Eurostat regional yearbook

2017 edition

STATISTICAL BOOKS

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Eurostat regional yearbook

2017 edition

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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.

Subnational data help to increase the understanding of the diversity that exists within Member States and across the European Union. As such, the regional statistics presented in this publication complement those provided in the online version of *Europe in figures — Eurostat's yearbook*, which concentrates on statistics for the EU-28, euro area and individual Member States.

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

The data presented in this publication are based on the 2013 version of the NUTS classification. They are supplemented by statistics on cities, towns and suburbs, and also rural areas (according to the degree of urbanisation classification).

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

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

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

Mariana Kotzeva

Acting 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 2017* 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 and figures, accompanied by a description of the policy context, main findings and data sources. These regional indicators are presented for the following 12 subjects: regional policies and European Commission priorities, population, health, education and training, the labour market, the economy, structural business statistics, research and innovation, the digital economy and society, tourism, transport, and agriculture. In addition, two special chapters are included in this edition: a focus on European cities and a focus on rural areas.

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Data extraction

The data presented within this publication were extracted during February–April 2017.

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

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Contents

Introduction

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

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

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

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

(1) There is currently no agreement on statistical regions with Serbia and so information is presented only at the national level.

Source: Eurostat

Subnational statistics

EU Member States are often compared with each other, but in reality it is very difficult to compare a small country like Malta, which had 434 thousand inhabitants on 1 January 2016, or Luxembourg, which had 576 thousand inhabitants, with Germany, the most populous EU Member State, with 82.2 million inhabitants.

Comparing data at a regional or subnational level is often more meaningful and such an analysis may also highlight potential disparities within countries, such as an east–west divide in Germany or a north–south divide in Italy, or a high concentration of economic activity in capital city regions, as is the case, for example, in France and the United Kingdom.

STATISTICS ON REGIONS

At the heart of regional statistics is the NUTS classification — the classification of territorial units for statistics. This is a regional classification for the EU Member States based on a hierarchy of regions: the NUTS classification subdivides each EU Member State into regions at three different levels, covering NUTS levels 1, 2 and 3 from larger to smaller areas.

It should be noted that 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, six of the Member States — Estonia, Cyprus, Latvia, Lithuania, Luxembourg and Malta — are each composed of a single NUTS level 2 region according to the 2013 version of the NUTS classification.

A similar situation exists for the level 2 statistical regions of Iceland, Liechtenstein, Montenegro and the former Yugoslav Republic of Macedonia, which are each composed of a single level 2 region. Note also that there is currently no agreement on statistical regions for Serbia and so only national data are presented.

Table 1 provides an overview of the number of NUTS regions 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, but, subject to data availability, some maps, tables and figures are shown for NUTS level 1 regions (more aggregated geographical information) or NUTS level 3 regions (the most detailed level of geographical information using NUTS); these more detailed statistics are only available for a limited selection of indicators that include agriculture, demography, economic accounts, business demography, transport and science and technology indicators.

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

Note: a map of the NUTS 2 regions with corresponding codes and region names is provided in a plastic sleeve attached to the inside cover of this publication, in order to help the reader locate those regions that are mentioned in the text.

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 (a new version of the NUTS). 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 into the classification when the accession of a new EU Member State occurs. Since 2003, the NUTS classification has been amended several times, partly due to regular amendments, partly due to the accession of new Member States or changes to the territorial boundaries of existing Member States (for example, the inclusion of data for the French region of Mayotte).

The third regular amendment of the NUTS classification (Commission Regulation No 1319/2013) was adopted in December 2013 and applies to data collected for reference periods from 1 January 2015 onwards; it is referred to as NUTS 2013. This version of NUTS is the basis for classifying regional statistics as used in the 2017 edition of the *Eurostat regional yearbook*. It should be noted that for time series, the data presented could often have been collected using a previous version of NUTS and that these statistics have been recoded to NUTS 2013; as a consequence data are sometimes not available for a small number of regions where a simple recoding or aggregation of data from previous versions of NUTS was not possible.

The main principles of the NUTS classification

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

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

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

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

Source: Eurostat

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

STATISTICS BY DEGREE OF URBANISATION

The degree of urbanisation is a classification originally introduced in 1991; initially it distinguished between densely, intermediate and thinly populated areas, using information on numbers of inhabitants, population density and the contiguity of local administrative units at level 2 (LAU2 or municipalities).

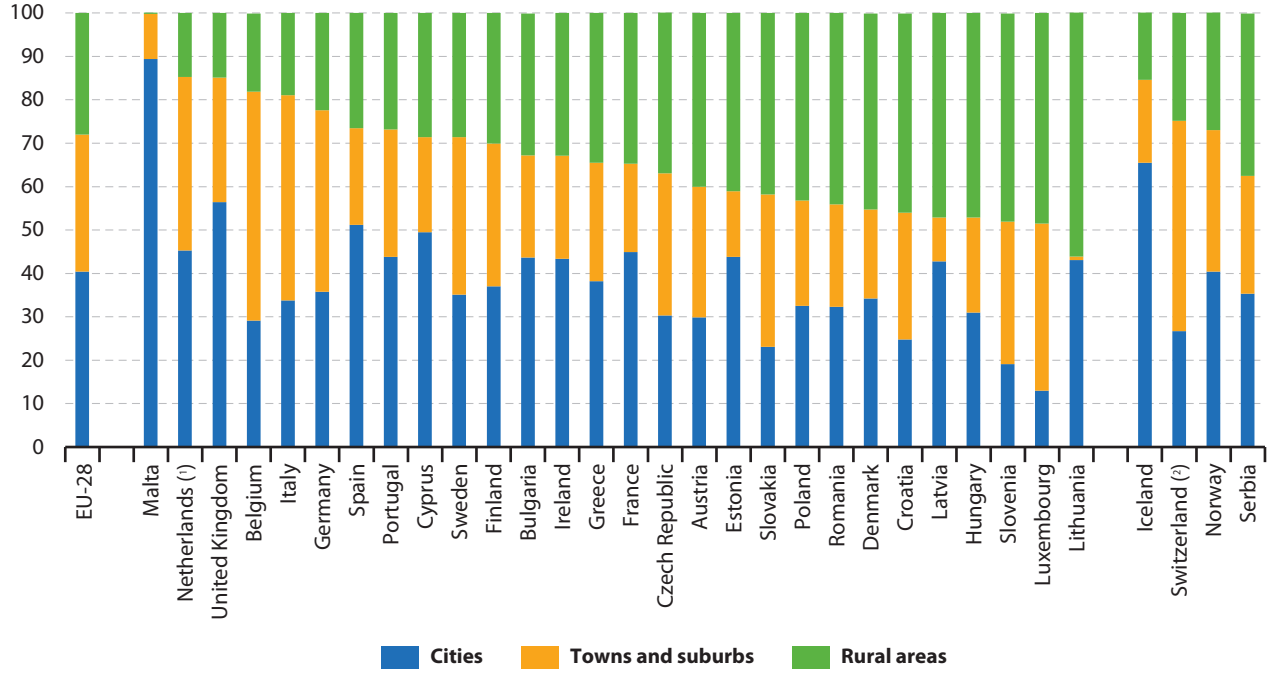
In 2014, a new degree of urbanisation classification was introduced: it is based on three types of area, which are defined using a criterion of geographical contiguity based on a population grid of 1 km^2 in combination with a minimum population threshold (see Table 3 for a summary of the spatial concepts employed). The revised classification identifies 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.

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

Within this edition of the *Eurostat regional yearbook*, statistics by degree of urbanisation are used in the chapters on health, the digital economy and digital society, tourism, cities and rural areas.

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

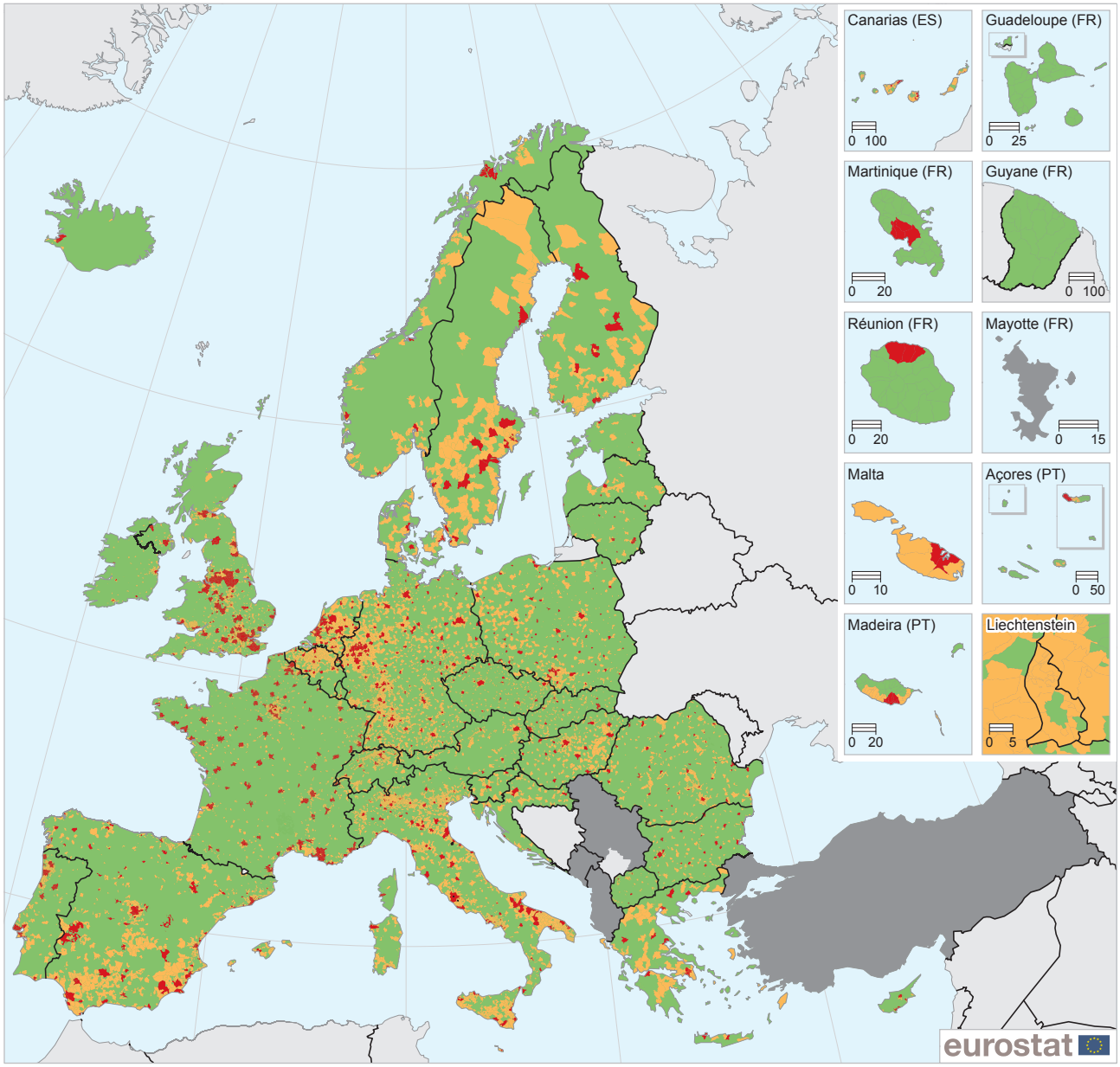
Figure 1: Share of the total population, by degree of urbanisation, 2015
(%)



Note: ranked on the share of rural areas.
(1) Provisional.
(2) 2014.

Source: Eurostat (online data code: ilc_lvho01)

Map 1: Degree of urbanisation for local administrative units level 2 (LAU2)



Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 05/2017

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)

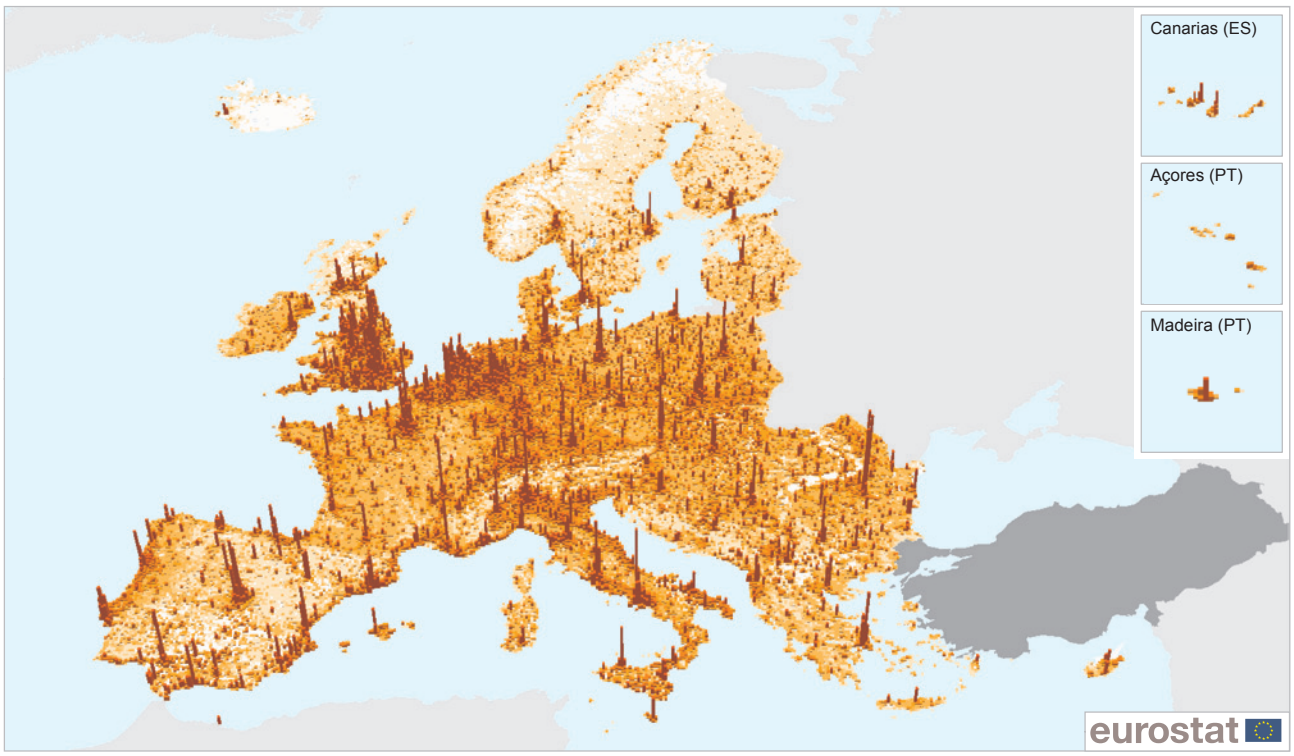
Data not available

0 200 400 600 800 km

Note: Based on population grid from 2011 and LAU 2014. Denmark, Greece and Malta: local administrative units level 1 (LAU1).

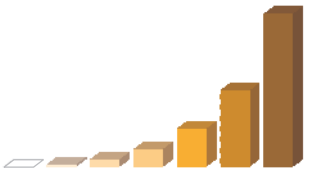
Source: Eurostat, JRC and European Commission Directorate-General for Regional Policy

Map 2: Population density based on the GEOSTAT population grid, 2011
(number of inhabitants/km²)



Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 06/2017

(number of inhabitants/10 km²)



Data not available

Note: the GEOSTAT population grid is normally based on the number of inhabitants per 1 km²; for the sake of clarity in this 3D map it has been aggregated to show the number of inhabitants per 10 km². Guadeloupe (FRA1), Martinique (FRA2), Guyane (FRA3) La Réunion (FRA4) and Mayotte (FRA5): not available.

Source: JRC, Eurostat, GEOSTAT Population Grid 2011

Table 3: Spatial concepts in relation to the revised degree of urbanisation

Grid cell concept	Criteria
High density clusters (urban centres)	Population ≥ 50 000 inhabitants and contiguous grid cells of 1 km² with ≥ 1 500 inhabitants per km²
Urban clusters	Population ≥ 5 000 inhabitants and contiguous grid cells of 1 km² with ≥ 300 inhabitants per km²
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

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

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'.

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

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

The EU has a specific city data collection exercise; it is 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 (with a population of at least 50 thousand inhabitants in their urban centres) spread across the EU Member States, Norway, Switzerland and Turkey; note that there may be considerable differences between cities as regards the latest reference period for which data are available.

These city statistics provide a wide range of information to assess the quality of urban life and living standards, supplementing regional statistics (based on the NUTS classification). The data collection exercise includes several hundred variables/indicators, with statistics collected for: demography, housing, health, crime, the labour market, economic activity, income disparities, local administration, civic involvement, educational qualifications, cultural infrastructure and tourism.

Within this edition of the *Eurostat regional yearbook*, statistics on European cities are presented in a special focus on cities (Chapter 13).

For more information:
Methodological manual on city statistics, Eurostat (2017)

Coverage and timeliness

The *Eurostat regional yearbook* contains statistics for the 28 Member States of the EU and, where available, data are also shown for the EFTA countries (Iceland, Liechtenstein, Norway and Switzerland) and the candidate countries (Montenegro, the former Yugoslav Republic of Macedonia, Albania, Serbia and Turkey). While Serbia has been a candidate country to the EU since 1 March 2012, there is currently no agreement on its regional boundaries, especially concerning Kosovo [2] — the latter is not covered — and so only national statistics are presented for Serbia (subject to availability). The designations employed and the presentation of material in maps, tables and figures does not imply the expression of any opinion whatsoever on the part of the European Union concerning the legal status of any country, territory or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

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

There is a wide range of surveys and data collection exercises whose data feed into the *Eurostat regional yearbook*. As a result, there may be differences concerning the latest available reference year between the different chapters as each aims to show the latest information available. In general, 2016 data are available from the labour force survey (used in the chapter on education and training or the labour market) and from the information society survey (used in the chapter on the digital economy and society). 2015 data are generally available for most of the other chapters, namely population (with some data for 1 January 2016), the remainder of the chapter on education and training, as well as those chapters covering the economy, tourism, transport and agriculture. 2014 data are available for most of the chapter covering health and for structural business statistics, while the chapter on research and innovation has data ranging from 2014 for R & D expenditure to 2015 for information pertaining to human resources, trademarks and Community designs. 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.

[2] This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo declaration of independence.

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 (see below for more information). In some exceptional cases, use has been made of national data sets on Eurostat's website in order to fill gaps in regional data sets.

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

Changes compared with the previous edition

Compared with the 2016 edition of the *Eurostat regional yearbook*, this edition includes some new chapters and content. The main differences are:

- some of the information in the health chapter concerning causes of death has been improved by moving from a set of crude death rates to standardised death rates averaged over a three-year period; there is a new section within the health chapter that provides information on health determinants, which makes use of information collected from the second wave of the European Health Interview Survey (EHIS);
- the transport chapter focuses on non-road transport, including information relating to aviation, maritime and rail transport services;
- there is a new chapter on cities;
- there is a new chapter on rural areas.

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, in tables, the following formatting and symbols are used, 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.

More information about regions on Eurostat's website

EUROBASE — EUROSTAT'S ONLINE DATABASE

The simplest way to access Eurostat's broad range of statistical information is through Eurostat's website. It provides users with free access to data, methodologies and publications. The website is updated daily with the latest and most comprehensive statistical information available on: the EU-28 and the euro area, the EU Member States, EFTA countries, candidate countries and potential candidates.

Eurostat online data codes, such as **tps00001** and **nama_10_gdp** ([3]) provide easy access to the most recent data available; these codes are given as part of the source below each map, table or figure. In the PDF version, readers are led directly to the freshest data when clicking on the hyperlinks provided. For readers of the paper version, the freshest data can be accessed by typing online data codes into the 'Search' utility found in the upper-right corner of Eurostat's homepage.

Statistics on regions

Eurostat's regional databases provide a wealth of information that extends well beyond that shown in the *Eurostat regional yearbook* — with a wider range of subjects and indicators, longer time series, and different levels of the NUTS classification. A dedicated section containing background information on regional statistics is available on Eurostat's website.

Statistics by degree of urbanisation

Eurostat's databases with statistics by degree of urbanisation contain a range of socioeconomic indicators covering: health, education and training, living conditions and welfare, the labour market, tourism and the digital economy and society. A dedicated section containing background information on data by degree of urbanisation is available on Eurostat's website.

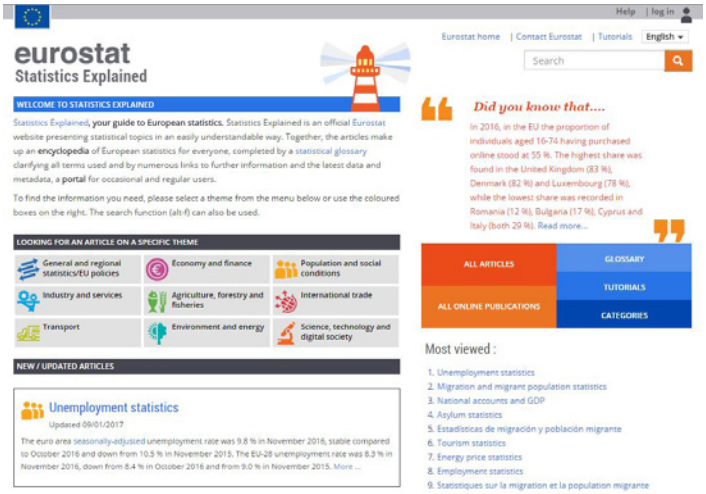
Statistics on cities

Eurostat's databases on city statistics contain a range of information on cities and their wider functional urban areas covering: demographic indicators, education, living conditions, the labour market, the economy and finance, culture and tourism, transport and the environment. A dedicated section containing background information from the city data collection is available on Eurostat's website.

STATISTICS EXPLAINED

Statistics Explained is a wiki-based system which presents statistics on a broad range of topics in an easy-to-understand way. Statistics Explained articles form an encyclopaedia of European statistics, which is completed by a statistical glossary clarifying the terms used, with clear and concise definitions of statistical terminology and concepts. Numerous links are provided to data, metadata, and further information, making Statistics Explained a portal for regular and occasional users of official European statistics.

Since the 2011 edition of the *Eurostat regional yearbook*, the German, English and French versions of the publication are available on Statistics Explained. The underlying data to the maps, tables and figures included in each chapter are also provided on Statistics Explained as Microsoft Excel workbooks.



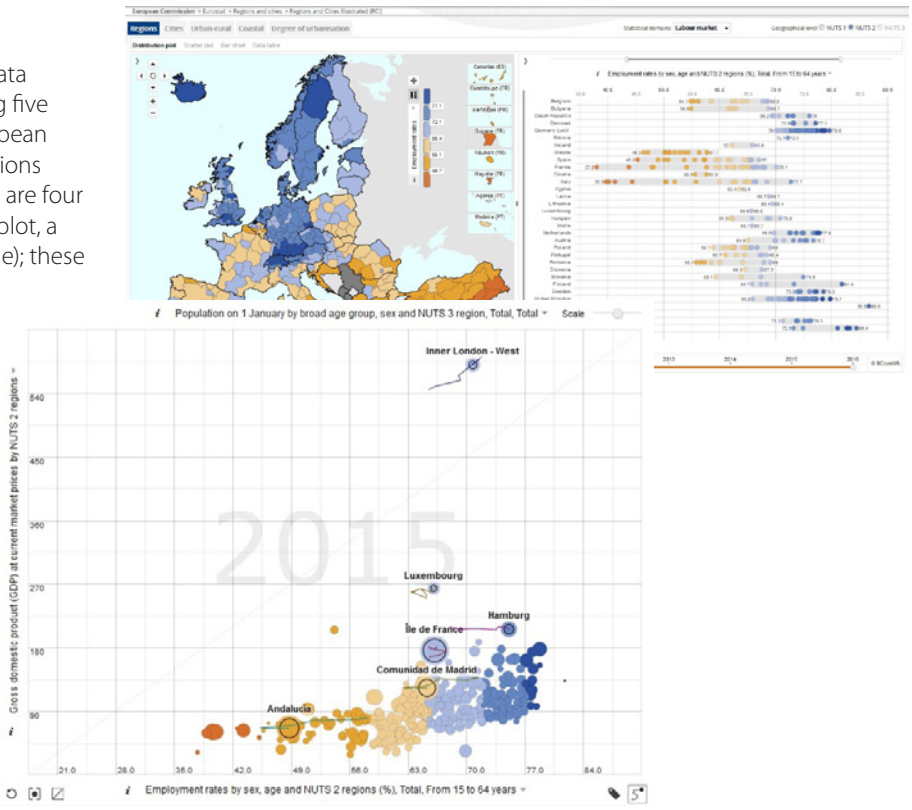
([3]) There are two types of online data codes: Tables (accessed using the TGM interface) have 8-character codes, which consist of 3 or 5 letters — the first of which is 't' — followed by 5 or 3 digits, e.g. tps00001 and tsdph220. Databases (accessed using the Data Explorer interface) have codes that use an underscore '_' within the syntax of the code, for example, nama_10_gdp.

VISUALISATION TOOLS AND APPS

Eurostat offers users several interactive applications on its website, providing tools for visualising and analysing territorial data for a number of different typologies.

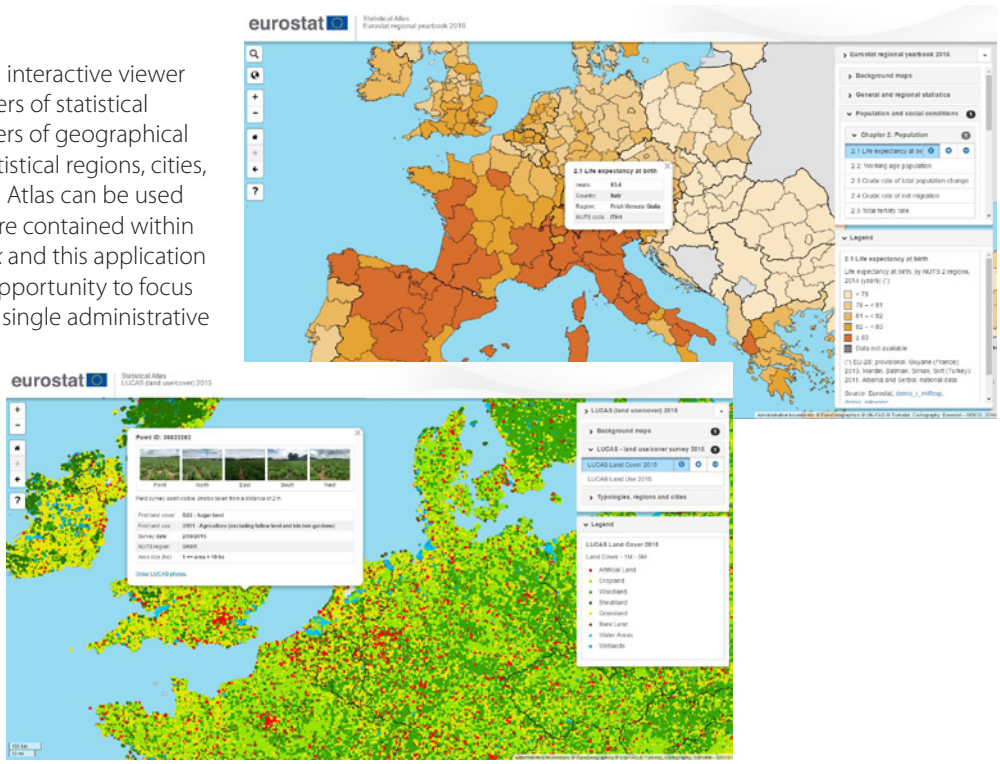
Regions and cities illustrated

Regions and cities illustrated contains data for a wide range of indicators covering five typologies — European regions, European cities, urban–rural regions, coastal regions and the degree of urbanisation. There are four standard visualisations (a distribution plot, a scatterplot, a bar chart and a data table); these provide an opportunity to make deeper analyses of the data as well as comparisons and rankings. Furthermore, an animated timeline can be used to explore how the various indicators have developed over time.



Statistical Atlas

Eurostat's *Statistical Atlas* is an interactive viewer that allows users to study layers of statistical data in combination with layers of geographical information (for example, statistical regions, cities, roads or rivers). The Statistical Atlas can be used to view all of the maps that are contained within the *Eurostat regional yearbook* and this application also provides users with an opportunity to focus on detailed information for a single administrative region, as well as data from the EU's land cover and land use survey (LUCAS).

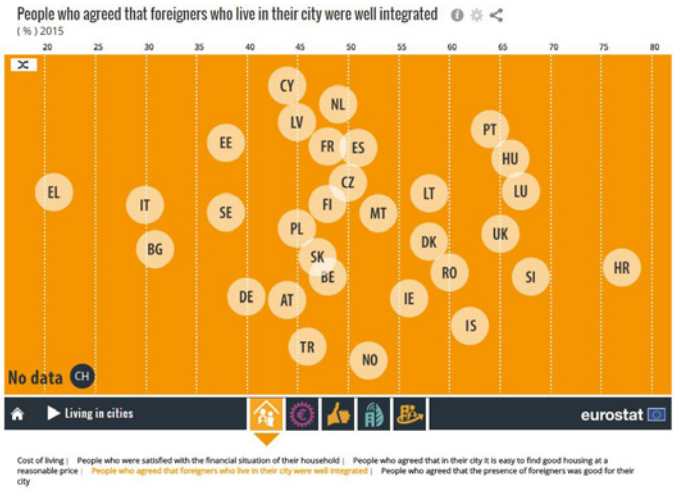


My region

My region is a mobile phone app (available both for iPhone and for Android) that provides users with access to a selection of annual regional indicators for NUTS level 2 regions; it presents data for EU Member States, as well as EFTA and candidate countries. The app is available in three language versions: German, English and French, while the update function makes it possible to download the freshest data directly from Eurostat's databases.

My capital in a bubble

This online tool provides comparisons of data for more than 30 indicators covering the capital cities of EU Member States, EFTA countries and Turkey. *My capital in a bubble* presents city statistics for a range of themes: living in cities, the economy and labour market, quality of life, smart and green cities, and urban demography. The app is available in three languages — German, English and French — and it also provides photographs of each capital city alongside the latest available data.



1 Regional policies and European Commission priorities

This chapter provides an overview of European Union (EU) policy developments that potentially have a territorial impact. It starts with information on how the EU attributes its cohesion policy funding with the goal of reducing socioeconomic disparities at a regional level, before providing information on a range of policy developments which impact life in Europe's regions, cities and rural areas.

Cohesion policy — investing to reduce regional disparities in the EU

WHAT IS COHESION POLICY?

The EU's cohesion policy invests in growth and jobs and promotes territorial cooperation; it is behind thousands of projects that have taken place all over Europe. Cohesion policy aims to reduce the disparities that exist between EU regions, promoting a balanced and sustainable pattern of territorial development, by supporting job creation, business competitiveness, economic growth, sustainable development, and an overall improvement in the quality of life.

The EU's cohesion policy is established on the basis of seven-year programming periods; the current period covers 2014–2020, for which expenditure of EUR 356 billion has been allocated for measures in the EU Member States, equivalent to almost one third (32.5 %) of the total EU budget. The EU's policy is delivered through three main funds: the European regional development fund (ERDF), the European social fund (ESF) and the cohesion fund.

The first of these, the European regional development fund, concentrates its actions on innovation and research, the digital agenda, support for small and medium-sized enterprises (SMEs), and the low-carbon economy. The resources allocated to each of these priorities depends upon the region concerned. For example, in more developed regions, at least 80 % of any funding should focus on at least two of these priorities, whereas in less developed regions this share falls to 50 %.

The European social fund aims to improve employment and education opportunities in the EU, as well as the situation of the most vulnerable people, for example, those at risk of poverty. More than EUR 80 billion has been earmarked for human capital investment across the EU Member States during the period 2014–2020. The European social fund focuses on supporting four thematic objectives: promoting employment and supporting labour mobility; promoting social inclusion and combating poverty; investing in education, skills and lifelong learning; enhancing institutional capacity and an efficient public administration.

The cohesion fund supports those EU Member States whose gross national income (GNI) per inhabitant is less than 90 % of the EU average. During the period 2014–2020 it allocates a total of EUR 63.3 billion to a range of investment projects primarily in relation to trans-European networks (TENs) and the environment, through a focus on the following areas: the shift towards a low-carbon economy; promoting climate change adaptation and risk prevention; preserving and protecting the environment and promoting resource efficiency; promoting sustainable transport and removing key bottlenecks in network infrastructures; enhancing institutional capacity. It is subject to the same rules of programming, management and monitoring as the European regional development fund and European social fund.

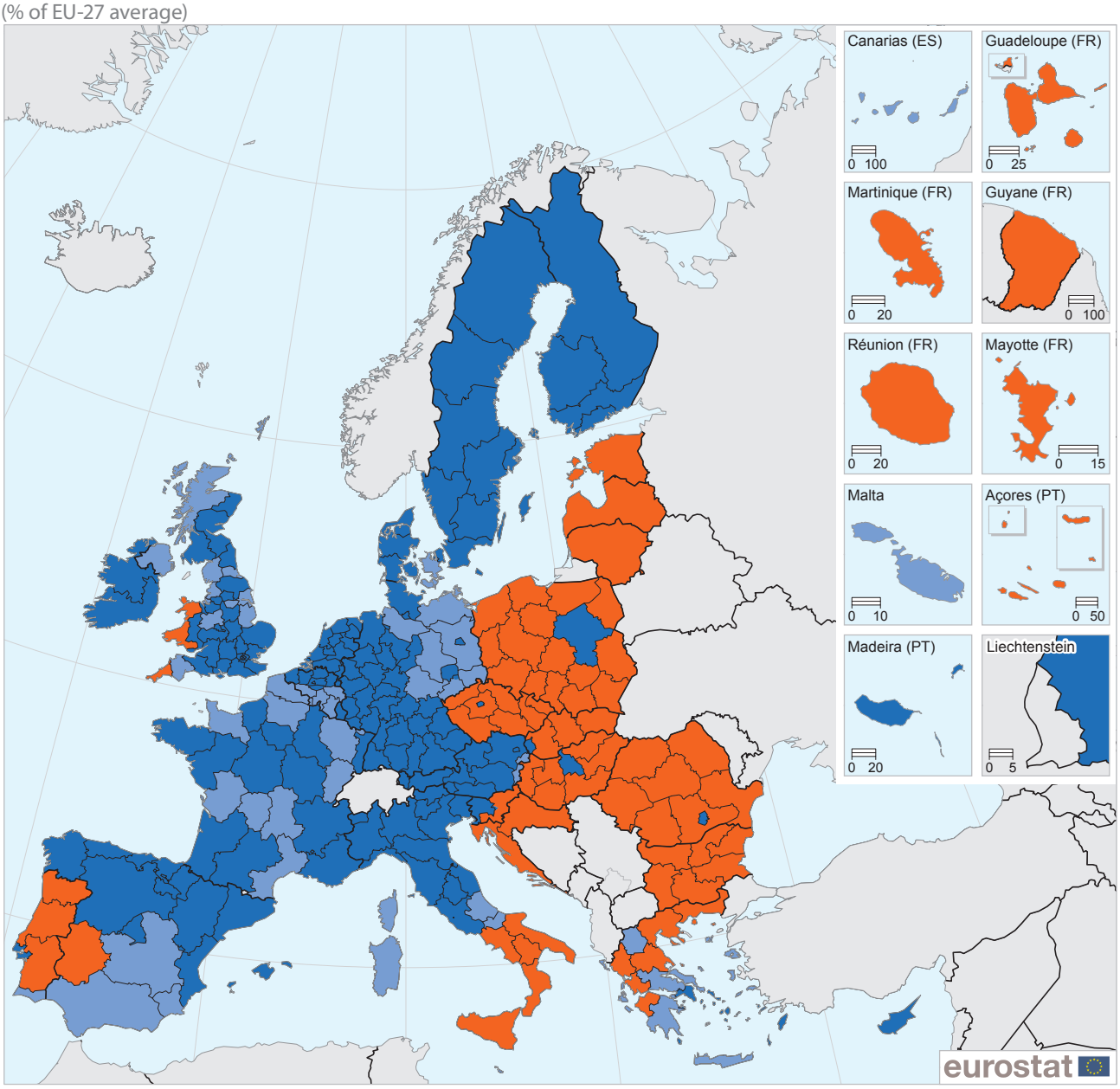
For more information:
http://ec.europa.eu/regional_policy/en/policy/what/investment-policy

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 (ESI) 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.

Structural and investment funds are attributed through a process which involves European, national, regional and local authorities, as well as social partners (for example organisations representing employers and employees) and organisations from civil society. There have been a number of changes to the design and implementation of cohesion policy for the 2014–2020 programming period, with a shift in funding to concentrate more funding on the European Commission's priorities including research and innovation, support to small businesses, training and education, social inclusion, digital technologies and broadband, energy, water, environment, climate change, sustainable transport and the low-carbon economy.

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



(% of EU-27 average)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 04/2017

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

0 200 400 600 800 km

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

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

THE NUTS CLASSIFICATION — AN OBJECTIVE BASIS FOR THE ALLOCATION OF COHESION FUNDS

Priority for cohesion policy funding is given to those regions whose development is lagging behind the EU average, with more than half (EUR 181 billion) of the total allocation set aside for less developed regions whose GDP is lower than 75 % of the EU average.

Statistics on regional accounts are used when allocating structural and investment funds, with the NUTS classification providing the basis for regional boundaries and geographic eligibility. Regional eligibility for the European regional development fund and the European social fund during the programming period 2014–2020 was calculated on the basis of regional GDP per inhabitant (in PPS) averaged over the period 2007–2009. NUTS level 2 regions were ranked and split into three groups:

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

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

Eligibility for the cohesion fund was initially calculated on the basis of GNI per inhabitant (in PPS) averaged over the period 2008–2010. Only EU Member States whose GNI per inhabitant was less than 90 % of the EU-27 average were supported, with funds to cover actions designed to reduce economic and social disparities and promote sustainable development. Bulgaria, the Czech Republic, Estonia, Greece, Croatia, Latvia, Lithuania, Hungary, Malta, Poland, Portugal, Romania, Slovenia and Slovakia were covered during the period 2014–2016, while Cyprus was eligible for a phase-out fund. During 2016, a review of cohesion fund eligibility was conducted, based on information for GNI per inhabitant averaged over the period 2012–2014. As a result, Cyprus became fully eligible for cohesion fund support (from 1 January 2017 onwards); there were no other changes to the list of eligible EU Member States.

Table 1.1 provides an overview of the allocation of cohesion policy funds (for the two regional structural funds and the cohesion fund) for the programming period 2014–2020. Over this period, Poland has been allocated 21.8 % of the EU's total funding for cohesion policy. The next highest allocations are for Italy (9.7 %) and Spain (8.6 %), while Portugal, the Czech Republic, Hungary and Romania should each receive between 6.0 % and 6.5 % of total cohesion policy funding during the programming period.

For more information:
http://ec.europa.eu/regional_policy/en

COHESION POLICY: IMPLEMENTATION

The principles for the implementation of cohesion policy and decisions on how to assign the funds are carried out through a process of consultation between the European Commission and the EU Member States. Each Member State produces a draft partnership agreement and draft operational programme, which provides information on their regional strategy and a list of proposals for various programmes.

Having negotiated the contents of these with the European Commission, national/regional managing authorities in each of the EU Member States then select, monitor and evaluate thousands of potential projects. The European Commission commits funds to allow these authorities to start spending funds on their programmes. Each programme is monitored by both the European Commission and the Member State in question and payments are made on the basis of certified expenditure and a series of reports.

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

COHESION POLICY: PRIORITIES AND TARGETS

The EU's cohesion policy is closely integrated with the Europe 2020 strategy and the EU's investment plan. During the period 2014–2020, cohesion policy programming is, for the first time, embedded within overall economic policy coordination, in particular the European semester, a regular cycle of economic policy coordination that is designed to coordinate the individual efforts of EU Member States so they result in the desired impact on growth. Indeed, the link between cohesion policy and broader economic reforms is such that the European Commission may suspend regional funding to any Member State which does not comply with the EU's economic rules.

Another change for the 2014–2020 programming period is a greater role for the urban dimension of regional policy, in particular concerning measures that are designed to assist in the fight against social

Table 1.1: Allocation of cohesion policy funds for the programming period 2014–2020
(million EUR)

	European Regional Development Fund and European Social Fund			Cohesion Fund	Total cohesion policy (1)	
	Less developed regions	Transition regions	More developed regions		Value	Share of EU-28 (%)
EU-28	181 289.8	37 984.5	57 428.8	63 282.6	356 450.1	100.0
Belgium	–	1 039.7	949.6	–	2 294.9	0.6
Bulgaria	5 089.3	–	–	2 278.3	7 588.4	2.1
Czech Republic	14 824.0	–	546.7	6 143.9	21 867.9	6.1
Denmark	–	87.3	332.3	–	559.8	0.2
Germany	–	9 771.5	8 498.0	–	19 234.9	5.4
Estonia	2 437.7	–	–	1 061.5	3 554.6	1.0
Ireland	–	–	955.3	–	1 192.2	0.3
Greece	7 345.7	2 922.1	2 511.0	3 265.7	16 447.6	4.6
Spain	2 155.6	14 927.9	11 562.6	–	30 716.7	8.6
France	3 434.3	4 253.3	6 322.0	–	15 878.2	4.5
Croatia	5 837.5	–	–	2 509.8	8 559.6	2.4
Italy	23 546.5	1 505.0	7 712.5	–	34 468.2	9.7
Cyprus	–	–	432.3	294.9	771.5	0.2
Latvia	3 039.8	–	–	1 349.4	4 511.8	1.3
Lithuania	4 628.7	–	–	2 048.9	6 823.1	1.9
Luxembourg	–	–	39.6	–	59.7	0.0
Hungary	15 005.2	–	463.7	6 025.4	21 905.9	6.1
Malta	–	490.2	–	217.7	725.0	0.2
Netherlands	–	–	1 020.6	–	1 410.2	0.4
Austria	–	72.3	906.0	–	1 235.6	0.3
Poland	49 628.7	–	3 777.3	23 208.0	77 567.0	21.8
Portugal	16 642.2	324.6	1 237.5	2 861.7	21 471.1	6.0
Romania	14 607.1	–	893.0	6 935.0	22 993.8	6.5
Slovenia	1 296.1	–	848.6	914.0	3 130.8	0.9
Slovakia	9 130.3	–	328.7	4 168.3	13 922.8	3.9
Finland	–	–	1 004.9	–	1 471.6	0.4
Sweden	–	–	1 491.9	–	2 085.3	0.6
United Kingdom	2 641.0	2 590.6	5 594.6	–	11 897.9	3.3

(1) The totals presented include a number of allocations which are not detailed in this table: European territorial cooperation, special allocations for outermost and northern sparsely populated regions, additional allocations for the Youth Employment Initiative, urban innovative actions and technical assistance.

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

exclusion. With this in mind, a minimum amount of the European regional development fund has been earmarked for integrated projects in cities and of the European social fund to support marginalised communities.

Cohesion policy during the period 2014–2020 has 11 thematic objectives:

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

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

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

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

EUROPE 2020: A MID-TERM REVIEW

On 5 March 2014, the European Commission released a Communication titled, 'Taking stock of the Europe 2020 strategy for smart, sustainable and inclusive growth' (COM(2014) 130 final). This provided a review of the achievements made and difficulties encountered during the first four years of the strategy. After endorsement by the European Council in March 2014, the European Commission launched a public consultation of the strategy which took place from May–October 2014. The results of the public consultation (COM(2015 100 final) concluded, among others, that:

- the delivery of objectives linked to jobs and economic growth was mixed, notably due to the impact of the global financial and economic crisis;
- the crisis had also affected progress towards the Europe 2020 headline targets;
- the mixed progress towards Europe 2020 targets could also be attributed to the time lag with which structural reforms produce their full impact;
- growing divergences across and often within EU Member States had hampered progress towards the Europe 2020 targets.

EUROPE 2020: COORDINATION OF EU POLICIES

In March 2015, the European Commission proposed a new set of Broad guidelines for the economic policies of the Member States and of the Union (COM(2015) 99 final) which focused on: boosting investment; enhancing growth through the implementation of structural reforms in the EU Member States; removing key barriers to growth and jobs at an EU level; improving the sustainability and growth-friendliness of public finances. At the same time, the Commission also proposed a set of Guidelines for the employment policies of the Member States (COM(2015) 098 final): boosting demand for labour; enhancing labour supply and skills; enhancing the functioning of labour markets; ensuring fairness, combatting poverty and promoting equal opportunities.

At the end of 2016, in the context of the European semester, the European Commission presented its Annual growth survey 2017 (COM(2016) 725 final), which proposed to focus efforts during 2017 on three key areas: boosting investment; pursuing structural reforms; ensuring responsible fiscal policies.

For more information:
https://ec.europa.eu/info/strategy/european-semester/framework/europe-2020-strategy_en
https://ec.europa.eu/info/strategy/european-semester_en

EUROPE 2020: AN OVERVIEW OF THE LATEST SITUATION

Table 1.2 presents a summary for Europe 2020 headline indicators: this information may be of use when analysing the results presented in the individual chapters of this publication, insofar as the Europe 2020 targets impact on a broad range of topics/policy issues. Looking at the latest data available, there were two indicators — greenhouse gas emissions and final energy consumption (which measures energy efficiency gains) — where the Europe 2020 target had already been achieved.

Although socioeconomic indicators that form part of the Europe 2020 targets have been set for the whole population (men and women together), Table 1.2 presents additional analyses by sex (subject to data availability). It confirms that the EU-28 male employment rate and EU-28 female tertiary educational attainment were both higher than their respective Europe 2020 targets in 2016, although each of these indicators recorded a considerable gender gap (with the other sex recording ratios well below the Europe 2020 target).

While several of the Europe 2020 targets may be attained before the end of 2020, it would appear difficult to envisage those targets relating to the employment rate, R & D expenditure, or the risk of poverty and social exclusion being achieved.

Table 1.2: Europe 2020 headline indicators, EU-28, 2008–2016

	(unit)	2008	2009	2010	2011	2012	2013	2014	2015	2016	Target
Employment											
Employment rate: total	(% of population aged 20–64)	70.3	69.0	68.6	68.6	68.4	68.4	69.2	70.1	71.1	75.0
Employment rate: male	(% of male population aged 20–64)	77.8	75.7	75.1	75.0	74.6	74.3	75.0	75.9	76.9	–
Employment rate: female	(% of female population aged 20–64)	62.8	62.3	62.1	62.2	62.4	62.6	63.5	64.3	65.3	–
Research and development (R & D)											
Gross domestic expenditure on R & D	(% of GDP)	1.84	1.93	1.93	1.97	2.01	2.03	2.04	2.03	:	3.00
Climate change and energy											
Greenhouse gas emissions (1)	(Index 1990 = 100)	90.3	83.8	85.7	83.0	81.8	80.3	77.1	:	:	80.0
Share of renewable energy in gross final energy consumption	(%)	11.0	12.4	12.8	13.1	14.3	15.0	16.0	16.7	:	20.0
Primary energy consumption	(million tonnes of oil equivalent)	1 692	1 598	1 657	1 594	1 585	1 570	1 508	1 530	:	1 483
Final energy consumption	(million tonnes of oil equivalent)	1 180	1 114	1 163	1 106	1 106	1 106	1 060	1 082	:	1 086
Education (2)											
Early leavers from education and training: total	(% of population aged 18–24)	14.7	14.2	13.9	13.4	12.7	11.9	11.2	11.0	10.7	< 10.0
Early leavers from education and training: male	(% of male population aged 18–24)	16.6	16.1	15.8	15.3	14.5	13.6	12.8	12.4	12.2	–
Early leavers from education and training: female	(% of female population aged 18–24)	12.7	12.3	11.9	11.5	10.9	10.2	9.6	9.5	9.2	–
Tertiary educational attainment: total	(% of population aged 30–34)	31.1	32.3	33.8	34.8	36.0	37.1	37.9	38.7	39.1	≥ 40.0
Tertiary educational attainment: male	(% of male population aged 30–34)	28.0	29.0	30.3	31.0	31.8	32.8	33.6	34.0	34.4	–
Tertiary educational attainment; female	(% of female population aged 30–34)	34.3	35.7	37.3	38.6	40.2	41.4	42.3	43.4	43.9	–
Poverty and social exclusion											
At risk of poverty or social exclusion: EU-27 (3)(4)	(million people)	115.9	114.2	116.4	119.3	122.2	121.4	120.7	117.6	:	96.2
At risk of poverty or social exclusion: EU-28 (3)	(million people)	:	:	117.7	120.7	123.6	122.7	121.9	118.8	:	–
At risk of poverty or social exclusion: EU-28 (3)	(% of population)	:	:	23.7	24.3	24.7	24.6	24.4	23.7	:	–
People living in households with very low work intensity	(% of population aged 0–59)	:	:	:	*10.5*	*10.5*	*10.9*	*11.2*	*10.6*	:	–
People at risk of poverty after social transfers	(% of population)	:	:	:	*16.8*	*16.8*	*16.7*	*17.2*	*17.3*	:	–
Severely materially deprived people	(% of population)	:	:	:	*8.8*	*9.9*	*9.6*	*8.9*	*8.1*	:	–

(1) Total emissions, including international aviation and indirect CO_2, but excluding emissions from land use, land use change and forestry (LULUCF).
(2) 2014: break in series.
(3) Corresponds to the sum of persons who are: at risk of poverty after social transfers and/or severely materially deprived and/or living in households with very low work intensity.
(4) The overall EU target is to lift at least 20 million people out of the risk of poverty and exclusion by 2020. Due to data availability issues, the target is evaluated only for the EU-27.

Source: Eurostat (dedicated section: Europe 2020 headline indicators)

EUROPE 2020: A REGIONAL PERSPECTIVE

The Europe 2020 strategy does not specifically touch upon regional policy. However, 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.

While there are often diverse patterns of socioeconomic developments between EU Member States, these differences are often matched by inter-regional differences within the same Member State. An analysis of general patterns for the Europe 2020 indicators (see the individual chapters for more specific information/analyses) suggests that the Nordic and Benelux Member States and many of the regions in Germany, France, Austria and the United Kingdom reported a high degree of socioeconomic development and figures that were close to or already exceeding the EU's Europe 2020 targets. By contrast, the latest data available for many regions in the east and south of the EU, as well as the Baltic Member States, showed that regional performance often remained a considerable distance from the EU's Europe 2020 targets; however, it should be borne in mind that each of the Member States has generally adopted a set of national targets.

An analysis within the individual EU Member States supports the view that capital city regions tend to outperform other regions; this pattern was particularly pronounced in Bulgaria, France, Romania, Slovakia and the United Kingdom, where patterns of economic development were monocentric. Disparities between regions from the same Member State were most apparent in terms of a north–south divide between the regions of Spain, Italy and the United Kingdom, an east–west divide between German regions, or a divide between cities and rural areas in most of eastern Europe and the Baltic Member States.

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 in the same EU Member State seek to attain the same national targets. Rather, it was considered important for the Member States to take account of their different needs and to draw up regional programmes that reflect local specificities so as to promote smart, sustainable and inclusive growth, while recognising the diversity of European regions. As such, the Commission recognises that it is not possible for all European regions to contribute to the Europe 2020 strategy in the same way and to the same extent.

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

For more information:
Smarter, greener, more inclusive? – Indicators to support the Europe 2020 strategy, 2017 (Eurostat)
The Europe 2020 Index: the progress of EU countries, regions and cities to the 2020 targets, 2015 (Dijkstra L. and Athanasoglou S.)
EU Regional Competitiveness Index, 2013 (Annoni P. and Dijkstra L.)

United Nations sustainable development goals in an EU context

Sustainable development has long been part of the political agenda within the EU. However, this subject area was given fresh impetus with the approval in September 2015 by the United Nations (UN) General Assembly for a set of 17 sustainable development goals (SDGs), which provide a global policy framework for tackling a wide range of issues, for example, poverty, inequality and climate change.

The 2030 sustainable development agenda came into force on 1 January 2016 and, under the auspices of the UN, work has been finalised on developing a detailed set of targets and a global list of 244 indicators (divided into three different tiers depending on data availability and the level of methodological development) that may be used to monitor progress towards transforming the world; note there is not always a direct correspondence between the goals, targets and indicators, for example, one target may not cover the whole of an individual goal, while another target may go beyond the scope of any specific goal. The SDGs cover three main dimensions: social solidarity,

economic efficiency and environmental responsibility; in some respects this mirrors the Europe 2020 goals of inclusive, smart and sustainable growth.

An initial survey carried out by Eurostat in September 2016 suggested that data were already available for EU Member States for more than one third (35 %) of the 244 global SDG indicators, while 26 % of the indicators were considered outside the scope of official European statistics, 17 % were considered not relevant for the EU (for example, the share of the population that had access to electricity) and 22 % were not available.

On 22 November 2016, the European Commission adopted the Communication 'Next steps for a sustainable European future' (COM(2016) 739 final). This Communication maps those EU policies contributing to the implementation of the SDGs; it shows the significance of the SDGs, explains how the EU contributes to achieving them and announces a detailed regular monitoring of the SDGs in an EU context. With this in mind, Eurostat and other European Commission services agreed upon the framework for monitoring SDGs within an EU context during 2017 and the development of a reference indicator framework for this purpose. This was achieved by developing an indicator list that is tailored to the specific needs of monitoring the performance of the EU. The European Commission chose to give preference to indicators which can be used to measure the impact and outcome of existing EU policies in a clear and easy-to-understand way. During the selection of the EU SDG indicators, care was taken to assess policy relevance and quality. This resulted in a final list of 100 different indicators (41 of which are multi-purpose indicators). This EU SDG indicator framework received a favourable opinion by the European Statistical System Committee and will serve as the basis for a regular monitoring report published by Eurostat, the first edition being scheduled for release towards the end of 2017.

Within the broader global context, the EU is actively contributing to the establishment of an SDG monitoring system at global, supranational and national level. Indeed, the EU is taking the lead in reporting on implementation for the EU and measuring the progress being made internally within the EU, as well as assessing the contributions that the EU makes to global progress on SDGs.

