
UKM8	West Central Scotland
UKM9	Southern Scotland
UKN0	Northern Ireland

EFTA countries: statistical regions at level 2 (capital region is shown in bold)

ICELAND

IS00 Ísland

LIECHTENSTEIN

LI00 Liechtenstein

NORWAY

NO01 Oslo og Akershus

NO02	Hedmark og Oppland
NO03	Sør-Østlandet
NO04	Agder og Rogaland
NO05	Vestlandet
NO06	Trøndelag
NO07	Nord-Norge

SWITZERLAND

CH01	Région lémanique
CH02	Espace Mittelland
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

NORTH MACEDONIA

MK00 Северна Македонија/Severna Makedonija

ALBANIA

AL01 North

AL02 Centre

AL03 South

SERBIA

RS11 Београдски регион/Beogradski region

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

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

TR51 Ankara

TR52 Konya

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

Annex 2 — Other classifications used in this publication

City statistics data collection:

See: <https://ec.europa.eu/eurostat/web/cities/background> and https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Territorial_typologies_manual_-_cities,_commuting_zones_and_functional_urban_areas#Further_information

Degree of urbanisation classification

See: <https://ec.europa.eu/eurostat/web/degree-of-urbanisation/background> and https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Territorial_typologies_manual_-_degree_of_urbanisation

International statistical classification of diseases and related health problems: ICD 2010

See: <https://icd.who.int/browse10/2010/en>

International standard classification of education: ISCED 2011

See: <http://uis.unesco.org/sites/default/files/documents/international-standard-classification-of-education-isced-2011-en.pdf>

Statistical classification of economic activities in the European Community: NACE Rev. 2

See: <https://ec.europa.eu/eurostat/web/nace-rev2>

Getting in touch with the EU

In person

All over the European Union there are hundreds of Europe Direct Information Centres. You can find the address of the centre nearest you at: https://europa.eu/european-union/contact_en

On the phone or by e-mail

Europe Direct is a service that answers your questions about the European Union. You can contact this service

- by freephone: 00 800 6 7 8 9 10 11 (certain operators may charge for these calls),
- at the following standard number: +32 22999696 or
- by electronic mail via: https://europa.eu/european-union/contact_en

Finding information about the EU

Online

Information about the European Union in all the official languages of the EU is available on the Europa website at: https://europa.eu/european-union/index_en

EU publications

You can download or order free and priced EU publications at: <https://publications.europa.eu/en/publications>. Multiple copies of free publications may be obtained by contacting Europe Direct or your local information centre (see https://europa.eu/european-union/contact_en).

EU law and related documents

For access to legal information from the EU, including all EU law since 1952 in all the official language versions, go to EUR-Lex at: <https://eur-lex.europa.eu>

Open data from the EU

The EU Open Data Portal (<http://data.europa.eu/euodp/en>) provides access to datasets from the EU. Data can be downloaded and reused for free, both for commercial and non-commercial purposes.

Eurostat regional yearbook 2019

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 2019* 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: EU policies for regions and cities, 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 socioeconomic developments after the global financial and economic crisis.

For more information
<https://ec.europa.eu/eurostat/>