For more information:
http://ec.europa.eu/eurostat/web/sdi
Sustainable Development in the European Union — A statistical glance from the viewpoint of the UN Sustainable Development Goals, 2016 (Eurostat)

Urban development in the EU

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

The penultimate chapter in this publication presents data relating to the sustainability of cities in the EU: it focuses on three principal areas — demographic developments; the use of different means of transport for travelling to work; and the environment.

WHAT IS URBAN DEVELOPMENT POLICY?

During the period 2014–2020, the EU has put the urban dimension at the heart of its cohesion policy, with at least half of the resources foreseen under the European regional development fund being invested in urban areas. The European Commission estimates that during this six-year programming period some EUR 10 billion from the European regional development fund will be allocated to sustainable urban development, covering around 750 different European cities. The EU's regional policy will target, among others, urban development through:

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

Urban development policy seeks to promote the economic, social and environmental transformations of cities through integrated and sustainable solutions. It can play a valuable role in the implementation of the Europe 2020 strategy, through a range of initiatives, extending the territorial coverage of the strategy to an additional level of governance. Indeed, a number of commentators and stakeholders have argued that cities need to be more involved in the conception and implementation of EU policies, as, despite their economic weight, there is no explicit urban dimension to the Europe 2020 strategy or its targets, although

three flagship projects — the digital agenda, the innovation union and youth on the move — each address urban challenges.

For more information:
http://ec.europa.eu/regional_policy/index.cfm/en/policy/themes/urban-development

WHAT IS THE EU'S URBAN AGENDA?

In February 2014, the European Commission organised a CITIES forum, to discuss how to strengthen the urban dimension of EU policymaking; it was centred on a debate over the need for an EU urban agenda, designed to bring together the increasing number of sectoral policies that impact on the EU's urban areas, for example, within the domains of energy, the information society, climate action, the environment, transport, education or culture. Many stakeholders saw an opportunity to implement a framework to bring coherence to a diversity of initiatives and policies, and to give clear roles for European, national, regional and local authorities. Europe 2020 was seen by many participants as a starting point for priority setting, although some argued that there was a need to go further both in scope and time, given that many urban developments involve long-term processes and long-lasting infrastructure investments.

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

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

At the end of May 2016, a meeting of ministers responsible for urban matters was held in Amsterdam, the Netherlands. It reached an agreement on an urban agenda for the EU, as established by the Amsterdam Pact. The agreement foresees 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. These 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 use of land and nature-based solutions; urban mobility; digital transition; innovative and responsible public procurement. Pilot partnerships are already operational for the first four of these themes.

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

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

In response to this agenda, the European Commission has developed a one-stop-shop for cities and an urban data platform.

For more information:
https://ec.europa.eu/futurium/en/content/what-urban-agenda

Rural development in the EU

Having outlined EU policy developments in relation to cities and urban areas, this next section looks at policy developments for rural areas. The final chapter in this publication presents information on rural areas in the EU, as defined by the degree of urbanisation, it covers the following subjects: poverty and social exclusion, housing, health, education, the labour market and the digital divide and focuses on real and perceived advantages which may attract people to live in rural areas and juxtaposes these against a range of (potential) drawbacks to living in the countryside.

There are considerable differences across the EU Member States as regards their rural–urban territorial divides. Some Member States — for example, Ireland, Sweden or Finland — are very rural in character. By contrast, the Benelux Member States and Malta have a high degree of urbanisation. Equally within individual Member States there can be a wide range of different typologies, for example, the densely-populated, urbanised areas of Nordrhein-Westfalen in western Germany may be contrasted with the sparsely-populated, largely rural areas of Brandenburg in eastern Germany.

The EU's rural development policy is designed to help rural areas in the EU meet a wide range of economic, social and environmental challenges; it complements the system of direct payments to farmers and

measures to manage agricultural markets. Indeed, rural development policy was introduced as the second pillar of the EU's common agricultural policy (CAP) during the Agenda 2000 reform.

The European Agricultural Fund for Rural Development (EAFRD) provides finance for the EU's rural development policy which is used to promote sustainable rural development and to contribute towards the goals of the Europe 2020 strategy for smart, sustainable and inclusive growth. For the period 2014–2020, the EAFRD has been allocated EUR 99.6 billion. If national contributions are included, the funding available for this second pillar of the CAP amounts to EUR 161 billion for the whole of the programming period 2014–2020, with France (EUR 11.4 billion) and Italy (EUR 10.4 billion) the largest beneficiaries.

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

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

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

For more information:
https://ec.europa.eu/agriculture/rural-development-2014-2020_en

European Committee of the Regions

The European Committee of the Regions is the EU's assembly of regional and local representatives. It was created in 1994 and is composed of 350 members who are regional presidents, mayors or elected representatives of regions and cities in the 28 Member States of the EU. Successive European treaties have broadened its role: indeed, since the entry into force of the Lisbon Treaty it has to be consulted throughout the European legislative process.

The European Committee of the Regions works closely together with the European Commission, the European Parliament and the Council of the EU, and in the EU Member States with the various tiers of authority, in order to promote multi-level governance. It aims to ensure that European policy developments uphold the principles of subsidiarity and proportionality and promotes economic, social and territorial cohesion in the EU through autonomy for regional and local authorities, encouraging decentralisation and cooperation at a regional and local level.

With a view of the important role that may be played by Europe's regions and cities for achieving the EU's objectives of achieving 'smart, sustainable and inclusive growth', the European Committee of the Regions has adopted five political priorities for its current mandate (2015–2020):

- A fresh start for the European economy: to achieve its goal of smart, sustainable and inclusive growth, the EU needs to involve local and regional authorities more deeply. Smart investment should be based on local needs, draw on best practice at the grass roots level, and encourage a new entrepreneurial spirit across Europe, while considering the opportunities offered by new digital technologies to boost growth.
- The territorial dimension of EU legislation matters: bearing this in mind, the European Committee of the Regions aims to help narrow the knowledge gap between regions and cities as a means of reducing the urban/rural divide. It will also assess what impact EU legislation has on the ground — including its impact on cities — and encourage cross-border cooperation through the European Grouping of Territorial Cooperation (EGTC).
- A simpler, more connected Europe: the European Committee of the Regions will promote the role of local government in European policymaking, encourage the EU to make its business environment friendlier and explain the benefits of the EU at a local level.

- Stability and cooperation within and outside of the EU: in order to contribute to a more stable international and regional environment, the European Committee of the Regions will help develop economic and political ties with the six Eastern European and south Caucasus countries in the EU's Eastern Partnership and explore what can be done at the local level to promote cooperation with countries around the Mediterranean; it will also help would-be members of the EU to prepare for membership.
- Europe of citizens is Europe's future: the European Committee of the Regions believes that a broader, richer dialogue is needed between the EU institutions, its citizens and local and regional authorities. The European Committee of the Regions aims to demonstrate how the EU can improve the lives of individuals and their communities.

Moreover, the European Committee of the Regions has set up a Europe 2020 monitoring platform to analyse the implementation of the Europe 2020 strategy and the European semester at a regional and local level, from the perspective of local and regional authorities; they are responsible for over 50 % of public investment, have powers in many key policy fields, and play a direct role in the implementation of over one third of country-specific recommendations that are issued. The monitoring platform follows recent developments and provides examples of how this involvement could take place. It also delivers results, by means of surveys, consultations and testimonies from on the ground. On 11 May 2017, the Committee proposed a code of conduct for the involvement of local and regional authorities in the European semester at the EU and Member State level.

The European Committee of the Regions joins forces with stakeholders at national, regional and local level to build an alliance for a modern, strong and ambitious EU cohesion policy after 2020. Based on an opinion adopted on 11 May 2017, its aim is to highlight the added value of EU cohesion policy, to provide for its effective and simplified delivery, and to safeguard its share in the EU's budget.

EUROPEAN WEEK OF REGIONS AND CITIES

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

The event was created in 2003 by the European Committee of the Regions, which joined forces with the European Commission's Directorate-General for Regional and Urban Policy one year later. It has become a networking platform for regional and local development, which is viewed as a key event for policy practitioners. The 15th European Week of Regions and Cities will be held under the title, 'Regions and cities working for a better future', with three principal subthemes:

- building resilient regions and cities;
- regions and cities as change agents;
- sharing knowledge to deliver results.

For more information:
http://ec.europa.eu/regional_policy/regions-and-cities/2017/index.cfm

2 Population

There are considerable differences in regional demographic patterns across the European Union (EU) from overcrowded, dynamic, metropolises which may have relatively youthful populations to more remote, rural regions that may have declining population numbers and poor access to a range of services. Statistics on regional demography are one of the few areas where detailed NUTS level 3 data are collected and published for each of the EU Member States, EFTA and candidate countries. At the time of writing, the latest information is available for vital demographic events (live births and deaths) and a range of demographic indicators up to 2015, with statistics on the size and structure of the population available through to 1 January 2016.

Demographic changes in the EU are likely be of considerable importance in the coming years as most models for future population trends suggest that the EU's population will continue to age as a result of consistently low levels of fertility and extended longevity. Although migration can play an important role in the population dynamics within many of the EU Member States, it is unlikely that it can reverse the ongoing trend of population ageing.

The social and economic consequences associated with population ageing are likely to have profound implications across the EU, both nationally and regionally. For example, low fertility rates will lead to a reduction in the number of students in education, there will be fewer working-age persons to support the remainder of the populace, and there will be a higher proportion of elderly persons (some of whom will require additional infrastructure, healthcare services and adapted housing). These structural demographic changes could impact on the capacity of governments to raise tax revenue, balance their own finances, or provide adequate pensions and healthcare services.

POLICY DEVELOPMENTS

Future demographic developments have driven a range of policy developments, in particular within the fields of employment and social policy, health policy, and policies concerning free movement, asylum and migration, see: 'The demographic future of Europe — from challenge to opportunity' (COM(2006) 571 final).

Five of the seven flagship initiatives of the Europe 2020 strategy have a particular demographic dimension.

The innovation union provides an opportunity to bring together public and private actors at various territorial levels to tackle a number of challenges, and in 2011 a European innovation partnership on active and healthy ageing was launched: its aim is to raise by two years the average healthy lifespan of Europeans by 2020.

In May 2015, the European Commission presented a European agenda on migration outlining immediate measures to respond to the influx of migrants and asylum seekers arriving in the EU from the Balkans and across the Mediterranean. The agenda also provided a range of options for the longer-term management of migration into the EU, setting out four levels of action for migration policy, namely:

- a new policy on legal migration — maintaining the EU as an attractive destination for migrants, notably by reprioritising migrant integration policies, managing migration through dialogue and partnerships with non-member countries, and modernising the blue card scheme for highly educated persons from outside the EU;
- reducing incentives for irregular migration — through a strengthening of the role of Frontex, especially in relation to migrant returns;
- border management — helping to strengthen the capacity of non-member countries to manage their borders;
- a strong common asylum policy — to ensure a full and coherent implementation of the common European asylum system.

As a result of the migrant crisis in 2015, the European Commission announced a new assistance instrument for emergency support within the EU in March 2016. The plan allocated some EUR 700 million of aid, over the period 2016–2018, to provide humanitarian assistance through the rapid delivery of food, shelter and healthcare. There followed a number of further initiatives during the remainder of 2016 as the crisis remained high on the political agenda, among which: the implementation of the EU-Turkey statement; additional financial support to Bulgaria, Greece and Italy to help cope with specific migration challenges; further provisions for supporting Syrian refugees (those displaced within Syria and those in other host countries); additional support for the protection of unaccompanied minors; renewed efforts to help save lives at sea and to disrupt smuggler networks; as well as the creation of safe and legal routes for asylum-seekers.

Statistical analysis

This chapter presents demographic developments across the EU; it provides a picture of vital demographic events from the cradle to the grave, contrasting time series with the latest information available. The average population of the EU-28 increased each and every year between 1961 and 2010. After falling by 282 thousand inhabitants in 2011 (which may be attributed to the revision of population statistics for Germany following the 2011 census), the upward pattern of population growth resumed and by 2015 there were 509.4 million inhabitants living in the EU-28 (see Figure 2.1). The average population of the EU-28 rose by 97.7 million inhabitants between 1961 and 2015, equivalent to an average increase of 0.4 % per annum.

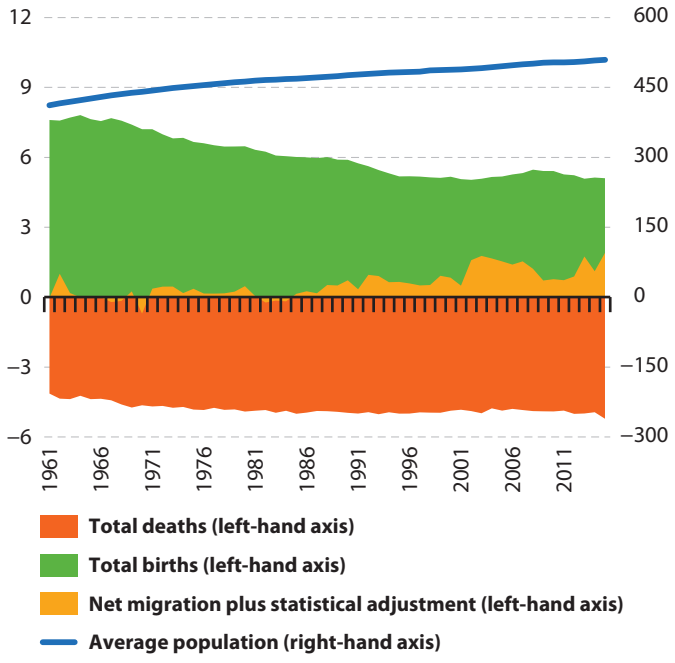
Historically, overall population growth in the EU has largely reflected developments in natural population change (the total number of births minus the total number of deaths), with a relatively minor role being played by migratory patterns. A closer examination shows that natural population increase in the EU was considerably higher in the 1960s than it is today. From the 1970s onwards, the rate of natural population growth started to slow, both as a result of lower numbers of live births and increasing numbers of deaths. By 2015, despite the considerably higher number of inhabitants in the EU-28 (compared with 1961), there were 2.5 million fewer live births; by contrast, the number of deaths had risen by 1.1 million when compared with 1961. Indeed, 2015 was the first year on record (for an EU-28 time series) that the natural change in population was negative, as the number of deaths exceeded the number of live births by 117 thousand.

Since many of the EU Member States do not have accurate figures on immigration and emigration, net migration (the difference between immigration and emigration) often has to be estimated; this is usually done by analysing the difference between the total population change and the natural change each year. Net migration (including statistical adjustment) was broadly balanced in the EU-28 during the period from the 1960s to the 1980s, with both positive and negative changes; as such, the impact of net migration on the overall changes in population numbers during this period was relatively weak. Since the start of the 1990s, a pattern of higher numbers of migrants entering the EU has emerged. Some of the peaks for net migration that are visible in Figure 2.1 may be associated with a range of international migration and refugee crises and resulting displaced persons, for example, former Yugoslavia during the 1990s, Afghanistan and Iraq in the early 2000s, or Syria more recently. While natural population change was responsible for most of the population change in the EU during the 1960s and 1970s, this pattern slowly diminished as the difference between the number of births and deaths gradually narrowed. By 1992, the impact of net migration on

Main statistical findings

- **On average, a baby born in the EU-28 in 2015 could expect to live 80.6 years.**
- **Net migration to the EU-28 in 2015 was 1.9 million: this was the highest level recorded since records began in 1961. A majority of the regions with the highest rates of net migration were situated in Germany, reflecting the large number of asylum seekers and refugees arriving during 2015.**
- **The highest crude birth rate across the NUTS level 2 regions of the EU was recorded in the overseas French region of Mayotte (38.9 births per 1 000 inhabitants); this figure was more than six times as high as the lowest birth rate (6.2 births per 1 000 inhabitants) which was recorded in the northern Spanish region of Principado de Asturias.**
- **The average age of women at childbirth peaked in Inner London - West at 33.5 years, suggesting that in this capital city region there was a growing number of women who chose to delay childbirth in order to be able to continue participating in further education and/or to establish themselves professionally within their chosen career.**
- **2015 was the first year on record when there were more deaths than live births in the EU-28. There were 5.22 million deaths in 2015, the highest number recorded since records began in 1961; the number of deaths rose by 5.7 % when compared with 2014, reflecting the growing number of elderly people in the EU's population.**

Figure 2.1: Population change, EU-28, 1961–2015
(millions)



Note: various breaks in series. 2013–2015: estimates.

Source: Eurostat (online data code: demo_gind)

total population change outweighed that of natural population change and thereafter became the primary factor for explaining overall population change as the number of births and deaths in the EU-28 became broadly balanced.

LIFE EXPECTANCY

2015

80.6 years
life expectancy at birth in the EU

Life expectancy at birth has historically risen, with increased longevity attributed to a range of factors including improved socio-economic and environmental conditions or better medical treatment and care. During the period from 2003 to 2014, life expectancy in the EU-28 increased by 3.2 years, rising from an initial value of 77.7 years. However, 2015 was the first year since an EU-28 time series began in 2003 that there was a reduction, as life expectancy fell by 0.3 years to an average of 80.6 years.

Life expectancy in the EU ranged from a high of 84.5 years in the Spanish capital region down to 73.5 regions in the north-western Bulgarian region of Severozapaden — a difference of 11 years

Map 2.1 presents life expectancy at birth for NUTS level 2 regions, detailing the average (mean) number of years that a new born child could expect to live if subjected throughout his/her life to current mortality conditions. In 2015, there were 21 NUTS level 2 regions where life expectancy at birth was 83 years or more (as shown by the darkest shade of yellow in Map 2.1); these were principally located in a band that ran from central through northern Spain (eight regions), into southern France (three regions) and across to northern and central regions of Italy (also eight regions). The only two exceptions located outside of this band were the capital city regions, Île de France (France) and Inner London - West (the United Kingdom). The highest life expectancy in the EU-28 among NUTS level 2 regions was recorded in another capital city region, namely, Comunidad de Madrid (84.5 years), the Spanish capital city region.

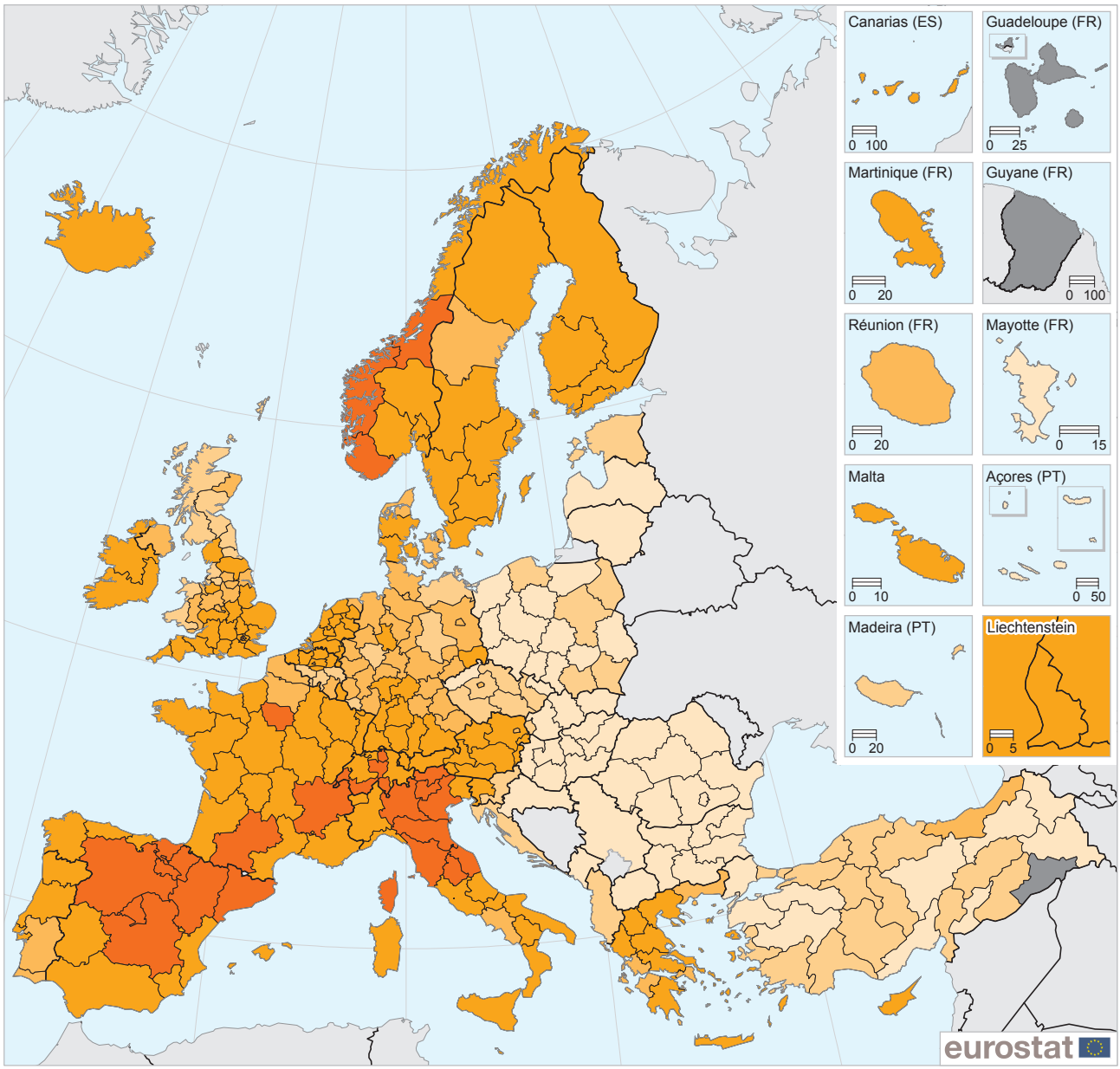
At the other end of the range, there were 42 NUTS level 2 regions where average life expectancy in 2015 was less than 78 years (as shown by the lightest shade of yellow in Map 2.1). These regions were predominantly located in the eastern regions of the EU, including: all six regions from Bulgaria, all seven regions from Hungary and all eight regions from Romania, as well as three out of four regions from Slovakia, 11 out of 16 regions from Poland, one out of two regions from Croatia, and two out of eight regions from the Czech Republic. Two of the three Baltic Member States, Latvia and Lithuania (both single regions at this level of detail) and the outermost regions of Mayotte (France) and Região Autónoma dos Açores (Portugal) were the only other EU regions where average life expectancy at birth was below 78 years. The lowest life expectancy at birth in 2015 was recorded in the north-western Bulgarian region of Severozapaden, at 73.5 years. As such, the difference in life expectancy between Severozapaden and Comunidad de Madrid was 11 years.

The largest gender gap for life expectancy was recorded in Lithuania — life expectancy was 10.5 years higher for women than for men

It is important to note that while Map 2.1 presents information for the whole population, there remain considerable differences in life expectancy between the sexes — despite evidence showing that this gender gap has been gradually closing in most of the EU Member States. In the EU-28, life expectancy at birth of women (83.3 years in 2015) was, on average, 5.4 years higher than the corresponding figure for men (77.9 years).

Figure 2.2 illustrates this gap between the sexes for life expectancy for NUTS level 2 regions: the biggest gaps, where women were likely, on average, to live more than 8.0 years longer than men, were all concentrated in the north-eastern corner of the EU, within the three Baltic Member States (all single regions at this level of detail) and eight Polish regions. In most of the EU Member States there was usually quite a narrow range when analysing the highest and lowest regional gender gaps. However, there were wider regional differences in three of the Member States, largely attributable to a single outlier: for example, there was a relatively large gap in life expectancy between the sexes across the vast majority of regions in Spain, France and Finland, aside from the territory of Ciudad Autónoma de Melilla (Spain), the overseas region of Mayotte (France), or the island region of Åland (Finland), where the gender gap was much smaller.

Map 2.1: Life expectancy at birth, by NUTS 2 regions, 2015
(years)



(years)

EU-28 = 80.6

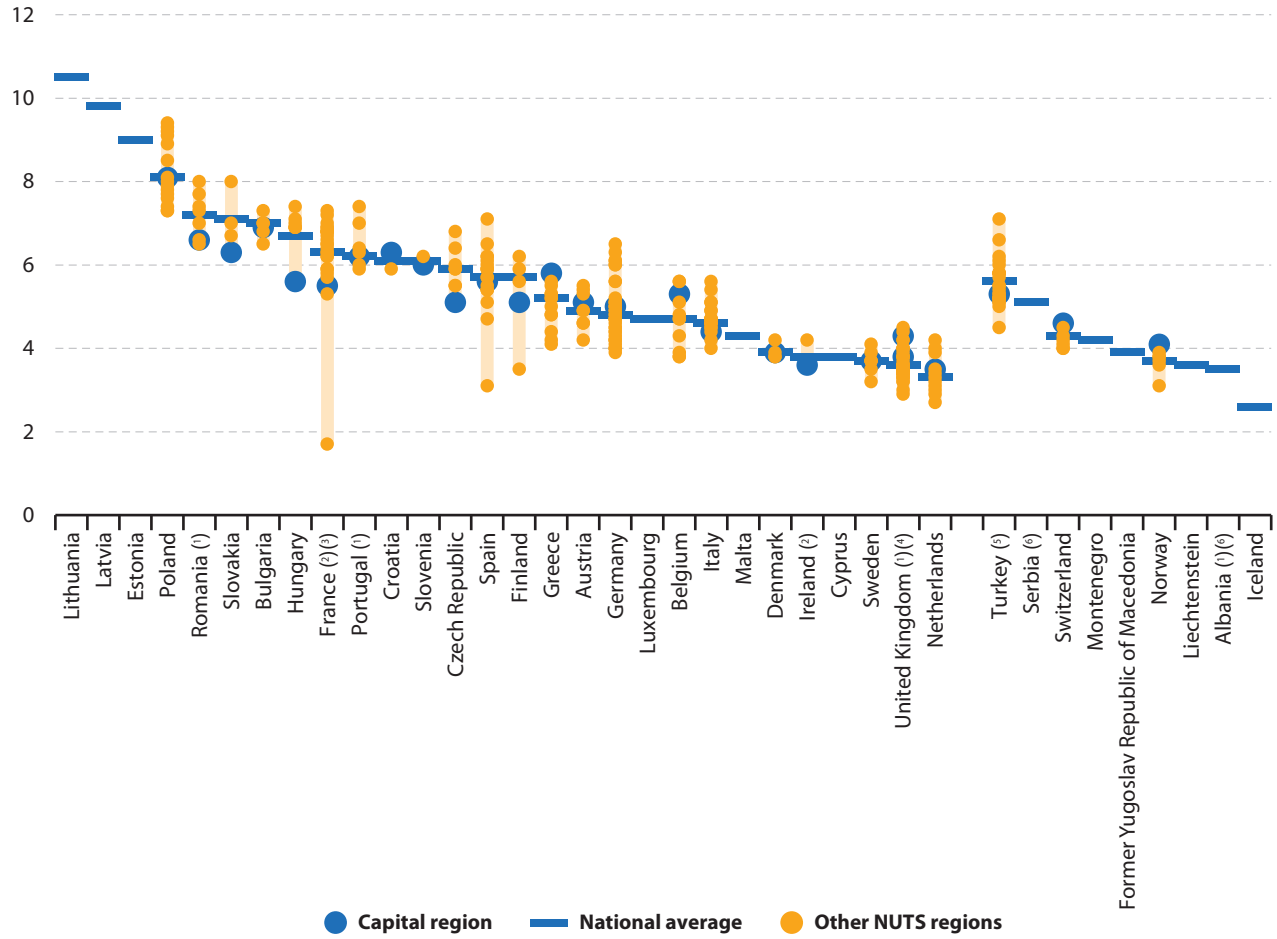
- < 78
- 78 – < 80
- 80 – < 81
- 81 – < 83
- >= 83
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat - GISCO, 07/2017

0 200 400 600 800 km

Note: EU-28 and Albania: estimates. Albania and Serbia: national data.
Source: Eurostat (online data codes: demo_r_mlifexp and demo_mlexpec)

Figure 2.2: Gender gap for life expectancy at birth, by NUTS 2 regions, 2015
(difference in years between the life expectancy of females and males)



Note: ranked on national average. The light yellow shaded area shows the range of the highest to lowest region for each country; the blue bar shows the national average; the blue circle shows the capital city region; the yellow circles show the other regions.

(1) National average: estimate.
(2) National average: provisional.
(3) Guadeloupe (FRA1) and Guyane (FRA3): not available.
(4) Note there are two capital city regions: Inner London - East and Inner London - West.
(5) Mardin, Batman, Sirnak, Siirt (TRC3): not available.
(6) National data.

Source: Eurostat (online data codes: demo_r_mlifexp and demo_mlexpec)

MEDIAN AGE

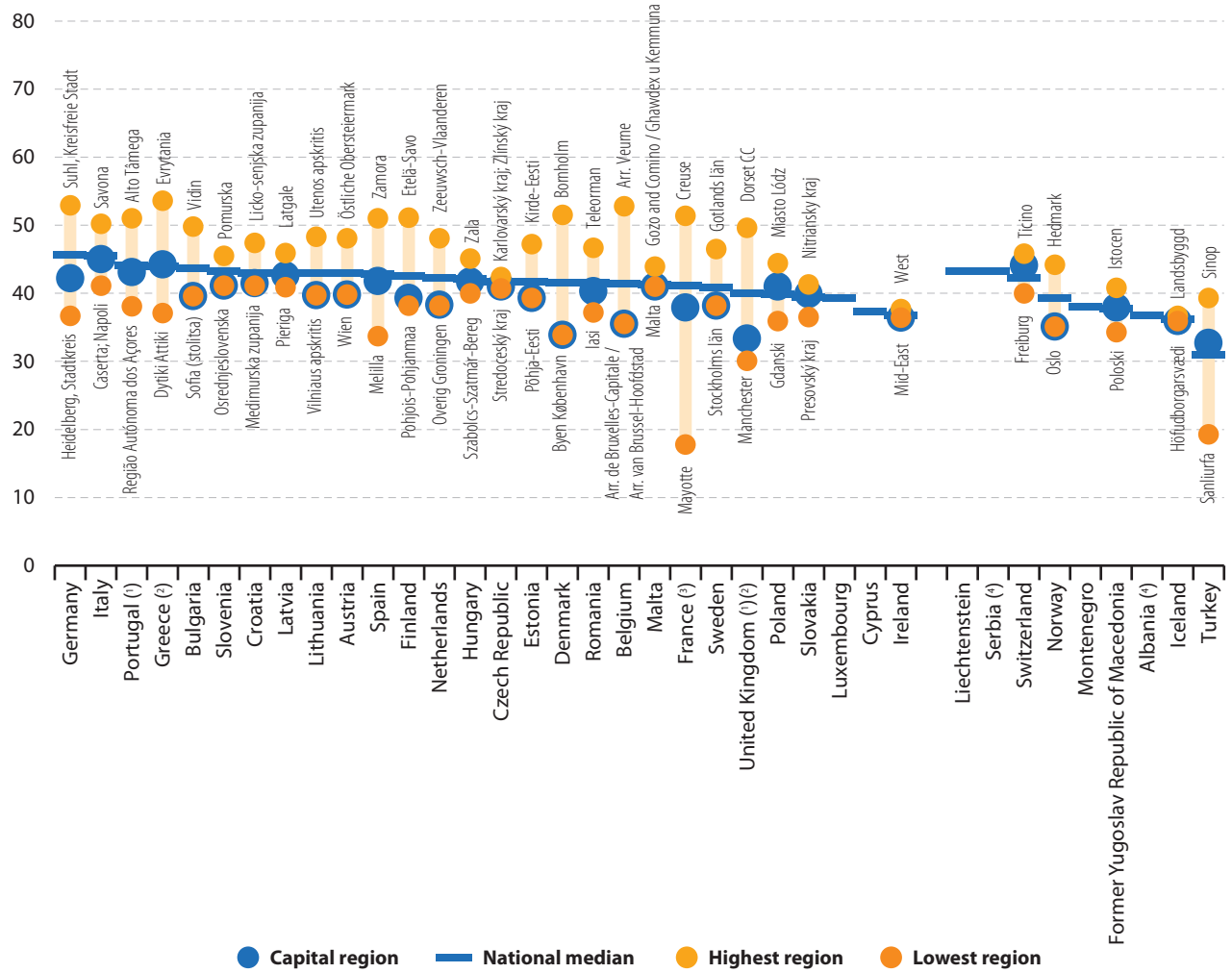
With life expectancy at birth rising for successive generations and with historically low fertility rates, it is not surprising to find that the median age of the EU-28's population continued to increase in recent years. It rose by 2.8 years during the most recent decade for which data are available, reaching 42.6 years on 1 January 2016. Figure 2.3 shows that the median age ranged between 36.7 years in Ireland and 45.7 years in Germany, suggesting relatively young and relatively old population structures in these EU Member States. The median age rose in every one of the Member States during the period between 1 January 2006 and 1 January 2016, with increases of more than 4.0 years recorded in Romania, Lithuania, Greece and Portugal, while the smallest rises were registered in Luxembourg (1.0 year) and Sweden (0.6 years).

The median age in the central Greek region of Evrytania was 53.6 years, which was slightly more than three times as high as in the French overseas region of Mayotte

The highest median age among any of the NUTS level 3 regions was recorded in the central Greek region of Evrytania (53.6 years), where the population declined by more than 1.0 % in 2015, in part due to a relatively high net outward migration. By contrast, the lowest median age (17.8 years) among NUTS level 3 regions was recorded in the overseas French region of Mayotte, which also had the lowest life expectancy at birth (76.5 years) among French regions at NUTS level 2; note the geographical coverage of Mayotte is identical at NUTS levels 2 and 3.

An analysis for capital city regions — again based on NUTS level 3 — shows that these regions usually recorded a median age that was below their respective national average. There were three exceptions to this rule among the EU Member States: in Poland and Slovakia the median age of the population living in Miasto Warszawa (41.0 years) and in Bratislavský kraj (39.9 years) was some 1.1 years and 0.5 years higher than the respective national average; the median age in three of the four Greek capital city regions (Dytikos Tomeas Athinon was the exception) was also higher than the national average. By contrast, the lowest (or joint lowest) median ages were recorded in the capital city regions of 10 EU Member States. Among these, the largest gaps (in years) between the median age for the capital city region and the national average were recorded for the Danish capital city region, Byen København (where the median age was 7.6 years lower than the national average), the Belgian capital city region, Arr. de Bruxelles-Capitale/Arr. van Brussel-Hoofdstad (5.9 years lower) and the Bulgarian capital city region, Sofia stolitsa (4.1 years lower). In those cases where the capital city region did not record the lowest median age, it was often the case that the lowest median was registered by a region characterised by its relatively high number of university students, for example, Heidelberg Stadtkreis in Germany, Overig Groningen in the Netherlands, Gdanski in Poland or Manchester in the United Kingdom.

Figure 2.3: Median age of the population, by NUTS 3 regions, 1 January 2016
(years)



Note: ranked on national average. The light yellow shaded area shows the range of the highest to lowest region for each country; the blue bar shows the national average; the blue circle shows the capital city region; the yellow circles show the region with the highest value; the darker yellow circles show the region with the lowest value.

(1) National value: estimate.
(2) There is more than one capital region at NUTS level 3: a simple mean of the different capital regions is shown.
(3) National value: provisional.
(4) National data.

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

POPULATION CHANGE

The EU-28's population increased each and every year between 1 January 1960 and 1 January 2016, with the exception of 2011 (as noted above, the reduction in 2011 may be attributed to the revision of population statistics in Germany following the census); during these 56 years, the total number of inhabitants living in the EU-28 rose by 103.6 million. 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 region effect, as populations continue to expand in and around many capital cities which exert a 'pull effect' on national and international migrants associated with (perceived) education and/or employment opportunities;
- an urban–rural split, with the majority of urban regions continuing to report population growth, while the number of persons resident in many peripheral, rural and post-industrial regions declines;
- a north–south split between EU Member States, with a high proportion of the population in northern Member States being single and living alone, whereas Mediterranean regions are often characterised by lower birth rates but a more important role for family units;
- regional divergences within individual EU Member States which may impact on regional competitiveness and cohesion, for example, between the eastern and the western regions of Germany, or between northern and southern regions of Belgium, Italy and the United Kingdom.

These general patterns were, to some degree, overtaken by events in 2015, as a result of very large numbers of asylum seekers and refugees arriving in and moving within the EU. The majority came from the Middle East or sub-Saharan Africa, either crossing the Mediterranean or making the journey northwards by land and passing from the Balkans into the EU. The impact of this mass movement of people was considerable and is reflected in the statistics presented below.

Map 2.2 presents the crude rate of total population change in 2015: the overall change in population is composed of two different effects, natural population change (the difference between births and deaths) and net migration (plus statistical adjustment) — see the box below for more details. Between 1 January 2015 and 1 January 2016, the population of the EU-28 rose by 1.8 million inhabitants, equivalent to a growth rate of 3.5 per 1 000 inhabitants. Among the 1 342 NUTS level 3 regions shown in Map 2.2, a considerable majority (835) reported an increase in their overall number of inhabitants, while there were 505 regions that recorded a decline in population numbers, leaving two regions with no change.

Measuring population change

Population change may be defined as the difference in the size of a population between the end and the beginning of a given time period (usually one year); more specifically, this period is usually the difference in population size on 1 January of two consecutive years.

Population change has two components:

- natural population change (the number of live births minus the number of deaths);
- net migration (the number of immigrants minus the number of emigrants), plus statistical adjustment; it should be noted that net migration as referred to in the context of population change statistics includes the statistical adjustments occurring in the annual balance of the population and that it serves the purpose of closing this balance.

A positive population change, when the result of net migration plus live births minus deaths is positive, is referred to as population growth (or a population increase), whereas a negative change is referred to as population decline (or a population decrease).

The crude rate of population change is the ratio of total population change during the year to the average population for the year in question; this value is expressed per 1 000 inhabitants.

The fastest rate of overall population growth within the EU was recorded in Trier Kreisfreie Stadt (western Germany); its total number of inhabitants rose by 5.8 % in 2015

In 2015, the fastest expanding populations were often concentrated in Germany or Austria, while there was also relatively high population growth in the south-eastern corner of the United Kingdom, the southern regions of the Nordic Member States, as well as several regions in Belgium, France and Luxembourg (a single region at the this level of detail). More specifically, the darkest shade of blue in Map 2.2 shows the 243 NUTS level 3 regions where the population grew, on average, by at least 12 per 1 000 inhabitants during 2015; these included 51 regions where population growth was at least 20 per 1 000 inhabitants (or 2.0 %). The majority (35) of these were located in Germany, while there were 10 regions from the United Kingdom (seven of which were in London; the other three were Coventry, Central Bedfordshire and Manchester), two regions from Austria (the urban regions of Innsbruck and Wien), and a single region from each of Belgium (Arr. Bastogne), France (the overseas region of Mayotte), Luxembourg (a single region at this level of detail) and Romania (Ilfov, which surrounds the capital city region, Bucuresti).

There were only five regions in the EU-28 where the population grew by at least 40 per 1 000 inhabitants in 2015. The highest crude rates of population growth were recorded in two German regions, Trier Kreisfreie Stadt (58 per 1 000 inhabitants) in the west and Schwerin Kreisfreie Stadt (49 per 1 000 inhabitants) in the north and three regions from London, Tower Hamlets in the east of the city (55 per 1 000 inhabitants) and Westminster (46 per 1 000 inhabitants) and Camden & City of London (42 per 1 000 inhabitants) in central London. A closer analysis reveals that the vast majority of the growth in population numbers in all five of these regions could be attributed to net migration (as opposed to natural population growth). Indeed, in the two German regions, the natural rate of population change was negative, in other words, there were more deaths than births.

The most rapid reductions in population were registered in the Baltic Member States, as well as some of the more rural and/or sparsely populated eastern and southernmost regions of the EU. There were 81 regions where the crude rate of total population change in 2015 was -10 per 1 000 inhabitants or less. These included 7 out of the 11 regions in Lithuania (the other four also recorded negative rates), four out of six regions in Latvia (the other two also recorded negative rates), slightly more than half of the Bulgarian (16 out of 28) and Croatian (11 out of 21) regions, as well as 11 regions from Romania, 10 regions from Spain, seven regions each from Greece and Portugal, four regions from Hungary, two regions from Estonia, and a single region each from Finland (Kainuu) and the United Kingdom (Blackpool).

There were 1.2 million migrant arrivals in Germany

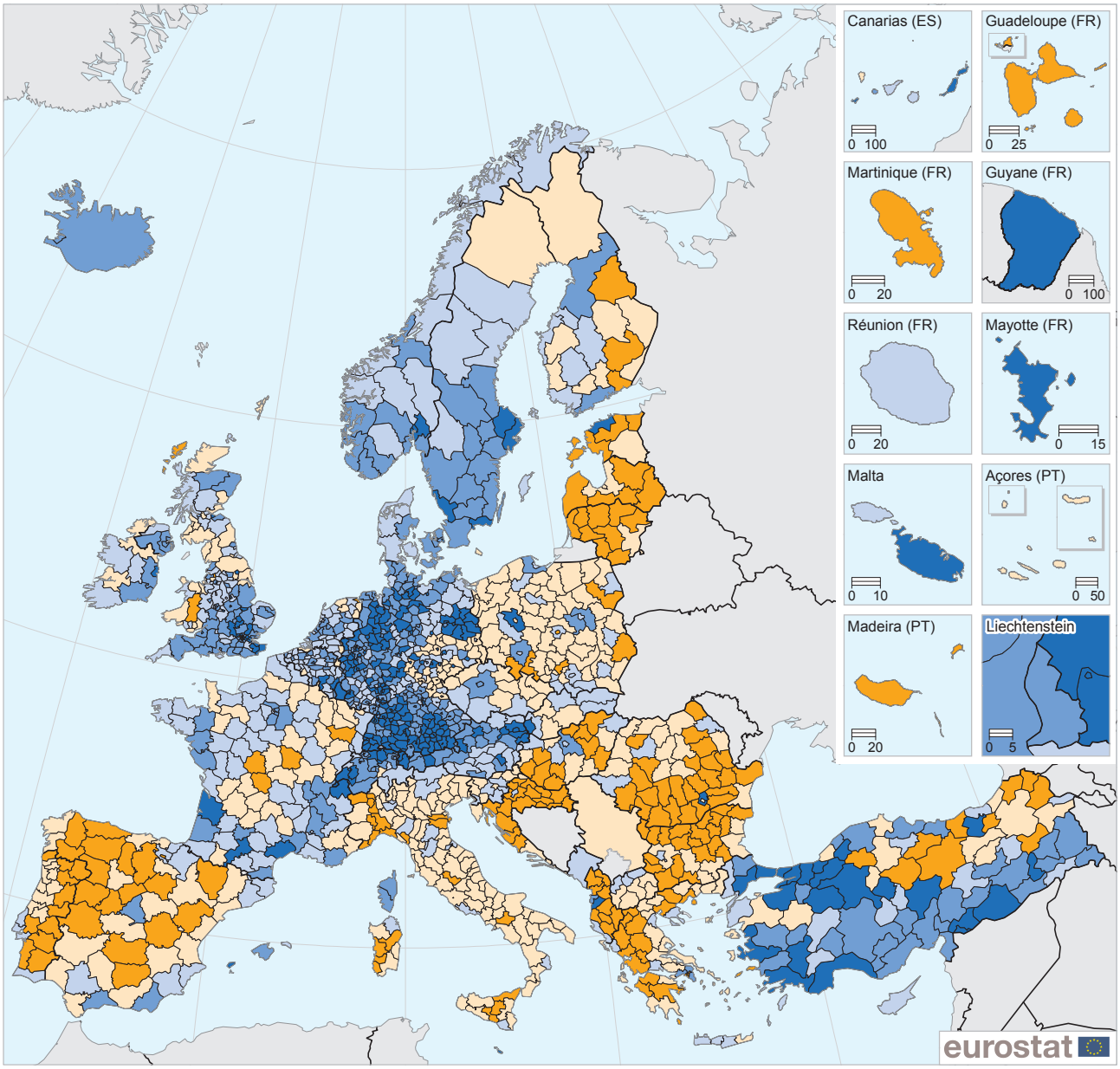
As noted above, the overall change in population numbers in 2015 was impacted upon by atypical patterns of net migration. The information presented in Map 2.3 concerns crude rates of net migration and is based on the total number of people migrating into each region from: other regions of the same Member State; from other regions in different EU Member States; or from non-member countries outside the EU. The distribution of regions in Map 2.3 is quite similar to the distribution for the crude rate of total population change (Map 2.2), underlining the fact that migratory patterns were often the principal factor in determining overall population change in 2015.

The highest crude rates of net migration were recorded in the two German regions of Trier Kreisfreie Stadt and Schwerin Kreisfreie Stadt. Alongside these, there were numerous other German regions that had very high crude rates of net migration in 2015, a pattern that could be associated with the dramatic influx of asylum seekers and refugees principally from the Middle East or the Balkans. The considerable influx of migrants into Germany during 2015 (net arrivals of 1.2 million) was broadly distributed across the whole of the German territory, as just six of the 402 NUTS level 3 German regions recorded a crude rate of net migration that was below the EU-28 average.

The regions with the highest crude rates of net migration were often those that also appeared at the top of the ranking for total population change, as natural population change was often close to being balanced. Aside from the two German and three London regions mentioned above, the remainder of the top 10 were also German regions (Bremerhaven, Kreisfreie Stadt; Lüchow-Dannenberg; Osnabrück, Kreisfreie Stadt; Heidekreis; Ansbach, Kreisfreie Stadt). Looking in more detail, there were 302 regions where the crude rate of net migration was at least 12 per 1 000 inhabitants (as shown by the darkest shade in Map 2.3); the vast majority (264) of these were located in Germany. Those regions with some of the highest rates were often characterised by the presence of migrant reception centres and/or refugee shelters.

There were 416 NUTS level 3 regions in the EU-28 where net migration in 2015 was negative (in other words, where more people left a region than arrived in it) and in 65 of these the crude rate was less than -6.0 per 1 000 inhabitants. These regions were predominantly located across the Baltic Member States, eastern and southernmost regions of the EU. Among the exceptions was the EU region with the most rapid reduction in its population as a result of net migration, namely, the sparsely-populated and heavily-forested Finnish region of Kainuu (which borders onto Russia), where the crude rate of net migration was -46 per 1 000 inhabitants.

Map 2.2: Crude rate of total population change, by NUTS 3 regions, 2015
(per 1 000 inhabitants)



(per 1 000 inhabitants)

EU-28 = 3.5

- < -6
- -6 – < 0
- 0 – < 6
- 6 – < 12
- >= 12
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © INSTAT © Turkstat

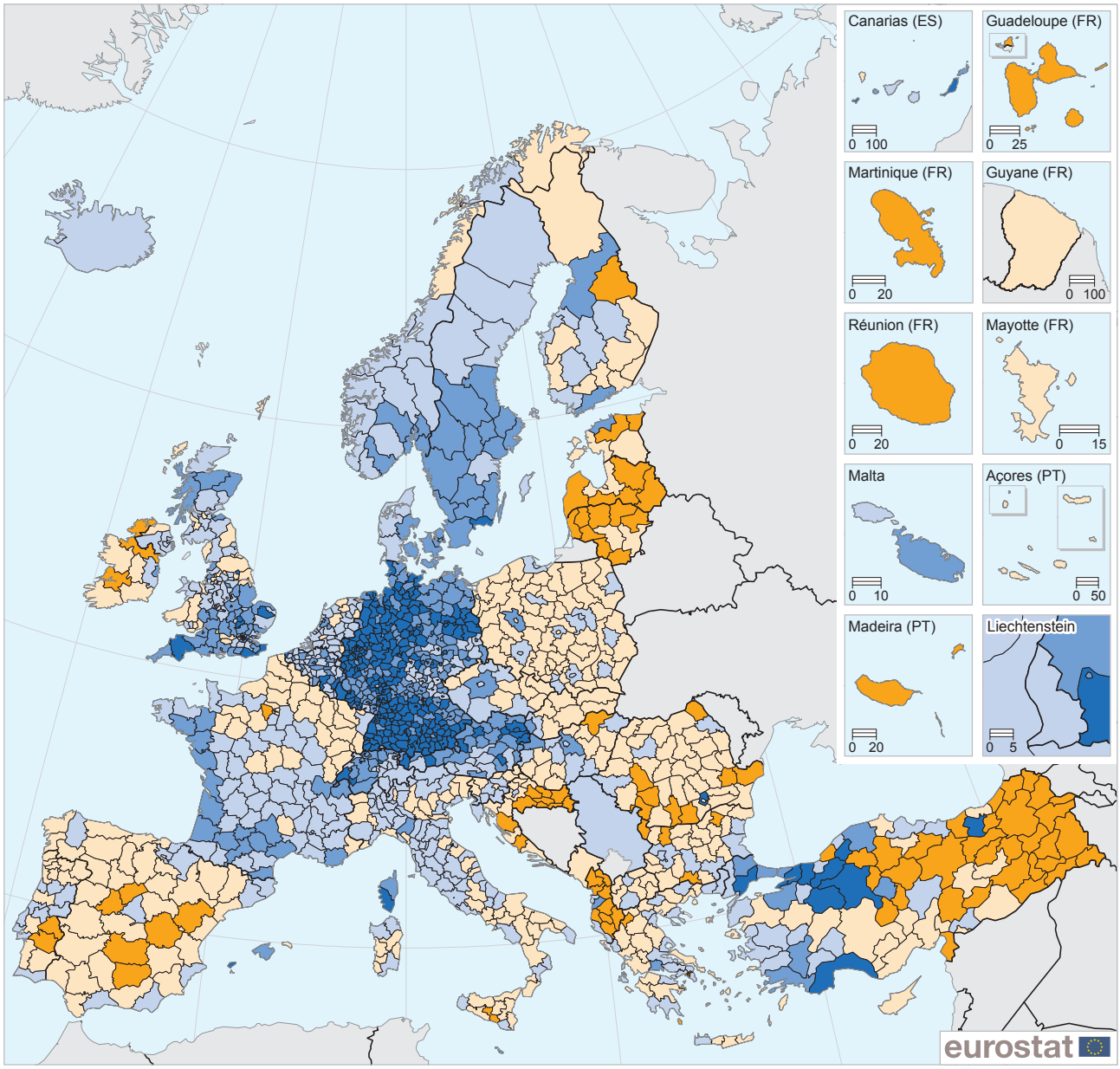
Cartography: Eurostat - GISCO, 07/2017

0 200 400 600 800 km

Note: EU-28, Portugal, Romania, the United Kingdom and Albania: estimates. Ireland and France: provisional. Serbia: national data.

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

Map 2.3: Crude rate of net migration (plus statistical adjustment), by NUTS 3 regions, 2015
(per 1 000 inhabitants)



(per 1 000 inhabitants)

EU-28 = 3.7

- < -6
- -6 – < 0
- 0 – < 6
- 6 – < 12
- >= 12
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © INSTAT © Turkstat

Cartography: Eurostat - GISCO, 07/2017

0 200 400 600 800 km

Note: EU-28, Portugal, Romania, the United Kingdom and Albania: estimates. Ireland and France: provisional. Serbia: national data.

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

Although an analysis of regional population changes supports the view that the leading factor affecting population changes in 2015 was net migration, there were some EU regions where natural change also played an important role. Aside from the overseas French regions of Mayotte (36 per 1 000 inhabitants) and Guyane (23 per 1 000 inhabitants), the highest rates of natural population growth were recorded in the eastern London regions of Hackney & Newham (14 per 1 000 inhabitants) and Tower Hamlets (12 per 1 000 inhabitants) and the north-eastern Parisian suburbs of Seine-Saint-Denis (13 per 1 000 inhabitants).

At the other end of the range, it is interesting to note that in 2015 the number of live births was lower than the number of deaths in a majority of the NUTS level 3 regions of the EU. This pattern was particularly prevalent across many rural and sparsely populated regions that were characterised by population age structures skewed in favour of older generations. The biggest decline in the crude rate of natural population change was recorded in the north-western Bulgarian region of Vidin (-16 per 1 000 inhabitants), while six additional regions from Bulgaria (principally from the north-west), as well as two regions from the Portuguese interior, and single regions from Germany, Greece, Croatia, Lithuania and Romania also recorded double-digit negative rates.

BIRTH AND FERTILITY RATES

2015

30.5 years
average age of women giving birth in the EU

This section presents information on crude birth rates (the ratio of the number of births to the average population, expressed per 1 000 inhabitants), the average (mean) age of women at childbirth, and fertility rates (the mean number of children born per woman). One of the main reasons why there has been a slowdown in EU population growth is that women are, on average, having fewer children; such historically low fertility rates have also impacted on the gradual ageing of the EU's population structure.

The EU-28 crude birth rate was 10.0 births per 1 000 inhabitants in 2015. Across the EU Member States, this rate peaked at 14.0 births per 1 000 inhabitants in Ireland and was also relatively high in France (12.0 births), the United Kingdom (11.9 births) and Sweden (11.7 births). At the other end of the range, the crude birth rate was 10.0 births per 1 000 inhabitants or lower across many eastern (Bulgaria, Croatia, Hungary, Poland, Romania and Slovenia) and southern regions (Greece, Spain, Italy, Malta and Portugal), as well as in Germany and Austria.

The lowest crude birth rate was recorded in the northern Spanish region of the Principado de Asturias

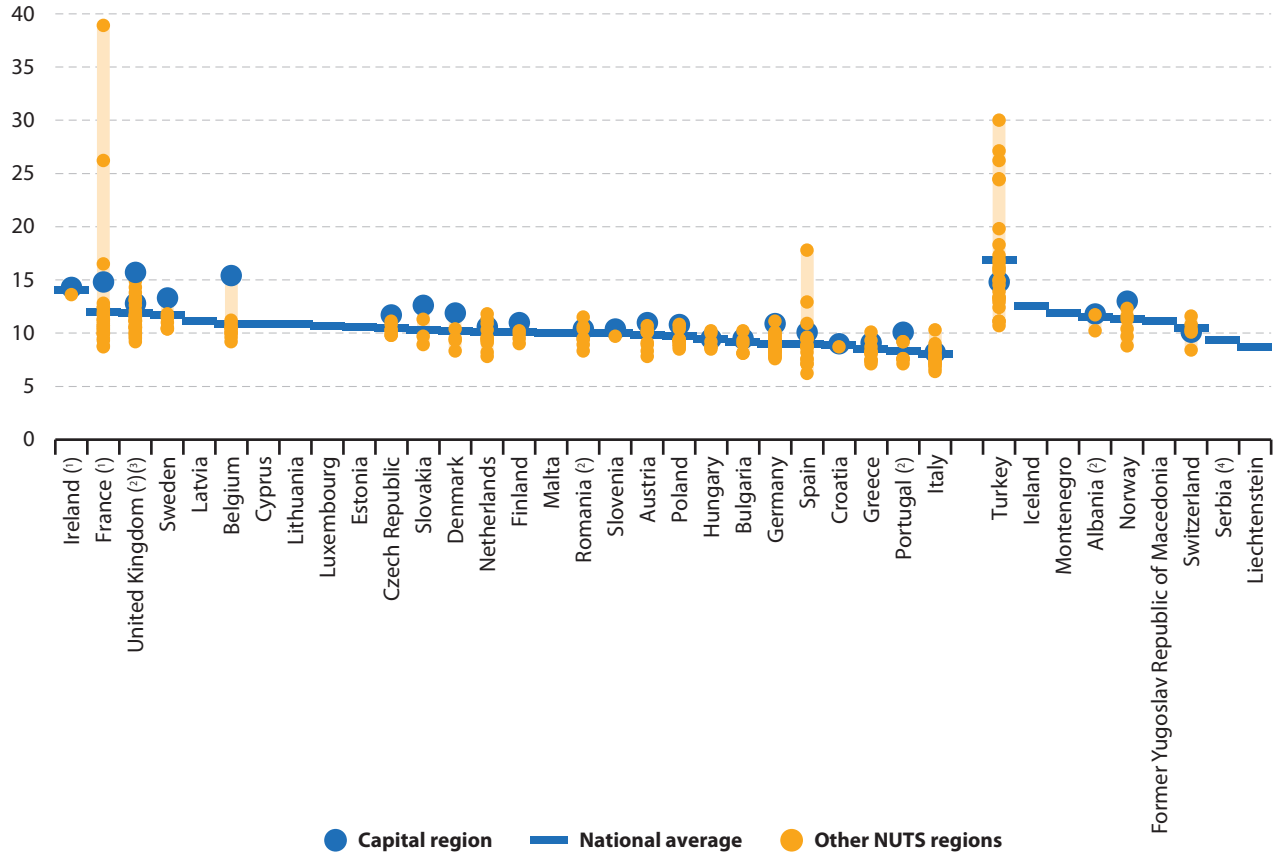
Figure 2.4 shows crude birth rates for NUTS level 2 regions in 2015. Some EU Member States reported very homogeneous regional crude birth rates, for example in the Czech Republic, Hungary, Bulgaria and Poland. Others were more heterogeneous, often because of just one or a few regions with particularly high rates: this was the case in the three French overseas regions of Mayotte (38.9 births per 1 000 inhabitants), Guyane (26.2) and La Réunion (16.5), as well as the Spanish territory of Ciudad Autónoma de Melilla (17.8). They were followed by a number of capital city regions and regions within close proximity of capitals, for example: Inner London - East and Outer London - East (both 15.7), the Région de Bruxelles-Capitale/Brussels Hoofdstedelijk Gewest (15.4), Outer London - West and North West (14.9), Île de France (14.8) Southern and Eastern Ireland (14.3), Outer London - South (14.3). Furthermore, one Irish region, five more regions from the United Kingdom, as well as the Swedish capital city region, Stockholm recorded rates of 13.0–14.0 births per 1 000 inhabitants. It is interesting to note that in all of the multi-regional EU Member States, the crude birth rate for the capital city region was at least as high as the national average.

Two of the three lowest crude birth rates (less than 7.0 births per 1 000 inhabitants in 2015) were recorded for Italian regions, Liguria in the north-western corner — a popular retirement location — and the island region of Sardegna. However, the lowest birth rate among NUTS level 2 regions was recorded in the northern Spanish region of Principado de Asturias (6.2 births per 1 000 inhabitants).

In Inner London - West the average age of women at childbirth was 33.5 years, this was 7.5 years higher than in the Bulgarian region of Yugoiztochen

With women tending to have fewer children, one consequence is that it becomes more common to postpone the decision of when to have a child. This pattern may, at least in part, also be attributed to a growing number of women participating in further education and trying to establish a professional career before deciding to start a family.

Figure 2.4: Crude birth rate, by NUTS 2 regions, 2015
(number of live births per 1 000 inhabitants)



Note: ranked on national average. The light yellow shaded area shows the range of the highest to lowest region for each country; the blue bar shows the national average; the blue circle shows the capital city region; the yellow circles show the other regions.

(1) Provisional.
(2) Estimates.
(3) Note there are two capital city regions: Inner London - East and Inner London - West.
(4) National data.

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

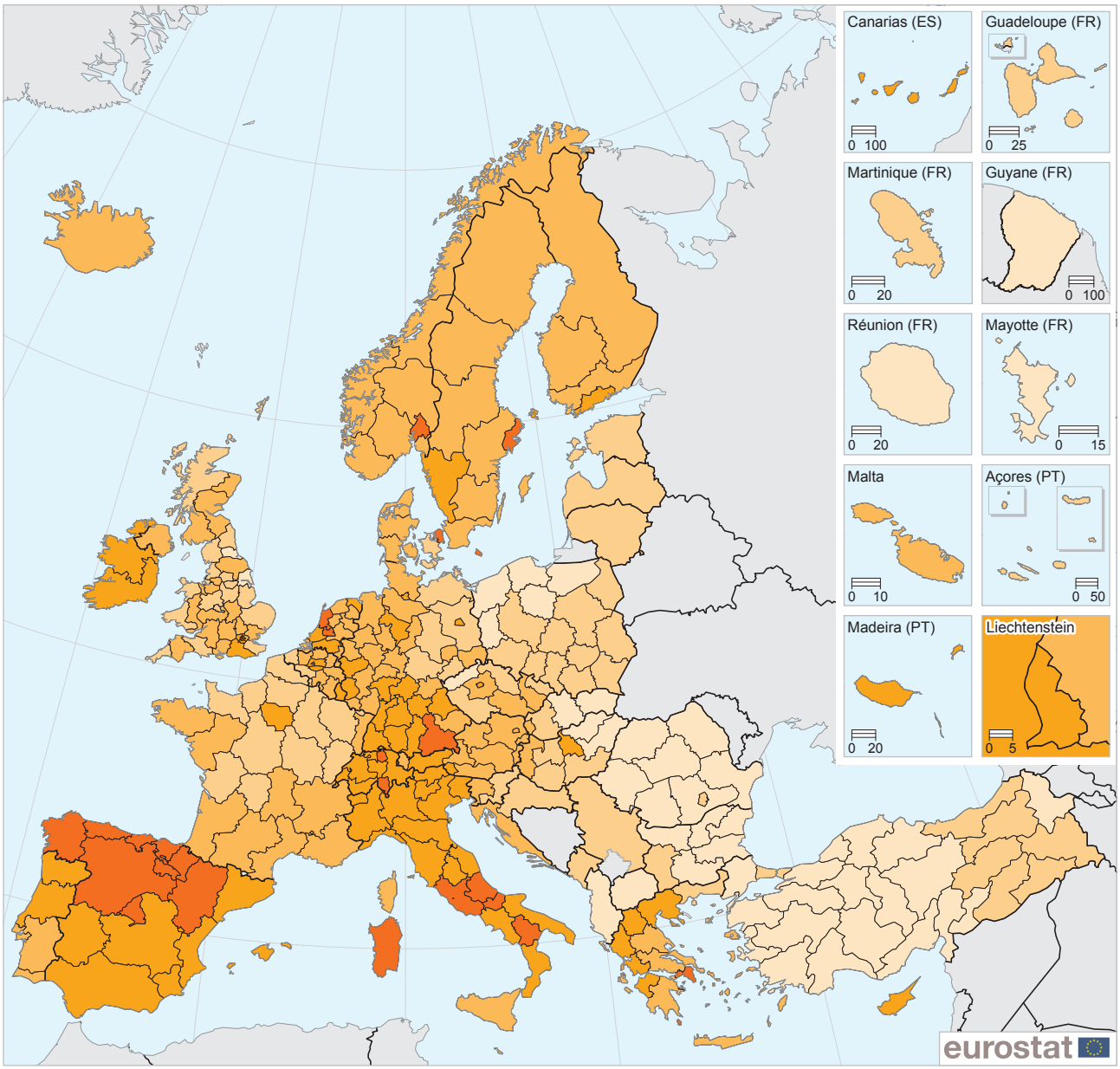
In 2015, the average (mean) age of women in the EU-28 giving birth was 30.5 years, while the mean age of women at childbirth was at least 30.0 years in a majority of the EU Member States. The highest average age for giving birth was recorded in Spain, at 31.9 years, while Italy, Ireland and Luxembourg each recorded averages that were within 0.4 years of this peak. The lowest mean ages at childbirth were recorded in Slovakia (28.8 years), Romania (27.7 years) and Bulgaria (27.4 years).

Looking in more detail, the mean age of women at childbirth was relatively high across most of Spain and Italy (see Map 2.4). By contrast, in most of the other EU Member States it was commonplace to find that urban regions (in particular, capital city regions) tended to record the highest average ages; this would tend to support the view that some women delay having children in order to pursue a career.

In 2015, the highest average age of women at childbirth across the NUTS level 2 regions of the EU was recorded in the more affluent of the two capital city regions of the United Kingdom, Inner London - West (an average of 33.5 years). The mean age of women at childbirth in the Spanish capital city region, Comunidad de Madrid was also relatively high (32.5 years) although it was surpassed by two northern Spanish regions, namely, País Vasco (32.8 years) and Galicia (32.6 years). Other capital city regions with high average ages of women at childbirth included the Danish, Greek and Italian capital city regions, Hovedstaden, Attiki and Lazio (each recording an average age of 32.1 years), two regions from the Netherlands (Utrecht and the capital city region, Noord-Holland) and the Swedish capital city region, Stockholm (all 32.0 years).

At the other end of the range, the three lowest average ages of women at childbirth in 2015 were all recorded in Bulgaria: Yuzhen tsentralen (26.7 years), Severozapaden (26.4 years) and Yugoiztochen (26.0 years). There were two further Bulgarian regions among the 27 EU regions that reported an average age of women at childbirth of less than 29.0 years (as shown by the lightest shade of yellow in Map 2.4), along

Map 2.4: Mean age of women at childbirth, by NUTS 2 regions, 2015
(years)



(years)

EU-28 = 30.5

- < 29
- 29 – < 30
- 30 – < 31
- 31 – < 32
- >= 32
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat - GISCO, 07/2017

0 200 400 600 800 km

Note: EU-28: estimate. Albania and Serbia: national data.
Source: Eurostat (online data codes: demo_r_find2 and demo_find)

with seven out of the eight Romanian regions (the only exception was the capital city region, Bucuresti - Ilfov), five regions from northern and western Poland, three overseas French regions, two regions each from northern Hungary, central and eastern Slovakia, and north-eastern England (in the United Kingdom), and a single region from the north-west of the Czech Republic. Many of these regions with low average ages for women at childbirth were characterised as either rural regions or former industrial regions in decline.

The highest fertility rates were recorded in France: the overseas island region of Mayotte recorded the highest value of 5.02 births per woman, while for mainland regions the rate peaked in Seine-Saint-Denis (2.47 births)

In developed economies, a total fertility rate of 2.10 live births per woman is considered to be the natural replacement rate, in other words, the level at which the size of the population would remain stable, in the long-run, if there were no inward or outward migration. Having fallen for several decades, the total fertility rate in the EU showed some signs of recovering at the start of the 21st century, as it rose from a low of 1.46 live births per woman in 2001 to reach an average of 1.62 births by 2010. Thereafter, the EU-28 fertility rate dipped again to 1.55 in 2013 before a modest recovery to 1.58 children in 2014, a figure that was repeated in 2015.

The highest fertility rate among the EU Member States was recorded in France (1.96 live births per woman in 2015), followed by Ireland (1.92), Sweden (1.85) and the United Kingdom (1.80). By contrast, in 13 of the Member States, the total fertility rate was no higher than 1.50 live births per woman. The lowest rate was recorded in Portugal (1.31 live births per woman) in keeping with generally low rates in the southern Member States (1.35 live births or less), as well as Poland (1.32).

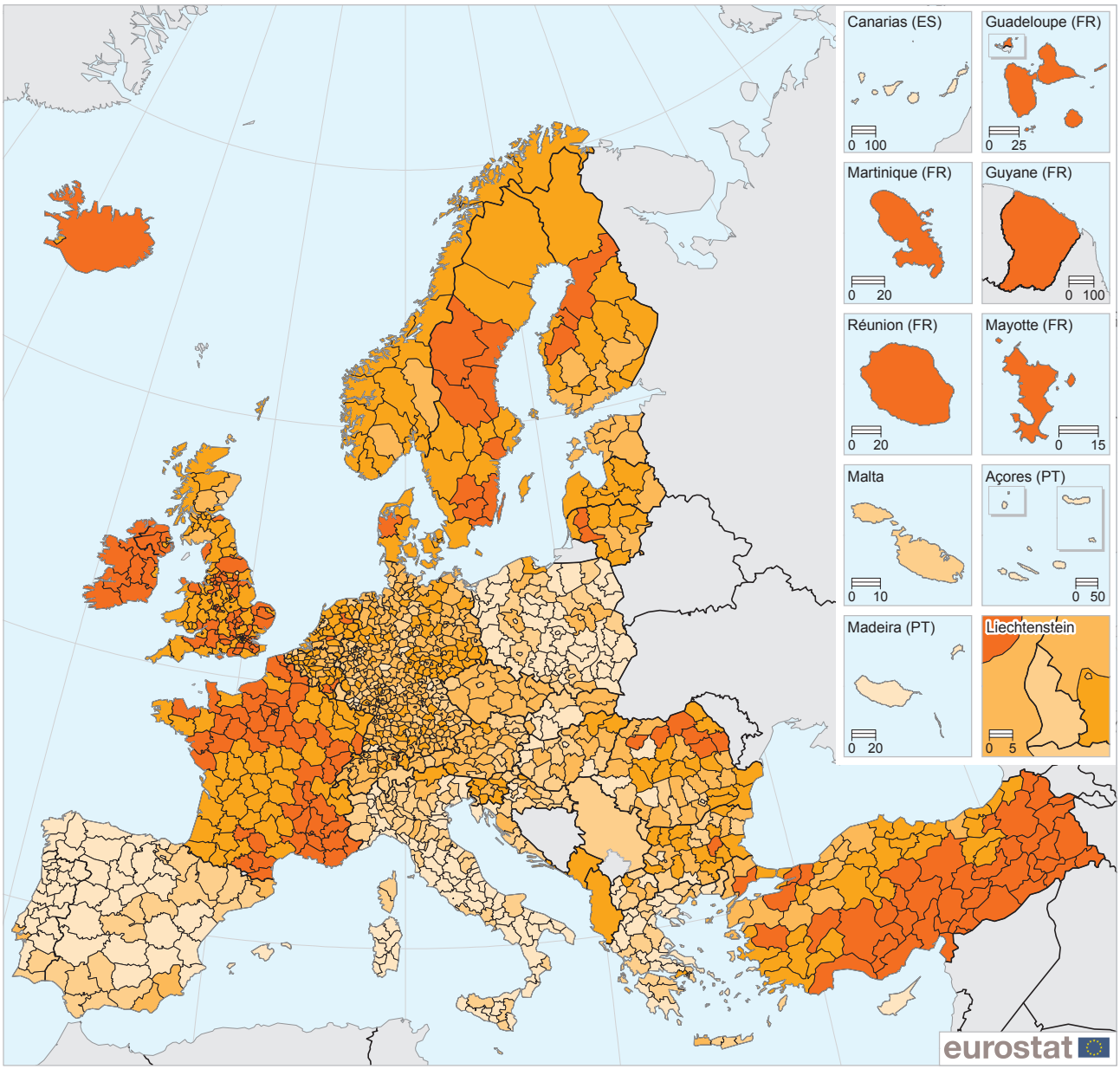
Differences in regional fertility may be linked to a range of factors, among others: the socioeconomic structure of the population (for example, educational attainment, occupational status, income or age); place of residence (for example, the availability of infrastructure, childcare facilities, or the housing market); or cultural factors (for example, religious beliefs and customs, attitudes to childbirth outside of marriage, or attitudes to contraception). A closer analysis of regional data reveals that fertility rates tended to be highest across Ireland, much of France (including its overseas regions), in southern regions of the United Kingdom and several Nordic regions; several of these regions were characterised by relatively high levels of migrants. By contrast, some of the lowest fertility rates were recorded for rural regions with relatively low levels of migration and where family units continued to play a relatively important role.

In 2015, there were 27 NUTS level 3 regions that recorded a total fertility rate of at least 2.10 live births — the natural replacement rate — with the majority of these located either in France (11 regions) or the United Kingdom (10 regions). Of the six remaining regions, Ireland was the only other EU Member State to report more than a single region (Border and Mid-West), while the remaining regions included Sliven (Bulgaria), Ciudad Autónoma de Melilla (Spain), Taurages apskritis (Lithuania) and Vaslui (Romania). The overseas French regions of Mayotte and Guyane and the Spanish territory of Ciudad Autónoma de Melilla reported the highest fertility rates in the EU, averaging 5.02, 3.52 and 2.53 live births per woman respectively. They were followed by Seine-Saint-Denis (located next to the French capital city region) and another French overseas region, La Réunion.

There were 161 NUTS level 3 regions where the fertility rate was 1.9 or more (as shown by the darkest shade of yellow in Map 2.5). By contrast, there were 247 NUTS level 3 regions where the fertility rate was below 1.35 live births per woman in 2015 (as shown by the lightest shade of yellow in Map 2.5). Among the latter, there were five regions where the fertility rate averaged less than 1.00 live birth per woman and all of these were located in the south of the EU: Zamora (north-west Spain); Carbonia-Iglesias (south-west Sardegna, Italy); Alto Tâmega (northern Portugal); Fokida (central Greece); and La Gomera (one of the Canary islands, Spain).

The distribution of total fertility rates across NUTS level 3 regions is shown in Map 2.5: as with the crude birth rate, the regional data shows that there was often a homogeneous distribution in many of the EU Member States. In 2015, the exceptions to this rule were often outliers in overseas regions, for example, Mayotte, Guyane, La Réunion and Guadeloupe (all France). However, even after excluding these special cases there was a relatively wide range in regional fertility rates across France and this diversity could even be observed for regions within close geographical proximity of each other, for example, (central) Paris, where the total fertility rate was 1.55 live births per woman and the neighbouring region of Seine-Saint-Denis, where it averaged 2.47. A similar situation was found in the United Kingdom, with relatively low fertility rates recorded among the affluent, central London regions of Camden & City of London (1.21), Westminster (1.24) or Kensington and Chelsea & Hammersmith and Fulham (1.32), whereas the total fertility rate rose to 2.17 live births per woman in the less well-off, outer London region of Barking and Dagenham & Havering.

Map 2.5: Total fertility rate, by NUTS 3 regions, 2015
(number of live births per woman)



(average number of live births per woman)

EU-28 = 1.58

- < 1.35
- 1.35 – < 1.50
- 1.50 – < 1.65
- 1.65 – < 1.90
- >= 1.90
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat - GISCO, 07/2017

0 200 400 600 800 km

Note: EU-28: estimate. Albania and Serbia: national data.
Source: Eurostat (online data codes: demo_r_frate3 and demo_find)

INFANT MORTALITY

The significant increases recorded for life expectancy in the EU are not exclusively due to increased longevity: rather, they may at least in part be attributed to a reduction in infant mortality rates. To give some idea of the rapid pace of change, the EU-28 infant mortality rate was 36.2 deaths per 1 000 live births in 1961 (the first reference year for which a value exists), this was approximately 10 times as high as the latest figure available, as the infant mortality rate was 3.6 deaths per 1 000 live births in 2015.

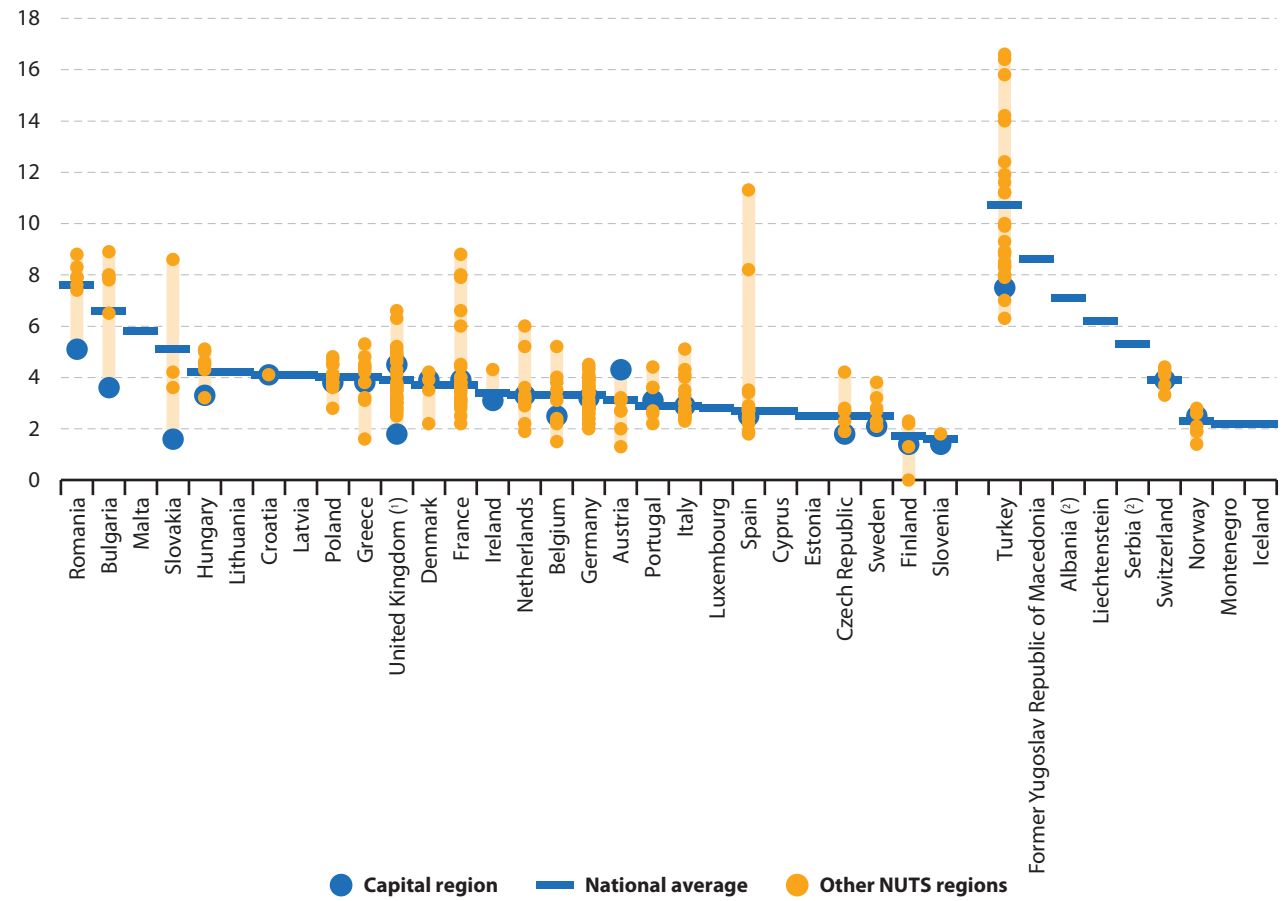
Figure 2.5 shows the range in infant mortality rates among NUTS level 2 regions. Among the EU Member States, national averages ranged in 2015 from highs of 7.6 and 6.6 deaths per 1 000 live births in Romania and Bulgaria, down to 2.5 or less deaths per 1 000 live births in Estonia, the Czech Republic, Sweden, Finland and Slovenia, the latter recording the lowest rate at 1.6 deaths per 1 000 live births.

For the fifth consecutive year there were no infant deaths in the Finnish island region of Åland

In 2015 there were a number of EU Member States that recorded particularly homogeneous infant mortality rates across their regions, including the Nordic Member States, Hungary, Poland and Portugal. By contrast, the range in infant mortality rates was wider in the regions of Spain, Slovakia and France. The highest rates in these three Member States were recorded in the relatively poor overseas and island regions of France and the Spanish autonomous cities or — in the case of Slovenia — the easternmost and poorest region of Východné Slovensko.

There were 17 regions where infant mortality rates rose above 7.0 deaths per 1 000 live births in 2015. Other than the Spanish autonomous cities, French overseas regions and Východné Slovensko, these were exclusively located in Romania (seven regions) or Bulgaria (four regions). The lowest infant mortality

Figure 2.5: Infant mortality rate, by NUTS 2 regions, 2015
(deaths per 1 000 live births)



Note: ranked on national average. The light yellow shaded area shows the range of the highest to lowest region for each country; the blue bar shows the national average; the blue circle shows the capital city region; the yellow circles show the other regions.

(1) Note there are two capital city regions: Inner London - East and Inner London - West.

(2) National data.

Source: Eurostat (online data codes: demo_r_minfind and demo_minfind)

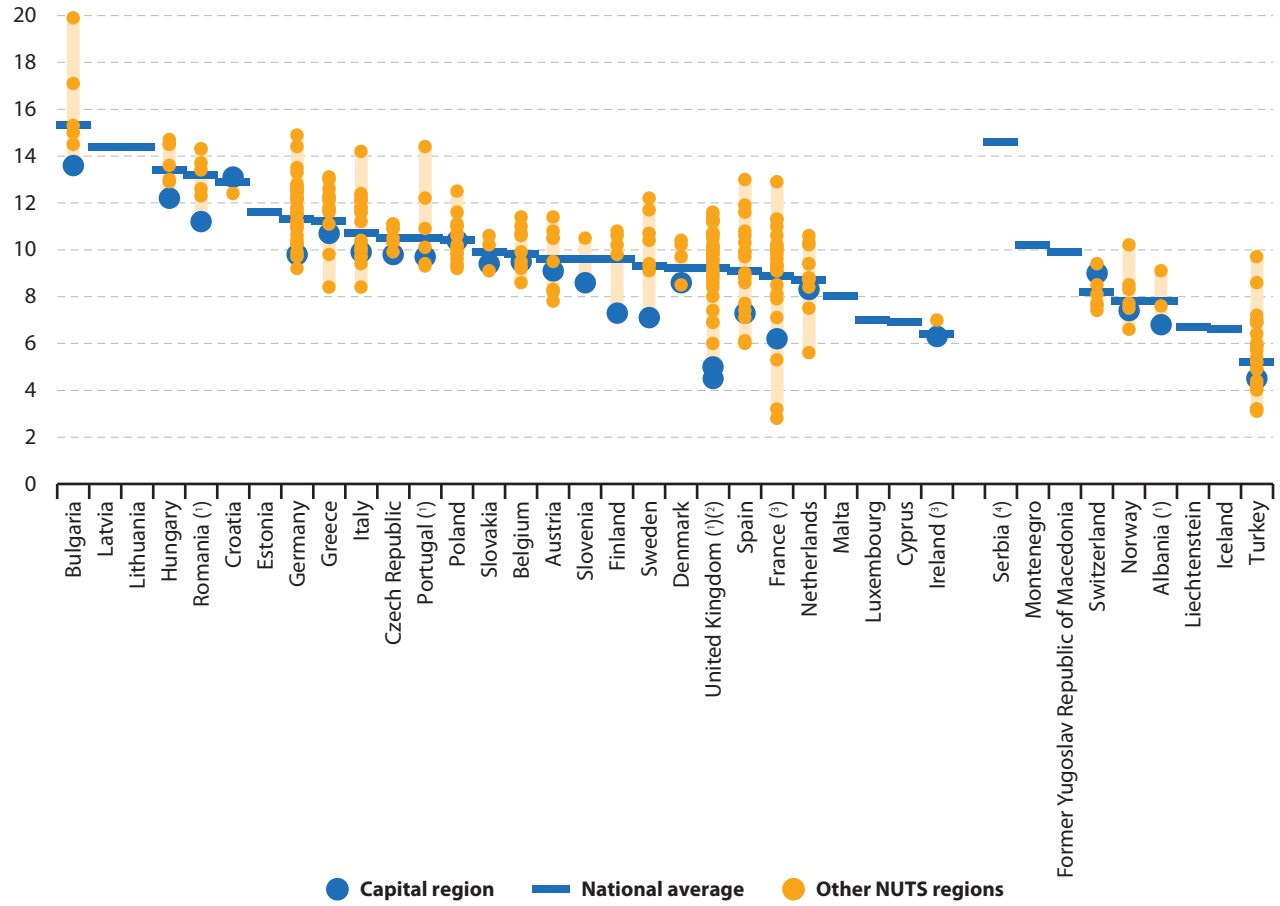
rate in the EU was recorded for the island region of Åland (Finland) where no child aged less than one year died (thus, the infant mortality rate was 0.0); this was the fifth consecutive year that a rate of zero had been recorded in this region. The next lowest rates (1.3 deaths per 1 000 live births) were recorded in the north-eastern Finnish region of Pohjois- ja Itä-Suomi and in the western Austrian region of Tirol. There were 16 NUTS level 2 regions across the EU which recorded infant mortality rates of less than 2.0 deaths per 1 000 live births in 2015, including the capital city regions of Finland, Slovakia, the Czech Republic, Slovenia and the United Kingdom (Inner London - West). Indeed, it was relatively common to find capital city regions with low infant mortality rates and this pattern was repeated across most of the multi-regional eastern EU Member States. However, in Austria, Denmark, France and Portugal, the infant mortality rate for the capital city region was above the national average.

DEATH RATES

Crude death rates generally reflect the age structure of the population as elderly persons are more likely to die and the likelihood of catching/contracting a specific illness/disease or dying from an external cause; as such, adverse weather conditions or an outbreak of a particular disease may impact on annual rates.

In 2015, there were 5.22 million deaths in the EU-28: this was the highest number recorded since a time series for the EU-28 began in 1961. The number of deaths rose by almost 280 thousand or 5.7 % when compared with 2014. Estonia was the only EU Member State to report that its overall number of deaths fell between 2014 and 2015 (down 1.6 %), while there was no significant change in the number of deaths recorded in Latvia. By contrast, the total number of deaths in France, Austria, Germany, Croatia, Greece and Spain rose by more than 6.0 %, while even higher rates of change were recorded in Italy (8.2 %) and Cyprus (11.6 %).

Figure 2.6: Crude death rate, by NUTS 2 regions, 2015
(number of deaths per 1 000 inhabitants)



Note: ranked on national average. The light yellow shaded area shows the range of the highest to lowest region for each country; the blue bar shows the national average; the blue circle shows the capital city region; the yellow circles show the other regions.

(1) Estimates.
(2) Note there are two capital city regions: Inner London - East and Inner London - West.
(3) Provisional.
(4) National data.

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

The EU-28 crude death rate was 10.2 deaths per 1 000 inhabitants in 2015, with this ratio ranging from a high of 15.3 in Bulgaria and 14.4 in both Latvia and Lithuania, down to 8.0 or fewer deaths per 1 000 inhabitants in Malta, Luxembourg, Cyprus and Ireland.

Crude death rates were often relatively low in capital city regions, as working age people accounted for a higher than average share of their total number of inhabitants

Figure 2.6 shows how crude death rates varied among NUTS level 2 regions in 2015; it may be contrasted with Figure 2.4 which shows a similar analysis for crude birth rates; generally there was a much wider range when analysing the distribution of regional death rates within each of the EU Member States. The highest crude death rates were recorded in those regions characterised by relatively old population structures: this was particularly the case in several of the eastern and southern EU Member States, the Baltic Member States and Germany. Four Bulgarian regions recorded the highest crude death rates in the EU, ranging from 15.0 to 19.9 deaths per 1 000 inhabitants, with a peak in the northern region of Severozapaden; the other regions were Yuzhen tsentralen, Yugoiztochen and Severen tsentralen.

At the other end of the range, the lowest crude death rates were recorded in two of the French overseas regions — Guyane and Mayotte — both characterised by their relatively youthful population structures. Other regions with relatively low death rates included both of the capital city regions of the United Kingdom, namely, Inner London - East (4.5) and Inner London - West (5.0), another French overseas region, La Réunion (5.3), and the Dutch region of Flevoland (5.6) which is located just to the east of the capital city of Amsterdam; each of these regions is characterised by a relatively young population. In nearly all of the multi-regional Member States, the crude death rate for the capital city region was below the national average, the only exceptions to this rule were Poland (where the capital city region, Mazowieckie, recorded a death rate that was identical to the national average) and Croatia.

Data sources and availability

Eurostat collects a wide range of regional demographic statistics: these include data on population numbers and various demographic events which influence the population's size, structure and specific characteristics. The data may be used for a wide range of planning, monitoring and evaluating actions, for example, to:

- analyse population ageing and its effects on sustainability and welfare;
- evaluate the economic impact of demographic change;
- calculate per inhabitant ratios and indicators — such as regional gross domestic product per capita, which may be used to allocate structural funds to economically less advantaged regions;
- develop and monitor migration and asylum systems.

Statistics on population change and the structure of population are increasingly used to support policymaking and to provide the opportunity to monitor demographic behaviour within a political, economic, social or cultural context. The European Parliament passed a resolution on 'Demographic change and its consequences for the future of the EU's cohesion policy' (2013/C 153 E/02) which underlined that demographic developments in the regions should be statistically measured and stressed that demographic change should be considered as a cross-cutting objective in future cohesion policy.

For more information:
http://ec.europa.eu/eurostat/cache/metadata/en/demo_r_gind3_esms.htm.

NUTS

The data presented in this chapter are based exclusively on the 2013 version of NUTS.

INDICATOR DEFINITIONS

Glossary entries on Statistics Explained (see: http://ec.europa.eu/eurostat/statistics-explained/index.php/Category:Population_glossary) are available for a wide range of demographic concepts/indicators.

For more information:
http://ec.europa.eu/eurostat/web/population-demography-migration-projections/overview

3 Health

Health is an important priority for Europeans, who expect to be protected against illness and accident and to receive appropriate healthcare services. The competence for the organisation and delivery of healthcare services largely resides with the 28 individual Member States of the European Union (EU).

This chapter presents recent statistics on health for the regions of the EU, providing information concerning some of the most common causes of death, notably cancer and diseases of the circulatory and respiratory systems. It also looks at healthcare services through an analysis of the number of hospital beds and healthcare professionals (physicians) and concludes with a range of statistics relating to health determinants according to the degree of urbanisation: six of the seven biggest risk factors for premature death — blood pressure, cholesterol, obesity and overweight, inadequate fruit and vegetable intake, physical inactivity and alcohol abuse — relate to how we eat, drink and move; the seventh is smoking.

In the coming decades, population ageing will be a major challenge for the EU's health sector. The demand for healthcare will likely increase at a rapid pace as a result of an ageing population, while demographic changes could also result in staff shortages for certain medical specialisations or specific geographic areas — according to the Directorate-General for Health and Food Safety, more than 60 thousand doctors (or 3.2 % of the workforce) are expected to retire/leave the profession each year during the period up to 2020.

POLICY INITIATIVES

The European Commission works with EU Member States using an open method of coordination for health issues, a voluntary process based on agreeing common objectives and helping national authorities cooperate. At an EU level, policy actions generally fall under the remit of the Directorate-General for Health and Food Safety and the Directorate-General for Employment, Social Affairs and Inclusion: they are focused on protecting people from health threats and disease (flu or other epidemics), consumer protection (food safety issues), promoting lifestyle choices (fitness and healthy eating), or workplace safety. The legal basis for the EU's third health programme is provided by Regulation (EU) No 282/2014 on the establishment of a third Programme for the Union's action in the field of health (2014–2020). It aims to:

- facilitate access to better and safer healthcare for EU citizens;
- contribute to innovative, efficient and sustainable healthcare systems;
- improve the health of EU citizens and reduce health inequalities;
- prevent disease and foster supportive environments for healthy lifestyles;
- protect citizens from cross-border health threats.

As well as being a value in itself, health is a precondition for economic prosperity. Efficient and smart spending on health can promote economic growth through more sustainable health systems, health promotion programmes, or investments to break the cycle of poor health contributing to and resulting from inequalities, poverty and social exclusion. By doing so, investing in health (SWD(2013) 43 final) may contribute towards the Europe 2020 objectives of 'smart, sustainable and inclusive growth'.

The EU's cohesion policy provides a powerful instrument to help EU Member States and their regions to invest in sustainable, innovative and reformed health systems. Structural and investment funds for non-direct investments such as urban regeneration, transport, the environment, employment, social inclusion and housing can also have a considerable impact on a population's health. During the period 2014–2020 the EU seeks to: invest in health infrastructure, in particular reinforcing the shift from a hospital-centred model to community-based care and integrated services; reduce health inequalities between regions and give disadvantaged groups and marginalised communities better access to healthcare; support the adaptation, up-skilling and lifelong learning of the health workforce; foster active, healthy ageing to promote employability and enable people to stay active for longer.

A healthy diet can protect against diseases and health conditions such as diabetes, circulatory diseases, strokes and some forms of cancer, as well as reducing the likelihood of obesity. Exercise from an early age can influence adult physical activity which in turn leads to a lower likelihood of being overweight or obese or suffer from circulatory diseases or chronic conditions such as diabetes. Obesity is associated with various health issues, including hypertension, high cholesterol, diabetes, circulatory diseases and cancer, and may lead to increased risks of respiratory and musculoskeletal problems. In March 2005, the European Commission launched a European platform for action on diet, physical activity and health. This was followed in May 2007 by a White paper concerning a Strategy for Europe on nutrition, overweight, and obesity-related health issues (COM(2007) 279 final), which aimed to contribute to reducing the risks associated with poor nutrition and limited physical activity in the EU. An EU Action Plan on Childhood Obesity was adopted in 2014 that aims to halt the rise in overweight and obese children (aged up to 18) by 2020; in June 2014, the Council adopted its Conclusions on Nutrition and Physical Activity and in September 2015 a Joint Action on Nutrition and Physical Activity started. Alcohol use and abuse is associated with a number of health and social issues, including accidents and violence, as well as negative

long-term health consequences: it one of the leading health risk factors in the EU and has been linked to increased risks of circulatory diseases, liver cirrhosis and cancer. In 2006, the European Commission adopted its strategy to support Member States in reducing alcohol related harm (COM(2006) 0625 final), which had five priorities: protect young people, children and unborn children; reduce injuries and deaths from alcohol-related road traffic accidents; prevent alcohol-related harm among adults and reduce the negative impact on the workplace; inform, educate and raise awareness on the impact of harmful and hazardous alcohol consumption, and on appropriate consumption patterns; develop, support and maintain a common evidence base. The implementation of the strategy was assessed in 2009 and again in 2013.

Smoking has a number of hazardous consequences for health, such as increasing the risk of respiratory and circulatory diseases and many forms of cancer, as well as impacting on physical fitness. The EU's main policy measures related to tobacco and tobacco consumption aim to protect people from the hazardous effects of smoking and other forms of tobacco consumption, including against second-hand smoke. These include measures related to packaging, labelling and ingredients, advertising restrictions, the creation of smoke-free environments, tax measures, activities against illicit trade, and anti-smoking campaigns.

Main statistical findings

- **All 32 regions where the standardised death rates from ischaemic heart disease reached or exceeded 270 per 100 000 inhabitants in 2011–2013 were in the Baltic Member States or eastern EU Member States.**
- **Five of the six regions in the EU with the highest standardised death rates for cancer of the trachea, bronchus and lung in 2011–2013 were located in Hungary (which is composed of seven regions at this level of detail).**
- **In 2014, the number of hospital beds relative to population size was high in nearly all German regions.**
- **The Greek capital city region had, by far, the highest number of physicians relative to population size of any region in the EU, 870 per 100 000 inhabitants; the number of professionally active physicians in Attiki was 240 per 100 000 inhabitants higher in 2014 than in 2004.**
- **More than half of the population (aged 15 and over) living in the urban areas of the Nordic Member States and Austria spent an average of at least 150 minutes per week on health-enhancing (non-work-related) aerobic physical exercises.**

Statistical analysis

CAUSES OF DEATH

Many factors determine mortality patterns — intrinsic ones, such as age and sex, as well as extrinsic ones, such as environmental or social factors and living/working conditions — while individual factors, such as lifestyle, exercise, diet, alcohol consumption, smoking or driving behaviour also play a role.

Slightly fewer than five million people died in the EU-28 in 2014, which equates to almost 1 % of the total population. The three leading causes of death in the EU were: diseases of the circulatory system (1.8 million deaths); cancer (1.3 million deaths); and diseases of the respiratory system (382 thousand deaths).

The three-year average standardised death rate for 2011 to 2013 in the EU-28 was 1 028 deaths per 100 000 inhabitants. Rates for the most common causes of death over the same period are presented in Figure 3.1 for various subpopulations. These confirm that the three leading causes of death for the whole population — diseases of the circulatory system, cancer and

Collecting and using statistics on the causes of death

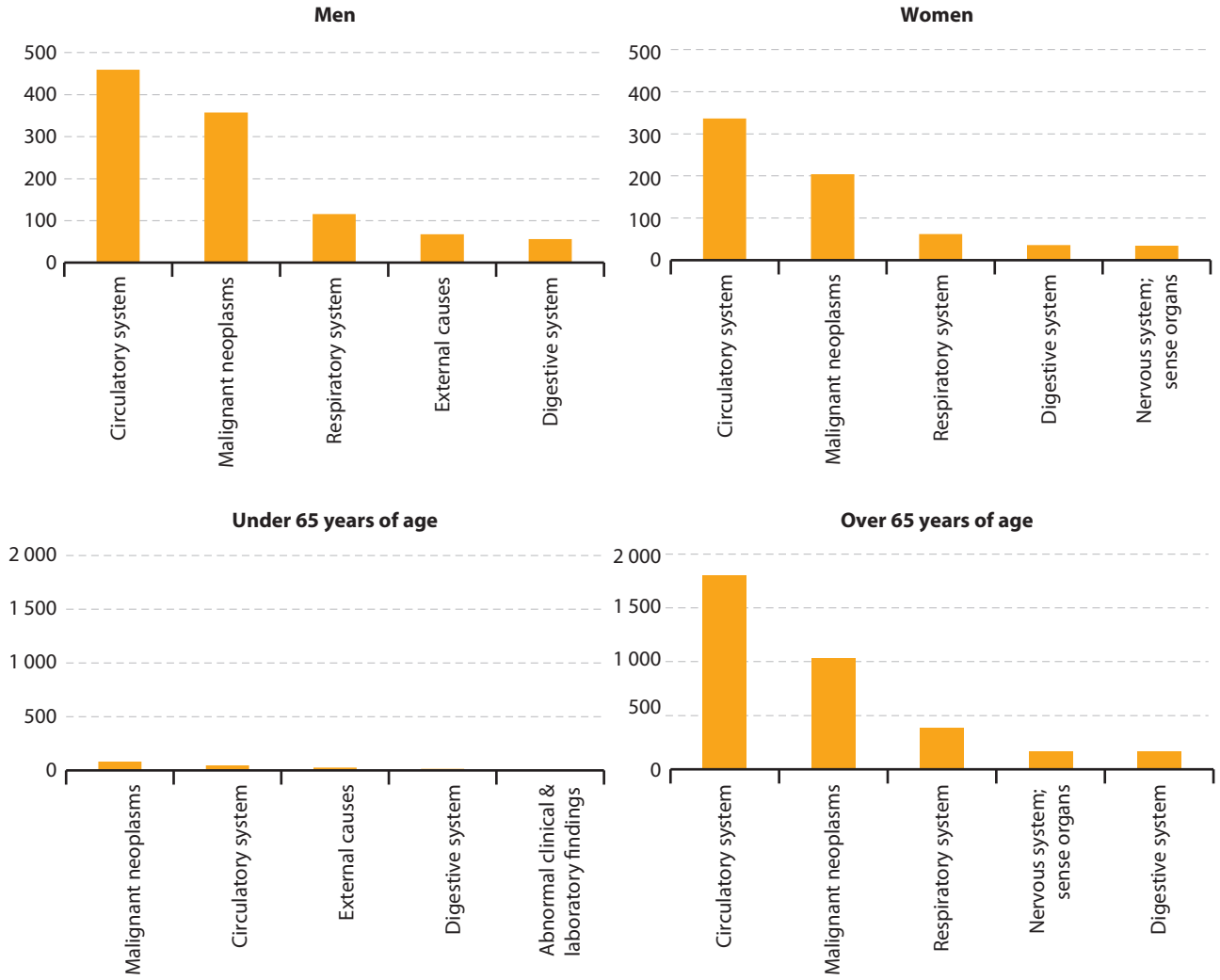
The medical certification of death is an obligation in all EU Member States. Causes of death statistics are based on two pillars: medical information on death certificates, which may be used as a basis for ascertaining the cause of death; and the coding of causes of death following the International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

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

diseases of the respiratory system — were also the most common causes of death for men, women and for persons aged 65 or over. For people aged less than 65, death from diseases of the respiratory was less common while death from external causes (which includes traffic accidents) was the third most common cause (after cancer and diseases of the circulatory system).

Figure 3.1 shows that standardised death rates were higher for men than for women for each of four common principal causes of death — diseases of the circulatory system, cancer, diseases of the respiratory system and diseases of the digestive system. Among men, external causes of death was the fourth highest cause of death (but did not feature among the five principal causes of death for women), while diseases of the nervous system and sense organs was the fifth most common cause of death among women (but did not feature in the five principal causes of death for men). The differences by age were even clearer, with all of the standardised death rates below the age of 65 relatively low.

Figure 3.1: Principal causes of death, by population subgroups, EU-28, 2011–2013
(standardised death rates per 100 000 inhabitants)



Note: the scale for the y-axes used for the figues by sex is different from that used for the figures by age.
Source: Eurostat (online data code: hlth_cd_ysdr2)

Standardised death rates

In Figures 3.1 to 3.3 and Maps 3.1 and 3.2, standardised death rates are presented. Standardised death rates, in comparison with crude death rates, are regarded as being more comparable between different populations. Crude rates are compiled by calculating a simple ratio of deaths to the population for individual five-year age groups and then combining these using weights based on the age structure of the population concerned. While these are simple to understand, the population structure strongly influences the crude rates as, for example, in a population with a relatively high proportion of older people there will be more deaths than in one with a higher proportion of younger people, because mortality is higher for older people (see Figure 3.1). This difference in age structures between various populations (for example, across countries/regions or across time) can be taken into account by using weights based on the structure of a standard population to combine the age-specific mortality rates, so allowing the resulting standardised rates to be compared more meaningfully.

Regional standardised death rates are provided in the form of three-year averages, in order to smooth out some of the relatively large fluctuations that might occur from year to year in some of the smaller regions; for consistency and comparison the rates for the EU-28 in Figure 3.1 are also presented as three-year averages.

Causes of death: ischaemic heart disease

There are a range of medical problems that affect the circulatory system (the heart, blood and blood vessels), with one of the most common being ischaemic heart disease (also known as coronary artery disease). Exercise, diet, smoking and stress can all have a positive or negative impact upon death rates from heart disease. Indeed, diet is thought to play an important role, as death rates tend to be higher in those regions where people consume large amount of saturated fats, dairy products and (red) meat.

Regional statistics on the causes of death are available for 2011–2013, during which time there was an average of 655 thousand deaths per year from ischaemic heart disease in the EU-28, equivalent to 13.2 % of all deaths. The standardised death rate in the EU-28 for ischaemic heart disease during this period was 136 deaths per 1 000 inhabitants. Map 3.1 shows there was an east–west split in standardised death rates from ischaemic heart disease across EU regions. The highest death rates were often recorded in regions located in one of the Member States that joined the EU in 2004 or later (with the exception of the Mediterranean island of Cyprus).

Lithuania and two Romanian regions had the highest death rates attributed to ischaemic heart disease

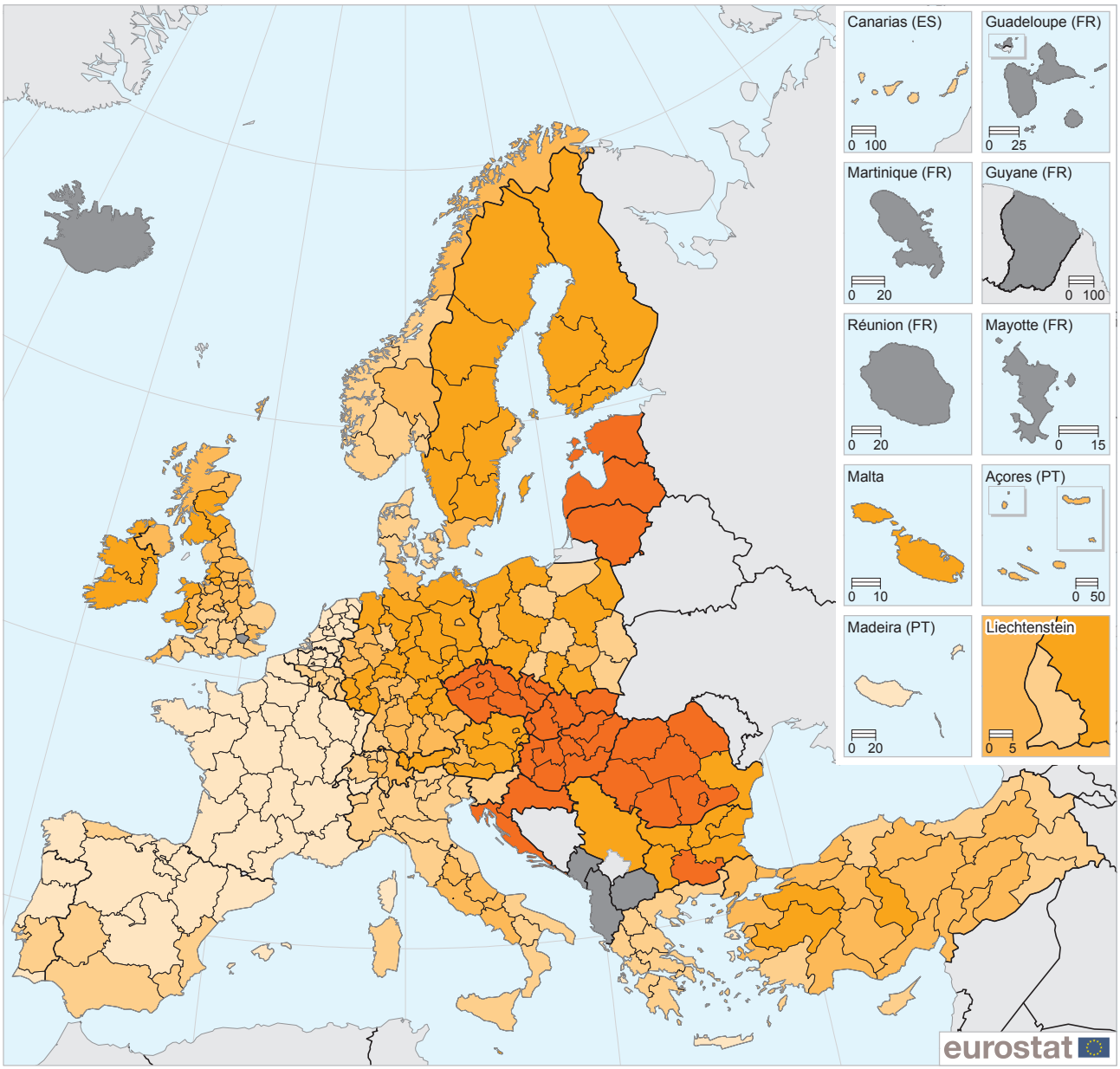
Looking in more detail, there were three NUTS level 2 regions in the EU-28 where the standardised death rate for ischaemic heart disease was close to or in excess of 500 deaths per 100 000 inhabitants (in other words, more than 0.5 % of the standardised population died from these diseases on average each year between 2011 and 2013): Lithuania (which is one region at this level of detail) and the two Romanian regions of Nord-Vest and Centru. Looking more broadly, all 32 regions where the standardised death rate from ischaemic heart disease reached or exceeded 270 per 100 000 inhabitants (shown with the darkest shade of yellow in Map 3.1) were in the Baltic Member States or eastern EU Member States (the Czech Republic, Croatia, Hungary, Romania or Slovakia). Elsewhere, the highest standardised death rate in the Nordic Member States was in Pohjois- ja Itä-Suomi (Finland; 266), the highest in the southern Member States was in Malta (a single region at this level of analysis; 258), and the highest in the western Member States was in Burgenland (Austria; 241).

The lowest death rates from ischaemic heart disease were recorded in French and Portuguese regions

Two factors other than diet that are often cited as an explanation for patterns of regional death rates from ischaemic heart disease are access to and the availability of hospital treatment. The lowest death rates from ischaemic heart disease are often registered in capital city and other urban regions, where patients in need of rapid medical assistance — for conditions such as heart attacks — can expect to travel relatively short distances to receive attention in relatively well-equipped hospitals.

Across NUTS level 2 regions, 13 of the 15 lowest standardised death rates from ischaemic heart disease were recorded in France, the other two being Norte and Centro (both Portugal). The French capital city region (Île de France) reported the lowest average rate between 2011 and 2013, at 45 deaths per 100 000 inhabitants. As such, there was a considerable difference between the highest and lowest standardised death rates from ischaemic heart disease across NUTS level 2 regions within the EU, with the death rate in Lithuania 13 times as high as that recorded for Île de France.

Map 3.1: Standardised death rates from ischaemic heart disease, by NUTS 2 regions, 2011–2013
(per 100 000 inhabitants)



(per 100 000 inhabitants)

EU-28 = 136

- < 80
- 80 – < 120
- 120 – < 150
- 150 – < 270
- >= 270
- Data not available

Note: Slovenia and Serbia: national data.

Source: Eurostat (online data code: hlth_cd_ysdr2)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat - GISCO, 07/2017

0 200 400 600 800 km

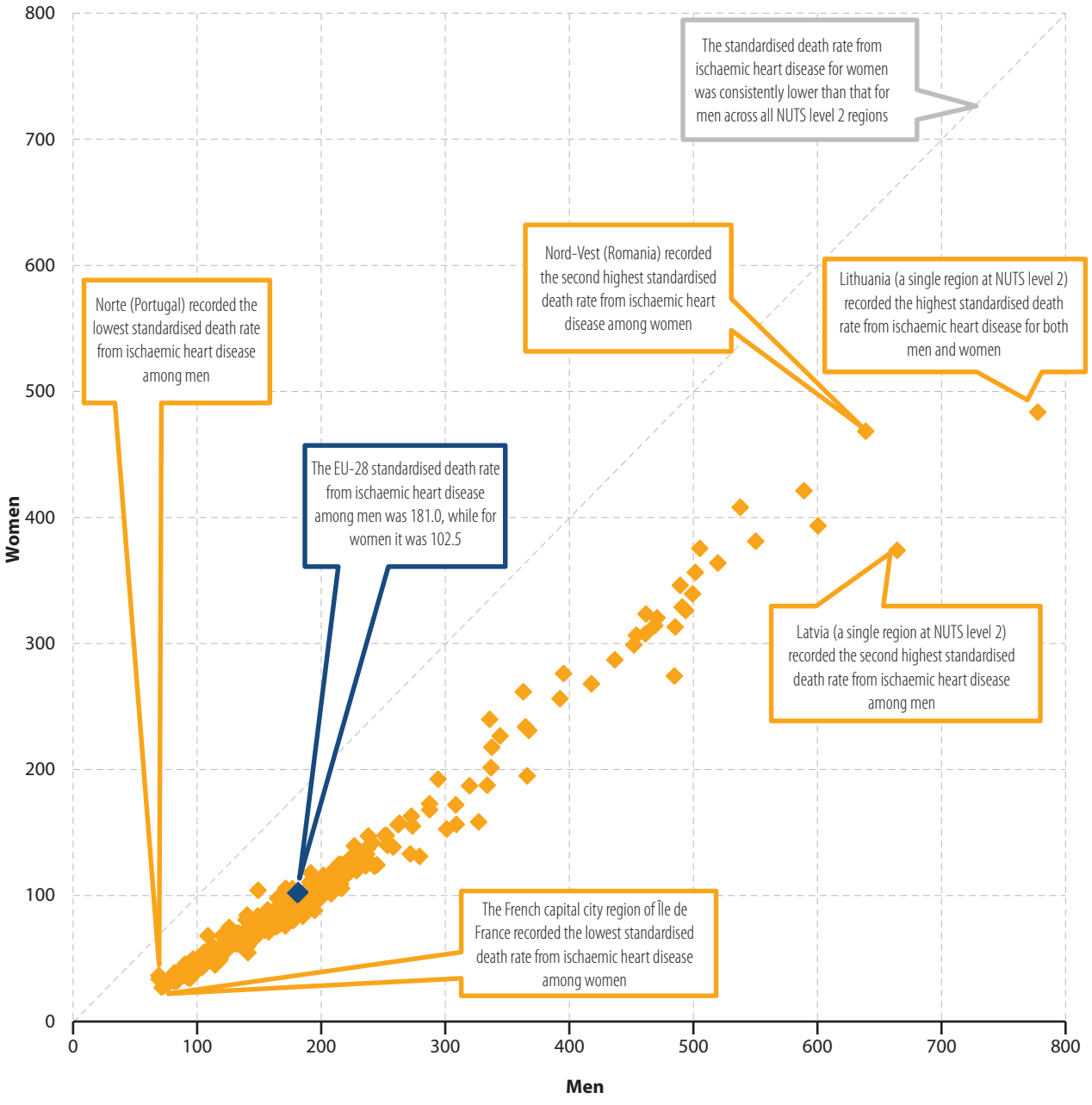
Standardised death rates for ischaemic heart disease were higher for men than for women in all regions

In the EU-28 as a whole, the annual average standardised death rate for ischaemic heart disease between 2011 and 2013 was 102.5 deaths per 100 000 inhabitants for women while it was 181.0 per 100 000 for men, a difference of 78.5 deaths per 100 000 inhabitants.

Figure 3.2 shows the standardised death rates for ischaemic heart disease for men and women across all regions of the EU and it is clear that, without exception, rates were consistently higher for men than for women. Among the 267 NUTS level 2 regions in the EU for which data are available, Lithuania recorded the highest death rates for both men and women, while the lowest rates were in two different regions, Île de France for women and Norte for men.

The largest absolute gender gaps for the standardised death rate for ischaemic heart disease were recorded in the three Baltic Member States (each one region at this level of detail), where the rates for men were at least 200 deaths per 100 000 inhabitants higher than for women and this was also the case in the Hungarian region of Észak-Magyarország. The narrowest gender gaps in absolute terms were recorded for three Portuguese regions, namely, Alentejo, Norte and Centro.

Figure 3.2: Standardised death rates from ischaemic heart disease, by sex, by NUTS 2 regions, 2011–2013
(per 100 000 inhabitants)



Note: Slovenia: national data. Départements d'outre-mer (FRA) and London (UKI): not available.
Source: Eurostat (online data code: hlth_cd_ysdr2)

Causes of death: cancer (malignant neoplasms) of the trachea, bronchus and lung

Although significant advances have been made in the fight against cancer of the trachea, bronchus and lung, it remains a key public health concern and a considerable burden on society. Between 2011 and 2013 there was an average of 268 thousand deaths per year from cancer of the trachea, bronchus and lung in the EU-28, equivalent to 5.4 % of all deaths. The standardised death rate in the EU-28 for cancer of the trachea, bronchus and lung during this period was 56 deaths per 1 000 inhabitants.

All of the regions in Hungary recorded very high standardised death rates for cancer of the trachea, bronchus and lung

The regional distribution of standardised death rates for cancer of the trachea, bronchus and lung was more mixed than that for ischaemic heart disease, both across EU Member States and between regions of the same Member State. Among the 38 regions where the annual average (between 2011 and 2013) standardised death rate was 70 deaths per 100 000 inhabitants or higher (the darkest shade of yellow in Map 3.2), the vast majority (all but two regions) were concentrated in Hungary and Poland (among the eastern EU Member States), Belgium, the Netherlands and the United Kingdom (among the western EU Member States), and Denmark (among the northern Member States); in addition there was one region each from the Czech Republic and Portugal. Not only were all seven Hungarian regions in this group, five of them were among the six regions with the highest standardised death rates for cancer of the trachea, bronchus and lung in the EU. However, the highest rate of all was recorded in the British region of South Western Scotland (99 deaths per 100 000 inhabitants).

Centro in Portugal recorded an annual average standardised death rate for cancer of the trachea, bronchus and lung for the period 2011 to 2013 that was 26 per 100 000 inhabitants, in other words less than half the EU-28 average and only just over a quarter of the rate recorded for South Western Scotland. As such, the range of regional rates for cancer of the trachea, bronchus and lung was far narrower than for ischaemic heart disease. Most regions with particularly low rates for cancer of the trachea, bronchus and lung were in Germany, Sweden, Portugal or Italy, with the remainder in Austria, Cyprus (one region at this level of detail), Finland and Slovenia (only national data available).

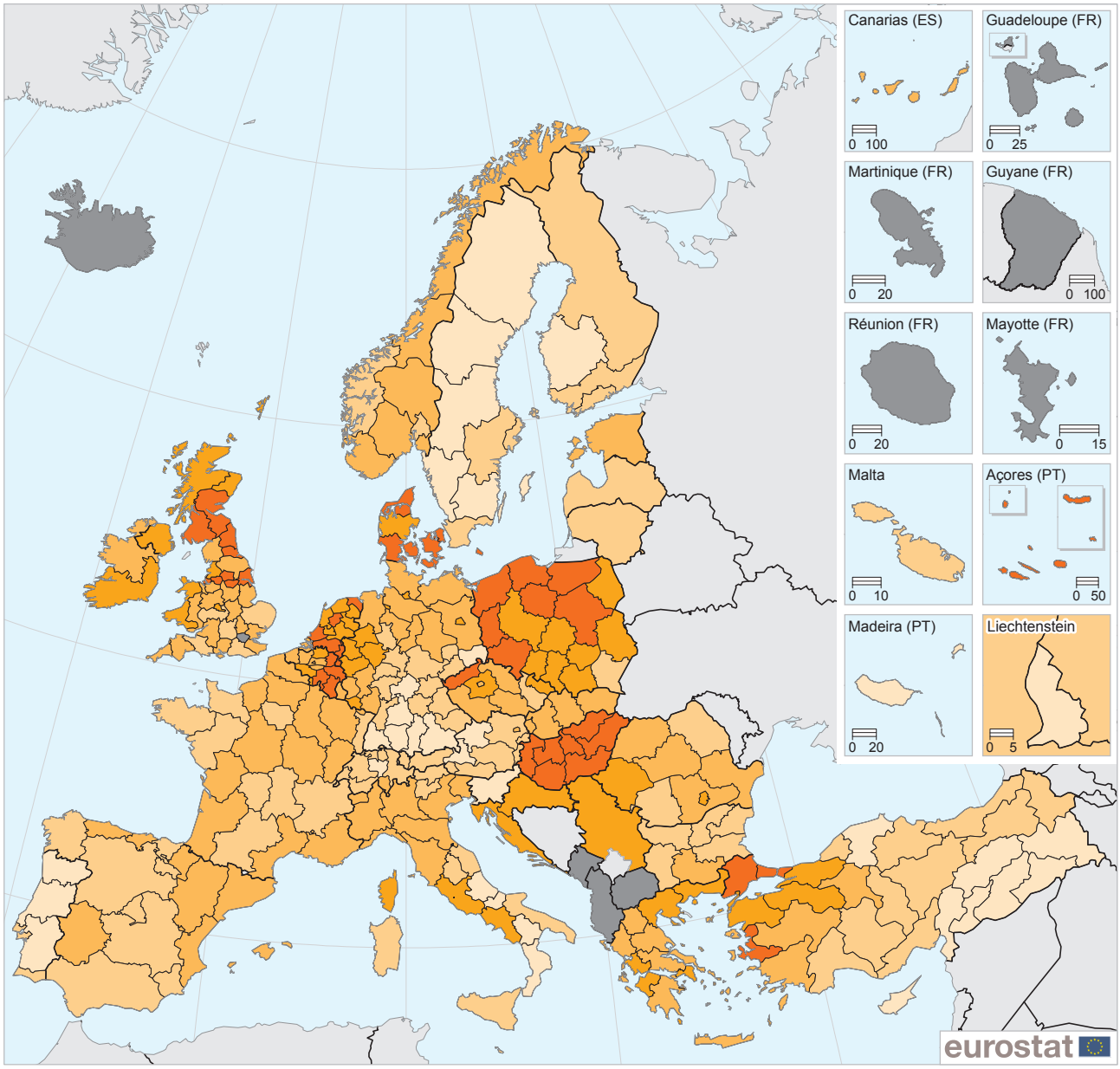
North–south divide in standardised death rates from cancer of the trachea, bronchus and lung within Italy and the United Kingdom

Within some of the EU Member States there were relatively large differences in standardised death rates from cancer of the trachea, bronchus and lung. In Italy, there was a broad north–south divide, with higher death rates in the north (except for Provincia Autonoma di Trento and Provincia Autonoma di Bolzano/Bozen) and lower rates in the south (except for Campania). There was also a broad north—south divide in the United Kingdom, with higher rates in Scotland, Northern Ireland and northern England (with a few exceptions) and lower rates in much of southern England. In Germany, the highest rates were reported in some of the westernmost regions of Germany (especially within Nordrhein-Westfalen and Saarland) and the three city regions of Berlin, Bremen and Hamburg, while relatively low rates were reported in several southern regions within Baden-Württemberg and Bayern. Poland and Portugal presented relatively homogenous rates, but with one exception in each case: all Polish regions reported high death rates except for the south-eastern region of Podkarpackie; all Portuguese regions reported low rates except for Região Autónoma dos Açores.

The annual average standardised death rate for cancer of the trachea, bronchus and lung between 2011 and 2013 in the EU-28 was 89.2 deaths per 100 000 inhabitants for men while it was 30.2 per 100 000 for women, a difference of 58.9 deaths per 100 000 inhabitants. Figure 3.3 shows a gender analysis of the standardised death rate for cancer of the trachea, bronchus and lung for 264 regions in the EU-28 for which data are available; as with the information presented for ischaemic heart disease, every region in the EU reported higher death rates for men than for women.

The largest gender gap was in Região Autónoma dos Açores which had a relatively low standardised death rate for cancer of the trachea, bronchus and lung for women (16.4 deaths per 100 000 inhabitants) but the sixth highest rate (147.1 deaths per 100 000 inhabitants) for men. Other regions where the gender gap was more than 100 deaths per 100 000 inhabitants included Anatoliki Makedonia, Thraki and Dytiki Ellada (both Greece), Észak-Magyarország and Észak-Alföld (both Hungary), Extremadura (Spain) and Warminsko-Mazurskie (Poland); all of these had high standardised death rates for cancer of the trachea, bronchus and lung for men, the lowest being 117.7 deaths per 100 000 inhabitants in Extremadura and the highest being 169.2 deaths per 100 000 inhabitants in Észak-Alföld.

Map 3.2: Standardised death rates from cancer (malignant neoplasms) of the trachea, bronchus and lung, by NUTS 2 regions, 2011–2013
(per 100 000 inhabitants)



(per 100 000 inhabitants)

EU-28 = 55.5

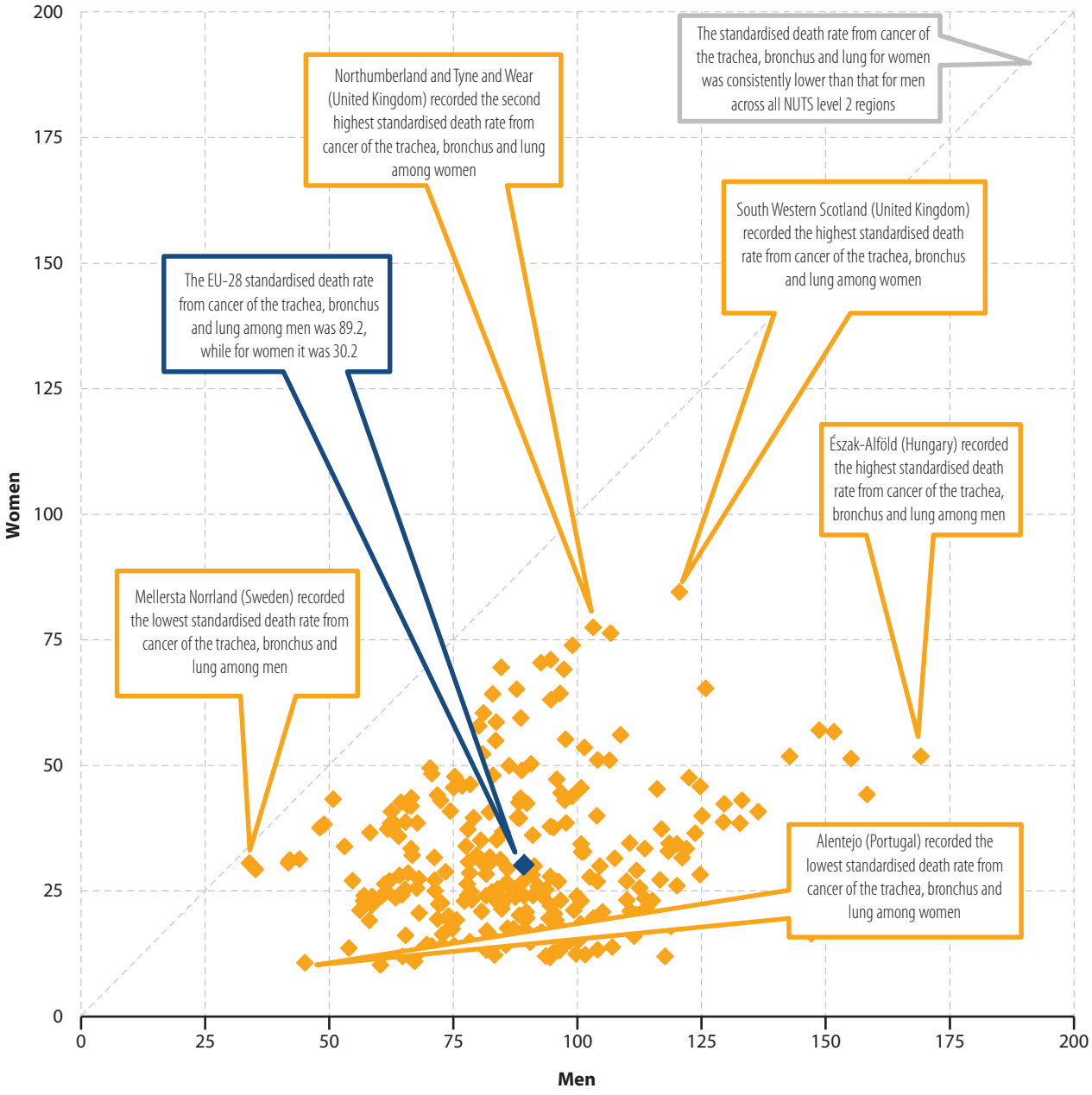
- < 40
- 40 – < 50
- 50 – < 60
- 60 – < 70
- >= 70
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat - GISCO, 07/2017

0 200 400 600 800 km

Note: Slovenia and Serbia: national data.
Source: Eurostat (online data code: hlth_cd_ysdr2)

Figure 3.3: Standardised death rates from cancer (malignant neoplasms) of the trachea, bronchus and lung, by sex, by NUTS 2 regions, 2011–2013
(per 100 000 inhabitants)



Note: Départements d'outre-mer (FRA), Slovenia and London (UKI): not available.
Source: Eurostat (online data code: hlth_cd_ysdr2)

The eight regions with the narrowest gender gaps for standardised death rates for cancer of the trachea, bronchus and lung were all Swedish, reflecting the fact that these regions were all among the nine regions with the lowest rates for men; Mellersta Norrland recorded the lowest rate for men across all regions of the EU, at 33.9 deaths per 100 000 inhabitants. Whereas the range between the highest and lowest rates for men was 5.0 : 1, for women it was 8.2 : 1, with a standardised death rate for cancer of the trachea, bronchus and lung of 84.5 deaths per 100 000 inhabitants reported for South Western Scotland and 10.3 deaths per 100 000 inhabitants in Alentejo (Portugal).

HEALTHCARE PROVISION

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

Hospital beds

Statistics on the availability of hospital beds cover general and speciality hospitals. Hospital beds are defined as those which are regularly maintained and staffed and immediately available for the care of patients admitted to hospitals.

For many years, the number of hospital beds available across the EU has decreased: this may be linked to a range of factors, including a reduction in the average length of hospital stays, the introduction of minimally invasive surgery and procedures, and an expansion of day care and outpatient care. During the last decade the number of hospital beds in the EU-28 continued to decline: available beds fell from 2.93 million in 2004 to 2.65 million by 2014, a relative decrease of 9.6 %. At the same time, the EU's population grew and so relative to population size the number of beds per 100 000 inhabitants fell from 592 in 2004 to 521 in 2014, a decline of 12.0 %.

German regions had relatively high numbers of hospital beds relative to population size

Map 3.3 shows a high density of available hospital beds across all German regions (NUTS level 1) in 2014, the capital city region being the only one where there were not at least 700 beds per 100 000 inhabitants (the darkest shade in Map 3.3). More generally, the highest densities of hospital beds (at least 700 per 100 000 inhabitants) in 2014 were rarely in regions in northern or southern Member States, the only cases being Lithuania (one region at this level of detail) and the Portuguese Região Autónoma da Madeira (2013 data). As such, the vast majority of the regions with high densities of hospital beds were in western and eastern Member States: aside from Germany, the highest densities were recorded in Austria, Poland, France; Hungary and Romania (three to five regions each), as well as two regions in Belgium and one region in each of Bulgaria, the Czech Republic and Slovakia. The highest density of hospital beds in any region was recorded in the north eastern German region of Mecklenburg-Vorpommern with an average of 1 308 beds per 100 000 inhabitants.

By contrast, the lowest densities of hospital beds — less than 250 per 100 000 inhabitants (as shown by the lightest shade in Map 3.3) in 2014 — were often recorded in the northern and southern EU Member States, as well as in one Irish region. In the northern Member States, very low ratios were recorded for three regions in Sweden and one in Denmark, while this was also the case in five Spanish regions, two Greek regions (2013 data) and one region in each of Italy and Portugal (both 2013 data). The lowest density of hospital beds was recorded in the Greek region of Sterea Ellada, at 165 hospital beds per 100 000 inhabitants.

An analysis of the density of hospital beds within individual EU Member States reveals that France and Portugal had quite diverse regional ratios. In the case of France this was due to notably lower ratios recorded in the overseas regions of Guyane and La Réunion, while in Portugal this was due to notably higher ratios recorded for the Regiões Autónomas dos Açores e da Madeira and a relatively low ratio in Alentejo.

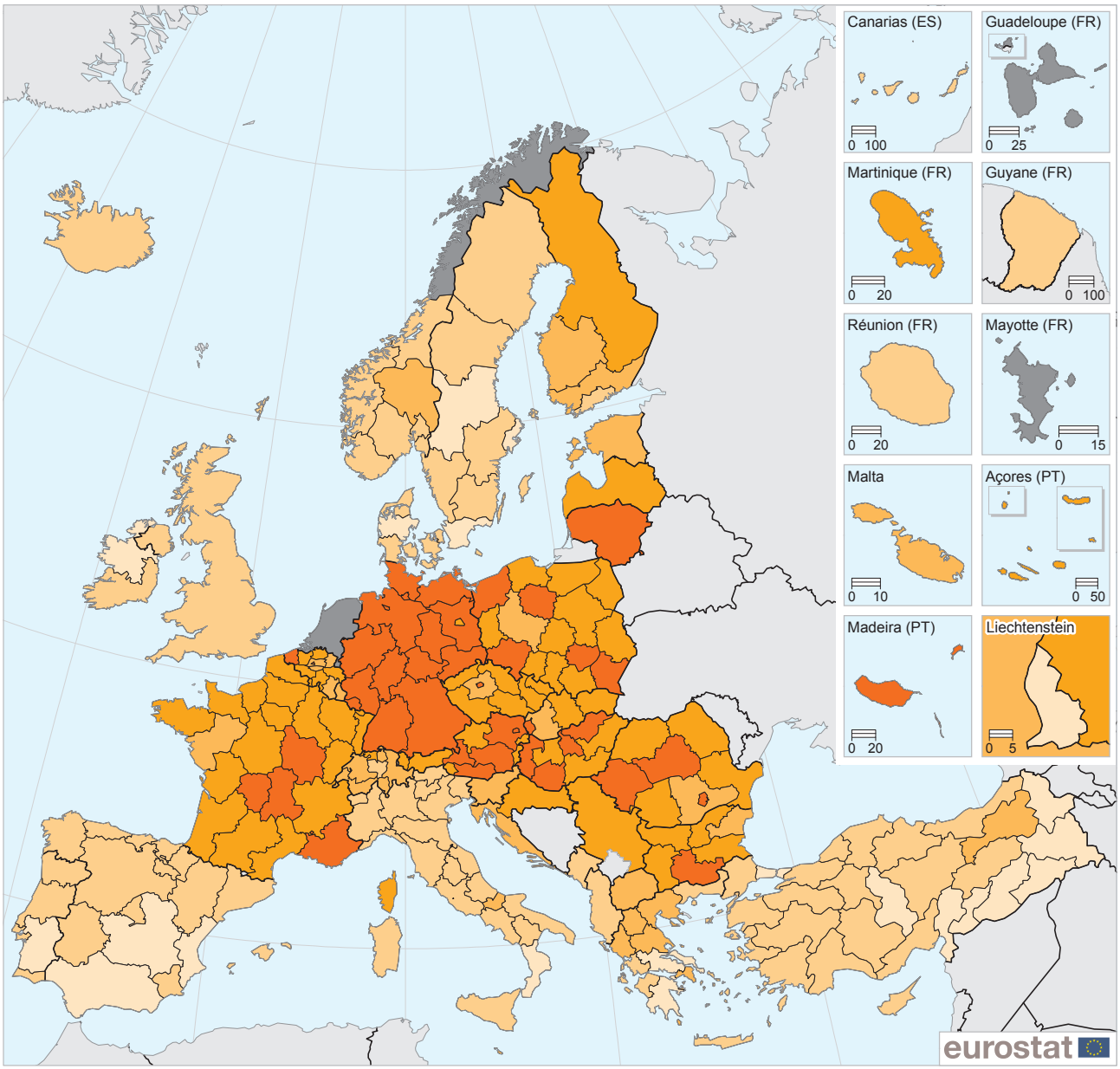
2014

192
number of inhabitants per hospital bed in the EU

Healthcare professionals

Physicians or (medical) doctors have a degree in medicine and provide services directly to patients as consumers of healthcare. In the context of comparing health care services across EU Member States, Eurostat gives preference to the concept of practising physicians, although data are only available for professionally active or licensed physicians in some Member States (see Map 3.4 for coverage). A practising physician provides services directly to patients as consumers of healthcare. These services include: conducting medical examinations and making diagnoses; prescribing medication and treating diagnosed illnesses, disorders or injuries; giving specialised medical or surgical treatment for particular illnesses, disorders or injuries; giving advice on and applying preventive medical methods and treatments. A professionally active physician is a practising physician or any other physician for whom medical education is a prerequisite for the execution of the job (for example, verifying medical absences from work, drug testing, medical research). A licensed physician is a physician licensed to practise; this category includes practising physicians, professionally active physicians, as well as any other registered physicians who are entitled to practise as healthcare professionals.

Map 3.3: Number of hospital beds relative to population size, by NUTS 2 regions, 2014
(number per 100 000 inhabitants)



(number per 100 000 inhabitants)

EU-28 = 521

- < 250
- 250 – < 400
- 400 – < 550
- 550 – < 700
- >= 700
- Data not available

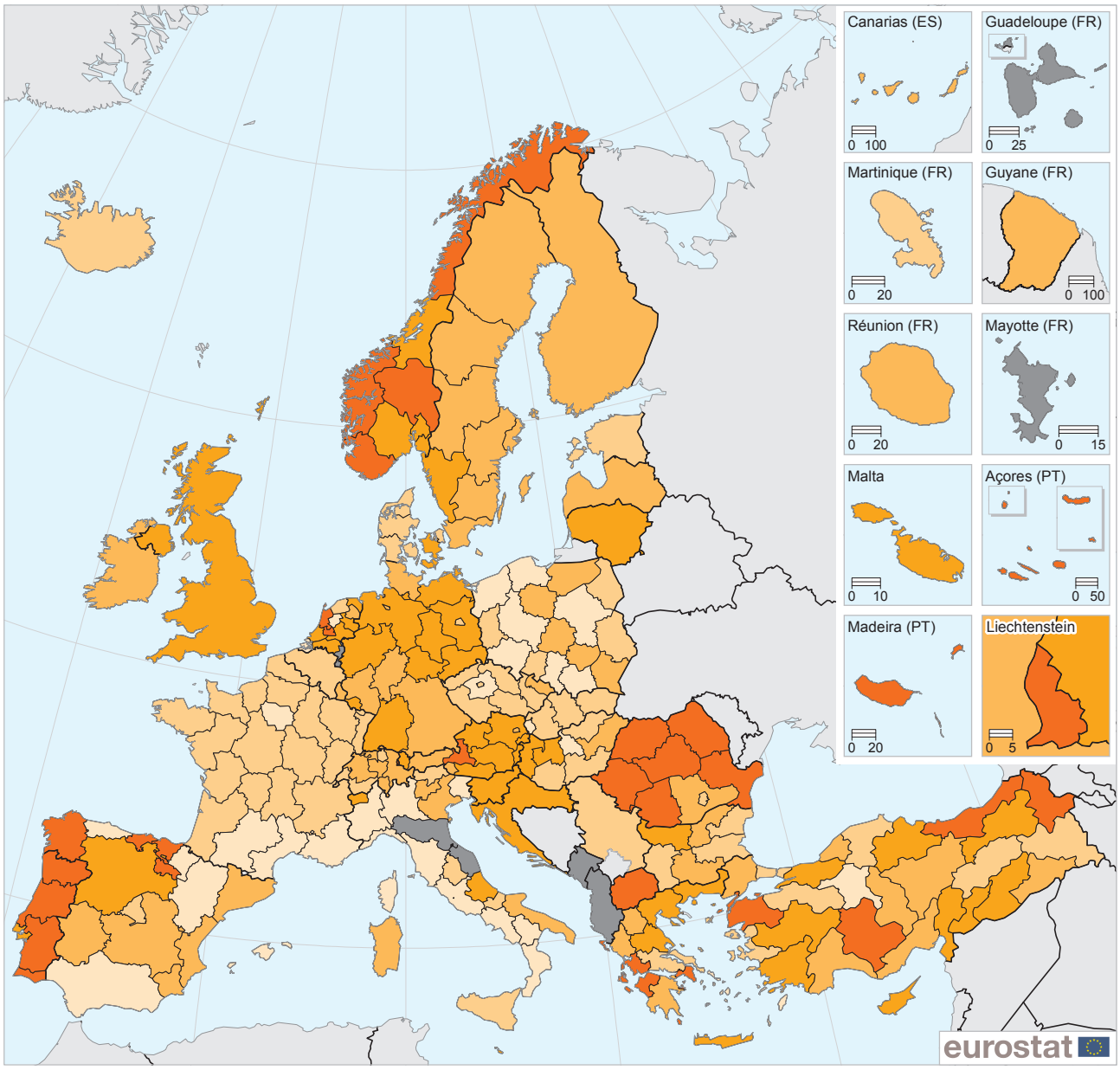
Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat - GISCO, 07/2017

0 200 400 600 800 km

Note: Germany: NUTS level 1. Slovenia, the United Kingdom, Albania and Serbia: national data. Voreia Ellada (EL5), Kentriki Ellada (EL6), Départements d'outre-mer (FRA), Italy, Portugal and Albania: 2013. Denmark, Portugal and Albania: estimates.

Source: Eurostat (online data codes: hlth_rs_bdsrg and hlth_rs_bds)

Map 3.4: Change in the number of (practising) physicians per 100 000 inhabitants, by NUTS 2 regions, 2004–2014
(%)



(%)

< 0
0 – < 10
10 – < 20
20 – < 30
>= 30
Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat - GISCO, 03/2017

0 200 400 600 800 km

Note: in the context of comparing health care services across EU Member States, Eurostat gives preference to the concept of practising physicians. Greece, France, the Netherlands, Slovakia, Finland, the former Yugoslav Republic of Macedonia, Serbia and Turkey: professionally active physicians. Portugal: physicians licensed to practise. Germany: NUTS level 1. Belgium, Ireland, Croatia, Slovenia, Finland, the United Kingdom and Serbia: national data. The Czech Republic, Voreia Ellada (EL5), Kentriki Ellada (EL6) and Départements d'outre-mer (FRA): 2004–2013. Sweden: 2004–2012. Denmark: 2007–2013. Turkey: 2008–2014. Malta: 2009–2014. Ireland, Cyprus and the United Kingdom: estimate. Ireland, France, Italy, Cyprus, Latvia, Luxembourg, Hungary, Malta, Poland, Finland, the United Kingdom, Norway, Switzerland and Turkey: break in series.

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

The number of physicians per head of population increased by 30 % or more between 2004 and 2014 in in many regions of Greece, Spain, Portugal and Romania

In 2014, there were approximately 1.78 million physicians in the EU-28, approximately 350 per 100 000 inhabitants. The number of physicians increased by approximately 240 thousand between 2004 and 2014, equivalent to an overall increase of around 16 % on the basis of absolute numbers and 12 % in terms of the per head ratio.

Regions of the EU where the ratio of physicians to population increased by 30 % or more between 2004 and 2014 (the darkest shade in Map 3.4) were mainly concentrated in Portugal, Spain and Greece (2004–2013 for some regions) in the south and Romania in the east, although this pattern was also apparent within a few regions of the Netherlands and Austria. In contrast to these 22 regions with relatively high increases, there were 33 regions (out of a total of 192 EU regions for which data are available) where the ratio of physicians to population fell. It should however be noted that in many of these regions that reported lower accessibility in 2014, there was a break in series, namely regions in France, Italy, Hungary and Poland. Focusing on regions where there was not a break in series, the ratio of physicians to population fell between 2004 and 2014 in six Spanish regions, two Dutch regions and a single region each in the Czech Republic (2004–2013), Greece and Slovakia.

By 2014 the Greek capital city region had by far the highest number of physicians relative to population size, 870 per 100 000 inhabitants. This region recorded one of the highest percentage increases in its number of physicians per 100 000 inhabitants between 2004 and 2014 (rising 38.1 %) and also the highest absolute increase, with an additional 240 physicians per 100 000 inhabitants in 2014 compared with 2004. The three regions with the next highest ratios in 2014 were also capital city regions, those of the Czech Republic (2013 data), Austria and Slovakia, all with ratios in the range 678–695 physicians per 100 000 inhabitants. The list of regions with more than 600 physicians per 100 000 inhabitants in 2014 was completed by Hamburg (Germany), and two more Greek regions (Kriti and Kentriki Makedonia (2013 data)).

Six regions in the EU reported less than 200 physicians per 100 000 inhabitants in 2014: there were two regions from each of the Netherlands (which had the two lowest rates of all), Poland and Romania. Interestingly, among these six regions was the Sud-Est region of Romania which reported a high rate of increase (31.5 %) between 2004 and 2014.

HEALTH DETERMINANTS

Issues related to diet, exercise, alcohol and tobacco consumption play a major role in a person's health and significantly impact on the likelihood of many chronic diseases; these diseases in turn have substantial costs for society as a whole. Figures 3.4 to 3.8 present various health determinants with an analysis by degree of urbanisation (more information on this classification is provided in the introductory chapter).

Large variation by degree of urbanisation in the share of adults in the Czech Republic who were obese

Weight problems and obesity are increasing at a rapid rate in most of the EU Member States. As well as increasing the risk of chronic diseases, obesity may be linked to a wide range of psychological problems. The proportion of adults — defined here as people aged 18 and over — in the EU-28 who were obese in 2014 was 15.9 %, about one in six of the adult population. Among the EU Member States, the prevalence of obesity ranged from 9.4 % in Romania (which was the only Member State where the rate was below 10.0 %) to 20–22 % in the United Kingdom, Estonia, Hungary and Latvia, and peaked at 26.0 % in Malta.

2014

15.9 %
of the adult population in the EU are obese

Body mass index

The body mass index (BMI) is a measure of a person's weight relative to their height that links fairly well with body fat. The BMI is accepted as the most useful measure of obesity for adults when only weight and height data are available. It is calculated as a person's weight (in kilograms) divided by the square of his or her height (in metres).

BMI = weight (kg) / height (m^2)

The following subdivision (according to the WHO) is used to classify results for the BMI:

- < 18.50: underweight;
- 18.50 – < 25.00: normal weight;
- 25.00 – < 30.00: pre-obese;
- >= 30.00: obese.

The prevalence of obesity in the EU-28 in 2014 was slightly lower in cities (15.0 %) than in towns and suburbs (15.6 %) and higher in rural areas (17.3 %). This basic pattern — lower prevalence in cities and higher in rural areas — was observed in the vast majority of EU Member States (see Figure 3.4). In Belgium, the lowest prevalence was observed in towns and suburbs rather than cities, while in Poland, Austria and Romania the reverse was true, with the highest prevalence in towns and suburbs. The two remaining exceptions were Sweden and the United Kingdom, where the situation was the direct opposite of the general pattern observed for the EU-28, as the highest prevalence of obesity was in cities and the lowest in rural areas.

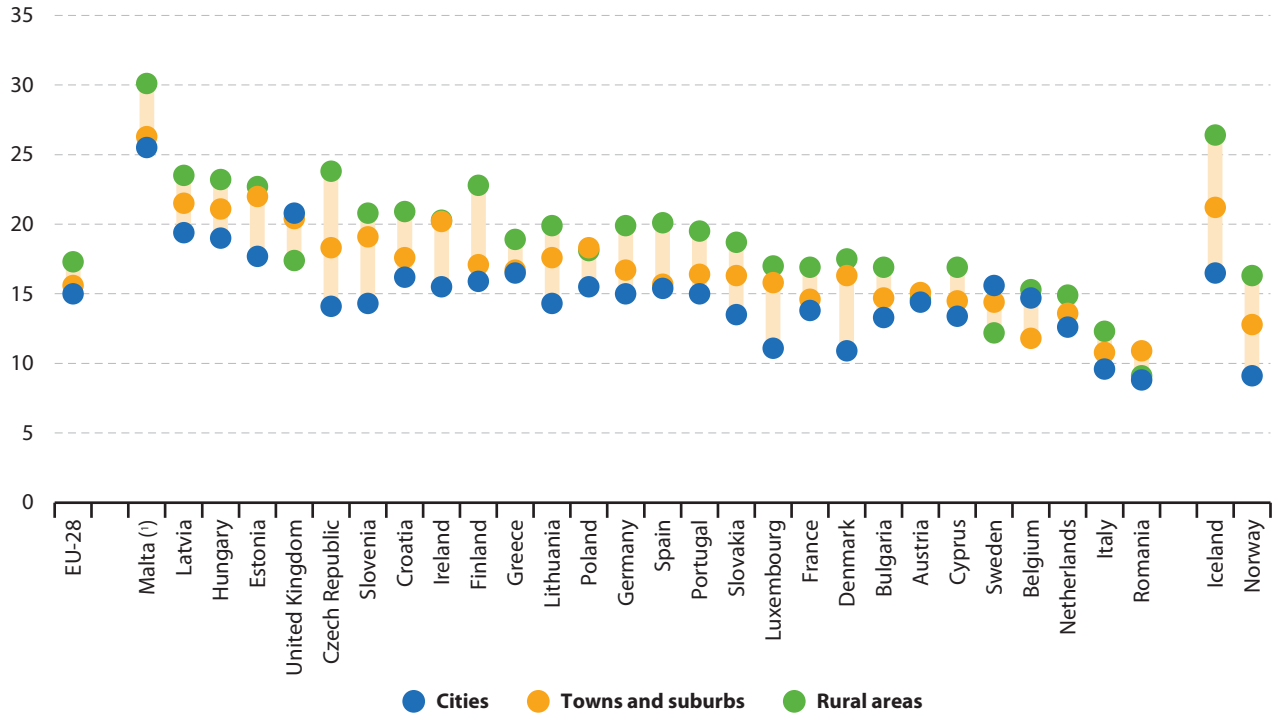
The range in the prevalence of obesity between the three different degrees of urbanisation was less than 5.0 percentage points in most EU Member States, with the most homogeneous situation in Austria where there was just 0.7 percentage points difference between the rates observed. By contrast, in the Czech Republic the share of adults who were obese in rural areas (23.8 %) was 9.7 percentage points higher than the share in cities (14.1 %).

Varied patterns in regular exercise between Member States when analysed by degree of urbanisation

Exercise strengthens the body and improves mental well-being as well as helping to reduce or maintain a person's weight. The data presented in Figure 3.5 are based on self-reported levels of regular physical exercise and show the proportion of persons (aged 15 and over) who undertook at least 150 minutes (two and a half hours) of health-enhancing (non-work-related) aerobic physical exercise (including walking and cycling for transportation, and sports, fitness and leisure physical activities; excluding physical activities at work) per week; data are not available for Belgium and the Netherlands.

In the EU-28, the share of regular exercisers was just less than one third (30.8 %). People in the Nordic Member States were the most likely (around 54–55 %) to undertake such regular exercise, while the lowest shares (less than 25.0 %) of regular exercise were observed in several eastern and southern Member States and in the Baltic Member States, dropping below 10.0 % in Bulgaria and Romania.

Figure 3.4: Share of people aged 18 and over who were obese, by degree of urbanisation, 2014
(%)



Note: ranked on national averages.

(!) Rural areas: low reliability.

Source: Eurostat (online data code: hlth_ehis_bm1u)

The share of the population aged 15 and over undertaking regular exercise in the EU-28 in 2014 was slightly higher in towns and suburbs (32.8 %) than in cities (31.7 %) and lower in rural areas (27.3 %). This basic pattern — a lower share in rural areas and a higher share in towns and suburbs — was observed in only six of the EU Member States (Greece, France, Italy, Hungary, Austria and Finland). The Czech Republic and Estonia were unusual in that the lowest share of their populations aged 15 and over undertaking regular exercise was observed in cities and the highest in towns and suburbs. By contrast, the highest share of regular exercisers was recorded among those people living in cities in 13 of the Member States (and in all of these cases the lowest share was in rural areas). In five Member States — Luxembourg, Malta, Romania, Sweden and the United Kingdom — the highest share of the population undertaking regular exercise was in rural areas.

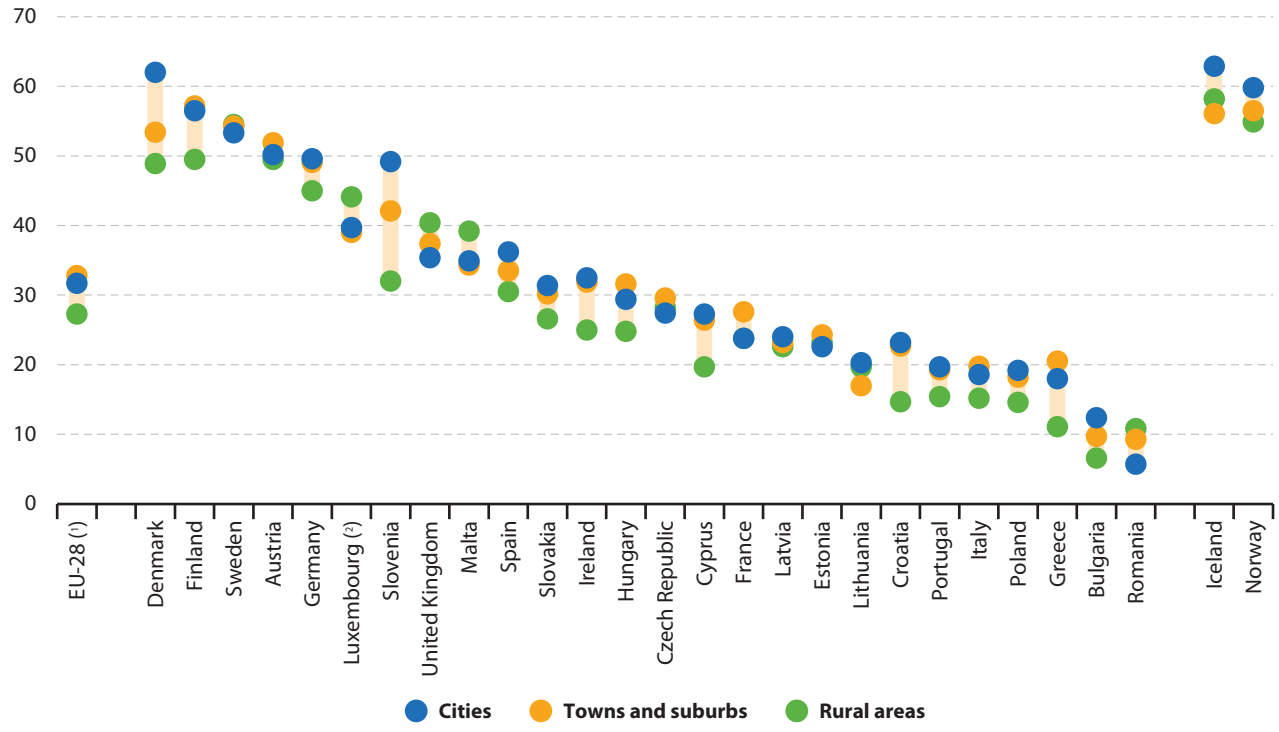
Based on an analysis by degree of urbanisation, there was a particularly large range in terms of the share of the population aged 15 and over undertaking regular exercise in Slovenia and Denmark (as shown in Figure 3.5); in both cases, the lowest shares were recorded for rural areas and the highest for cities. The share of the population that exercised regularly was more homogenous (across the three degrees of urbanisation) in Sweden, the Baltic Member States, the Czech Republic and Austria.

One in three people aged 15 and over in the United Kingdom ate at least five portions of fruit and vegetables per day

Alongside exercise, another issue linked with being overweight and with obesity is diet, which also plays a role in reducing the risk of a number of chronic illnesses, including circulatory diseases, diabetes and some cancers. The main components of diet are carbohydrates, proteins, unsaturated fats, vitamins, minerals, fibre and water; the levels of consumption of meat, fish, dairy products, cereals (grains), and fruit and vegetables play an important role in achieving a balanced and healthy diet.

Figure 3.5: Share of people aged 15 and over who spent 150 minutes or more per week on health-enhancing (non-work-related) aerobic physical exercises, by degree of urbanisation, 2014

(%)



Note: ranked on national averages. Belgium and the Netherlands: not available.

(1) Estimates.

(2) Towns and suburbs: low reliability.

Source: Eurostat (online data code: hlth_ehis_pe2u)

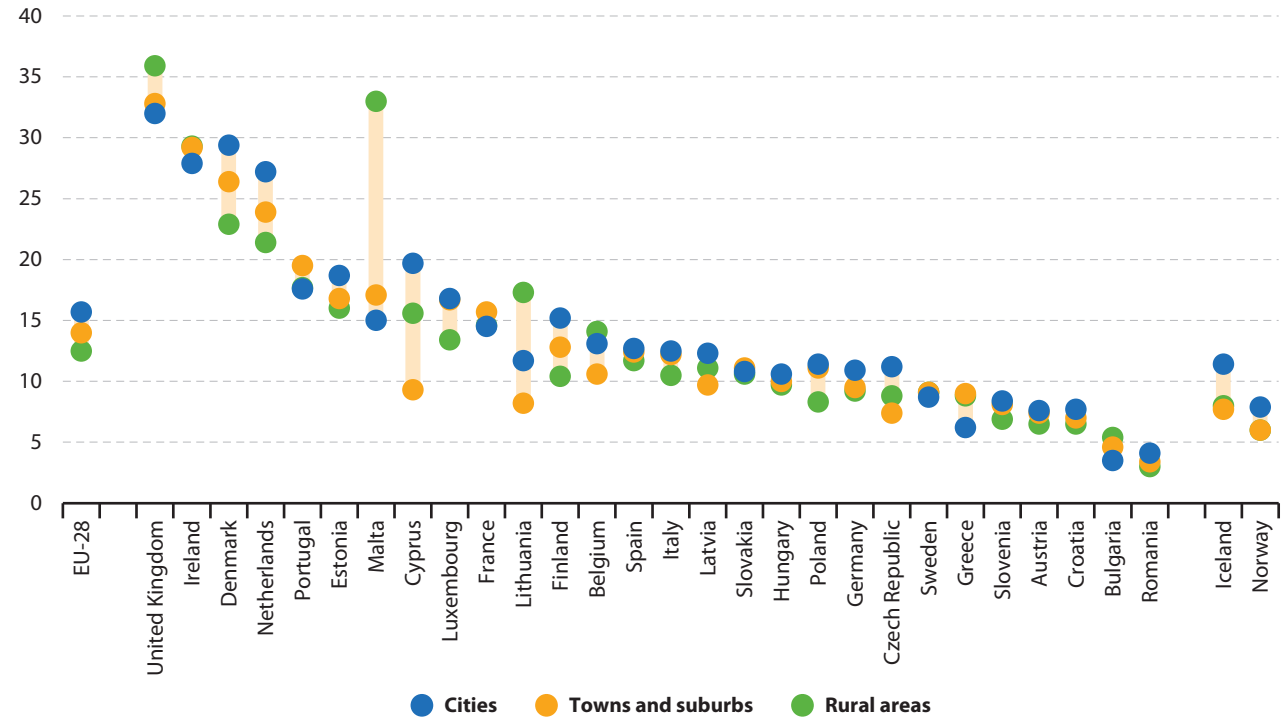
The proportion of persons aged 15 and over in the EU-28 who ate at least five portions of fruit and vegetables per day in 2014 was 14.3 %, equivalent to one in seven of the population. Among the EU Member States, this share ranged from less than 5.0 % in Bulgaria and Romania to a quarter or more in the Netherlands, Denmark and Ireland, peaking at close to one third (33.1 %) in the United Kingdom.

The share of the population aged 15 and over who ate five or more portions of fruit and vegetables per day in the EU-28 in 2014 was higher in cities (15.7 %) than in towns and suburbs (14.0 %), which in turn was higher than in rural areas (12.5 %) — see Figure 3.6. This basic pattern was observed in half (14) of the EU Member States. By contrast, the highest proportion of people aged 15 and over who ate five or more portions of fruit and vegetables per day was recorded for rural areas in Belgium, Bulgaria, Ireland, Lithuania, Malta, Sweden (joint highest with towns and suburbs) and the United Kingdom. Belgium and Lithuania were also unusual in that their lowest shares of the population aged 15 and over who ate five or more portions of fruit and vegetables per day were observed in towns and suburbs, which was also the case in the Czech Republic, Cyprus and Latvia. The reverse was true in Greece, France, Portugal and Slovakia, where their highest shares were recorded for town and suburbs (with their lowest shares often observed in cities).

An analysis by degree of urbanisation reveals that the consumption of five or more portions of fruit and vegetables per day was fairly uniform in Sweden and Slovakia, whereas there were large differences observed in Malta and to a lesser extent Cyprus and Lithuania: in Malta and Lithuania the share of the population aged 15 and over who ate five or more portions of fruit and vegetables per day was substantially higher in rural areas than elsewhere, whereas in Cyprus it was substantially lower in towns and suburbs.

Figure 3.6: Share of people aged 15 and over who ate five portions or more of fruit and vegetables per day, by degree of urbanisation, 2014

(%)



Note: ranked on national averages.

Source: Eurostat (online data code: hlth_ehis_fv3u)

Weekly drinking of alcohol consistently high across the three degrees of urbanisation in Belgium

Alcohol abuse is associated with a number of medical conditions as well as posing further health risks through an increased likelihood of accidents, violence and suicide. Nearly two fifths (38.8 %) of people aged 15 and over in the EU-28 consumed alcohol every week in 2014. This proportion was generally lower in the Baltic Member States as well as the eastern and southern Member States, with the notable exception of the Czech Republic and to a lesser extent Portugal. By contrast, the proportion of people consuming alcohol on a weekly basis was generally higher in western (no data available for France or the Netherlands) and Nordic Member States, with more than half of people aged 15 and over drinking alcohol on a weekly basis in Luxembourg, Denmark, Belgium and the United Kingdom.

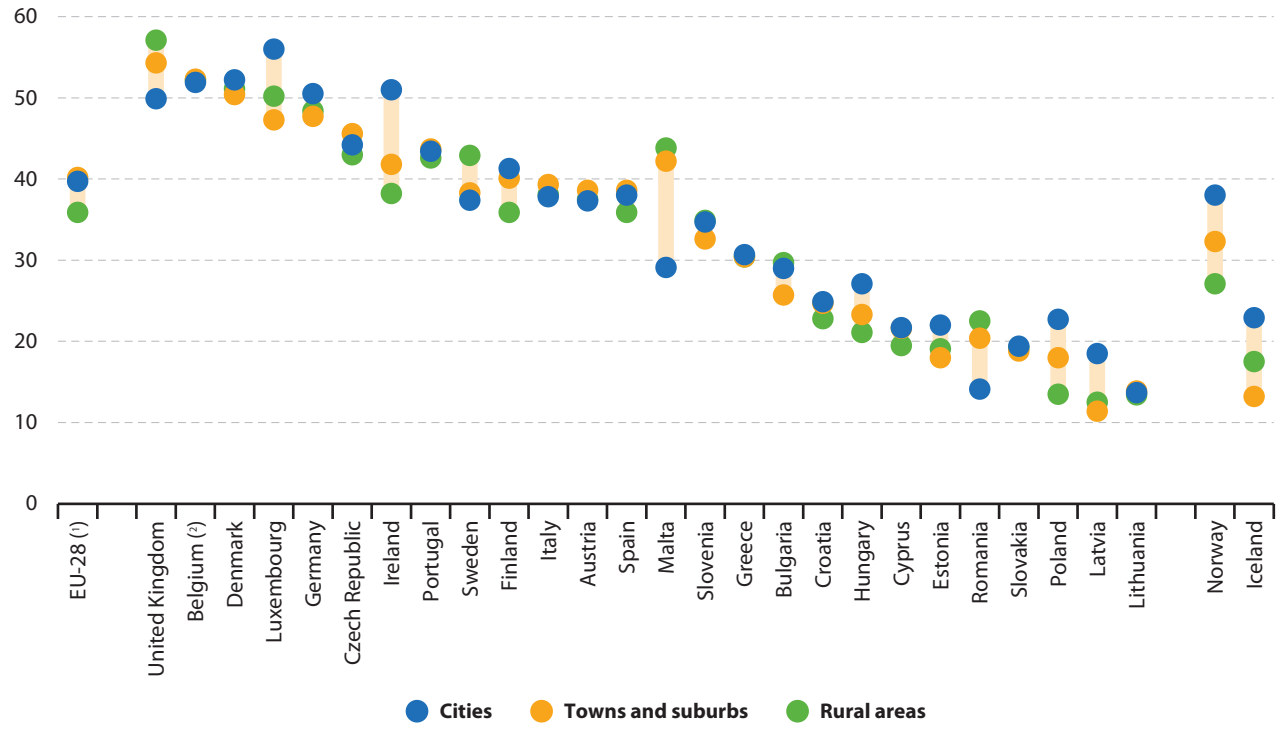
Just over two fifths (40.2 %) of people aged 15 and over living in tows and suburbs in the EU-28 consumed alcohol every week, with the share slightly lower in cities (39.7 %) and notably lower in rural areas (35.9 %) — see Figure 3.7. These averages for the EU-28 reflect quite different situations among the EU Member States, as in only four cases — the Czech Republic, Spain, Lithuania and Portugal — was a similar pattern found.

It was generally more common for the highest share of weekly drinkers of alcohol to be found in cities, which was the case in 13 Member States, with seven of these reporting the lowest share in rural areas and six in towns and suburbs. The next most common pattern was for the highest share of weekly drinkers to be found for people living in rural areas which was the case in six Member States, four reporting their lowest share in cities and two in towns and suburbs.

The share of weekly drinkers of alcohol varied by less than 1.0 percentage points between the three degrees of urbanisation in Slovakia, Lithuania, Belgium and Greece: in Belgium the shares were consistently high (with more than half of the population consuming alcohol at least once every week for all three degrees of urbanisation), whereas in Slovakia and Lithuania the proportion of people consuming alcohol on a weekly basis was consistently low (less than one fifth of the population for all three degrees of urbanisation). Malta and Ireland showed the greatest diversity, but with opposite patterns: in Ireland the share of weekly drinkers of alcohol was particularly high in cities (51.0 %) and relatively low (38.2 %) in rural areas, while in Malta the share of weekly drinkers peaked in rural areas (43.8 %) where it was 50 % higher than in cities (29.1 %).

Figure 3.7: Share of people aged 15 and over who consumed alcohol at least once every week, by degree of urbanisation, 2014

(%)



Note: ranked on national averages. France and the Netherlands: not available.

(1) Estimates.
(2) Cities: low reliability.

Source: Eurostat (online data code: hlth_ehis_al1u)

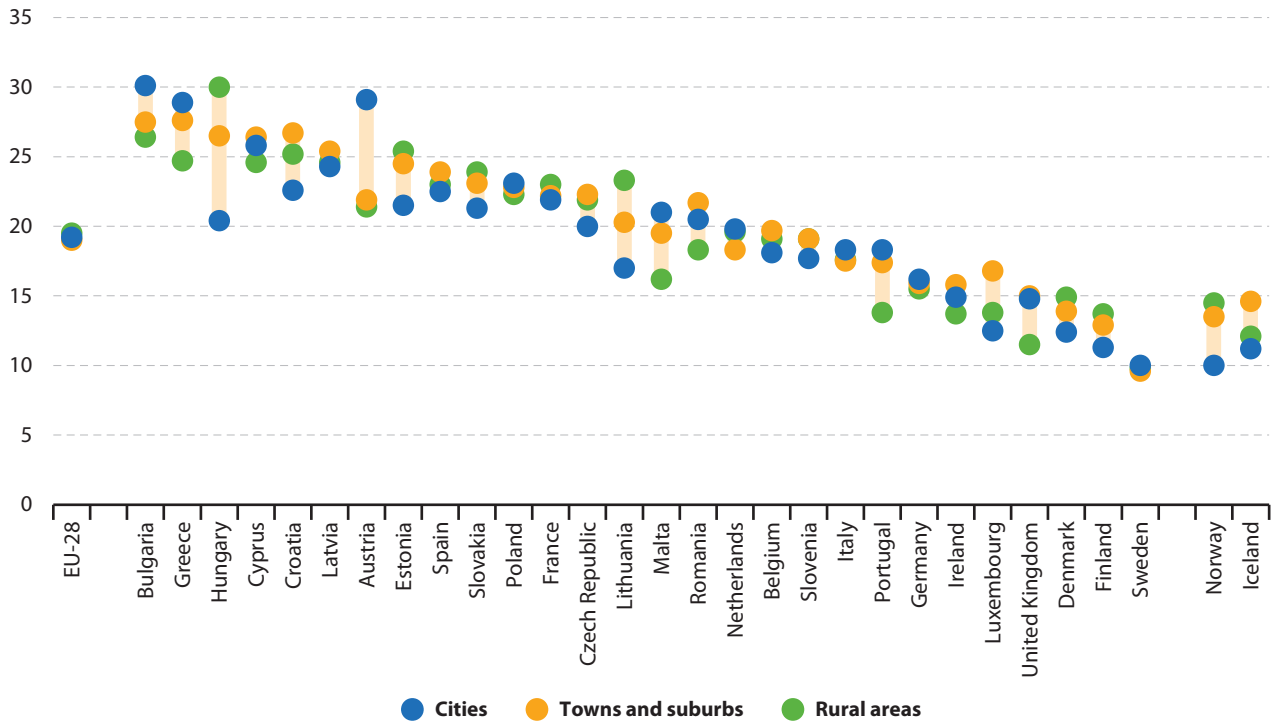
Prevalence of daily cigarette consumption in the EU fairly similar when analysed by degree of urbanisation

The final part of this analysis of health determinants presents statistics on the proportion of persons aged 15 and over who were daily smokers of cigarettes (see Figure 3.8). In many developed countries the prevalence of smoking has stabilised or declined in recent decades. According to the World Health Organisation (WHO), tobacco is one of the biggest public health threats, killing nearly six million people a year. The European Commission's Directorate-General for Health and Food Safety describes tobacco consumption as 'the single largest avoidable health risk in the European Union' and many forms of cancer, cardiovascular and respiratory diseases are linked to tobacco use. Around half of all smokers are estimated to die prematurely, while smokers may raise the burden of health care considerably.

In 2014, just fewer than one in five (19.2 %) people aged 15 and over in the EU-28 were daily smokers, with this share ranging from just under one tenth (9.8 %) in Sweden to a quarter or more of the population in Croatia, Cyprus, Hungary, Greece and Bulgaria. More generally, the lowest shares of daily smokers were observed in the Nordic Member States with relatively low shares also found in most western EU Member States, with the exception of Austria (24.3 %) and to a lesser extent France (22.4 %).

Within the EU-28 as a whole there was relatively little variation in the extent of daily smoking between the three degrees of urbanisation (as presented in Figure 3.8): whereas 19.0 % of people aged 15 and over in towns and suburbs reported that they were daily smokers in 2014, the share in rural areas was only 0.5 percentage points higher (19.5 %), with the share in cities (19.2 %) lying between these two values; none of the EU Member States displayed the same pattern as that observed for the EU-28 as a whole. In only eight Member States (mainly in the east or north) was the share of daily smokers highest in rural areas, as it was in the EU-28 as a whole. The other 20 Member States were split evenly between those where cities had the highest share of daily smokers and those where towns and suburbs had the highest share. The lack of a dominating pattern reflects the fact that the share of daily smokers was relatively homogeneous across the three different degrees of urbanisation. This was particularly the case in two of the largest Member States — Germany and Italy — as well as in Sweden and Poland, where the range between the highest and lowest shares was less than 1.0 percentage points. By contrast, the greatest diversity for the share of daily smokers was recorded in Hungary and Austria, although they had opposing patterns: in Hungary, the highest share of daily smokers was recorded in rural areas (and the lowest in cities), whereas this pattern was reversed in Austria (with the highest share recorded in cities and the lowest in rural areas).

Figure 3.8: Share of people aged 15 and over who were daily smokers, by degree of urbanisation, 2014
(%)



Note: ranked on national averages.

Source: Eurostat (online data code: hlth_ehis_sk1u)

Data sources and availability

CAUSES OF DEATH

Since reference year 2011, data for causes of death have been provided under a specific legal basis, Regulation No 1338/2008 of the European Parliament and of the Council of 16 December 2008 on Community statistics on public health and health and safety at work and implementing Regulation No 328/2011 of 5 April 2011 on Community statistics on public health and health and safety at work, as regards statistics on causes of death. The information presented on causes of death relates to standardised death rates, averaged over the three-year period of 2011–2013.

For more information:
http://ec.europa.eu/eurostat/cache/metadata/en/hlth_cdeath_esms.htm

HEALTHCARE RESOURCES

Non-expenditure healthcare data, shown here for hospital beds and the number of physicians, are submitted to Eurostat on the basis of a gentlemen's agreement, as there is currently no implementing legislation covering statistics on healthcare resources as specified within Regulation (EC) No 1338/2008. These data are mainly based on national administrative sources and therefore reflect country-specific ways of organising health care and may not always be completely comparable; a few countries compile their statistics from surveys.

For more information:
http://ec.europa.eu/eurostat/cache/metadata/en/hlth_act_esms.htm

HEALTH DETERMINANTS

The data presented for health determinants are derived from the European health interview survey (EHIS). It aims to provide harmonised statistics across the EU Member States in relation to the respondents' health status, lifestyle (health determinants) and their use of and access to healthcare services. The general coverage of the EHIS is the population living in private households (who are residents at the time of data collection); it therefore excludes people living in collective households and institutions. Data generally refer to the population aged 15 years or over (although information pertaining to obesity cover those aged 18 years and over).

For more information:
http://ec.europa.eu/eurostat/statistics-explained/index.php/European_health_interview_survey_-_methodology

NUTS

The data presented in this chapter are based exclusively on the 2013 version of NUTS.

The data presented on causes of death are generally available for NUTS level 2 regions, covering the resident population of each territory. Only national data are available for Slovenia, while there are no data available for the French Départements d'outre-mer (FRA), nor for London (UKI).

The data concerning regional healthcare resources (hospital beds and physicians) are generally available for NUTS level 2 regions; they were converted from NUTS 2010. This conversion has had the following consequences: data for the French regions of Guadeloupe (FRA1) and Mayotte (FRA5) are not available; only national data are available for Slovenia. Non-expenditure healthcare data are generally presented for NUTS level 2 regions, with some exceptions.

INDICATOR DEFINITIONS

Glossary entries on Statistics Explained (see: http://ec.europa.eu/eurostat/statistics-explained/index.php/Category:Health_glossary) are available for a wide range of health-related concepts/indicators.

For more information:
http://ec.europa.eu/eurostat/web/health/overview

4 Education and training

Education, vocational training and more generally lifelong learning play a vital role in the economic and social strategies of the European Union (EU). This chapter presents data following the natural progression through different levels of the education system (following the international standard classification of education (ISCED)) and also analyses transitions into the labour force, with data on: participation rates among four year-olds, students in vocational training, the proportion of early leavers from education and training, the share of young people neither in employment nor in education or training (NEET), the share of persons aged 30–34 with a tertiary level of educational attainment and employment rates of recent graduates.

Education and training are crucial for both economic and social progress. Aligning skills with labour market needs plays a key role and is increasingly important in a globalised and knowledge-driven economy, where a skilled workforce is necessary to compete in terms of productivity, quality, and innovation. Each EU Member State is largely responsible for its own education and training systems and the content of its teaching programmes (curricula). The EU supports national actions and helps Member States to address common challenges through what is known as the 'open method of coordination': it offers a policy forum for discussing topical issues (for example, ageing societies, skills deficits, or global competition) and provides Member States with an opportunity to exchange best practices.

Main statistical findings

- **A majority of the regions in France and England (the United Kingdom) reported that practically all four year-olds participated in pre-primary or primary education in 2015.**
- **In four regions of the EU, more than three quarters of all upper secondary students participated in vocational education in 2015: Severozápad and Jihozápad in the Czech Republic, Oberösterreich in Austria, and Vzhodna Slovenija in Slovenia.**
- **In 2016, the share of early leavers (aged 18–24) from education and training stood at 10.7 % for the EU-28, which was 4.6 percentage points lower than 10 years earlier. There were very low shares of early leavers from education and training in several eastern regions of the EU.**
- **There were three regions in the EU where the NEET rate was over 40 % in 2016: Sicilia in Italy, the French overseas region of Guyane, and Severozapaden in Bulgaria.**
- **The highest regional employment rates in the EU in 2016 for recent graduates were in Zeeland and Utrecht in the Netherlands, while the lowest rates were in Campania, Sicilia and Calabria in Italy.**

POLICY INITIATIVES

A strategic framework for European cooperation in education and training (ET 2020) was set out by the Council of the European Union (2009/C 119/02) in May 2009. This framework comprises four strategic objectives for education and training: making lifelong learning and mobility a reality; improving the quality and efficiency of education and training; promoting equality, social cohesion and active citizenship; and enhancing creativity and innovation (including entrepreneurship) at all levels of education and training. To reach these objectives, ET 2020 set a number of benchmarks to be achieved by 2020 and these are subject to regular statistical monitoring and reporting. Further details are provided in the Box titled 'Education and training 2020 and Europe 2020 targets'. Drawing on this work, the European Commission made a proposal for six new priorities covering the period 2016–2020. These were adopted in November 2015 and concern:

- relevant and high-quality knowledge, skills and competences developed through lifelong learning, focusing on learning outcomes for employability, innovation, active citizenship and well-being;
- inclusive education, equality, equity, non-discrimination and the promotion of civic competences;
- open and innovative education and training, including by fully embracing the digital era;
- strong support for teachers, trainers, school leaders and other educational staff;
- transparency and recognition of skills and qualifications to facilitate learning and labour mobility;
- sustainable investment, quality and efficiency of education and training systems.

For more information:
Strategic framework — education and training 2020 (ET 2020)
Joint report of the Council and the Commission on the implementation of the strategic framework for European cooperation in education and training (ET 2020) — New priorities for European cooperation in education and training

Statistical analysis

There is no harmonised concept of compulsory education in the EU Member States. Nevertheless, it is widely accepted that a basic level of education is desirable, so that everyone has the opportunity to participate in economic and social life, raising their chances of finding employment and reducing their risk of falling into poverty. In 2015, there were approximately 110 million children, pupils and students enrolled across all levels of education in the EU (ISCED levels 0–8), from early childhood education through to postgraduate studies.

Education and training 2020 and Europe 2020 targets

Each EU Member State is responsible for its own education and training policy. The EU supports national actions and helps address common challenges, such as skills deficits in the workforce or technological developments, through its education and training 2020 (ET 2020) framework. This provides a forum for sharing information and exchanging best practices through a series of working groups. ET 2020 has four common objectives: making lifelong learning and mobility a reality; improving the quality and efficiency of education and training; promoting equity, social cohesion and active citizenship; and enhancing creativity and innovation, including entrepreneurship.

As part of the ET 2020 framework, a number of EU benchmarks have been set for 2020:

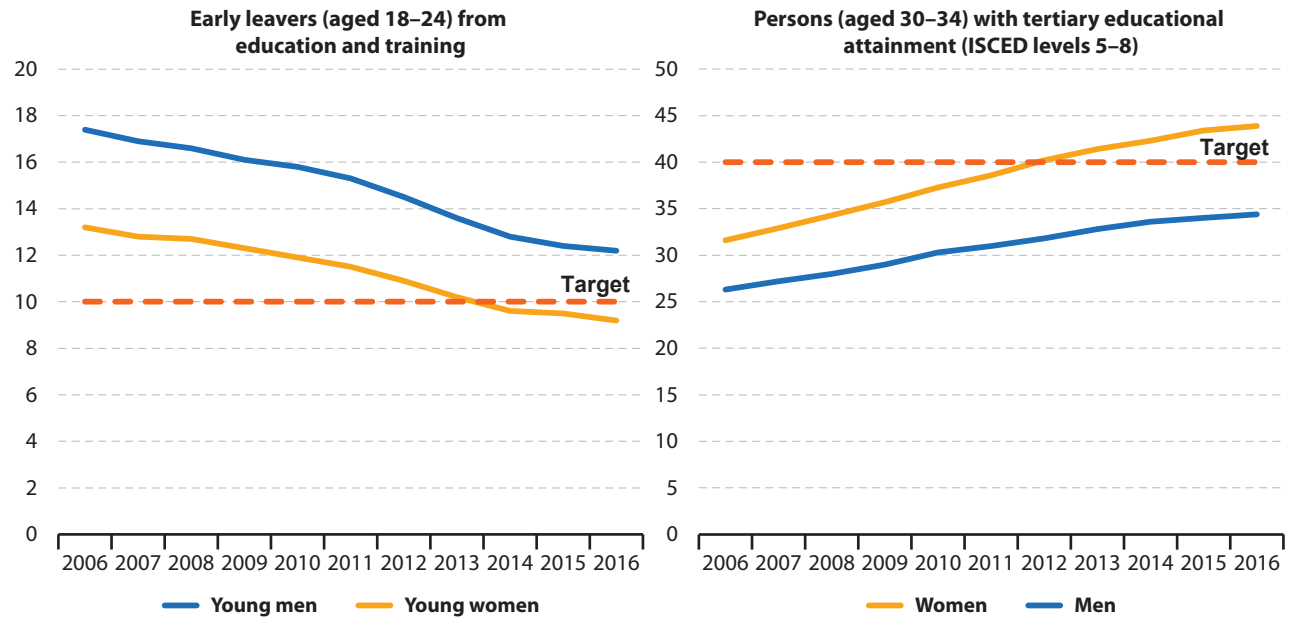
- at least 95 % of children from the age of four to the compulsory school age should participate in early childhood education;
- the share of 15 year-olds with insufficient abilities in reading, mathematics and science should be less than 15 %;
- the share of early leavers (aged 18–24) from education and training should be less than 10 %*;
- at least 40 % of people (aged 30–34) should have completed higher education*;
- at least 15 % of adults (aged 25–64) should participate in lifelong learning initiatives;
- at least 20 % of higher education graduates should have had a period of higher education-related study or training (including work placements) abroad, representing a minimum of 15 European credit transfer and accumulation system (ECTS) credits or lasting a minimum of three months;
- at least 6 % of young people (aged 18–34) with an initial vocational education and training qualification should have had an initial vocational education and training (VET) related study or training period (including work placements) abroad lasting a minimum of two weeks;
- the share of employed students/graduates (aged 20–34) with an upper secondary or higher level of educational attainment and who left education between one and three years ago should be at least 82 %.

The Europe 2020 strategy also provides a set of targets which are designed to help achieve smart, sustainable and inclusive growth in the EU. Education is one of five pillars which are central to the strategy, with two specific targets used to monitor the EU's progress; both targets are also ET 2020 benchmarks and they are marked in the list above with an asterisk (*). Note that while these targets have been set for the EU as a whole, they have been translated into different national (and sometimes regional) targets, which reflect the situation/circumstances of each EU Member State (or region).

Figure 4.1 presents information for one of these targets, namely, the share of early leavers (aged 18–24) from education and training. Early leaver rates are often highest among children/young adults who: are at risk of poverty and social exclusion; have special educational needs; experience gender or family-related issues; or are from migrant backgrounds. Indeed, a wide range of socioeconomic factors may impact on vulnerable individuals from early childhood, reinforcing their cumulative disadvantage. Both the ET 2020 and the Europe 2020 strategy aim to reduce the proportion of early leavers from education and training to below 10 % by 2020. The latest data available shows that this ratio averaged 10.7 % across the EU-28 in 2016, which marked a reduction of 4.6 percentage points compared with a decade earlier (2006). Among young women, the share of early leavers in the EU-28 was below the target threshold, standing at 9.2 % in 2016, while the rate for young men was 3.0 percentage points higher, at 12.2 %. The gender gap between the sexes narrowed somewhat between 2006 and 2016, as the difference between the sexes had been 4.2 percentage points in 2006.

Most Europeans spend considerably more time in education than the legal minimum requirements and the second part of Figure 4.1 presents information on people aged 30–34 with a higher/tertiary level of educational attainment (as defined by ISCED levels 5–8). There was a relatively rapid increase in tertiary educational attainment reflecting policy initiatives to encourage more young people to remain within education and training (not only in academic studies, but also in apprenticeships/vocational training) and wider participation in lifelong learning initiatives; through lifelong learning, adults return to education or training and thereby (re)train/(re)equip themselves for a (different) career or interest. Both the ET 2020 and the Europe 2020 strategy aim to increase tertiary education attainment so it covers at least 40 % of the population aged 30–34 by 2020. The latest data show that this ratio averaged 39.1 % across the EU-28 in 2016, which marked an increase of 10.1 percentage points compared with a decade earlier (2006). The share of women (aged 30–34) with tertiary educational attainment in the EU-28 was above the target threshold, standing at 43.9 % in 2016, while the rate for men was 9.5 percentage points lower, at 34.4 %. The gender gap for this indicator widened between 2006 and 2016 as the difference between the sexes had been 5.3 percentage points in 2006.

Figure 4.1: Progress towards the Europe 2020 education targets, EU-28, 2006–2016
(%)



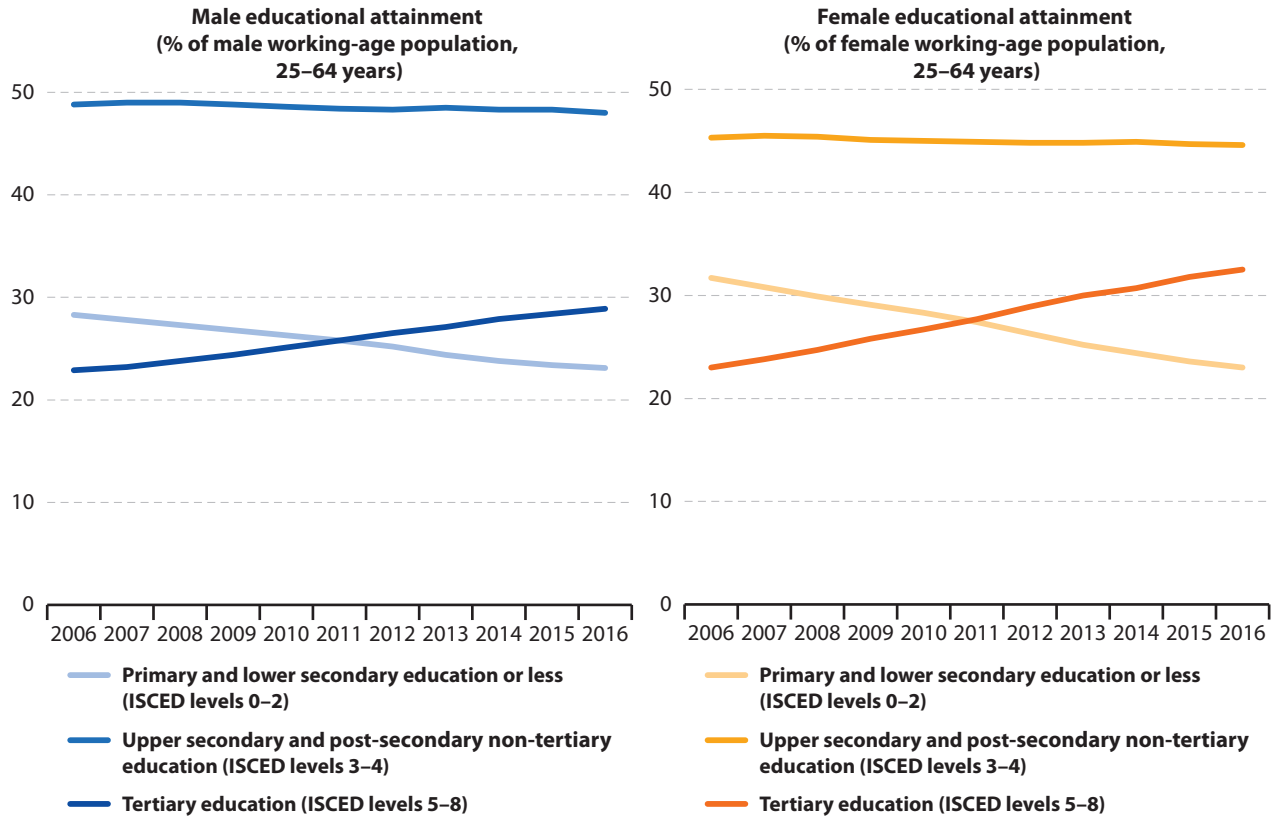
Note: 2014, break in series. The scales of the y-axes are different.
Source: Eurostat (online data codes: edat_lfse_14 and edat_lfse_03)

An alternative analysis of educational attainment patterns across the EU-28 is presented in Figure 4.2. It shows the attainment of the working-age population — defined here as those aged 25–64 — by sex. The bottom end of this age range was set at 25 years as this is an age by which most students have completed their studies and have therefore generally reached their highest level of attainment. Using a younger age (for example, 20) would include many students that would still be studying and would therefore not yet have reached their highest level of attainment.

In the EU-28, almost half (46.3 %) of the working-age population had an upper secondary or post-secondary non-tertiary level of educational attainment in 2016, while approximately three tenths (30.7 %) had a tertiary level of educational attainment, leaving slightly less than one quarter (23.0 %) of the working-age population with no more than a lower secondary level of educational attainment. It is noteworthy that the share of the subpopulation aged 30–34 with a tertiary level of educational attainment was 8.4 percentage points higher than the average for the whole of the working-age population (25–64 years) in 2016, providing further evidence of the recent rapid uptake of higher education opportunities by young people.

Figure 4.2 shows that during the period 2006–2016 there was a rapid reduction in the proportion of working-age people in the EU-28 with no more than a lower secondary level of educational attainment, while there was a corresponding increase in the proportion of working-age people with a tertiary level of educational attainment. This development was observed for both sexes, although the rates of change recorded for women were greater.

Figure 4.2: Developments in educational attainment among people aged 25–64, by sex, EU-28, 2006–2016
(%)



Note: 2014, break in series.

Source: Eurostat (online data code: edat_lfse_03)

PARTICIPATION OF FOUR YEAR-OLDS

Early childhood and primary education play an essential role in tackling inequalities and raising proficiency in basic competences. The ET 2020 strategic framework has set a headline target, whereby at least 95 % of children between the age of four and the age for starting compulsory primary education should participate in early childhood education. Note the legal age for starting within the education systems of the EU Member States varies somewhat: compulsory education begins at age four in Luxembourg and Northern Ireland (the United Kingdom), while in other EU regions/Member States it starts between five and seven years of age. Enrolment in pre-primary education is generally voluntary across most of the Member States. Note also that these ratios are calculated on the basis of data from two distinct sources (regional education and demography statistics) and that some pupils enrolled in educational institutions might not be registered as residents in the same region (or at all) in the demographic data. As a consequence, ratios may be in excess of 100 %.

In 2015, the vast majority (93.8 %) of four year-old children in the EU-28 were enrolled in some form of education. Nearly all of these attended pre-primary education, although a small share, mainly in Ireland or the United Kingdom, were enrolled in primary education.

A majority of the regions in France and England reported that practically all four year-olds participated in pre-primary or primary education

The darkest shade in Map 4.1 shows those NUTS level 2 regions where participation rates of four year-olds were particularly high. Note that data for Germany and the United Kingdom are presented for NUTS level 1 regions; only national data are available for Serbia. There were 43 out of 225 NUTS regions in the EU for which data are available where the participation rate of four year-olds in pre-primary and primary education was at least 99 % in 2015. The highest participation rates were concentrated in various regions of Belgium, France, southern Italy, Malta (a single region at this level of detail) and England (in the United Kingdom), while there were also high rates in three Spanish regions and one Danish region.

By contrast, Map 4.1 shows a very clear east–west split as participation rates were generally much lower in most eastern regions of the EU. There were 16 regions in the EU that were characterised by the lowest participation rates of four year-olds (below 70 %, as shown by the lightest shade): 10 out of the 13 regions in Greece (2014 data); both Croatian regions; two Polish regions; single regions from each of Slovakia and Finland. Looking in more detail, Attiki (the Greek capital city region) was the only region in the EU to record a participation rate for four year-olds in early pre-primary and primary education that was below 50 %. Outside of the EU, low participation rates were also recorded in every region of Turkey (2014 data) and all but one region (Ticino being the exception) in Switzerland, as well as in Liechtenstein and the former Yugoslav Republic of Macedonia (both single regions at this level of detail) and Serbia (national data).

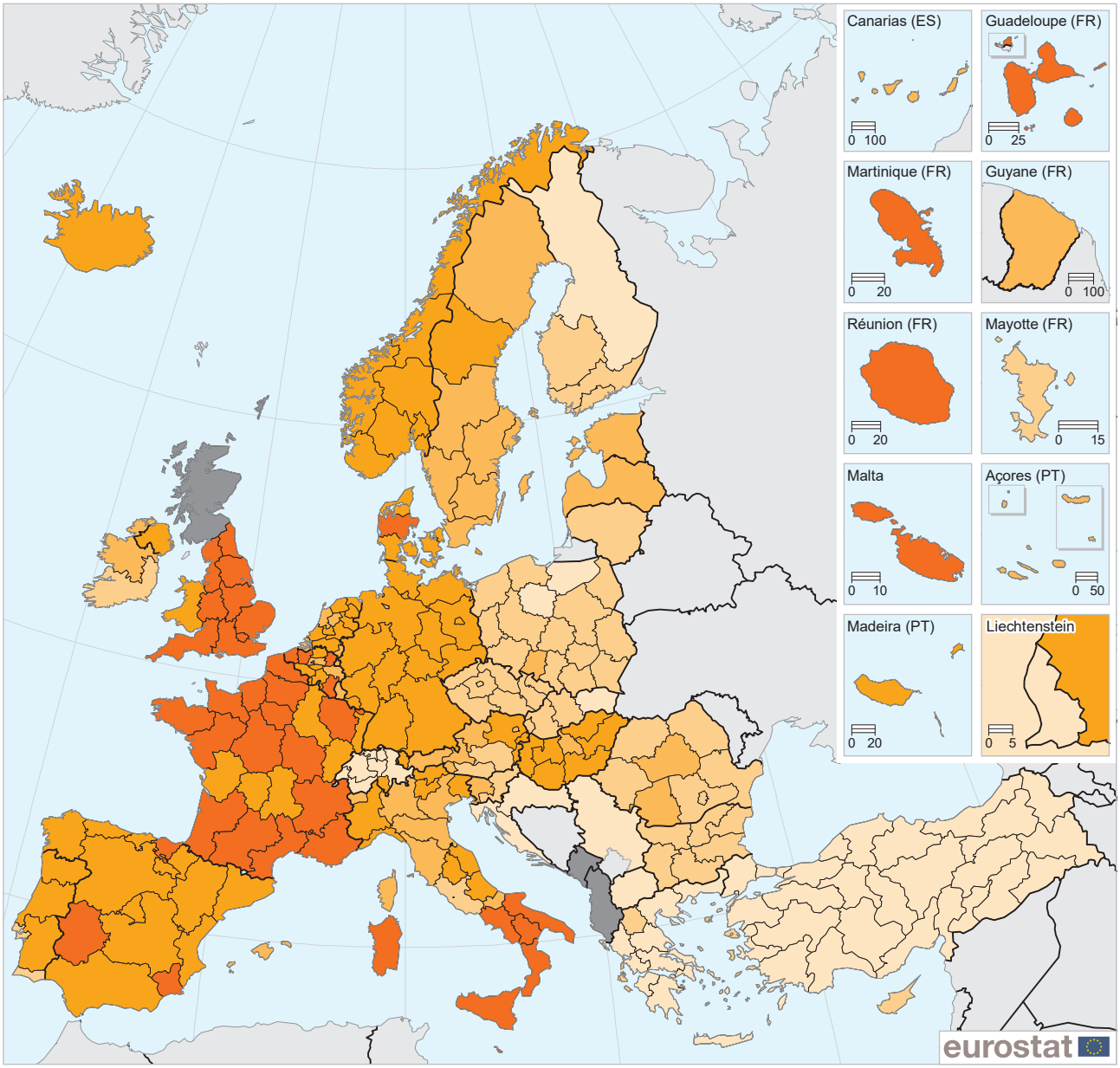
Defining early childhood and primary education

Early childhood education (ISCED level 0) is typically designed with a holistic approach to support children's early cognitive, physical, social and emotional development and introduce young children to organised instruction outside of the family context. There are two subcategories of programmes covering early childhood education: early childhood educational development (level 01) and pre-primary education (level 02). While the former has educational content designed for younger children (in the age range of 0–2 years), the latter is designed for children between the ages of three and the start of primary education. Both categories are characterised by learning environments that are visually stimulating and language-rich, with at least two hours of teaching provision per day; in other words, crèches, day-care centres or nurseries are generally excluded (unless they have a specific educational component).

Primary education (ISCED level 1) programmes are typically designed to provide students with fundamental skills in reading, writing and mathematics (literacy and numeracy) and establish a solid foundation for learning and understanding core areas of knowledge, personal and social development. Age is typically the only entry requirement at this level of education.

Map 4.1: Participation rates of four year-olds in pre-primary and primary education (ISCED levels 02–1), by NUTS 2 regions, 2015

(%)



(%)

EU-28 = 93.8

- < 70
- 70 – < 90
- 90 – < 95
- 95 – < 99
- >= 99
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 07/2017

0 200 400 600 800 km

Note: Germany and the United Kingdom: NUTS level 1. Serbia: national data. Greece and Turkey: 2014.

Source: Eurostat (online data codes: educ_uoe_enra14 and educ_uoe_enrp07)

STUDENTS IN VOCATIONAL UPPER SECONDARY EDUCATION

Vocational education and training (VET) is designed for students to acquire the knowledge, skills and competencies specific to a particular occupation or trade; it may have work-based components. More than 10 million upper secondary (ISCED level 3) students in the EU-28 participated in vocational education programmes in 2015, equivalent to 48.1 % of all upper secondary students; the remaining share participated in general programmes. A higher number of young men (than young women) were enrolled in vocational programmes as young men accounted for 56 % of all upper secondary education students participating in vocational programmes.

Vocational education is increasingly considered as key to lowering youth unemployment rates and facilitating the transition of young people from education into work/the labour market. Attention has been given to ways to increase the attractiveness of vocational programmes and apprenticeships, so that these may offer an alternative route to general upper secondary and tertiary education and result in a better match with the skills employers look for.

Map 4.2 shows that the share of upper secondary students participating in vocational education programmes varied considerably across the EU Member States in 2015, with a particularly high specialisation in a cluster of regions covering the Croatia, Slovenia, Austria, Slovakia and the Czech Republic as well as Belgium, the Netherlands and Finland. Some of these differences may be attributed to perceptions concerning vocational education and training: for example, in countries including the Czech Republic and Austria, vocational education and training is widely seen as an effective step that facilitates an individual's transition into the labour market, whereas in some other EU Member States its role is often less developed, perhaps as a result of less positive societal perceptions.

More than three quarters of upper secondary students participated in vocational education programmes in four EU regions

There were 39 NUTS level 2 regions in the EU where the share of upper secondary students who participated in vocational education programmes in 2015 was at least 65 % (as shown by the darkest shade in Map 4.2). In four of these regions, in excess of three quarters of all upper secondary students participated in vocational education: two were in the Czech Republic — Severozápad (77.7 %) and Jihozápad (75.9 %) — and they were joined by the Austrian region of Oberösterreich (76.2 %) and the Slovenian region of Vzhodna Slovenija (75.1 %).

By contrast, vocational education programmes accounted for less than 35 % of upper secondary students in 32 regions of the EU (as shown by the lightest shade). Looking in more detail, the lowest shares were recorded for the two Irish NUTS level 2 regions (2013 data) and for Scotland, where vocational programmes covered less than 1 in 10 students. There were three regions where the share of students participating in vocational programmes was situated within the range of 10–20 %: the island regions of Malta and Cyprus (both single regions at this level of detail) and Közép-Magyarország (the capital city region of Hungary).

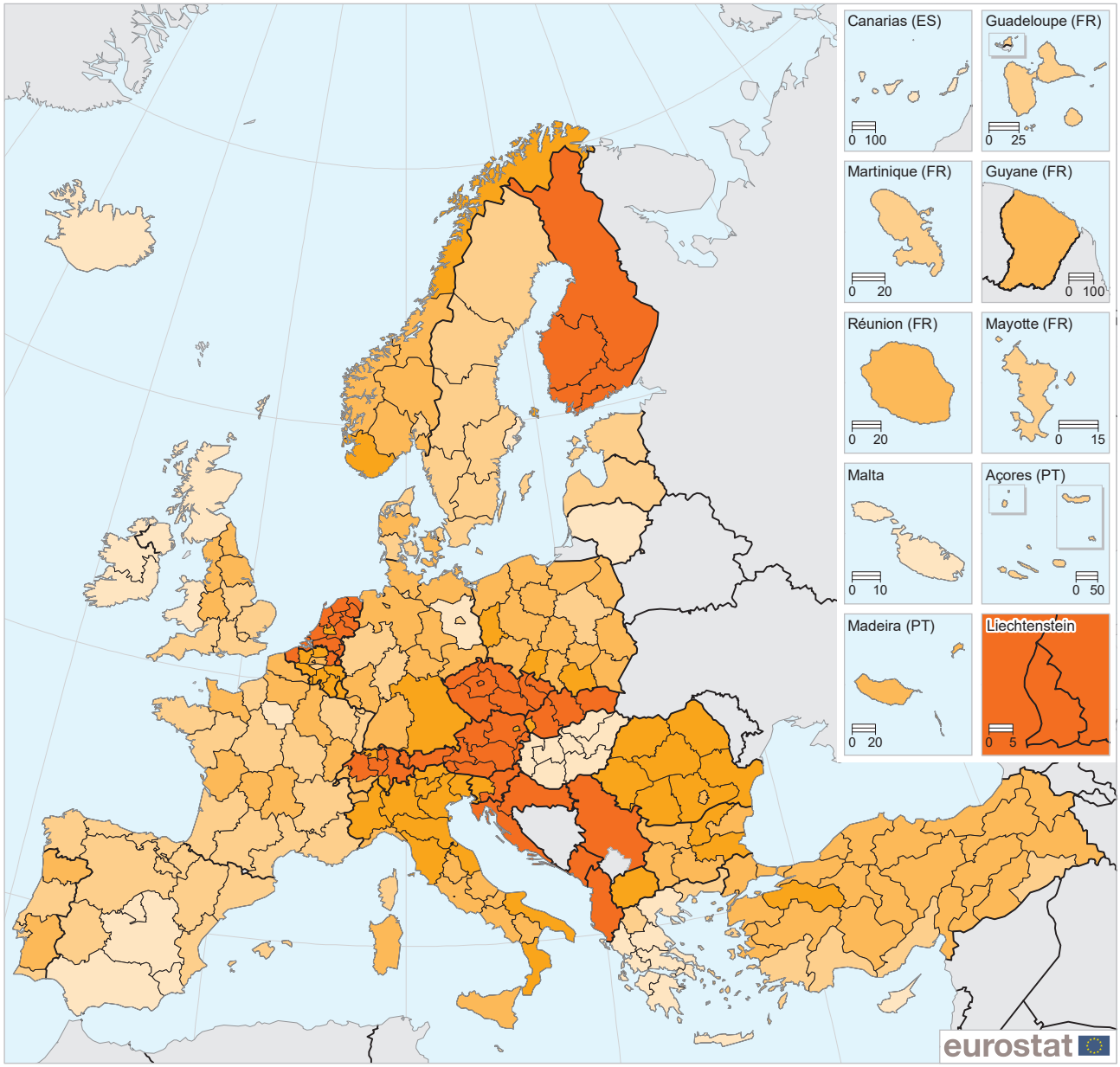
Defining upper secondary education

Upper secondary education (ISCED level 3) is typically designed to complete secondary education in preparation for tertiary education and/or to provide skills that are relevant for employment. These programmes offer students more varied, specialised and in-depth instruction and they are more differentiated (increased range of options and fields available), with teachers who are often specialised in the subjects or specialised fields they teach.

Upper secondary education generally begins after 8–11 years of formal education (from the beginning of primary education (ISCED level 1)), with students typically aged between 14 and 16 when entering this level; the programmes usually end when students are aged 17 or 18. Upper secondary education programmes may be either general or vocational in orientation.

Map 4.2: Share of students in upper secondary education (ISCED level 3) who were following vocational programmes, by NUTS 2 regions, 2015

(%)



(%)

EU-28 = 48.1

- < 35
- 35 – < 45
- 45 – < 55
- 55 – < 65
- >= 65
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat - GISCO, 07/2017

0 200 400 600 800 km

Note: Germany and the United Kingdom: NUTS level 1. Serbia: national data. Greece: 2014. Ireland: 2013. EU-28: estimate.

Source: Eurostat (online data codes: educ_uoe_enra13 and educ_uoe_enrs05)

EUROPE 2020: EARLY LEAVERS FROM EDUCATION AND TRAINING

Young people between the ages of 15 and 17 are often faced with a difficult choice: to remain in education or training, or to look for a job. Full-time compulsory education lasts, on average, 9 or 10 years in most of the EU Member States and is generally completed at the end of lower secondary education (ISCED level 2). Early leavers from education and training are defined as the proportion of individuals aged 18–24 who have at most a lower secondary education (ISCED levels 0–2), and who are not engaged in any further education and training (during the four weeks preceding the labour force survey (LFS)). As noted above, this indicator is both an ET 2020 benchmark and a Europe 2020 target, the policy goal being to reduce the proportion of early leavers in the EU-28 to below 10 %.

The share of young people in the EU who were early leavers from education and training stood at 10.7 %

In 2016, the share of early leavers (aged 18–24) from education and training stood at 10.7 % for the EU-28; this was 0.3 percentage points lower than in 2015. Looking at developments over the last decade, the share of 18–24 year-olds who were early leavers from education and training fell each and every year, and was 4.6 percentage points lower in 2016 than it had been in 2006. As such, if these developments continue, the headline target may be reached.

That said, there remain considerable disparities in the share of early leavers both between and within the regions of the EU Member States. These are reflected, to some degree, in the national targets for this indicator; note there is no target for the United Kingdom. There were 17 Member States that recorded shares of early leavers in 2016 that were below 10 % with some of the lowest shares being recorded in eastern Europe. By contrast, there were several large Member States in southern and western Europe that recorded shares above the EU benchmark, namely, Germany (10.2 %), the United Kingdom (11.2 %), Italy (13.8 %) and Spain (19.0 %). The highest share of early leavers from education and training was recorded in Malta (19.6 %), while the lowest shares — below 5 % — were recorded in Slovenia, Lithuania and, in particular, Croatia (2.8 %).

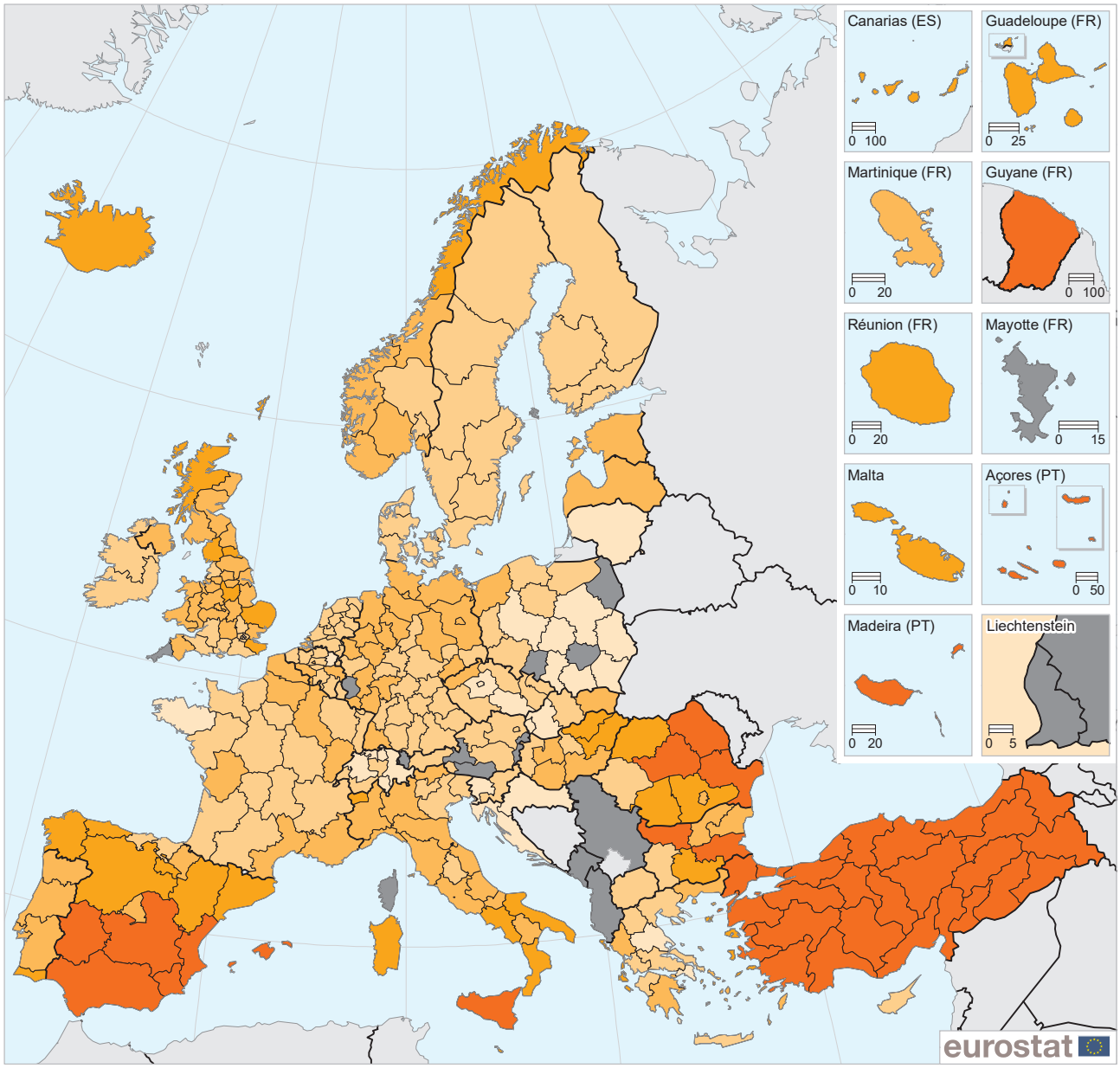
Very low shares of early leavers from education and training in several eastern regions of the EU

Looking in more detail at regional developments for early leavers from education and training, Map 4.3 shows that approximately half of all regions in the EU recorded a rate that was below the benchmark target of 10 %. In 2016, 131 out of 264 NUTS level 2 regions for which data are available recorded a share of less than 10 % (as shown by the two lightest shades in the map); among these, there were 21 regions that recorded early leaver shares that were below 5 % (the lightest shade). These regions with the lowest shares were principally distributed across eastern regions of the EU: seven regions from Poland, three regions from the Czech Republic, both regions from Croatia (data for Jadranska Hrvatska are for 2015), two regions from Slovakia (data for Bratislavský kraj are for 2013), and one of the two regions from Slovenia. Many of these regions characterised by having some of the lowest shares of early leavers were also regions with extensive vocational training programmes/apprenticeships for young people.

The remaining regions that recorded shares of less than 5 % included: two Greek regions (one of which was the capital city region), Lithuania (which is a single region at this level of detail), and single regions from each of Belgium, France and the United Kingdom (which was one of the two capital city regions, Inner London - East). Indeed, it was commonplace to find capital city regions and other urban areas recording relatively low shares of early leavers from education and training; this may reflect a number of factors, for example, greater opportunities and choice, the perception of future employment prospects, and the level of educational attainment among parents. By contrast, the proportion of young people who were early leavers from education and training was relatively high (compared with national averages) in the Belgian and German capital city regions.

The regions with the highest shares of early leavers from education and training were principally concentrated in the Iberian Peninsula, Bulgaria and Romania. There were 17 NUTS level 2 regions in the EU where, in 2016, upwards of one in five of the population aged 18–24 had left education and training with no more than a lower secondary level of attainment (as shown by the darkest shade in Map 4.3): eight of these regions were in Spain, three in Romania, two from each of Bulgaria and Portugal, and single regions from each of France (the overseas region of Guyane) and Italy (the island region of Sicilia). The latter two were examples of more general patterns, insofar as many island and peripheral regions recorded relatively high rates of early leavers when compared with other regions in the same EU Member State. Other examples of this pattern, with relatively high rates included: two island regions in Greece (Voreio Aigaio and Ionia Nisia (2014 data)), two island regions in Portugal (Regiões Autónomas dos Açores e da Madeira) and the partly island and peripheral region of Highlands and Islands (in Scotland, the United Kingdom). As such, many of the EU regions with the highest shares of early leavers from education and training were characterised as being relatively remote and/or sparsely populated and it may be the case that students living in these regions have to leave home if they wish to follow a particular specialisation,

Map 4.3: Share of young people aged 18–24 who were early leavers from education and training, by NUTS 2 regions, 2016
(%)



(%)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat - GISCO, 07/2017

EU-28 = 10.7

- < 5
- 5 – < 10
- 10 – < 15
- 15 – < 20
- >= 20
- Data not available

0 200 400 600 800 km

Note: Prov. Luxembourg (BE34), Chemnitz (DED4), Dytiki Makedonia (EL53), Jadranska Hrvatska (HR03), Cumbria (UKD1) and North Yorkshire (UKE2): 2015. Prov. Brabant Wallon (BE31), Ionia Nisia (EL62) and Limousin (FR63): 2014. Ipeiros (EL54), Valle d'Aosta/Vallée d'Aoste (ITC2), Bratislavský kraj (SK01) and Inner London - West (UKI3): 2013. Includes data of low reliability for some regions.

Source: Eurostat (online data code: edat_lfse_16)

while those who remain are presented with relatively few opportunities for upper secondary or tertiary education. E-learning initiatives may prove useful for combatting high shares of early leavers in such regions (where access to education and training may be restricted), and that the introduction of more lengthy compulsory education could increase the employability of young people in several southern EU Member States (where high numbers of young people have relatively few qualifications).

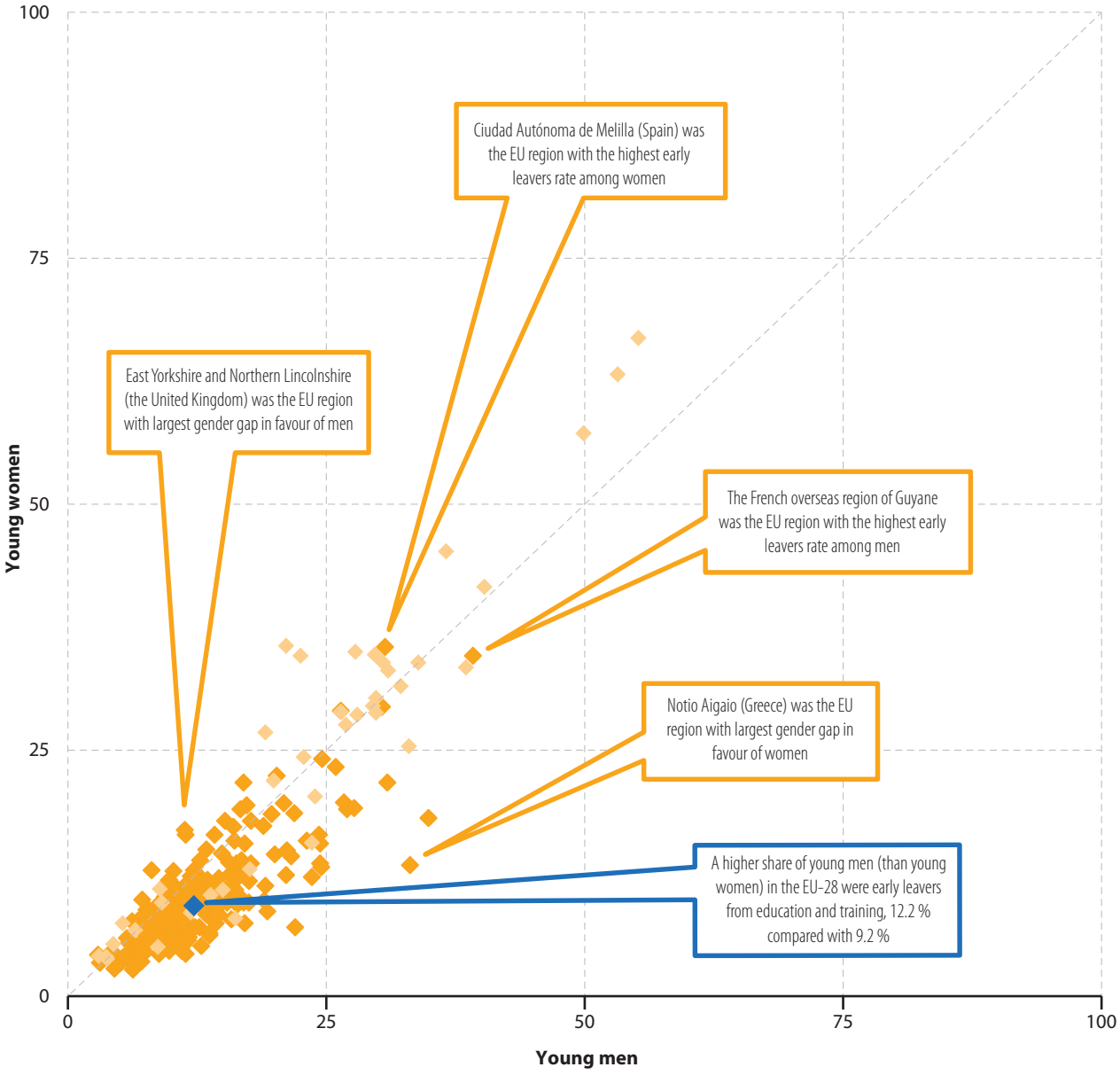
Some of the largest ranges between the highest and lowest shares of early leavers across the different regions of a single EU Member State were observed in France and Spain. In France, the highest rates were generally recorded in the overseas regions, although there were also relatively high rates in a number of northern and eastern regions (for example, Nord - Pas-de-Calais, Champagne-Ardenne and Picardie). In Spain, the highest rates of early leavers from education and training were recorded in several southern, island and overseas regions, including Ciudades Autónomas de Ceuta y Melilla, Illes Balears, Región de Murcia and Andalucía, while many of the lowest rates were recorded in more northerly regions, especially the País Vasco and Cantabria (the only Spanish regions where the share of early leavers was below 10 %).

Young men were almost one third more likely than young women to be early leavers from education and training

Figure 4.3 presents information relating to the proportion of early leavers from education and training by sex. In 2016, the share of early leavers (aged 18–24) was considerably higher among young men, at 12.2 %, than it was for young women, as their share of 9.2 % was lower than the 10 % target in the ET 2020 and Europe 2020 strategies. Therefore, the gender gap for the EU-28 stood at 3.0 percentage points in 2016, which meant it fell during the last decade, as the share of early leavers among young men had been 4.2 percentage points higher than the share for young women in 2006.

The rate of early leavers from education and training was lower for young women than it was for young men in 168 out of the 207 NUTS level 2 regions for which data were available for 2016; there was a single region — Provincia Autonoma di Trento (Italy) — where early leaver rates were identical for young men and women, leaving 38 regions where the early leavers rate was lower for young men. Double-digit gender gaps were recorded for seven EU regions in 2016; in all of these cases the share of young men who were early leavers was higher than the corresponding share for young women. The biggest gaps were recorded in the Greek island region of Notio Aigaio (2013 data) and the Spanish island region of Illes Balears, while the remaining regions also included two further island regions — Sardegna (Italy) and Canarias (Spain) — as well as Aragón (Spain), Norte (Portugal) and Kent (the United Kingdom); in the last two regions the early leavers rate for young women was below 10 %. At the other end of the scale, the share of young women who were early leavers in East Yorkshire and Northern Lincolnshire (the United Kingdom) was 5.6 percentage points higher than the corresponding share for young men; there were four other regions where this gap was greater than 4 points: South Yorkshire (also in the United Kingdom), Severozápad (Czech Republic), Ciudad Autónoma de Melilla (Spain) and Észak-Magyarország (Hungary).

Figure 4.3: Share of young people aged 18–24 who were early leavers from education and training, by sex, by NUTS 2 regions, 2016
(%)



Note: the symbols in dark yellow are regions in the EU Member States; the symbols in lighter yellow are for non-EU regions; the symbol in blue is the EU-28 average. Prov. West-Vlaanderen (BE25), Severen tsentralen (BG32), Tübingen (DE14), Brandenburg (DE40), Sachsen-Anhalt (DEE0), Thessalia (EL61), Peloponnisos (EL65), Ciudad Autónoma de Ceuta (ES63), Champagne-Ardenne (FR21), Bretagne (FR52), Aquitaine (FR61), Provincia Autonoma di Bolzano/Bozen (ITH1), Provincia Autonoma di Trento (ITH2), Nyugat-Dunántúl (HU22), Flevoland (NL23), Essex (UKH3) and East Wales (UKL2): 2015. Schwaben (DE27), Centre (FR24), Drenthe (NL13) and Vest (RO42): 2014. Prov. Limburg (BE22), Mittelfranken (DE25), Notio Aigaio (EL42), Ciudad Autónoma de Melilla (ES64), Haute-Normandie (FR23) and Alentejo (PT18): 2013. Includes data of low reliability for some regions. Data are not available for several regions.

Source: Eurostat (online data code: edat_lfse_16)

YOUNG PEOPLE NEITHER IN EMPLOYMENT NOR IN EDUCATION OR TRAINING (NEETS)

2016

15.2 %
of people aged 18–24 in the EU are neither in employment nor in education or training

The share of young people (aged 18–24) in the EU-28 who were neither in employment nor in education or training (NEET), expressed in relation to the population of the same age, stood at 15.2 % in 2016. The latest NEET rate was almost identical to that recorded a decade earlier in 2006, when the rate had been 15.1 %. An analysis over time reveals that, during the interim, it first fell and then subsequently rose on the impact of the global financial and economic crisis to reach a relative peak of 17.2 % in 2012, after which there were four consecutive annual reductions.

One of the key determinants that explains differences in NEET rates is low educational attainment. As such, regions characterised by relatively high rates of early leavers from education and training and relatively low rates of vocational training may be expected to display relatively high NEET rates. Government policies may also impact on NEET rates. For example, some administrations have decided to link social security benefits for young people to mandatory participation in further education and training schemes.

An analysis across the EU Member States shows that the highest proportion of young people who were neither in employment nor in education or training in 2016 was recorded in Italy (26.0 %), while the NEET rate was also above 20 % in Cyprus, Bulgaria, Greece, Romania and Croatia. By contrast, the proportion of young people who were neither in employment nor in education or training was as low as 6.1 % in the Netherlands, and was below 9 % in Denmark, Luxembourg, Malta and Sweden.

There were three regions in the EU where the proportion of young people neither in employment nor in education or training rose above 40 %

In 2016, there were 27 NUTS level 2 regions in the EU, among the 271 for which data are available, where the NEET rate was at least 25 % (as shown by the darkest shade in Map 4.4). The highest rates tended to be located in southern, eastern or overseas regions. The 10 highest rates were concentrated in southern Italy (Sicilia, Campania, Calabria and Puglia), three regions of Greece (Sterea Ellada, Peloponnisos and Notio Aigaio), the French overseas regions of Guyane and La Réunion, and the Bulgarian region of Severozapaden. The latter recorded the highest NEET rate (46.5 %) in the EU, followed by Guyane (44.7 %) and Sicilia (41.4 %). As such, those regions with some of the highest NEET rates were often characterised as being relatively rural or peripheral regions.

In western EU Member States, there were sometimes pockets of relatively high NEET rates, often located in urban areas characterised by a traditional specialisation in heavy industry. Examples include Prov. Hainaut in Belgium (20.3 %), the French regions of Picardie, Champagne-Ardenne and Nord - Pas-de-Calais (where NEET rates were over 20 %), or Tees Valley and Durham in the United Kingdom (where the NEET rate was 23.2 %).

Across the 271 NUTS level 2 regions for which data are available in 2016, there were 69 regions where the NEET rate was less than 10 % (as shown by the lightest shade in Map 4.4). These regions were principally concentrated in Flemish regions of Belgium, the Czech Republic, Denmark, Germany, the Netherlands, Austria, Sweden and the United Kingdom, although there were also single regions with rates below 10 %, namely, Luxembourg, Malta (both single regions at this level of detail) and the capital city regions of Hungary, Slovenia and Slovakia. Looking in more detail, the lowest NEET rate in 2016 was 2.7 %, recorded in the Czech capital city region. There followed four Dutch regions — Utrecht, Drenthe, Gelderland and Noord-Holland (which is the capital city region) — where NEET rates were within the range of 4.4–5.2 %.

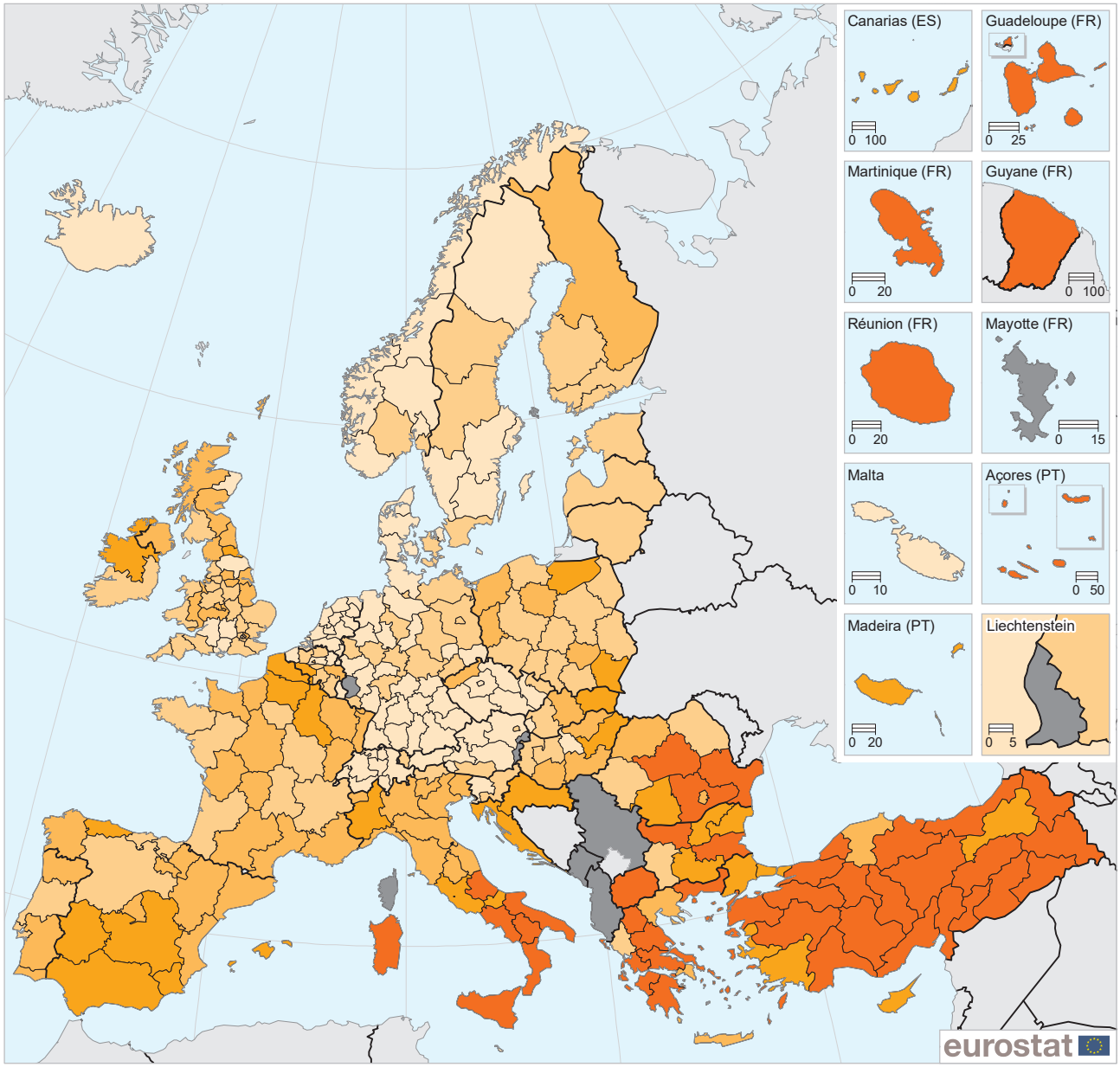
Comparing youth unemployment and NEET rates

Youth unemployment and the proportion of young people who were neither in employment nor in education or training (NEET) are complementary concepts. The youth unemployment rate is a measure of those (aged 15–24) who are out of work, but have actively searched for work and are able to start work; it is based on the economically active population — those who are either in work or unemployed — as its denominator.

By contrast, the definition of those who were neither in employment nor in education or training (NEET) excludes those in employment, education or training, but may include not only the unemployed but also some economically inactive people. The NEET rate is based on a denominator that covers the whole cohort of 18–24 year-olds, not just those who are economically active. As such, the NEET rate may be preferred for analysing younger cohorts.

Map 4.4: Share of young people aged 18–24 neither in employment nor in education or training (NEETs), by NUTS 2 regions, 2016

(%)



(%)

EU-28 = 15.2

- < 10
- 10 – < 15
- 15 – < 20
- 20 – < 25
- >= 25
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat - GISCO, 07/2017

0 200 400 600 800 km

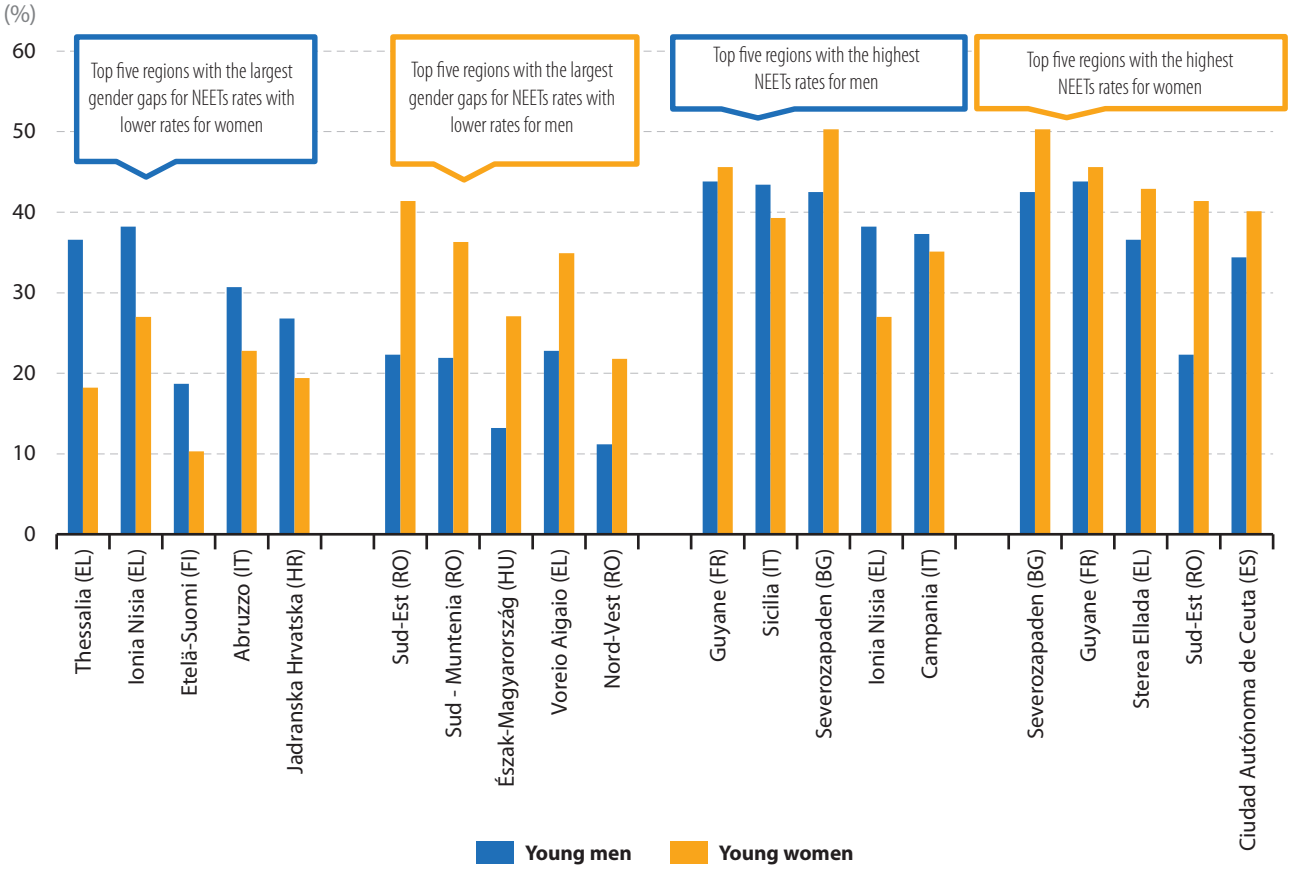
Note: Oberfranken (DE24) and Limousin (FR63): 2015. Vorarlberg (AT34): 2014. Includes data of low reliability for some regions.

Source: Eurostat (online data code: edat_lfse_22)

Figure 4.4 provides a more detailed analysis of NEET rates analysed by sex. At an aggregated level, the EU-28 gender gap between NEET rates for young men and women (aged 18–24) was 1.0 percentage points, with a lower rate for young men. There was a relatively even split between the EU Member States, insofar as 13 recorded lower NEET rates for men and 15 recorded lower rates for women; the largest gaps (for both men and women) were recorded in the Baltic and eastern Member States.

The four presentations shown as part of Figure 4.4 provide information on the top five regions with the largest gender gaps (with lower rates for men and lower rates for women) and the five regions with the highest NEET rates for each of the sexes. NEET rates for young women in the Greek regions of Thessalia and Ionia Nisia were much lower (more than 10 percentage points) than the corresponding rates for men. Double-digit gender gaps — although with lower rates among young men — were recorded in four Romania regions (Sud-Est, Sud – Muntenia, Nord-Vest and Centru), in Észak-Magyarország (Hungary) and in Voreio Aigaio (Greece).

Figure 4.4: Share of young people aged 18–24 neither in employment nor in education or training (NEETs), by sex, selected NUTS 2 regions, 2016



Note: Nordjylland (DK05), Ipeiros (EL54) and Ciudad Autónoma de Ceuta (ES63): 2015. Auvergne (FR72), Flevoland (NL23), Opolskie (PL52) and Shropshire and Staffordshire (UKG2): 2014. Prov. Luxembourg (BE34), Mecklenburg-Vorpommern (DE80), Alentejo (PT18) and Bratislavský kraj (SK01): 2013. Includes data of low reliability for some regions. Data are not available for several regions.

Source: Eurostat (online data code: edat_lfse_22)

EUROPE 2020: TERTIARY EDUCATIONAL ATTAINMENT

There are a range of policy challenges in relation to tertiary (higher) education, among which: broadening access by increasing participation (especially among disadvantaged groups); reducing the number of students who leave tertiary education without a qualification; reducing the time it takes some individuals to complete their higher level of education; improving the quality of higher education by making degree courses more relevant for the world of work. Indeed, in an increasingly knowledge-based society, many jobs require a relatively high level of educational attainment, qualifications or specific skills. That said, concerns have been expressed that, with a rising proportion of the population obtaining a tertiary level of educational attainment, dynamic urban areas may increasingly be characterised by regional workforces that are overqualified, where some (possibly demotivated) people carry out jobs that require relatively low skills.

The tertiary educational attainment indicator is defined as the share of the population aged 30–34 who have successfully completed a tertiary education programme (for example, at a university or higher technical institution). The goal set by ET 2020 and Europe 2020 is to ensure that at least 40 % of 30–34 year-olds have completed a tertiary level of education by 2020. The age range of 30–34 year-olds is used as this generally refers to the first five-year age span where the vast majority of students have already completed their studies and have therefore been awarded their highest qualification.

The headline target for tertiary education attainment among people aged 30–34 years is 40 %

Tertiary educational attainment in the EU-28 rose rapidly from 23.6 % in 2002 (the start of the time series available for this EU aggregate), with gains being made in successive years throughout the period to 2016, when a rate of 39.1 % was recorded. Compared with a year before (2015), the share of 30–34 year-olds with tertiary education attainment in the EU-28 rose by 0.4 percentage points. The growth in tertiary educational attainment was particularly fast for young women, and the gender gap widened during the last decade. Across the EU-28, the share of young women with a tertiary level of educational attainment was 43.9 % in 2016, which was 9.5 percentage points higher than the share for young men (34.4 %).

2016

39.1 %
of people aged 30–34 in the EU have completed tertiary education

Capital city regions act as a magnet for highly-qualified young people

In many capital cities a wide range of opportunities are available for higher education in general and specialised establishments. Consequently many capital cities attract people wanting to undertake tertiary education. Furthermore, capital cities are often chosen by large organisations (in both the public and private sectors) as the location for their headquarters, either as a matter of prestige or to benefit from economies of scale which may be present in some of the EU's largest cities. The relatively high concentration of tertiary educational opportunities and business activity in capital city regions could, at least in part, explain the considerable number of people with tertiary education in these regions. The attraction of capital city regions

Defining tertiary education

Tertiary education (ISCED levels 5–8) builds on secondary education, providing learning activities in particular fields of education at a higher level of complexity. Tertiary education is offered by universities, vocational universities, institutes of technology and other institutions that award academic degrees or professional certificates. It includes short-cycle tertiary education programmes (ISCED level 5); bachelor's or equivalent degree programmes (ISCED level 6); master's or equivalent degree programmes (ISCED level 7); and doctoral or equivalent degree programmes (ISCED level 8).

Students who wish to enter such programmes generally need to demonstrate that they have successfully completed secondary education, with qualification requirements dependent on the choice of subject and institution; it may, in some education systems, also be necessary to take an entrance examination.

has the potential to create labour market imbalances whereby an increasing share of graduates move to capital cities in search of work, even if this means (at least initially) accepting work for which they are over-qualified, thereby displacing the local workforce. These patterns may be of particular concern in EU Member States which are characterised by a monocentric pattern of economic developments, where a large part of the national economy is concentrated in the capital city and its surrounding regions. Large movements of labour have the potential to result in skills' shortages and lower levels of economic activity in other regions.

Map 4.5 shows tertiary educational attainment for people aged 30–34 across NUTS level 2 regions in 2016; the most qualified regional workforces are shown in the darkest shade, which denotes those regions where at least 50 % of this age cohort possessed a tertiary level of educational attainment. As such, this indicator may reflect to some extent the attractiveness (or 'pull effects') of regions with respect to the employment opportunities that they offer higher education graduates as well as simply reflecting the supply of people with higher education.

An analysis by NUTS level 2 regions reveals that by far the highest proportion of persons aged 30–34 with a tertiary level of educational attainment was recorded in one of the two capital city regions of the United Kingdom: some 84.9 % of all young people in Inner London - West in 2016 had attained a tertiary level of education. The second, third and fourth highest shares were also recorded in the United Kingdom, namely in: North Eastern Scotland (76.5 %), the second capital city region of Inner London - East (70.3 %), and Outer London - South (66.2 %). Outside of the United Kingdom, the next highest share (63.5 %) in the EU was recorded for the Danish capital city region.

In total, 16 or the 35 regions in the EU where the share of young people with a tertiary education attainment reached at least 50 % (shown with the darkest shade in Map 4.5) were capital city regions. Away from capital city regions, some of the regions that reported high shares of young people with a tertiary level of educational attainment included many with science parks, technology clusters and/or high research and development expenditure, such as Eastern Scotland, South Western Scotland, Cheshire, Berkshire, Buckinghamshire and Oxfordshire (all in the United Kingdom), Prov. Brabant Wallon, Prov. Vlaams-Brabant (both in Belgium), Utrecht (the Netherlands), País Vasco or Comunidad Foral de Navarra (both in Spain).

The high number of capital city regions where at least half of people aged 30–34 had a tertiary level of educational attainment reflects the fact that, among the 22 multi-regional EU Member States, there were only five — Belgium, Germany, Spain, Italy and the Netherlands — where the capital city region failed to record the highest share of tertiary educational attainment. Even in these five cases, the share in the capital city region was above the national average.

Lower levels of tertiary educational attainment may be linked to an emphasis on vocational education

The share of tertiary educational attainment was below 20 % (as shown by the lightest shade of orange in Map 4.5) in six regions that were mainly located in southern or eastern regions of the EU. They were generally characterised by their traditional reliance on heavy industries (for example, chemicals or iron and steel) or agriculture. Two of the regions were in the south of Italy (Campania and Sicilia), two were from the east of Romania (Nord-Est and Sud - Muntenia), one was in the north-west of Bulgaria (Severozapaden) and the final one was Sachsen-Anhalt in eastern Germany. The lowest share of tertiary educational attainment among people aged 30–34 was 16.3 % in the Romanian Nord-Est region.

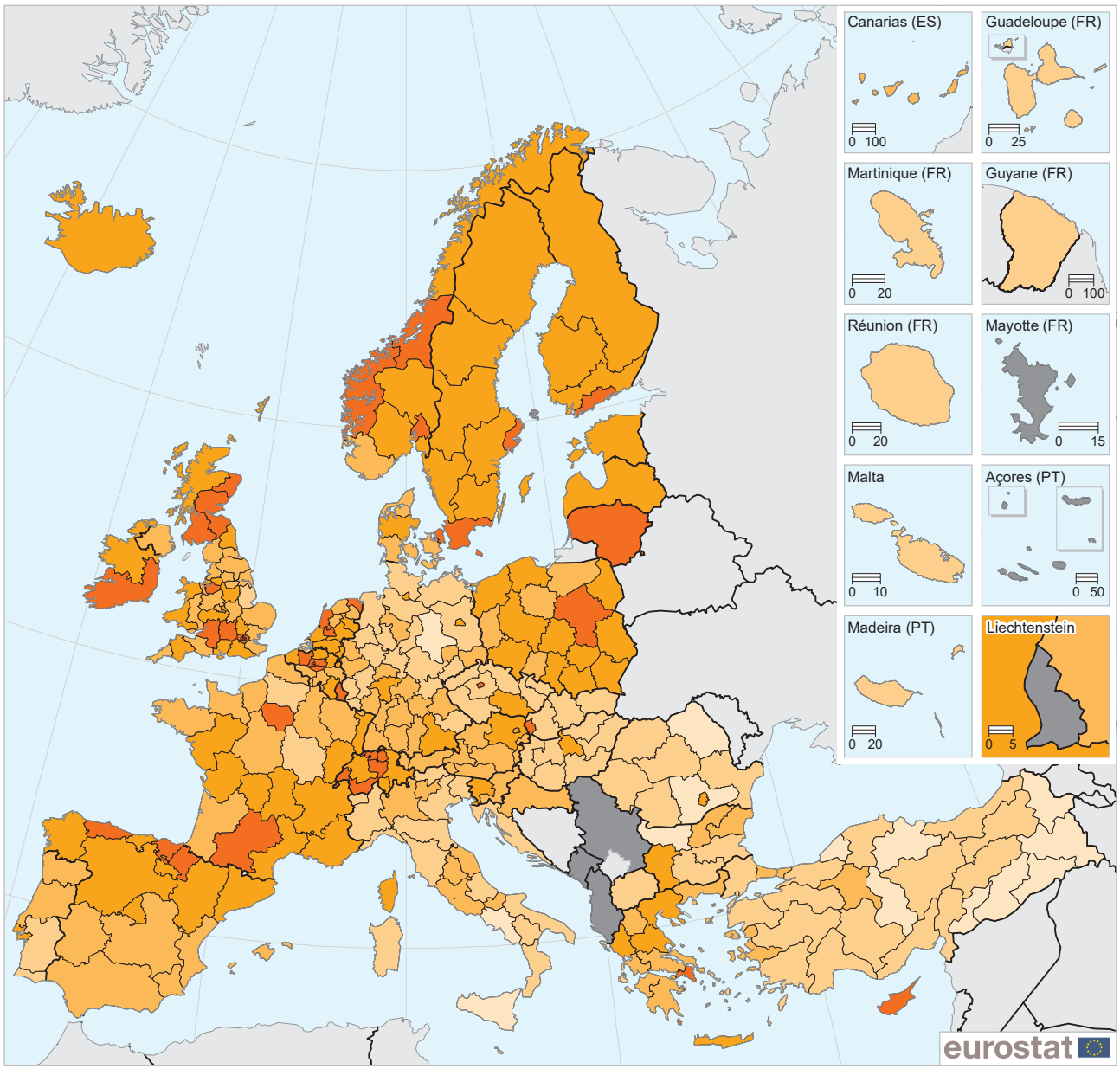
Aside from these regions, the level of tertiary educational attainment was also relatively low (at least 20 % but below 30 %) in several regions from Bulgaria, the Czech Republic, Germany, Greece, Italy, Hungary, Portugal, Romania and Slovakia, as well as overseas regions of France and Spain. In some EU Member States, this may, at least in part, be attributed to a particular emphasis placed on vocational education (see Map 4.2) which leads to professional qualifications rather than academic ones.

ET 2020: EMPLOYMENT RATE OF RECENT GRADUATES

Increasing youth employability is an integral part of the ET 2020 strategy to enhance employability as a whole through education and training in order to meet current and future labour market challenges. In 2012, a benchmark on the employability of graduates from education and training was established with a view to monitor better the contribution of education and training to the transition to employment. The target is that, by 2020, 82 % of recent young graduates should be in employment.

The employment rate of recent graduates in the EU-28 rose unevenly from 76.5 % in 2002 (the start of the time series available for this indicator) to 82.0 % in 2008. The rate fell, as did the overall employment rate, as the impact of the global financial and economic crisis was felt in labour markets, dropping to 75.4 % in 2013. Thereafter the rate started to increase again, reaching 78.2 % by 2016. Compared with 2015, the employment rate of recent graduates in the EU-28 rose by 1.3 percentage points in 2016.

Map 4.5: Share of persons aged 30–34 with tertiary education (ISCED levels 5–8) attainment, by NUTS 2 regions, 2016
(%)



(%)

EU-28 = 39.1

- < 20
- 20 – < 30
- 30 – < 40
- 40 – < 50
- >= 50
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat - GISCO, 07/2017

0 200 400 600 800 km

Note: Ionia Nisia (EL62), Ciudad Autónoma de Ceuta (ES63), Ciudad Autónoma de Melilla (ES64), Corse (FR83), Guyane (FRA3), Valle d'Aosta/Vallée d'Aoste (ITC2), Luxembourg (LU00): low reliability.

Source: Eurostat (online data code: edat_lfse_12)

Highest regional employment rates for recent graduates in Dutch regions and lowest in Italian regions

The highest regional employment rates for recent graduates in the EU were observed in Drenthe in the Netherlands and North Eastern Scotland (2015 data; low reliability) in the United Kingdom, both 100 %. These were followed by the Dutch region of Zeeland, Malta (one region at this level of detail), Inner London - West (one of the British capital city regions), Praha (the Czech Capital city region), and three more British regions (Hampshire and Isle of Wight; Berkshire, Buckinghamshire and Oxfordshire; and Herefordshire, Worcestershire and Warwickshire), all with rates above 95 %.

Generally, capital city regions reported relatively high employment rates for recent graduates in 2016, with these regions recording the highest rates in six of the 22 multi-regional EU Member States. One notable exception to this general pattern was Austria, as Wien recorded the lowest regional employment rate for recent graduates in Austria.

A total of 125 regions in the EU-28 recorded employment rates for recent graduates that were 82 % or higher in 2016: these are shown by the two darkest shades in Map 4.6. This group included all German, Dutch and Swedish regions, nearly all of the Austrian regions (not Wien), more than half of the Czech, Danish, Hungarian and British regions, all of the Flemish regions in Belgium, five regions in Poland, as well as Lithuania, Luxembourg and Malta (all single regions at this level of detail). This concentration in regions of several northern and western EU Member States generally reflects their relatively high national employment rates (although this was not the case in Belgium). Apart from Malta, only one other region from a southern Member State figured in this list, Ciudad Autónoma de Ceuta in Spain (2013 data, low reliability). The other regions with employment rates for recent graduates that were above 82 % in 2016 were Pays de la Loire in France and the capital city regions of Slovakia and Finland.

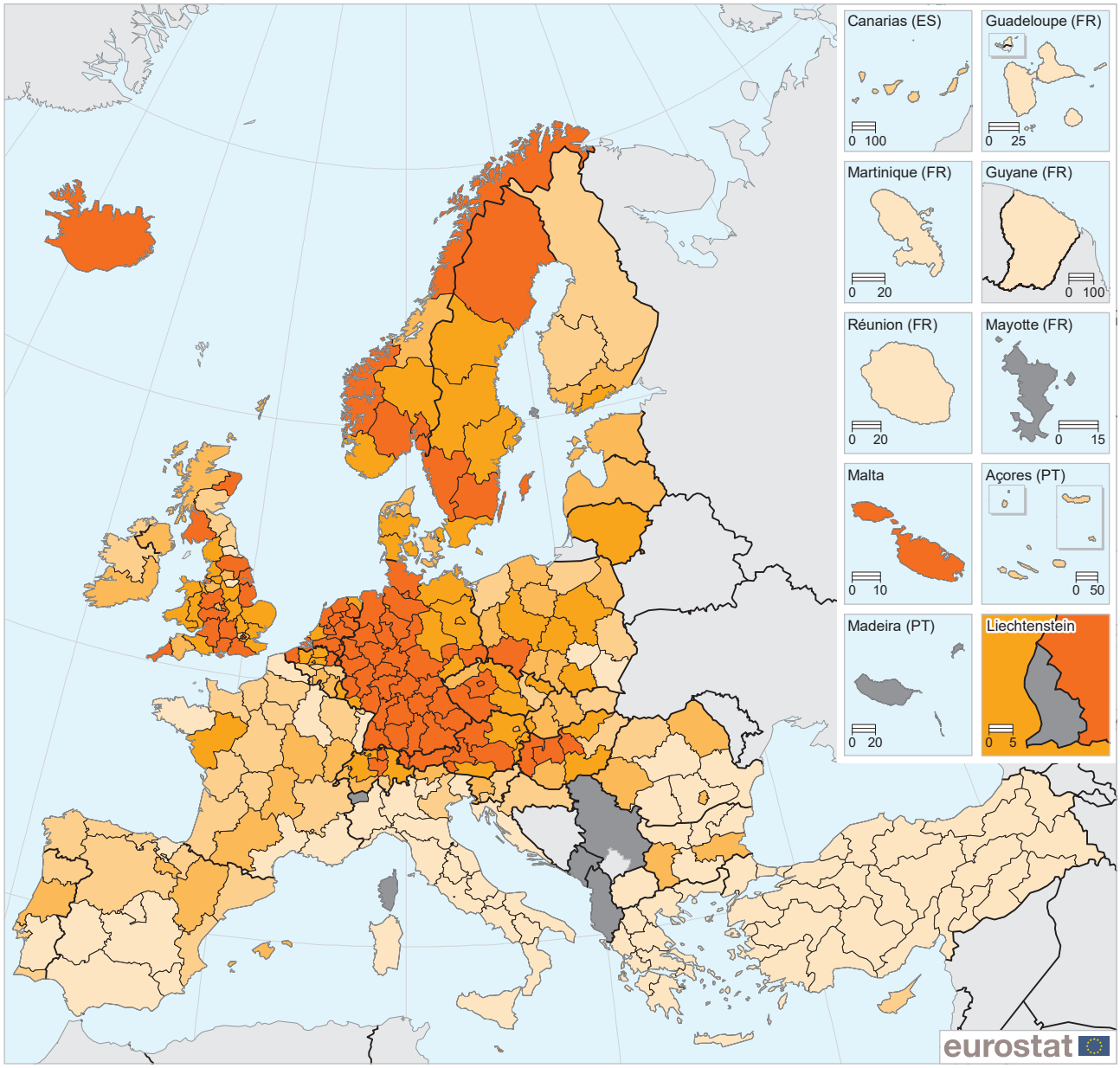
By contrast, all 13 regions in the EU where rates were below 50 % were in Greece or southern Italy, with the lowest of all, 29.1 %, in the Greek region of Peloponnisos (low reliability). The 62 regions in the EU where the rate was below 70 % (those shown with the lightest shade in Map 4.6) included all 13 Greek regions, 18 of the 21 Italian regions, 10 French regions, seven Spanish regions, four regions each from Bulgaria and Romania, two regions each from Poland and the United Kingdom, and a single region each from Croatia and Portugal.

Defining the employment rate of recent graduates

This indicator is focused on young people aged 20-34 who successfully completed their highest educational attainment within the previous 1–3 years, where that level of attainment was upper-secondary education, post-secondary non-tertiary education, or tertiary education and who did not receive any education or training in the four weeks preceding the survey. The indicator shows the employment rate, in other words the proportion of people meeting the age and education criteria specified above who were employed.

Map 4.6: Employment rate of recent graduates aged 20–34 with at least an upper secondary level of educational attainment (ISCED levels 3–8), by NUTS 2 regions, 2016

(%)



(%)

EU-28 = 78.2

- < 70
- 70 – < 76
- 76 – < 82
- 82 – < 88
- >= 88
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat - GISCO, 07/2017

0 200 400 600 800 km

Note: Ciudad Autónoma de Melilla (ES64), North Eastern Scotland (UKM5) and Switzerland: 2015. Ciudad Autónoma de Ceuta (ES63): 2013. Severozapaden (BG31), Severen tsentralen (BG32), Voreio Aigaio (EL41), Notio Aigaio (EL42), Dytiki Makedonia (EL53), Ipeiros (EL54), Ionia Nisia (EL62), Peloponnisos (EL65), La Rioja (ES23), Ciudad Autónoma de Ceuta (ES63), Ciudad Autónoma de Melilla (ES64), Limousin (FR63),Guadeloupe (FRA1), Martinique (FRA2), Guyane (FRA3), Burgenland (AT11), Cornwall and Isles of Scilly (UKK3), North Eastern Scotland (UKM5), Highlands and Islands (UKM6): low reliability.

Source: Eurostat (online data code: edat_lfse_33)

Data sources and availability

As the structure of education systems varies from one country to another, a framework for assembling, compiling and presenting regional, national and international education statistics is a prerequisite for the comparability of data; this is provided by the international standard classification of education (ISCED). The ISCED framework is occasionally updated in order to reflect new developments in education systems worldwide. ISCED 2011 provides the basis for the statistics presented in this chapter: it was adopted by the UNESCO General Conference in November 2011 and included new categories in recognition of the expansion of early childhood education and the restructuring of tertiary education. It classifies educational programmes and qualifications as: early childhood education (level 0); primary education (level 1); lower secondary education (level 2); upper secondary education (level 3); post-secondary non-tertiary education (level 4); short-cycle tertiary education (level 5); bachelor's or equivalent level (level 6); master's or equivalent level (level 7); doctoral or equivalent level (level 8).

For more information:
http://www.uis.unesco.org/Education/Documents/isced-2011-en.pdf

UNESCO/OECD/EUROSTAT (UOE) STATISTICS

Most EU education statistics are collected as part of a jointly administered exercise that involves the UNESCO Institute for Statistics (UNESCO-UIS), the Organisation for Economic Cooperation and Development (OECD) and Eurostat, often referred to as the UOE data collection exercise; data on regional enrolments and foreign language learning are collected separately by Eurostat. The UOE data collection exercise is principally based on administrative sources, as provided by education ministries or national statistical authorities. Reference periods are the calendar year for data on graduates and the school/academic year for all other non-monetary data.

For more information:
http://uis.unesco.org

LABOUR FORCE SURVEY

The EU's labour force survey (LFS) provides data on early leavers from education and training, NEETs, data on the population by educational attainment level, as well as employment rates of recent graduates. It covers the total population of individuals living in private households and is updated twice a year during the spring (with information for a new reference year) and the autumn. LFS data for Estonia and Austria has a level shift (a break in series) in 2014.

For more information:
http://ec.europa.eu/eurostat/statistics-explained/index.php/EU_labour_force_survey_-_methodology

NUTS

The data presented in this chapter are based exclusively on the 2013 version of NUTS. Information is generally presented for NUTS level 2 regions, although data on participation rates are only available for NUTS level 1 regions for Germany and the United Kingdom, while for Croatia only national data are available.

INDICATOR DEFINITIONS

Glossary entries on Statistics Explained (see: http://ec.europa.eu/eurostat/statistics-explained/index.php/Category:Education_and_training_glossary) are available for a wide range of education and training concepts/indicators.

For more information:
http://ec.europa.eu/eurostat/web/education-and-training/overview

5 Labour market

This chapter analyses European Union (EU) labour markets, providing an overview of regional employment (looking also at hours worked and earnings) and unemployment. Eurostat compiles and publishes labour market statistics for EU regions, the individual EU Member States, as well as the EU-28 aggregate; in addition, data are also available for a subset of EFTA and candidate countries. These regional statistics are presented for NUTS level 2 regions.

Generating employment and providing jobs is generally considered a key factor in combating social exclusion and the most effective way of giving people their independence, financial security and a sense of belonging. Although the EU seeks to promote the integration of all people within society, labour markets continue to be subject to discrimination, with various groups under-represented or excluded.

In regions that are characterised by relatively high employment and relatively low unemployment rates, there may be large numbers of unfilled job vacancies. This may, at least in part, be due to: unemployed applicants lacking the required skills or experience for certain posts; a lack of workforce mobility, with job vacancies being available in one region, while the unemployed look for work in another region; a lack of decent and affordable housing that prevents people moving into a region to fill job vacancies; a relatively low level of pay for some job vacancies (particularly in affluent and expensive regions), which makes it difficult to recruit people to certain occupations.

EUROPE 2020 FLAGSHIP INITIATIVES

Employment issues are integrated into the Europe 2020 strategy as one of five headline targets, namely that 75 % of the 20–64 year-olds in the EU-28 should be employed by 2020. Individual agreements exist with each EU Member State and national targets range from employment rates of 80 % or more in Denmark, the Netherlands and Sweden down to 70 % or less in Ireland, Greece, Croatia, Italy, Malta and Romania; there is no target in the national reform programme for the United Kingdom.

Progress towards the Europe 2020 target of 75 % for the employment rate among those aged 20–64 is analysed in the EU's annual growth survey and its accompanying joint employment report. The latest of these — from the end of 2016 — points out that there were some signs of a moderate economic recovery in the EU and that the target might be achieved by 2020. Despite the upturn in European labour markets, the report also noted that poverty remained high and employment and social outcomes varied significantly across the EU Member States. With this in mind, the growth survey for 2017 called for Member States to pursue structural reforms that should, among others, create jobs and enhance skills and also promote social policy as a productive factor.

While almost all of the Europe 2020 flagship initiatives have some relevance for labour markets, two are directly aimed at improving the employability of the workforce. An agenda for new skills and jobs (COM(2010) 682 final) sets out, through 13 key actions, to promote a substantial increase in employment rates, particularly those for women, young and older workers. Youth on the move (COM(2010) 477 final) was a Europe 2020 flagship initiative that came to an end as of December 2014. Its aim was to help young people gain the knowledge, skills and experience they needed to secure their first job. The initiative proposed 28 actions aimed at making education and training more relevant, increasing young people's employability and access to the labour market, as well as ensuring that young people had the right skills for the jobs of tomorrow.

OTHER POLICY INITIATIVES

In April 2012, the European Commission launched the so-called employment package, as detailed in its Communication titled 'Towards a job-rich recovery' (COM(2012) 173 final). This focused on the potential for structural, labour market reforms promoting job creation through to 2020, building on the Europe 2020 agenda for new skills and jobs through identifying areas where there is a high potential for future job creation.

In February 2013, the European Council agreed on a youth employment initiative with a budget of around EUR 6 billion for the period 2014–2020, largely to support young people not in education, employment or training. This initiative concerns any region that has a youth unemployment rate that is over 25 % and supports measures to integrate young people (in particular those who are not in education, employment or training (NEETs)) into the labour market.

Adopted in November 2014, the investment plan for Europe aims to promote structural reforms to nurture the economic recovery and provide a further basis for sustainable growth. It is estimated that during its first year, the plan contributed towards the creation of 100 000 new jobs. European structural and investment funds are used to boost jobs, by investing in human capital, thereby encouraging more people into jobs, combatting poverty and social exclusion, and creating the workforce of tomorrow. The European Commission estimates that over the period 2014–2020, funds under this plan will:

- provide support for the direct creation of almost 600 000 new jobs;
- help up to 2.3 million people find employment, including self-employment;
- help 10 million unemployed people improve their chances of finding a job.

Statistical analysis

LABOUR FORCE COMPOSITION

The economically active population in the EU-28 — also called the labour force — was composed of 245.2 million persons in 2016. The labour force includes people in work (in other words employed persons) and people actively seeking and available for work (in other words unemployed persons). An infographic on Statistics Explained illustrates various components of the labour force.

Nearly all (99.8 %) of the people in the EU-28's labour force in 2016 were in the age range 15–74. By focusing an analysis of the importance of the labour force within the whole population to this age range, it only reduces very slightly the coverage of the labour force, but at the same time leaves out of the analysis a large part of the relatively large (and growing) number of people who are retired and therefore no longer economically active. Figure 5.1 provides such an analysis, showing the development over time in the working status of the population, focusing on people aged 15–74. In 2016, the EU-28 population was composed of 379.9 million people in this age range, up from 376.2 million in 2006. As well as growing by 1.0 %, the activity structure of the population changed between these years. In this context, it should be noted that the time span covered — 2006 to 2016 — includes the global financial and economic crisis.

Overall, between 2006 and 2016 the EU-28's labour force (aged 15–74) grew by 4.1 % while the number of economically inactive people fell by 4.2 %. The activity rate (for persons aged 15–74), in other words the ratio of the labour force to the population, increased from 62.5 % in 2006, to 64.4 % in 2016. As a consequence, the share of economically inactive people in the population fell to 35.6 %. While this increase in the activity rate was relatively smooth, changes in the composition of the labour force were less smooth, with the crisis having a major impact in early years; this can be seen in the increasing share of unemployed persons and falling share of employed persons between 2009 and 2013.

Increases in unemployment and part-time employment resulted in an increased activity rate between 2006 and 2016

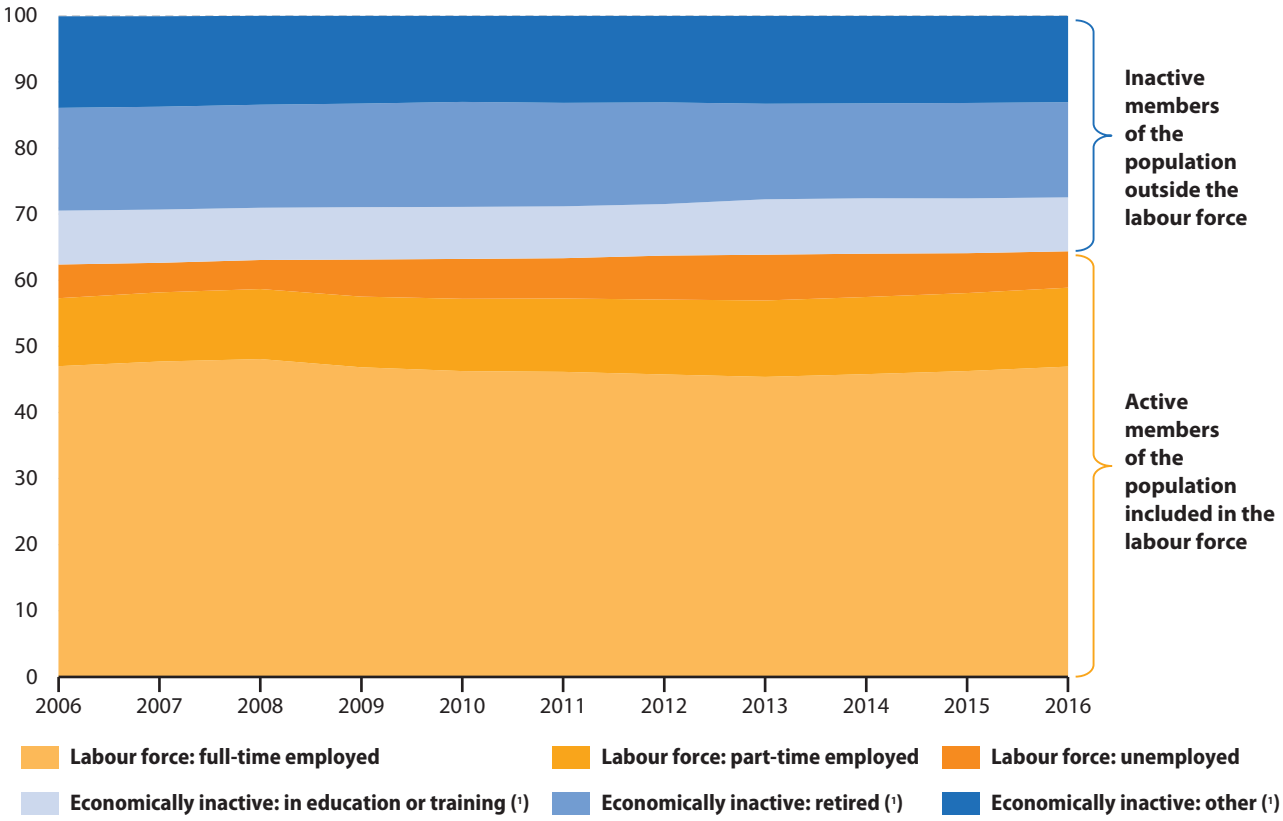
One of the main factors driving the change in the working status structure of the population between 2006 and 2016 was the increase in the number of persons who were in part-time employment: their share increased by 1.7 percentage points over 10 years to reach 11.9 % of the entire population in 2016. The share of the population that was in full-time employment was more stable, just 0.1 percentage points lower in 2016 than it had been in 2006, reflecting slightly lower growth in absolute terms than recorded for the population (aged 15–74) as a whole. A second factor driving the increase in the activity rate between 2006 and 2016 was the increase in the number of unemployed people: the share of the unemployed in the population (which should not be confused with the unemployment rate) increased by 0.4 percentage points, from 5.1 % in 2006 to 5.5 % in 2016.

Concerning economically inactive members of the population aged 15–74, the share of the population that was in education remained relatively stable: it moved from 8.1 % in 2006, through a low of 7.8 % in 2011 and 2012, to a peak of 8.4 % in 2013 and 2014, and finished at 8.2 % in 2016, almost the same as it was in 2006. The overall fall between 2006 and 2016 in the share of the population aged 15–74 that was economically inactive resulted from a decline in the share that was retired as well as a decline in the share of other economically inactive people (for example people caring for family members or simply not looking for work). The share of retired people in the population aged 15–74 fell by 1.2 percentage points between 2006 and 2016 to reach 14.4 %, reflecting, among other factors, the implementation of increases in retirement/pension ages in many EU Member States. The share of other economically inactive persons also fell, down from 13.9 % in 2006 to 13.1 % in 2016.

Main statistical findings

- **The lowest employment rates in 2016 were recorded in EU Member States that were strongly affected by the sovereign debt crisis, in particular, Greece, Spain and Italy.**
- **Male employment rates in 2016 were higher than female rates in all regions of the EU except for Corse and Övre Norrland.**
- **Employment rates for older workers were high in 2016 in all Swedish regions while they were lowest in the Greek capital city region.**
- **All Greek regions except for the capital city region recorded very high shares of self-employed persons in 2016.**
- **The long-term unemployed accounted for a relatively low share of total unemployment in 2016 in the Nordic Member States and in the United Kingdom.**

Figure 5.1: Labour force composition, persons aged 15–74, EU-28, 2006–2016
(%)



(1) 2006–2007: low reliability.
Source: Eurostat (online data codes: lfsa_pganws, lfsa_eftpt and lfsa_igar)

EMPLOYMENT RATES

2016

71.1 %
of people aged 20–64 in the EU are employed

The headline target is to have at least 75 % of people aged 20–64 in employment by 2020

Among persons aged 20–64, there were 214.8 million persons employed in the EU-28 in 2016. The employment rate in this age range peaked in the EU-28 at 70.3 % in 2008. However, in the aftermath of the global financial and economic crisis, there was a period of falling employment and rising unemployment from 2009–13. Indeed, the impact of the crisis was considerable: in 2009, the employment rate fell by 1.3 percentage points and there were further reductions through to 2013 when it stabilised at 68.4 %. Against a background of developments in gross domestic product (GDP) turning positive, the first signs of the EU-28's labour market strengthening occurred towards the end of 2013 and this pattern was confirmed in 2014 and 2015. The employment rate was 71.1 % in 2016, surpassing for the first time its pre-crisis level from eight years earlier.

With the Europe 2020 target set at 75 %, average annual growth of almost 1.0 percentage points will be necessary in each of the coming four years if this goal is to be achieved. In order to boost employment rates, policymakers have focused on increasing employment rates for women, young people and older workers.

A majority of regions in the Czech Republic, Denmark, Germany, the Netherlands, Austria, Sweden and the United Kingdom had employment rates above 75 %, as did Estonia and Lithuania

Map 5.1 presents 2016 employment rates for people aged 20–64 for NUTS level 2 regions. The highest employment rates — equal to or above the Europe 2020 target of 75 % — are shown in the two darkest shades of orange. There were 108 regions out of the 276 EU regions where the latest employment rate was equal to or above the Europe 2020 target.

The highest regional employment rate in the EU-28 in 2016 was recorded in the Finnish archipelago of Åland, where 86.2 % of the population aged 20–64 were in employment, while the second and third highest regional employment rates were 83.4 %, registered in Stockholm, the capital city region of Sweden, and in Berkshire, Buckinghamshire and Oxfordshire, to the east of the British capital city regions.

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 20–64 year-olds are employed by 2020.

The 20–64 age group has been selected to ensure compatibility at the lower end of the age range, given that an increasing proportion of young people remain within educational systems. At the upper age limit, employment rates are usually set to a maximum of 64 years, taking into account (statutory) retirement or pension ages across Europe. Note that several governments have legislated to increase the retirement or pension age gradually over the coming years and it is likely that an increasing proportion of older persons will remain in employment beyond the age of 64.

The employment rate is considered to be a key social indicator for analytical purposes when studying developments within labour markets. In the face of demographic changes and the ageing of the EU's population, raising the employment rate is considered essential for the sustainability of the EU's social model, welfare and its public finances.

In 2016, there were 33 further regions which reported that at least four fifths of their population aged 20–64 was in employment. The vast majority of these were in Germany, the United Kingdom and Sweden, with the exceptions being Praha in the Czech Republic, Utrecht in the Netherlands and Vorarlberg in Austria. The highest employment rates in Germany tended to be recorded in the southern regions, although there were also rates of 80 % or higher in a few regions in the north and the east. In a similar manner, the highest employment rates in the United Kingdom were mainly in the southern half of England, with one region in the north of England and one in Scotland.

The other regions which reported employment rates that were equal to or above the Europe 2020 target of 75 % in 2016 included the two other Swedish regions and most of the remaining German and British regions. Also falling into this category (with employment rates of at least 75 % but not reaching 80 %) were all Danish regions, nearly all remaining Dutch regions, more than half of the Czech regions and half of the remaining Austrian regions, as well as Estonia and Lithuania (each a single region at this level of detail). Additionally, there were five other separate regions where the latest employment rate was also equal to or above 75 % but below 80 %: the capital city regions of Slovakia, Finland and Hungary, the northern Italian region of the Provincia Autonoma di Bolzano/Bozen (Italy) and the French region of Limousin.

All regions of Iceland, Norway and Switzerland had employment rates that were above 75 % in 2016, with the rate in Iceland (87.8 %) higher than in any of the EU regions.

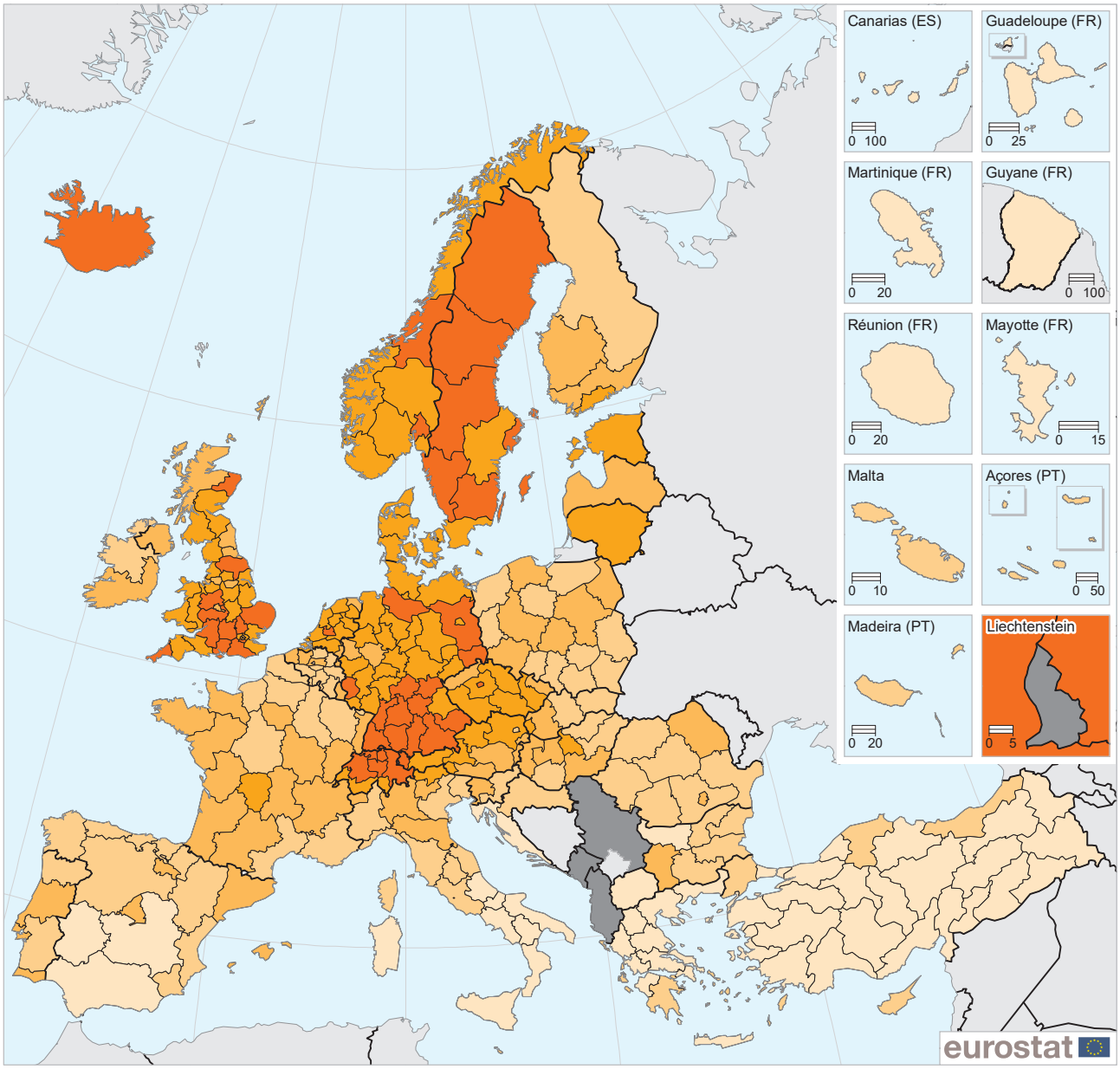
The lowest employment rates were recorded in EU Member States that were strongly affected by the sovereign debt crisis, in particular, Greece, Spain and Italy

In 2016, there were six regions in the EU where the employment rate (among those aged 20–64) was below 50 % (in other words, less than half of the working-age population was in work). Four of the lowest rates were recorded in the south of Italy, in Calabria, Sicilia, Campania and Puglia, while the other two regions were the French and Spanish overseas regions of Mayotte and Ciudad Autónoma de Melilla.

Regional employment rates below 60 % in 2016 are shown with the lightest shade of orange in Map 5.1. These 32 regions were largely concentrated in the French overseas regions or in southern EU Member States. The vast majority of these were in Greece, Italy, Spain and France, the only exceptions being the Belgian capital city region, the Bulgarian region of Severozapaden, and the Croatian coastal region (Jadranska Hrvatska). All except three Turkish regions also reported employment rates below 60 %, with five of these below 50 % and one below 40 %.

While all EU Member States showed some differences in employment rates between regions, these were often not very large. Two of the Member States with a single region with a particularly high rate reported relatively low rates elsewhere: in Austria, Vorarlberg recorded a rate of 80.1 %, while the capital city region had a rate of 68.0 %; in Finland, the rate of 86.2 % in Åland (the highest rate of all EU regions) contrasted with a rate of 69.7 % in Pohjois- ja Itä-Suomi. As already noted, the French overseas regions reported relatively low rates, and these were notably lower than those observed elsewhere in France. Furthermore, in Italy and Spain there were broad North–South divides, with higher employment rates in the north.

Map 5.1: Employment rate, persons aged 20–64, by NUTS 2 regions, 2016
(%)



(%)

EU-28 = 71.1

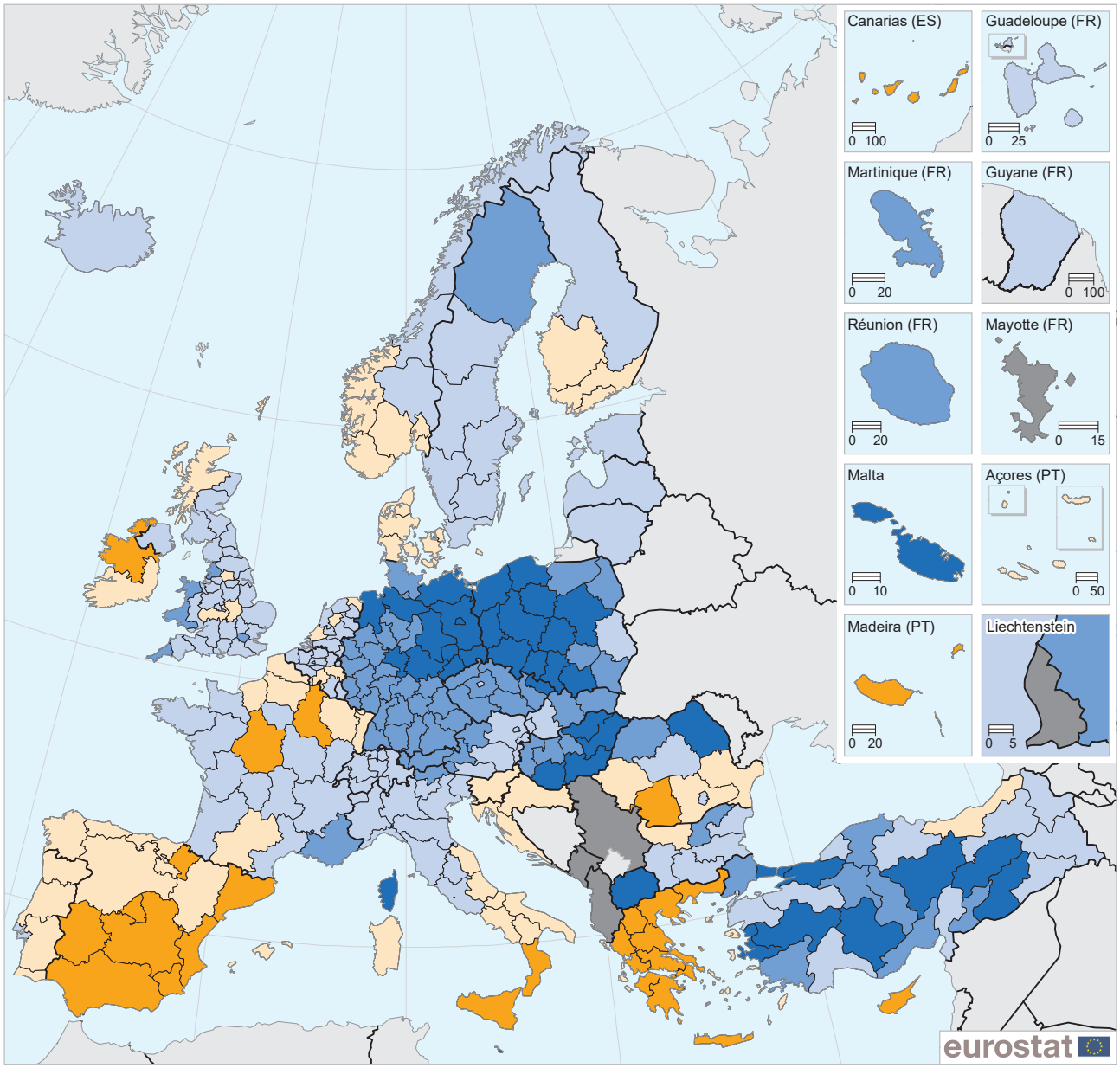
- < 60
- 60 – < 70
- 70 – < 75
- 75 – < 80
- >= 80
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat - GISCO, 07/2017

0 200 400 600 800 km

Source: Eurostat (online data code: lfst_r_lfe2emprt)

Map 5.2: Change in the employment rate, persons aged 20–64, by NUTS 2 regions, 2006–2016
(percentage points, difference between 2016 and 2006)



(percentage points, difference between 2016 and 2006)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat - GISCO, 07/2017

EU-28 = 2.2

- < -4
- -4 – < 0
- 0 – < 4
- 4 – < 8
- >= 8
- Data not available

0 200 400 600 800 km

Note: London (UKI): NUTS level 1. Slovenia: national data. Denmark and Croatia: 2007–2016. Belgium, Bulgaria, the Czech Republic, Denmark, Germany, Ireland, Greece, Cyprus, Luxembourg, the Netherlands, Austria, Poland, Portugal, Romania, Slovakia, Finland, the United Kingdom and Turkey: break(s) in series.

Source: Eurostat (online data code: lfst_r_lfe2emprt)

Employment rates increased in a majority of EU regions between 2006 and 2016

It has already been noted that labour market developments between 2006 and 2016 were not generally smooth. The global financial and economic crisis lead to employment rates falling between 2009 and 2013, with a return to increasing rates observed from 2014 onwards. The employment rate (for persons aged 20–64) in the EU-28 reached 71.1 % in 2016, 2.2 percentage points higher than the value in 2006. Map 5.2 shows a regional analysis over the same period. A total of 185 regions in the EU reported a higher employment rate in 2016 than in 2006 and three regions reported unchanged rates: these regions are shown in the blue shades in the map. A total of 82 regions — shown in the two yellow shades in Map 5.2 — reported a fall in their employment rate between these years.

In general terms, national patterns can be seen in the regional developments of the multi-regional EU Member States. In the Czech Republic, Germany, Hungary, Austria, Poland, Slovakia and Sweden, all regions reported higher employment rates in 2016 than in 2006, as was also the case in Switzerland. In Belgium, Bulgaria, the Netherlands and the United Kingdom a large majority of regions also reported an increase. By contrast, all regions in Denmark (change between 2007 and 2016), Ireland, Greece and Croatia (change between 2007 and 2016) reported a decline in employment rates, as did a large majority of regions in Spain and Portugal.

In the remaining multi-regional EU Member States and Norway, a more varied regional picture could be observed in the change in employment rates between 2006 and 2016. In France, four of the six regions in the Bassin parisien (which encircles the capital city region) recorded a fall in employment rates, as did the Nord - Pas-de-Calais as well as two eastern regions, Alsace and Lorraine; elsewhere in France the rates increased. In Italy there was a clear North–South divide concerning the change in employment rates, with increases in the north and decreases in the south: the divide in employment rates observed in Map 5.1 widened over the last decade. In Romania, there was also a fairly clear North-South divide, with again the northern regions reporting increases in the employment rate and southern regions decreases, although the capital city region, which is in the south, was an exception. In Finland, the employment rate increased in Åland in the south and Pohjois- ja Itä-Suomi in the north, but decreased in the regions between them. In Norway, three of the more northerly regions experienced increases in employment rates, whereas all other regions recorded decreases.

The highest increase in the employment rate between 2006 and 2016 among all EU regions was in Dolnoslaskie in Poland, where it increased by 12.5 percentage points; the same increase was observed in Kayseri, Sivas, Yozgat in Turkey. Increases of 12.2 percentage points were reported for Berlin in Germany and a second Polish region, Pomorskie. Among all 31 EU regions with the darkest shade in Map 5.2, in other words those where the increase was at least 8.0 percentage points, 12 were in Germany, 11 in Poland and four in Hungary. The remaining regions were Malta (one region at this level of detail), Corse in France, Nord-Est in Romania and Moravskoslezsko in the Czech Republic.

Five Greek regions — Ipeiros, Dytiki Ellada, Thessalia, Sterea Ellada and Kriti — experienced falls in their employment rates between 2006 and 2016 that were greater than 10 percentage points; the largest was 11.9 percentage points in Kriti. Among all 28 EU regions where the fall exceeded 4.0 percentage points, 20 were in Greece and Spain (10 each), while four others were also in southern EU Member States: two in Italy, one in Portugal and in Cyprus (one region at this level of detail). The remaining four regions where employment rates fell by more than 4.0 percentage points comprised three in western Member States (two in France and one in Ireland) and one in Romania in the east. Some of these regions may have experienced net outward migration, with people of working age leaving to look for work elsewhere, thereby depressing the employment rate.

Male employment rates were higher than female rates in all regions of the EU except for Corse (France) and Övre Norrland (Sweden)

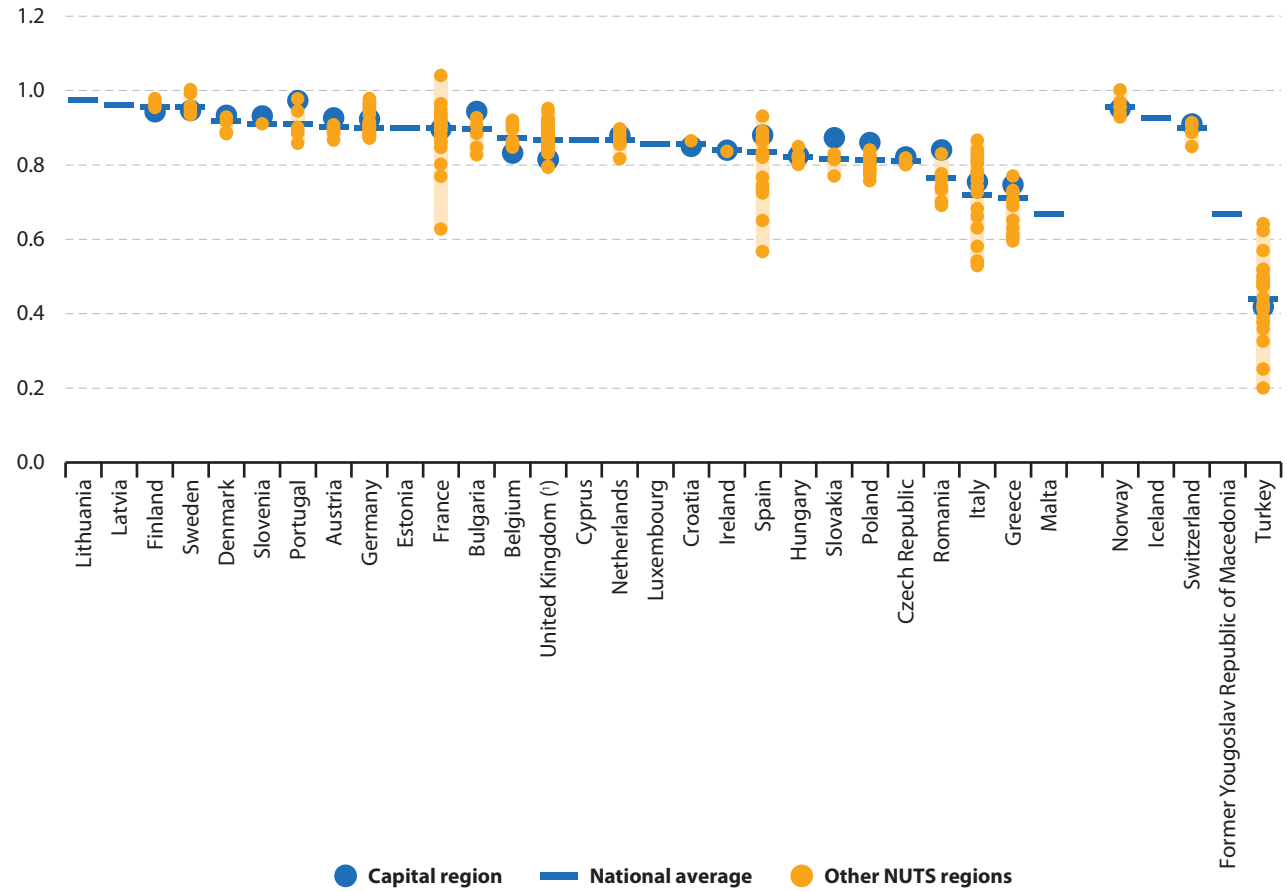
A further analysis of employment rates highlights a considerable, though narrowing, gender gap in the EU-28. In 2006, the employment rate for men was 15.7 percentage points higher than for women, but by 2016 this had narrowed to 11.5 percentage points. A particularly strong contraction in this gap (–1.6 percentage points) was observed in 2009, at the peak of the global financial and economic crisis. Thereafter the gap continued to narrow alongside the fall in the overall employment rate, reaching 11.6 percentage points by 2014, after which it remained stable. By 2016, the employment rate for women had reached 65.3 %, 2.5 percentage points above its pre-crisis high of 62.8 % in 2008. For men the rate in 2016 was 76.8 % and so remained below its 2008 pre-crisis high of 77.8 %, but above the Europe 2020 target.

Gender differences in the employment rate may occur for a number of reasons, including differences in levels of participation in education or educational attainment and different economic structures or industrial specialisation (which may favour job creation for specific occupations). Nevertheless, family responsibilities — maternity, caring for children and/or other family members — are frequently recognised as being one of the main reasons for lower levels of (economic) activity among women; this reflects cultural traditions as well as the availability and affordability of care alternatives.

Figure 5.2 presents the gender gap in employment rates by way of the ratio of the rate for women compared with the rate for men. In 2016, this ratio was 85 % in the EU-28 as a whole, up from 80 % in 2006. In general, high ratios (and therefore small gender gaps) were observed in all northern EU Member States (in other words, the Baltic and Nordic Member States), as well as in Slovenia, Portugal, Austria, Germany, France and Bulgaria. Relatively low ratios (and therefore large gender gaps) were observed in Malta, Greece, Italy and Romania.

The regional gender gaps illustrated by Figure 5.2 strongly reflect national gender gaps, with notable exceptions in Italy and Spain and to a lesser extent in France, Greece and Romania; strong regional differences in the gender gap were also observed in Turkey. Particularly weak regional differences — among EU Member States with more than two regions — were observed in the Czech Republic, Finland, Austria, Hungary, the Netherlands, Denmark and Sweden.

Figure 5.2: Gender balance for the employment rate of persons aged 20–64, by NUTS 2 regions, 2016
(ratio of female to male employment)



Note: ranked on national average. The light yellow shaded area shows the range of the highest to lowest region for each country; the blue bar shows the national average; the blue circle shows the capital city region; the yellow circles show the other regions.

(1) Note there are two capital city regions: Inner London - East and Inner London - West.

Source: Eurostat (online data code: lfst_r_lfe2emprt)

Relative to rates for men, employment rates for women were particularly low in southern Italy

There were only two regions in the EU — Corse in France and Övre Norrland in Sweden — where the gender gap was reversed, with the employment rate for women exceeding that for men and the ratio of these two rates therefore passing the value of 1; a similar situation was observed in Nord-Norge in Norway. The three largest imbalances in EU regions, with employment rates for women only just over half the rates for men, were observed in the southern Italian regions of Puglia, Sicilia and Campania.

Capital city regions often reported gender gaps that were slightly narrower than national averages, resulting in the ratio of employment rates for women to men being slightly higher in these regions. However, this was not the case in Belgium, France, Croatia, Finland, Sweden or the United Kingdom, as can be seen from Figure 5.2. In fact, in Belgium, Croatia and Finland the lowest regional ratio (and therefore the highest gender gap) was recorded in the capital city region. By contrast, the capital city region recorded the highest ratio between women's and men's employment rates (and therefore the lowest gender gap) of all regions in several eastern EU Member States (Bulgaria, the Czech Republic, Poland, Romania, Slovenia and Slovakia) as well as in Denmark, Ireland and Austria.

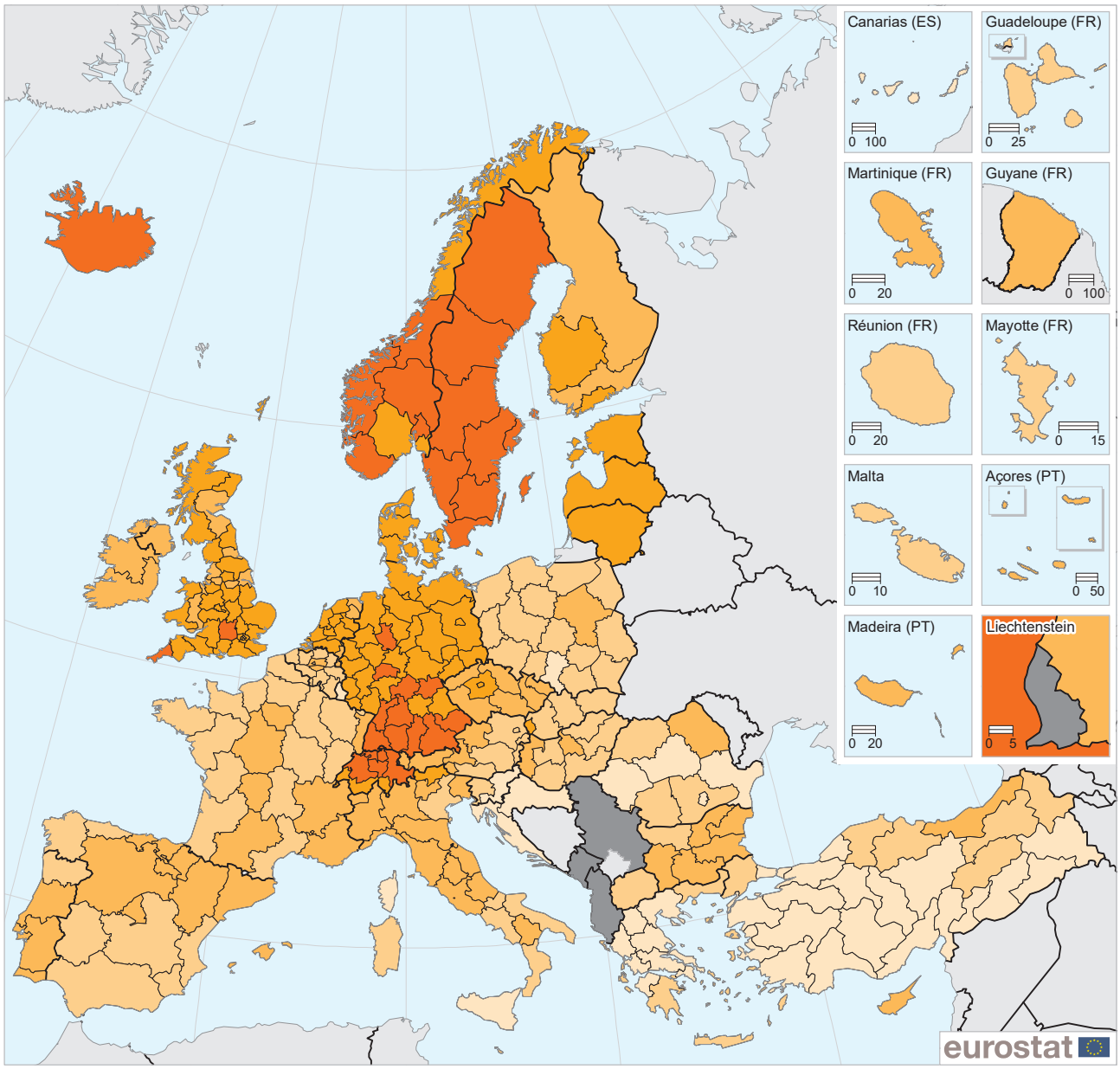
Employment rates for older workers were high in all Swedish regions while they were lowest in the Greek capital city region

The final analysis of regional employment rates presented in this chapter looks at the rates for older people, in other words those aged 55–64. Compared with the employment rate of 71.0 % for all persons aged 20–64, the employment rate for older people in the EU-28 was nearly 16 percentage points lower in 2016, at 55.3 %. Unlike the overall employment rate and despite the global financial and economic crisis the employment rate for older people increased each and every year between 2002 (the beginning of the time series) and 2016, gaining 17.2 percentage points. For comparison, the employment rate for persons aged 20–64 increased by just 4.3 percentage points during the same period.

Among the 276 NUTS level 2 regions in the EU, 22 reported an employment rate for older people that reached 70 % or higher in 2016, with this indicator peaking at 80.8 % (low reliability) in the Finnish archipelago of Åland. Most of the other regions with such high employment rates for older people were in Germany or Sweden, with two in the south of the United Kingdom. It should be noted that all eight Swedish regions reported high employment rates for older people, ranging from 72.9 % in Sydsverige to 77.8 % in Småland med öarna. More generally, all regions in Denmark, Germany, Sweden and the three Baltic Member States reported employment rates for older people of at least 60 % (shown with the two darkest shades in Map 5.3).

By contrast, Greece, Croatia, Luxembourg, Malta and Slovenia reported employment rates for older people below 50 % in all regions in 2016; in fact, in both regions in Croatia and in Luxembourg (one region at this level of detail), the rates were less than 40 %, as shown by the lightest shade in Map 5.3. Other EU Member States with at least one region with an employment rate for older people below 50 % include Spain, France, Italy, Poland and Romania. The lowest rates among all EU regions were both in Greece, 30.5 % in Attiki, the Greek capital city region, and 33.8 % in Dytiki Makedonia.

Map 5.3: Employment rate, persons aged 55–64, by NUTS 2 regions, 2016
(%)



(%)

EU-28 = 55.3

- < 40
- 40 – < 50
- 50 – < 60
- 60 – < 70
- >= 70
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat - GISCO, 07/2017

0 200 400 600 800 km

Note: Ciudad Autónoma de Ceuta (ES63), Corse (FR83), Mayotte (FRA5) and Åland (FI20): low reliability.
Source: Eurostat (online data code: lfst_r_lfe2emprt)

EMPLOYMENT CHARACTERISTICS

33.1 million self-employed people in the EU-28 in 2016, 14.8 % of all employed persons

There were 33.1 million persons (aged 15 and over) in the EU-28 who were self-employed in 2016, among whom 30.5 million were aged 20–64. As a share of all employed persons this was equivalent to 14.8 % for those aged 15 and over and 14.2 % among those aged 20–64.

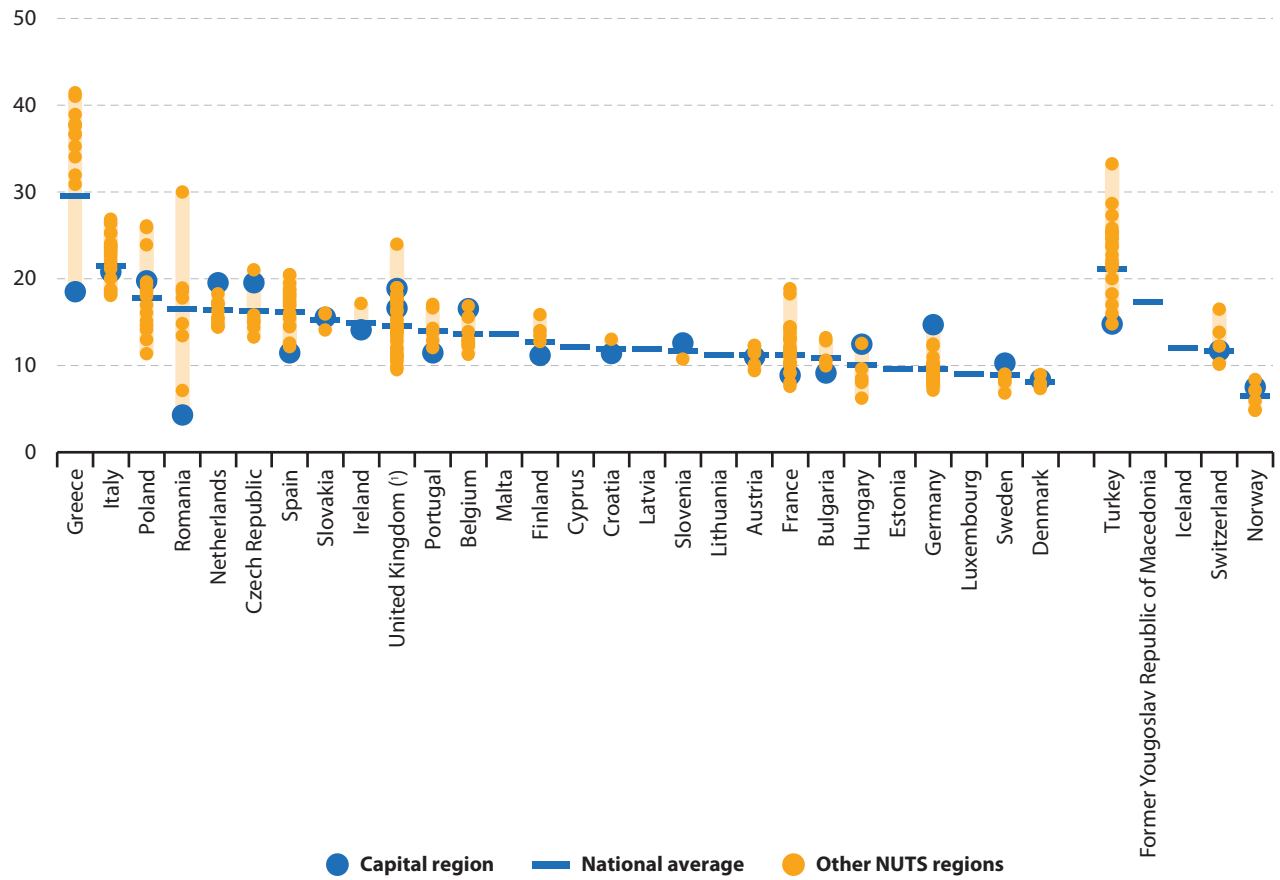
In 2002 (beginning of the time series), the share of self-employed people in the age range 20–64 was 14.7 %. Over the next eight years this share developed in a narrow range, rising to 15.1 % (2004), falling back to 14.5 % (2008), and rising again to 14.9 % (2010). After 2010, the share of self-employed persons experienced a more sustained decrease, falling 0.7 percentage points to its lowest level (since the beginning of the time series). Figure 5.3 provides a regional analysis of the share of self-employed persons (aged 20–64) in 2016.

Particularly high shares of self-employed persons were recorded in Greece and to a lesser extent in Italy and Poland. The share of self-employment was lowest in Denmark, Sweden and Luxembourg.

All Greek regions except for the capital city region recorded very high shares of self-employed persons in 2016

The regional dispersion of the share of self-employment varied greatly within many EU Member States in 2016. A particularly strong regional variation could be seen in Romania, with a relatively low share of self-employment in the capital city region, a particularly high share in Nord-Est and also quite large differences in the shares of the other Romanian regions. Relatively large regional variations in the share of self-employed persons were also observed in Hungary, Poland, France and the United Kingdom, as well as in Turkey. In Greece, the share of self-employed persons was quite uniformly high across most regions, with the capital

Figure 5.3: Share of self-employment in total employment, persons aged 20–64, by NUTS 2 regions, 2016
(%)



Note: ranked on national average. The light yellow shaded area shows the range of the highest to lowest region for each country; the blue bar shows the national average; the blue circle shows the capital city region; the yellow circles show the other regions. Ciudad Autónoma de Ceuta (ES63), Ciudad Autónoma de Melilla (ES64) and Åland (FI20): low reliability.

(1) Note there are two capital city regions: Inner London - East and Inner London - West.

Source: Eurostat (online data codes: lfst_r_lfe2emp and lfst_r_lfe2estat)

city region the main exception: in Attiki the share was 12 percentage points lower than in any other Greek region. Particularly weak regional differences — among Member States with more than two regions — were observed in Slovakia, Denmark, Austria and Croatia.

There were 12 regions in the EU where the share of self-employed persons exceeded 30 % in 2016, all of which were in Greece. In fact, all regions in Greece except for the capital city region reported that more than 30 % of employed persons were self-employed. Elsewhere, this share reached exactly 30.0 % in Sud-Est in Romania and was over 25 % in three southern Italian regions (Molise, Basilicata and Abruzzo), Liguria in north-eastern Italy and two eastern Polish regions (Lubelskie and Podlaskie). The 4.3 % share of self-employed persons recorded in the Romanian capital city region was the only share below 5 % among all regions in the EU.

Two capital city regions are mentioned above as having particularly low shares of self-employed relative to other regions in the same EU Member State, namely the capital city regions of Greece and Romania. Bulgaria, Ireland, Spain, Croatia, Portugal and Finland were the other Member States (among those with at least two NUTS level 2 regions) that reported that their lowest share of self-employed persons was in their capital city region. By contrast, Germany, the Netherlands, Slovenia and Sweden were the only Member States where the capital city region recorded the highest share of self-employed persons.

The average number of hours worked in the EU-28 in 2016 was 37.1 per week, rising to 41.4 per week for people in full-time employment

A key area of interest when analysing employment is to quantify labour input. This may be done by simply compiling data on the number of persons in employment, but other measures are available, for example distinguishing between people working full-time and part-time, or quantifying the number of hours worked. The latter is based on the number of hours actually worked (rather than contractual or paid hours) and includes the sum of all hours spent on direct and ancillary activities to produce goods and services. The data presented in Map 5.4 concern the number of hours normally worked, including overtime, but excluding travel time between home and workplace and main meal breaks. In cases where a person has more than one job, the data shown correspond to the main job only.

The average number of hours worked per week in the EU-28 in 2016 was 37.1. For men the average was 40.0 hours per week while for women it was 33.7 hours per week. A large part of this difference can be explained by the fact that a larger proportion of women than men work part-time. For people working full-time, the average was 41.4 hours per week, with the gap between the average for men (42.3 hours) and women (40.0 hours) much narrower than for all persons employed. For part-time workers, average weekly hours were slightly higher for women (20.6) than for men (19.2).

The average weekly hours worked in the EU-28 fell steadily from 37.8 in 2008 (start of the time series) to 37.1 in 2016, a fall of just under three quarters of an hour per week. This fall is mainly the result of a structural shift in the labour force, as the proportion of part-time employees increased. Between 2008 and 2016 the average weekly hours of full-time persons employed fell from 41.7 to 41.4, in other words a fall of just over a quarter of an hour per week. During the same period the average number of weekly hours worked by part-time persons employed increased from 19.9 to 20.3, an increase of less than half an hour per week.

In most EU Member States, average hours in 2016 ranged from 35.1 per week in Germany to 40.8 per week in Bulgaria, with the Netherlands (30.3 per week) and Denmark (32.9 per week) below this range and Greece (42.3 per week) above it.

Map 5.4 presents a regional analysis of the average weekly hours worked, focusing on people aged 20–64. Within this age group, the average hours worked was 37.6 per week in 2016, about half an hour longer per week than the average for persons of all ages.

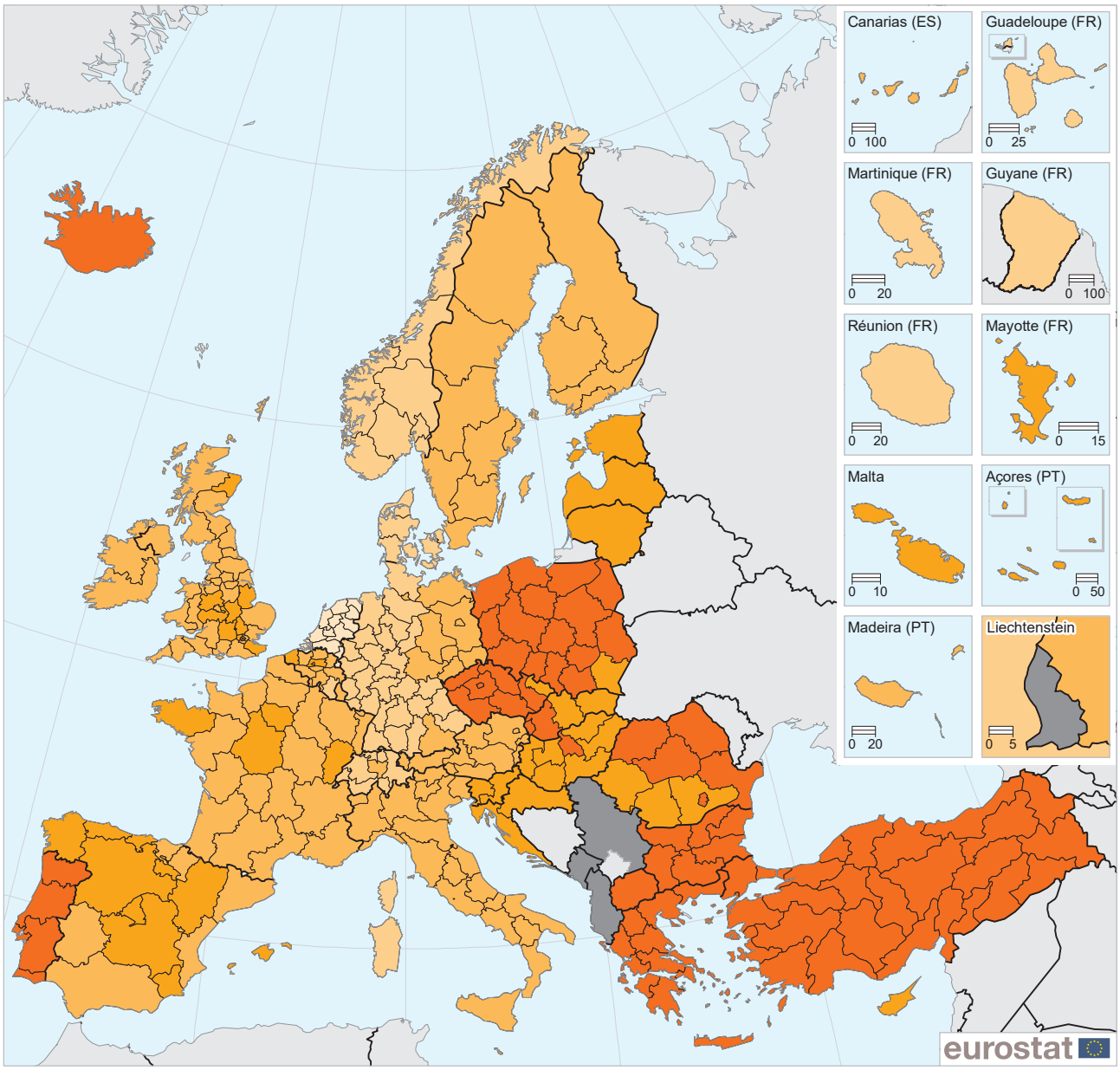
Average weekly hours were above 40 in Greece and many regions of eastern EU Member States …

A total of 55 of the 276 NUTS level 2 regions in the EU reported an average working week in 2016 for persons aged 20–64 that reached or exceeded 40 hours, including all 13 Greek regions. Furthermore, 12 of the 14 regions with the highest average hours per week were in Greece (the Greek capital city region was not among them), the other two being the Polish region of Podlaskie and the Slovakian capital city region. The highest averages of all were in the Greek island regions of Ionia Nisia and Notio Aigaio where the average passed 46 hours. Elsewhere, at least half of all regions in Bulgaria, the Czech Republic, Poland, Portugal, Romania and Slovakia reported that average hours reached or exceeded 40 per week, and this was also the case in the Hungarian capital city region and one of the two British capital city regions (Inner London - West).

2016

37.6 hours
average working week for people employed in the EU

Map 5.4: Average number of usual weekly hours of work in main job, persons aged 20–64, by NUTS 2 regions, 2016 (hours)



(hours)

EU-28 = 37.6

- < 34
- 34 – < 36
- 36 – < 38
- 38 – < 40
- >= 40
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat - GISCO, 07/2017

0 200 400 600 800 km

Source: Eurostat (online data code: lfst_r_lfe2ehour)

… and below 33 hours in all Dutch regions

Reflecting the high part-time employment rates in the Netherlands, the lowest average weekly hours of people aged 20–64 in the EU regions in 2016 were observed in Dutch regions. The highest average among any of the Dutch regions was 32.4 hours per week in Zeeland, approximately one and three-quarter hours per week less than the lowest average in any other region of the EU. Elsewhere the regional averages were below 36 hours per week in all Danish regions, the vast majority of German regions, most French overseas regions as well as Corse (France), Prov. Luxembourg (Belgium) and Sardegna (Italy).

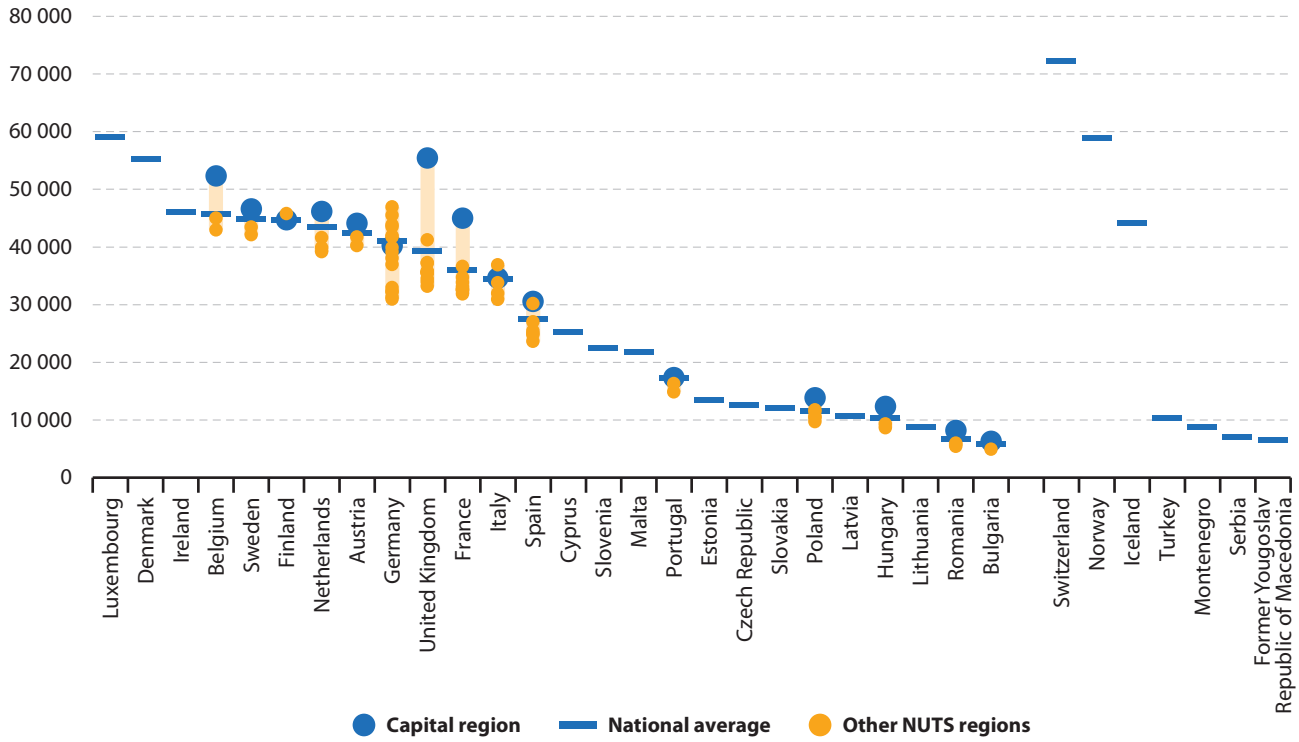
Germany, Italy and Finland were the only EU Member States where the capital city region did not record the highest regional average earnings in 2014

The final part of the analysis of employment characteristics focuses on earnings. The data presented in Figure 5.4 are compiled from a survey of enterprises with at least 10 employees. The coverage is NACE Sections B–S excluding Section O, in other words it does not cover agriculture, hunting and fishing, nor public administration, defence and compulsory social security, nor the activities of households (as employers) and extraterritorial organisations. The data are average (mean) annual earnings: remuneration in cash paid by the employer before tax deductions and social security contributions payable by wage/salary-earners and retained by the employer. Included are not only regular (weekly or monthly) payments, but also payments such as 13th or 14th month payments as well as holiday and other bonuses (whether in cash or in kind).

Annual earnings in the EU-28 averaged EUR 33.8 thousand in 2014. Among the EU Member States this average varied greatly, from EUR 10.3 thousand in Hungary to EUR 46.0 thousand in Ireland, with the averages in Lithuania (EUR 8.8 thousand), Romania (EUR 6.7 thousand) and Bulgaria (EUR 5.8 thousand) below this range and those in Luxembourg (EUR 59.0 thousand) and Denmark (EUR 55.2 thousand) above them; an even higher average was recorded in Switzerland (EUR 72.1 thousand).

The regional analysis in Figure 5.4 is based on NUTS level 1 regions, meaning that many of the EU Member States have just one region. The regional dispersion for average earnings in 2014 was relatively weak in Finland, Austria and Sweden. In several Member States, the regional dispersion appeared to be strong in 2014 because of particularly high average earnings in just one region, the capital city region; this was the case in Belgium, the United Kingdom and France, and to a lesser extent in the Netherlands, Poland, Hungary and Romania. Germany, Italy and Finland were the only Member States where the capital city region did not record the highest regional average earnings.

Figure 5.4: Mean annual earnings, by NUTS 1 regions, 2014
(EUR)



Note: ranked on national average. Concerns enterprises with 10 or more employees within NACE Rev. 2 Sections B–S excluding Section O. Turkey: national data. The light yellow shaded area shows the range of the highest to lowest region for each country; the blue bar shows the national average; the blue circle shows the capital city region; the yellow circles show the other regions. Greece, Croatia, Liechtenstein and Albania: not available.

Source: Eurostat (online data codes: earn_ses14_rann and earn_ses14_26)

UNEMPLOYMENT RATES

High unemployment (particularly long-term unemployment) may reflect economic problems and potentially leads to a wide range of social problems, most directly poverty and social exclusion. In 2016, there were 20.9 million persons (aged 15–74) in the EU-28 who were unemployed. As a share of the labour force (persons who are employed or unemployed), this represented an unemployment rate of 8.5 %. In 2000 (start of the time series for the EU-28), there were 20.0 million unemployed persons in the EU-28, equivalent to 8.9 % of the labour force. The unemployment rate rose to 9.3 % by 2004, before falling for four consecutive years to reach 7.0 % in 2008. The global financial and economic crisis impacted strongly on the EU-28's labour market, resulting in five consecutive annual increases in the unemployment rate, peaking at 10.9 % in 2013. In the three most recent years, 2014–2016, a fall in the EU-28 unemployment rate was observed, bringing the rate down to its fourth lowest level since the time series began, higher only than during the period 2006–2008. Comparing 2016 with 2008, 4.2 million more people were unemployed in 2016 than at the onset of the crisis.

Among the EU Member States, unemployment rates varied greatly in 2016, with the 23.6 % rate in Greece nearly six times as high as the 4.0 % rate in the Czech Republic. Along with Greece, several other southern Member States — Spain, Cyprus, Italy and Portugal — reported unemployment rates above 10 %, as did Croatia and France. The one other southern Member State, Malta, was one of four Member States where unemployment rates below 5 % were observed, the others being the United Kingdom, Germany and the Czech Republic.

The highest unemployment rates were concentrated in Greek, Spanish, French and Italian regions …

Taking all of the EU regions together, the highest regional rates of unemployment (shown with the darkest shade in Map 5.5) can be found in four clusters: most Greek regions, French overseas regions, southern Italy and southern/eastern Spain (as well as Canarias). Generally the high rates in these regions reflect the impact of the global financial and economic crisis as well as underlying structural unemployment. Unemployment rates above 30 % were observed in two regions in the EU in 2016: the Greek region of Dytiki Makedonia (31.3 %) and the Spanish region of Ciudad Autónoma de Melilla (30.8 %).

… while the lowest rates were predominantly recorded in German regions

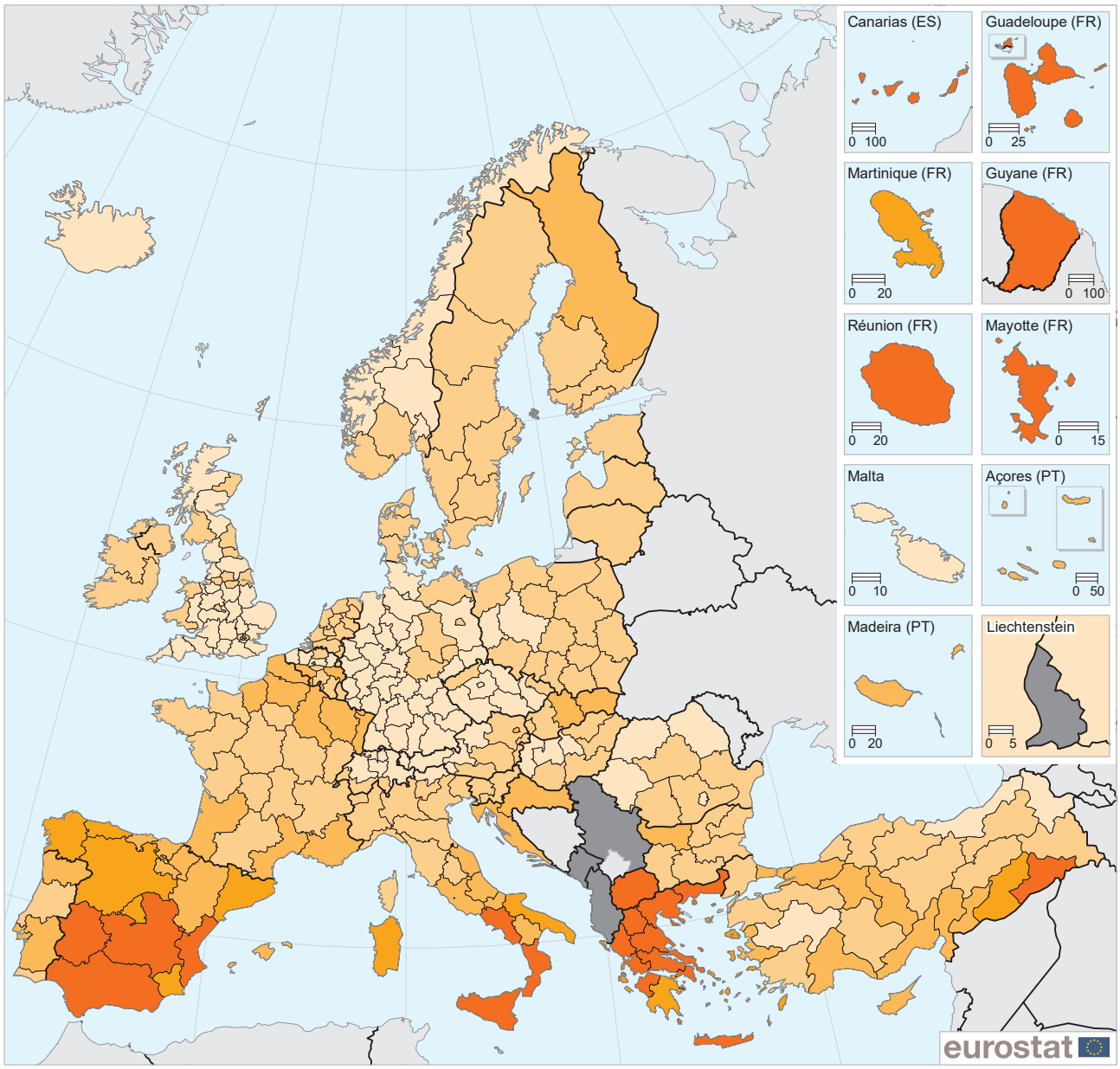
The lowest regional unemployment rates in the EU were in Niederbayern (2.1 %) in Germany and the Czech capital city region (2.2 %), followed by four more southern German regions. Considering all 84 regions in the EU where the unemployment rate was below 5 %, the vast majority were in Germany or the United Kingdom. Among western EU Member States such low rates were also observed in several Belgian and Austrian regions as well as one in the Netherlands (Zeeland), while among eastern Member States, regions with unemployment rates below 5 % were located in the Czech Republic, Hungary, Poland and Romania. None of the regions in the northern Member States had unemployment rates below 5 % (the lowest was 5.5 % in Midtjylland in Denmark), while there were just two from the south, Malta (which is one region at this level of regional analysis) and Provincia Autonoma di Bolzano/Bozen in the north of Italy.

The most dispersed regional unemployment rates were observed in Belgium, Italy, Austria, France and Hungary

The regional analysis presented in Map 5.5 shows that there were several EU Member States where the national averages result from quite diverse regional situations. The most uniform unemployment rates were observed in Denmark, Croatia, Sweden, Finland, Ireland, Portugal and Slovenia, while the strongest regional variations (between NUTS level 2 regions) were recorded for Belgium, Italy, Austria, France and Hungary. In Belgium, the lowest unemployment rates in 2016 were in the five regions that make up Vlaams Gewest (four of which were under 5 %), while the highest was in the capital city region (16.8 %). In Italy, there was a clear North–South divide, with higher unemployment rates in the south and lower ones in the north. In Austria, a similar situation to that in Belgium was observed, as a cluster of regions (in the west) reported the lowest unemployment rates, all under 5 %, while the capital city region reported a rate (11.3 %) that was approximately double the rate in the next highest region (5.7 % in Burgenland). In France, unemployment rates in the overseas regions were all higher than in any of the other regions, with rates in four overseas regions exceeding 20 %. Although all of the unemployment rates in Hungary were below 10 %, the rates in two of the three western regions that make up Dunántúl were

The **dispersion of unemployment rates** is the coefficient of variation of regional unemployment rates. The **coefficient of variation** is calculated by dividing the standard deviation by the mean; it is then multiplied by 100 to make a percentage. This indicator measures the spread of regional unemployment rates in relation to the national rate. If all the regional unemployment rates are equal (regardless of whether they are all high or all low), the dispersion is zero. Large differences between regional unemployment rates imply a wide dispersion. The regional dispersion rates can be calculated at any level of the regional classification for which data are available, for example for NUTS levels 1, 2 or 3.

Map 5.5: Unemployment rate, persons aged 15–74, by NUTS 2 regions, 2016
(%)



(%)

EU-28 = 8.6

- < 5
- 5 – < 10
- 10 – < 15
- 15 – < 20
- >= 20
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat - GISCO, 07/2017

0 200 400 600 800 km

Note: Corse (FR83) and Cumbria (UKD1): low reliability.
Source: Eurostat (online data code: lfst_r_lfu3rt)

particularly low (2.7 % in Nyugat-Dunántúl and 3.0 % in Közép-Dunántúl) such that the regional dispersion was quite high, given that the unemployment rate reached 9.3 % in the easternmost region of Észak-Alföld.

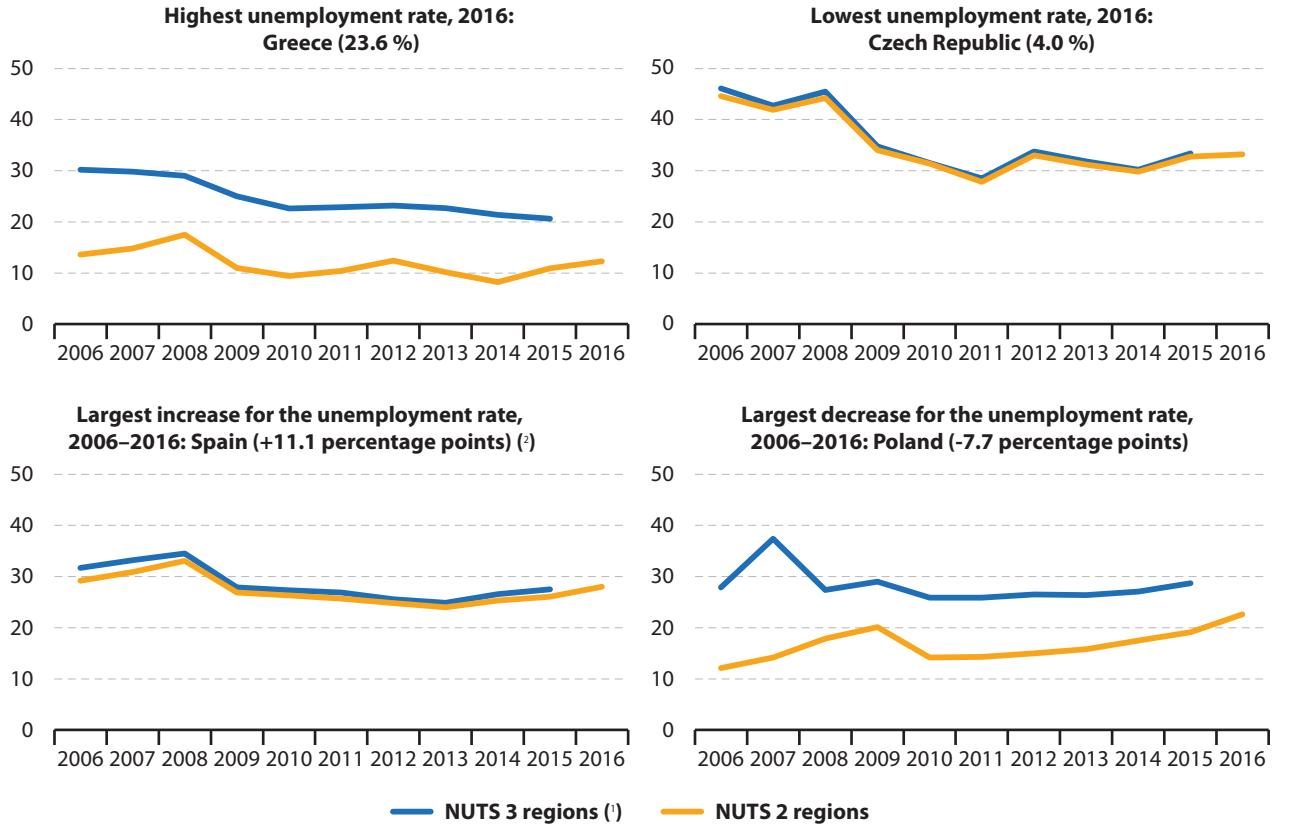
Figure 5.5 looks at how the regional variations within a selection of EU Member States have developed during the most recent 10-year period: note that all parts of the figure are shown with the same scale.

As noted above, the highest unemployment rate among EU Member States in 2016 was in Greece; this resulted from quite similar regional unemployment rates across all regions (at NUTS level 2 and level 3), with regional Greek unemployment rates converging between 2006 and 2016. The Czech Republic had the lowest unemployment rate among Member States in 2016, although its regional rates were quite diverse in 2006, but converged rapidly through to 2011, since when the level of dispersion has been broadly stable.

The two remaining parts of Figure 5.5 look at two EU Member States with very different developments to their national unemployment rates during the past 10 years. In Spain, the unemployment rate was 11.1 percentage points higher in 2016 (19.6 %) than it was in 2006 (8.5 %), which was the second largest increase after Greece (where the unemployment rate increased by 14.6 percentage points). In Poland, the unemployment rate fell by 7.7 percentage points, from 13.9 % in 2006 to 6.2 % in 2016. Despite the strong increase in national unemployment rates in Spain, there was a slight convergence in regional unemployment rates for both NUTS level 2 and level 3 regions. In Poland, the situation was slightly different depending whether NUTS level 2 or level 3 regions are analysed. For the smaller regions (NUTS level 3), there was a strong increase in the dispersion of regional unemployment rates between 2006 and 2007 before an almost equally strong convergence in 2008, since when the level of dispersion remained quite stable. For the less detailed NUTS level 2 regions, the level of dispersion for unemployment rates in Poland increased between 2006 and 2009, decreased rapidly in 2010 and then increased steadily through to 2016, when the level of dispersion overtook its previous 2009 peak.

The final analysis of unemployment data in this chapter concerns long-term unemployment. The indicator in Figure 5.6 is the long-term unemployment ratio, which

Figure 5.5: Dispersion of regional unemployment rates, 2006–2016
(%)



Note: Estonia, Ireland, Croatia, Cyprus, Latvia, Lithuania, Luxembourg, Malta and Slovenia: not applicable for NUTS 2 regions (as they only have one or two regions). Cyprus, Luxembourg and Malta: not applicable for NUTS 3 regions (as they only have one or two regions).

(1) 2016: not available.
(2) The largest increase was for Greece (14.6 percentage points); as Greece is already shown the next highest increase is shown.

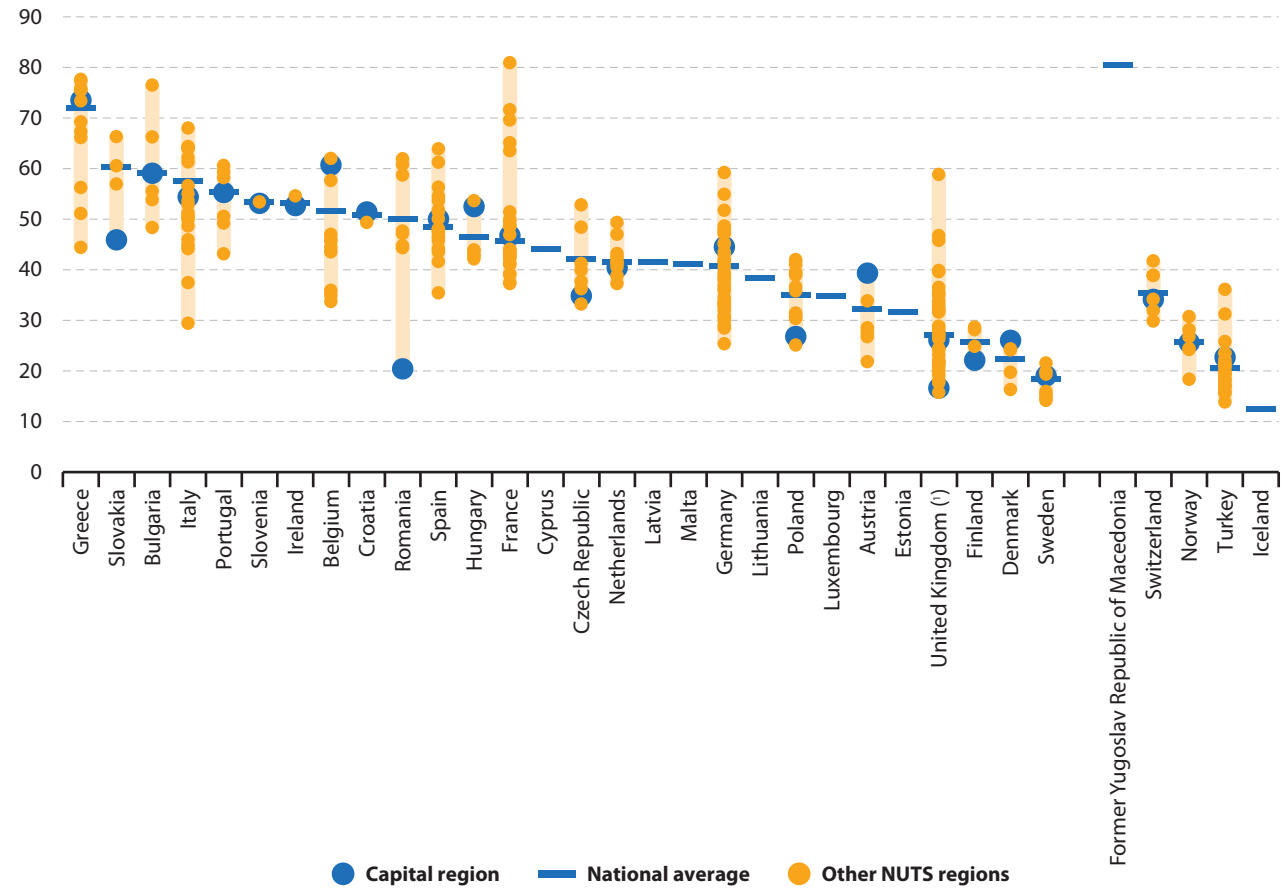
Source: Eurostat (online data code: lfst_r_lmdur)

is defined as the share, among all unemployed people, of those who have been without work for at least 12 months; this is compiled for people aged 15–74.

Close to half (46.9 %) of the unemployed in the EU-28 in 2016 had been without work for at least a year. This share had been slightly lower in 2002 (45.4 %), at the beginning of the time series for this indicator. Thereafter the long-term unemployment ratio rose to 46.2 % by 2005 and then fell to 33.3 % by 2009, initially reflecting an overall fall in unemployment and then a rapid increase in the number of newly unemployed as the global financial and economic crisis impacted the labour market. As the overall unemployment rate remained persistently high for several years, the long-term unemployment ratio increased once more, peaking at 49.6 % in 2014, after which it declined for two consecutive years.

The **long-term unemployed** are people who remain unemployed for 12 months or more. The longer somebody remains unemployed, the less attractive they are likely to be for potential employers, as their specific skills depreciate. Equally, long-term unemployment may have a significant impact on self-esteem and disillusionment, thereby increasing the risk of remaining even longer outside of employment. The **long-term unemployment ratio** is the share of people who have been without work for at least 12 months in the total unemployed population. This may be contrasted with the **long-term unemployment rate**, which is the number of people who remained unemployed for a period of 12 months or longer as a percentage of the total labour force.

Figure 5.6: Share of long-term unemployment in total unemployment, persons aged 15–74, by NUTS 2 regions, 2016 (%)



Note: ranked on national average. The light yellow shaded area shows the range of the highest to lowest region for each country; the blue bar shows the national average; the blue circle shows the capital city region; the yellow circles show the other regions. Opolskie (PL52), Cumbria (UKD1), Cheshire (UKD6) and Iceland: 2015. North Yorkshire (UKE2), Lincolnshire (UKF3), Cornwall and Isles of Scilly (UKK3) and Highlands and Islands (UKM6): 2014. Trier (DEB2), Corse (FR83), Burgenland (AT11), Salzburg (AT32), Vorarlberg (AT34), Åland (FI20) and North Eastern Scotland (UKM5): not available. Data of low reliability for some regions.

(1) Note there are two capital city regions: Inner London - East and Inner London - West.

Source: Eurostat (online data code: lfst_r_lfu2ltu)

The long-term unemployed accounted for a relatively low share of total unemployment in the Nordic Member States and in the United Kingdom

In 2016, the lowest long-term unemployment ratios among the EU Member States were recorded in the Nordic Member States — Sweden (19.2 %), Denmark (22.3 %) and Finland (25.9 %) — and the United Kingdom (27.2 %). Among the non-member countries for which data are available, the long-term unemployment ratio was also particularly low in Turkey (20.6 %) and Iceland (12.4 %, 2015 data). By contrast, at least half of the unemployed people in 10 Member States were long-term unemployed in 2016, with the long-term unemployment ratio peaking at 72.0 % in Greece; in the former Yugoslav Republic of Macedonia the ratio reached 80.4 %.

Among the EU Member States, the regional dispersion of long-term unemployment ratios was weakest in 2016 in Slovenia, Ireland, Croatia and the Netherlands, while the ratios were most varied within the United Kingdom, Romania and France. In the United Kingdom a particularly high long-term unemployment ratio (58.8 %, 2014 data) was recorded for the Highlands and Islands of Scotland, the only region within the United Kingdom where this ratio exceeded the EU-28 average; even without this value the regional dispersion in the United Kingdom remained strong for this ratio. In Romania, the long-term unemployment ratio for the capital city region was considerably lower than for any other region, as its ratio of 20.4 % was less than half the 44.3 % observed for Nord-Vest, which had the next lowest ratio in Romania. In France, the strong regional dispersion in the long-term unemployment ratio was due to particularly high ratios for all five of its overseas regions.

In Mayotte, around four fifths of the unemployed had been out of work for at least 12 months

In 2016, there were 10 regions in the EU where the long-term unemployed accounted for at least 70 % of the total unemployed population. Seven of these regions were Greek, two were French overseas regions (Guadeloupe and Mayotte) and one was Bulgarian (Severozapaden). The highest regional long-term unemployment ratio of all within the EU was 80.9 % in Mayotte.

At the other end of the scale, 15 regions in the EU reported long-term unemployment ratios below 20 % in 2016, with seven of these in Sweden (all except Sydsverige), six in the United Kingdom (in a cluster from East Midlands to South East of England), and two in Jutland in Denmark. The three lowest regional long-term unemployment ratios in the EU were all in Sweden, with the lowest ratio (14.1 %) recorded in Småland med öarna.

In five EU Member States the lowest regional long-term unemployment ratios were reported in capital cities, with these considerably lower than in any other region in Slovakia and Romania, somewhat lower in the Finnish capital city region, but only slightly lower in the capital city regions of Ireland and Slovenia: these last two Member States have only two NUTS level 2 regions each. In Croatia (which also has only two NUTS level 2 regions), Denmark and Austria the highest regional long-term unemployment ratio was observed in the capital city region.

Data sources and availability

The information presented in this chapter mainly pertains to annual averages derived from the labour force survey (LFS). This survey covers 33 countries, comprising the 28 EU Member States, three EFTA countries (Iceland, Norway and Switzerland) and two candidate countries (the former Yugoslav Republic of Macedonia and Turkey). The survey population generally consists of those persons aged 15 and over living in private households, with definitions aligned with those provided by the International Labour Organisation (ILO).

NUTS

The data presented in this chapter are generally based on the 2013 version of NUTS, although data for Figure 5.4 are presented based on the 2010 version of NUTS. For Map 5.2, which shows an analysis of the change in employment rate between 2006 and 2016, data are presented at NUTS level 1 for London as the earlier data have been converted from a previous version of NUTS.

INDICATOR DEFINITIONS

Glossary entries on Statistics Explained (see: http://ec.europa.eu/eurostat/statistics-explained/index.php/Category:Labour_market_glossary) are available for a wide range of labour market concepts/indicators.

For more information:
http://ec.europa.eu/eurostat/web/labour-market/overview
http://ec.europa.eu/eurostat/statistics-explained/index.php/EU_labour_force_survey_-_methodology

6 Economy

This chapter uses regional economic accounts to analyse economic developments within the European Union (EU). The first section is based on gross domestic product (GDP), the principal aggregate for measuring the economic output of an economy. The second provides a brief analysis of labour productivity (defined here as gross value added per hour worked). It closes with a regional analysis of structural differences in regional economies, according to economic activities as defined by the NACE classification.

Economic development is commonly expressed in terms of GDP, which may be used to measure macroeconomic activity and growth. GDP per capita is often regarded as a proxy indicator for overall living standards. However, as a single source of information it should not be relied upon to inform policy debates, as it does not take account of externalities such as environmental sustainability or social inclusion, which are increasingly considered as important drivers for the quality of life and sustainable development.

The EU's regional policy aims to support the broader Europe 2020 agenda. It is designed to foster solidarity and cohesion, such that each region may achieve its full potential by helping to alleviate inequalities such as social deprivation, poor-quality housing, healthcare or education, unemployment or inadequate infrastructure. Such inequalities may be due to a wide range of factors, including: geographic remoteness or sparse populations, social and economic change, or the legacy of former economic systems. Across the EU, regional policymakers seek to help every region achieve its full potential, through improving competitiveness and raising the living standards of the poorest regions towards the EU average (convergence) by stimulating investment in these regions, improving accessibility, providing quality services and preserving the environment.

POLICY INITIATIVES

In August 2009, the European Commission adopted a communication titled GDP and beyond: measuring progress in a changing world (COM(2009) 433 final), which outlined a range of actions to improve and complement GDP measures. This noted that there was a clear case for complementing GDP with statistics covering other economic, social and environmental issues, on which individuals' well-being critically depends. A set of complementary indicators was detailed in a staff working paper called Progress on 'GDP and beyond' actions (SWD(2013) 303 final), including at regional and local levels.

International interest in sustainable development issues has been led by work conducted under the auspices of the United Nations (UN). Transforming our world: the 2030 agenda for sustainable development was adopted on 25 September 2015 and provides a commitment to eradicate poverty and achieve worldwide sustainable development by 2030, bringing social and environmental measures of development into the mainstream. In conjunction, the European Commission adopted a series of Communications titled, a decent life for all: ending poverty and giving the world a sustainable future (COM(2013) 92 final), a decent life for all: from vision to collective action (COM(2014) 335 final) and a global partnership for poverty eradication and sustainable development after 2015 (COM(2015) 44 final).

For more information:
http://ec.europa.eu/europeaid/policies/european-development-policy/2030-agenda-sustainable-development_en

More than one third of the EU's budget is devoted to cohesion policy, with the goal of removing economic, social and territorial disparities. GDP is an important indicator from this perspective, insofar as it is used to determine the extent to which each EU Member State should contribute to the EU's budget. Regional accounts also serve as the basis for the allocation of expenditure under the EU's cohesion policy. Every region of the EU is covered: however, most structural funds (the European regional development fund (ERDF) and the European social fund (ESF)) are directed to NUTS level 2 regions where GDP per capita in PPS — averaged over the period 2007 to 2009 — was less than 90 % of the EU average. The process for the allocation of cohesion funds was adapted during 2016 and is now based upon providing support to those EU Member States whose gross national income (GNI) per inhabitant — averaged over the period 2012 to 2014 — was less than 90 % of the EU average. More information on the EU's structural and investment funds and cohesion policy is provided in the chapter on regional policies and the European Commission's priorities.

For more information:
https://ec.europa.eu/info/strategy/european-semester/framework/europe-2020-strategy_en

In 2014, the European Commission set its top priority as 'boosting jobs, growth and investment'. This is a major new initiative that aims to unlock public and private investment by targeting infrastructure developments, such as broadband internet, energy networks and transport. In its Communication titled an investment plan for Europe (COM(2014) 903 final), the European Commission underlined the role that EU Member States and regional authorities should play to get the maximum impact from structural funds by capitalising on a variety of financial instruments in the form of loans, equity and guarantees. In January 2015, the European Commission adopted a Communication on making the best use of the flexibility within the existing rules of the stability and growth pact

(COM(2015) 12 final); it aims to strengthen the link between investment, structural reforms and fiscal responsibility. This was followed in 2016 by two further Communications following a stock-taking exercise to analyse the progress made during the first two years of the investment plan: Europe investing again — taking stock of the investment plan for Europe (COM(2016) 359 final) and Strengthening European investments for jobs and growth: towards a second phase of the European Fund for strategic investments and a new European external investment plan (COM(2016) 581 final).

For more information:
http://ec.europa.eu/priorities/jobs-growth-and-investment/investment-plan_en

Statistical analysis

GROSS DOMESTIC PRODUCT

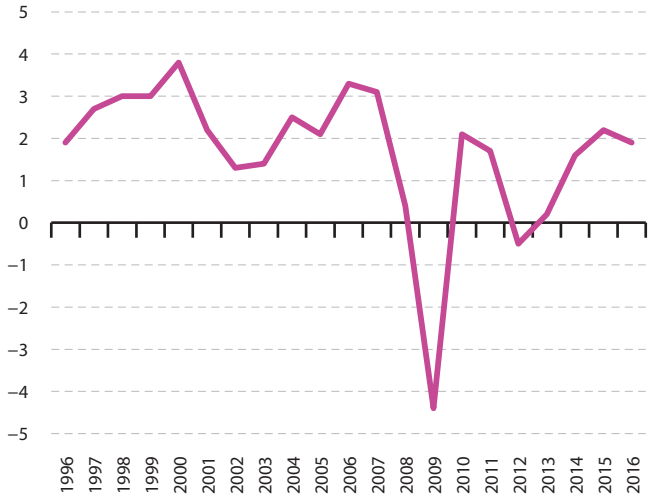
GDP is the central measure of national accounts, summarising the economic position of a country or region. It may be used to analyse economic performance and cycles (such as recessions, recoveries and booms). In order to compensate for price level differences between countries, GDP can be converted using 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 regions with very high GDP per capita in euro terms also tend to have relatively high price levels (for example, the cost of living in central Paris is generally higher than the cost of living in rural regions of eastern Europe).

GDP at market prices in the EU-28 was valued at EUR 14.8 trillion in 2016; this equated to an average of EUR 29.0 thousand per capita. Developments over time can be analysed on the basis of a constant price GDP series, which removes the impact of price changes/inflationary effects. Figure 6.1 shows the considerable impact of the global financial and economic crisis on the EU-28's economic output in 2009, as GDP fell by 4.4 % in real terms. Although there was a rebound in 2010 and continued growth in 2011, the EU-28 economy contracted again in 2012 (output falling by 0.5 %). Thereafter, there were four consecutive years (2013 to 2016) of growth in real GDP, with the latest rate of change in 2016 (1.9 %) slightly lower than that recorded in 2015 (2.2 %).

Main statistical findings

- **GDP per capita was higher in capital city regions, often considerably higher than in any other region; GDP per capita was also generally above average in other metropolitan regions.**
- **Many eastern regions of the EU were less adversely affected by the medium and long-term effects of the global financial and economic crisis and saw their relative living standards improve at a rapid pace; this was particularly the case for regions in Poland, Romania and Slovakia. By contrast, the impact of the crisis continues to be apparent across many southern regions of the EU.**
- **The crisis amplified economic inequalities in several EU Member States: while some regions continued to grow at a rapid pace, others — often former industrial heartlands or sparsely populated regions — were seemingly 'left behind', with their average GDP per capita stagnating.**
- **Territorial patterns of regional labour productivity closely resemble those recorded for GDP per capita. Those regions where these two ratios are relatively high are often characterised by specialisation in one or more of the following activities: scientific and high-technology manufacturing, financial and advanced business services. As such, their economic performance may reflect investment in education, knowledge, innovation and technology.**
- **Those regions with relatively high specialisation ratios for industrial and construction activities were also characterised by rapid growth for these activities, suggesting that their competitive advantage in these activities was being consolidated.**

Figure 6.1: Annual growth rate of gross domestic product (GDP) in real terms, EU-28, 1996–2016
(%)



Source: Eurostat (online data code: nama_10_gdp)

Measuring wealth and income by place of residence or place of work?

It is important to note that average GDP per capita does not provide any indication as to the distribution of wealth between different population groups within a region, nor does it measure the income ultimately available to private households of a region, as commuter flows may result in employees contributing to the GDP of one region (where they work) and to the household income of another region (where they live).

Areas that are characterised by a considerable number of inflowing commuters often display particularly high levels of regional GDP per capita. This pattern can be seen in many metropolitan regions of the EU, especially in/around capital cities. Because of this anomaly, it should be noted that high levels of GDP per capita do not necessarily translate into correspondingly high levels of income for (all of) the people living in the same region.

2014

66.3 %
of GDP is generated in EU metropolitan regions

Almost two thirds of the EU's GDP was generated in metropolitan regions

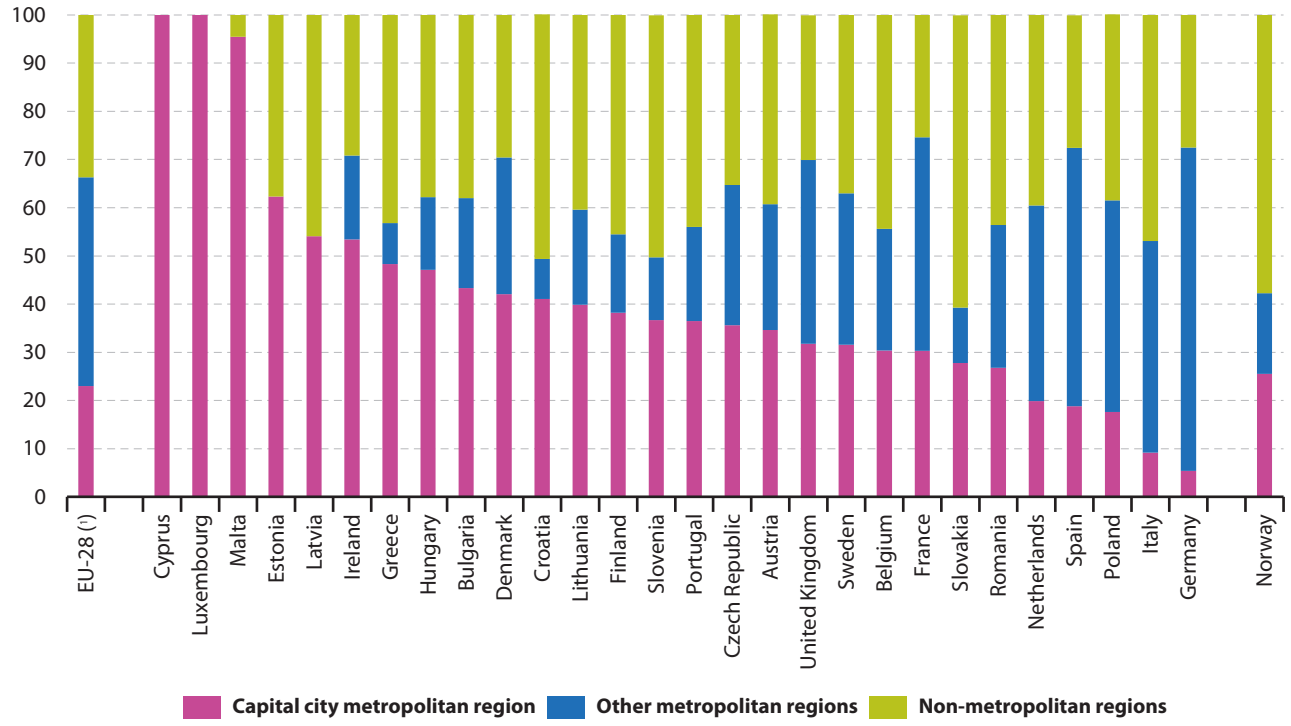
Metropolitan regions are defined in relation to NUTS level 3 regions; they may be composed of one or more regions and cover urban agglomerations with more than 250 thousand inhabitants. A time series for the period 2004 to 2014 (based on a PPS series) reveals that there was a gradual shift in the EU-28's economic activity towards metropolitan regions, as their share of total GDP rose by 1.2 percentage points to reach almost two thirds (66.3 %).

A more detailed analysis for 2014 reveals that EU capital city metropolitan regions accounted for almost a quarter (23.0 %) of the EU-28's GDP; this marked an increase of 1.5 percentage points compared with 2004. The share of capital city metropolitan regions in the economic activity of all metropolitan regions rose from 33.0 % in 2004 to 34.7 % by 2014. As such, there was a gradual shift in economic activity across the EU from rural regions and smaller towns towards metropolitan regions, and this pattern was particularly prevalent for capital city regions.

Figure 6.2 provides information on the GDP shares of metropolitan regions, identifying separately capital city metropolitan regions and other metropolitan regions. There were considerable differences in the structure of economic output between EU Member States, in part reflecting the size of each country; note that Cyprus and Luxembourg are both composed of single NUTS level 3 regions. Among the larger Member States (defined here as those with at least 10 million inhabitants), Germany, Italy, Poland, Spain and the Netherlands were characterised by a polycentric distribution of their economic activity, with each of their capital city metropolitan regions accounting for no more than one fifth of national GDP in 2014 and other several other metropolitan regions having relatively large (sometimes larger) shares; this pattern was particularly evident in Italy (where the relative weight of the capital city in total economic output was 9.2 %) and Germany (where an even lower share was recorded, at 5.4 %). By contrast, the distribution of economic activity in France, Belgium, the United Kingdom, the Czech Republic, Portugal and Greece was more monocentric in nature, as their capital city metropolitan regions accounted for more than 30 % of national GDP.

An analysis over time shows that the shift in economic activity towards capital city metropolitan regions was relatively rapid in France, Croatia, Slovakia, Denmark, Sweden and the United Kingdom, with the share of their capital city metropolitan regions in total GDP rising by 2.5–2.9 percentage points between 2004 and 2014. This pattern was even more pronounced in Lithuania (3.7 points), Ireland, Romania (both 5.5 points) and Bulgaria (8.4 points). Indeed, the redistribution of wealth creation towards rapidly expanding capital city metropolitan regions was particularly apparent in several of the eastern EU Member States, in contrast to agrarian-based lifestyles in many rural regions.

Figure 6.2: Share of metropolitan regions in gross domestic product (GDP) in purchasing power standards (PPS), 2014
(%)



(1) Based on a weighted average of the sum of data for the EU Member States.

Source: Eurostat (online data code: met_10r_3gdp)

ESA 2010

The European system of national and regional accounts (ESA 2010) is the latest internationally compatible accounting framework for a systematic and detailed description of the EU economy. ESA 2010 is consistent with worldwide guidelines on national accounting, as set out in the system of national accounts (2008 SNA) and has been implemented since September 2014.

ESA 2010 differs in scope as well as in concepts from its predecessor ESA 95 reflecting developments in measuring modern economies, advances in methodological research and the needs of users. ESA 2010 is not restricted to annual national accounting, as it also applies to quarterly and shorter or longer period accounts, as well as to regional accounts. It is harmonised with the concepts and classifications used in many other social and economic statistics (for example, statistics on employment, business or international trade) and as such serves as a central reference for socioeconomic statistics.

The ESA framework consists of two main sets of tables: institutional sector accounts and an input-output framework. The former provide a systematic description of the different stages of the economic process: production, generation of income, distribution of income, redistribution of income, use of income and financial and non-financial accumulation for each institutional sector, as well as balance sheets to describe stocks of assets, liabilities and net worth. The latter presents in more detail the production process (cost structures, income generated and employment) and the flows of goods and services (output, exports, imports, final consumption, intermediate consumption and capital formation by product group), whereby the sum of incomes generated in an activity is equal to the value added produced by that activity.

REGIONAL GDP PER CAPITA

Map 6.1 shows GDP per capita in 2015 for NUTS level 2 regions: the values presented are based on GDP per capita in PPS, expressed as a percentage of the EU-28 average which is set equal to 100 %. Relatively 'rich' regions, where GDP per capita was above the EU-28 average, are shown in blue and relatively 'poor' regions, where GDP per capita was below the EU-28 average, are shown in purple. There are several aspects of note:

- a band of relatively 'rich' regions runs from northern Italy, up through Austria and Germany before splitting in one direction towards the Benelux countries, southern England and southern Ireland, and in the other direction towards the Nordic Member States;
- other pockets of relatively 'rich' regions', for example, in the south of France, the north-east of Spain, or north-east of the United Kingdom;
- a relatively high concentration of wealth creation in capital city regions, which are often depicted as islands surrounded by 'poorer' regions;
- a band of relatively 'poor' regions running from the Baltic Member States down through eastern regions of the EU to Greece and southern Italy, before extending across the Mediterranean to the Iberian Peninsula.

The highest level of GDP per capita in the EU was recorded in Inner London - West

The distribution of wealth across the EU was somewhat skewed insofar as there were 101 NUTS level 2 regions where average GDP per capita was above the EU-28 average in 2015, compared with 175 regions where it was below; as such, wealth creation appears concentrated in regional pockets. Some 16 % of the 276 NUTS level 2 regions for which data are available (see Map 6.1 for coverage) reported that their GDP per capita was at least 25 % higher than the EU-28 average; these are shown in the two darkest shades of blue. Many of them were capital city regions or clusters of regions that neighboured capital city regions, while the vast majority of the others were grouped together in the centre of the map, covering western and southern Germany, western Austria and northern Italy (as well as Switzerland).

At the upper end of the ranking, there were four regions in the EU where GDP per capita was more than double the EU-28 average, namely: Inner London - West (one of two capital city regions in the United Kingdom), Luxembourg (a single region at this level of analysis), Hamburg (northern Germany) and Région de Bruxelles-Capitale/Brussels Hoofdstedelijk Gewest (the Belgian capital city region). Each of these is characterised by a high number of commuters, with large numbers of people travelling to work from neighbouring regions and sometimes further afield. Indeed, improvements in transport infrastructure have made longer commuting distances feasible and there has, in recent years, been a growing pattern of international commuting. One such example is Luxembourg, where a high proportion of the workforce travels each day across national borders from neighbouring Belgium, Germany or France.

A number of capital city regions followed in the ranking with the next highest levels of GDP per capita, around 75 % higher than the EU-28 average. These included regions covering the Slovakian and Czech capitals (Bratislavský kraj and Praha), the French capital (Île de France), the second of the two capital city regions in the United Kingdom (Inner London - East) and the Swedish capital (Stockholm); they were joined by Oberbayern (southern Germany), whose administrative centre is München.

Figure 6.3 confirms that capital city regions tended to record the highest levels of GDP per capita in each of the EU Member States. Indeed, the only exceptions to this rule (among the multi-regional Member States) were Germany and Italy. GDP per capita in Berlin was almost 20 % above the EU-28 average, but was below the German national average, while the same ratio in Lazio was approximately 10 % above the EU-28 average and was also higher than the Italian national average. As such, despite Germany having the highest number of regions with GDP per capita at least 25 % higher than the EU-28 average, the capital city region was not among them; indeed, there were 16 NUTS level 2 regions in Germany which posted GDP per capita above that recorded for Berlin. A similar comparison for the Italian capital city region reveals that there were five northern Italian regions which posted average GDP per capita above that recorded in Lazio.

Cohesion policy is targeted at regions where GDP per capita is less than 75 % of the EU-28 average

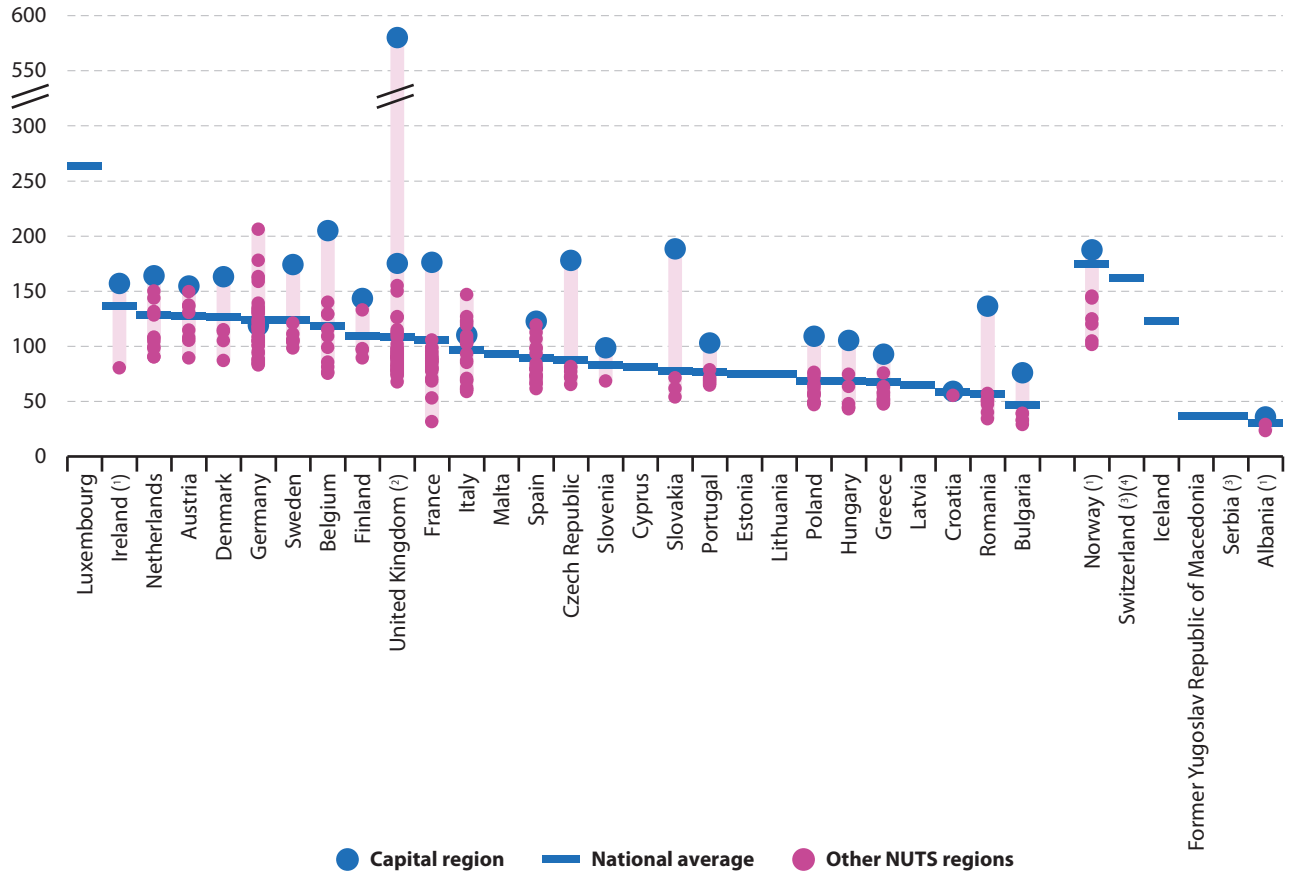
The distribution of EU regional development assistance in the form of cohesion policy funding is specifically targeted at those regions where GDP per capita is less than 75 % of the EU-28 average. Note that funding for the 2014 to 2020 programming period has already been fixed in relation to average GDP per capita for the three-year period covering 2007 to 2009.

Map 6.1 shows there were 82 NUTS level 2 regions where GDP per capita was less than 75 % of the EU-28 average in 2015; these are shown by the darkest shade of purple in Map 6.1. More than a quarter (22 out of the 82) of these regions registered GDP per capita that was less than half the EU-28 average, including: five out of the six NUTS level 2 regions from Bulgaria (the exception was Yugozapaden, the capital city region); five Polish regions; four out of seven Hungarian regions; four out of eight Romanian regions; three Greek regions; and Mayotte, a French overseas region. The

lowest levels of average GDP per capita were recorded in three of the Bulgarian regions — Severozapaden, Severen tsentralen and Yuzhen tsentralen — and Mayotte, as economic output per inhabitant in each of these was less than one third of the EU-28 average.

A comparison between the NUTS level 2 regions recording the highest and lowest levels of economic activity reveals the wide disparities in wealth creation between regions. Average GDP per capita in Inner London - West (580 % of the EU-28 average) was 20 times as high — having taken account of differences in price levels — as in Severozapaden (Bulgaria) where the lowest level of GDP per capita was recorded (29 % of the EU-28 average). A similar analysis carried out for each of the multi-regional EU Member States reveals that the widest disparities in wealth creation were recorded in: the United Kingdom, where GDP per capita in Inner London - West was 8.6 times as high as in West Wales and The Valleys; France, where GDP per capita in Île de France was 5.6 times as high as in Mayotte; Romania, where GDP per capita in Bucuresti - Ilfov was 4.0 times as high as in Nord-Est. By contrast, wealth creation was relatively evenly spread across Croatia, Slovenia, the Nordic Member States, Portugal, Austria, the Netherlands, Greece, Ireland and Spain, as the region with the highest level of GDP per capita never recorded a value that was more than double that recorded for the region with the lowest value; this situation was also repeated in Norway and in Albania.

Figure 6.3: Gross domestic product (GDP) per inhabitant in purchasing power standards (PPS) in relation to the EU-28 average, by NUTS 2 regions, 2015
(% of the EU-28 average, EU-28 = 100)

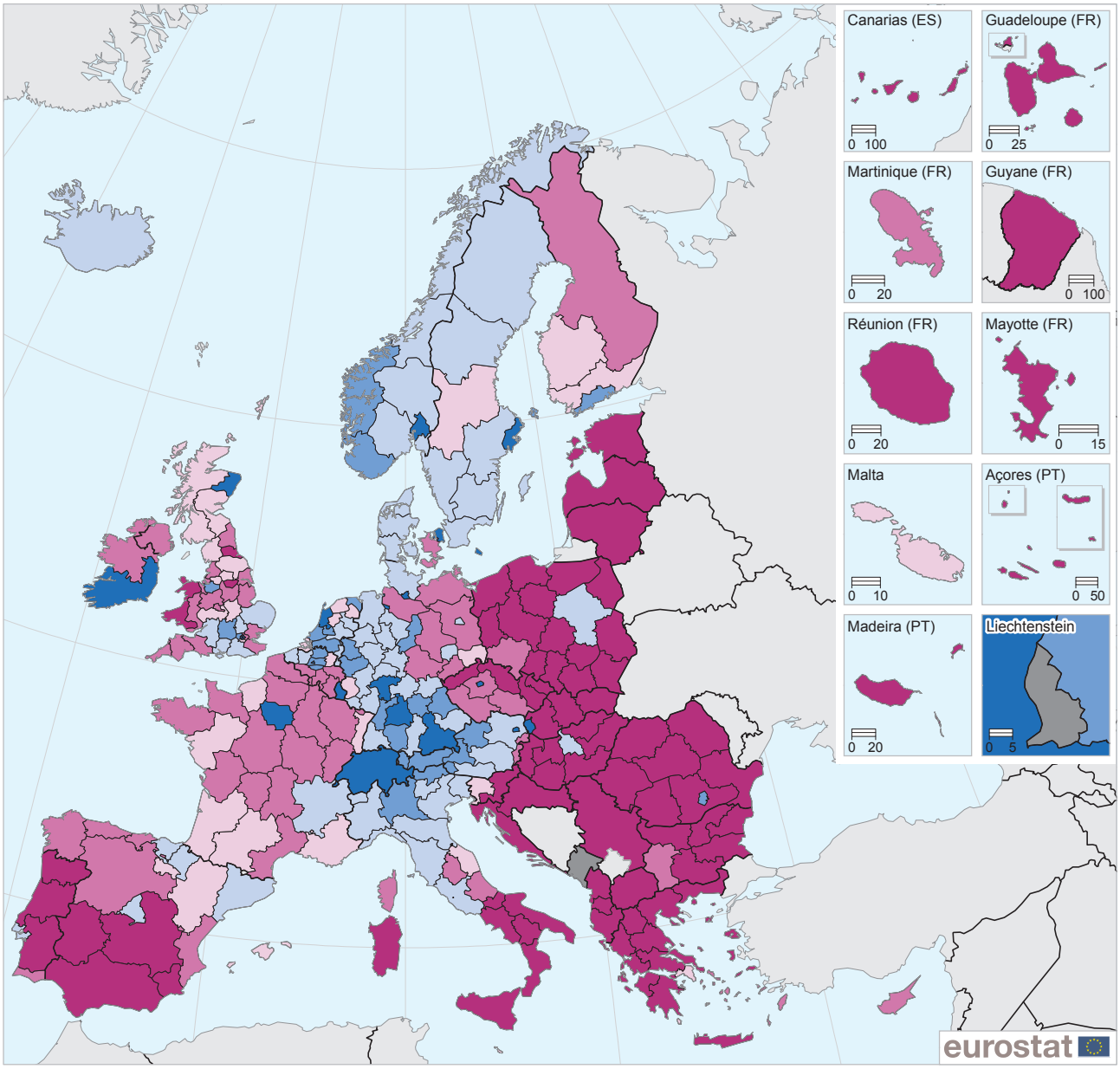


Note. Ranked on national average. The light lilac shaded area shows the range of the highest to lowest region for each country; the blue bar shows the national average; the blue circle shows the capital city region; the lilac circles show the other regions.

(1) 2014.
(2) Note there are two capital city regions: Inner London - East and Inner London - West.
(3) National data.
(4) Provisional.

Source: Eurostat (online data codes: nama_10r_2gdp and nama_10_pc)

Map 6.1: Gross domestic product (GDP) per inhabitant in purchasing power standards (PPS) in relation to the EU-28 average, by NUTS 2 regions, 2015
(% of the EU-28 average, EU-28 = 100)



(% of the EU-28 average, EU-28 = 100)

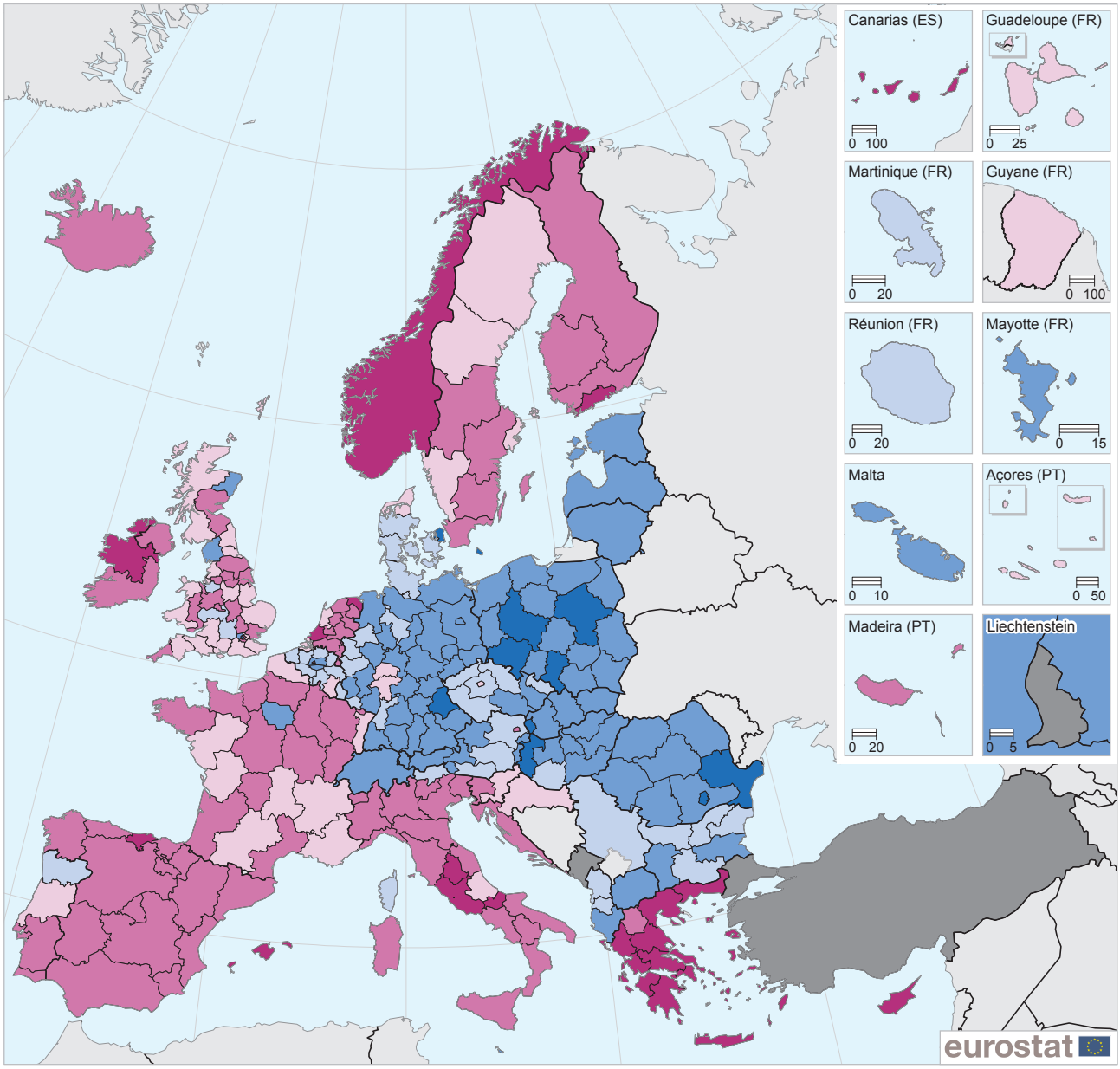
EU-28 = 100
- < 75
- 75 – < 90
- 90 – < 100
- 100 – < 125
- 125 – < 150
- >= 150
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © INSTAT © Turkstat
Cartography: Eurostat - GISCO, 07/2017

0 200 400 600 800 km

Note. Ireland, Norway and Albania: 2014. Switzerland and Serbia: national data. Switzerland: provisional.
Source: Eurostat (online data codes: nama_10r_2gdp and nama_10_pc)

Map 6.2: Change of gross domestic product (GDP) per inhabitant in purchasing power standards (PPS) in relation to the EU-28 average, by NUTS 2 regions, 2007–2015
(percentage points difference between 2007 and 2015)



(percentage points difference between 2007 and 2015)

EU-28 = 0

- < -15
- -15 – < -5
- -5 – < 0
- 0 – < 5
- 5 – < 15
- >= 15
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © INSTAT © Turkstat

Cartography: Eurostat - GISCO, 07/2017

0 200 400 600 800 km

Note. Ireland: 2007–2014. Albania: 2008–2014. Norway, Switzerland and Serbia: national data. Switzerland: provisional.

Source: Eurostat (online data code: nama_10r_2gdp)

ANALYSIS OF REGIONAL ECONOMIC DEVELOPMENTS OVER TIME

Figure 6.1 has already shown that there was a marked slowdown in the rate at which economic activity was expanding in the EU-28 in 2008, although the main impact from the global financial and economic crisis was not experienced until 2009. Given the crisis had already begun to affect some of the EU Member States in 2008, the analysis that follows is based on a comparison between the pre-crisis highs of 2007 and the latest information available for 2015.

Average GDP per capita in the EU-28 stood at 26.0 thousand PPS in 2007. It was almost unchanged in 2008 (rising by 100 PPS), but then fell considerably to 24.5 thousand PPS in 2009, after which it took two years before it had returned to the same level as in 2008. Thereafter, the EU-28's economy expanded during four consecutive annual periods, as average GDP per capita reached 28.9 thousand PPS.

The most rapid growth in GDP per capita was recorded for one western and three eastern capital city regions

There were 124 NUTS level 2 regions that saw their relative wealth, as measured by GDP per capita, increase between 2007 and 2015, while a somewhat higher number (152) reported a decline. By far the biggest increase in wealth creation, in relation to the EU-28 average, was recorded for the region with the highest level of GDP per capita, namely, Inner London - West; it was followed by three capital city regions from eastern Europe, namely, Bucuresti - Ilfov (Romania), Bratislavský kraj (Slovakia) and Mazowieckie (Poland).

Despite wide variations in average levels of GDP per capita between the regions of some EU Member States, there was a relatively uniform pattern to changes in economic activity over the period from 2007 to 2015.

Among the multi-regional EU Member States, GDP per capita grew at a faster pace than the EU-28 average in every region of Bulgaria, Hungary, Poland, Romania, Slovakia and all three of the Baltic Member States (each of which is a single region at this level of detail), as well as every region except for the capital city region in the Czech Republic and Austria, and every region except for the southern island region of Sjælland in Denmark. The vast majority of regions in Belgium and Germany — all but two in both cases — also recorded an increase in their relative living standards. By contrast, average GDP per capita in each region of Greece, Spain, Croatia, the Netherlands, Slovenia, Finland and Sweden grew at a slower pace than the EU-28 average, while all but one region in Italy and in Portugal — Provincia Autonoma di Bolzano/Bozen in the former and Norte in the latter — recorded a rate of change that was below the EU average.

Although there remains an east–west divide in terms of wealth creation in the EU-28 (as shown in Map 6.1), this pattern is less pronounced than before the accession of 13 Member States to the EU in 2004, 2007 and 2013, suggesting that EU membership and cohesion policy have been effective, at least in part, at addressing national and regional disparities. A closer examination reveals that there are a growing number of regions in western EU Member States with relatively low levels of average GDP per capita. These are often characterised as having previously been prominent industrial heartlands, and it would appear that they have, to some degree, been left behind by a move away from heavy industrial activities in much of the EU, as witnessed through their stagnating or falling living standards. Examples include several regions in southern Belgium (for example, Prov. Hainaut and Prov. Luxembourg), northern and eastern France (Picardie, Champagne-Ardenne and Lorraine), or the United Kingdom (West Wales and The Valleys, the Tees Valley and Durham and South Yorkshire).

LABOUR PRODUCTIVITY

National accounts ratios in relation to labour input are designed to provide insight concerning the competitiveness and productivity of a national/regional economy. Labour productivity may be defined as gross value added at basic prices expressed in relation to the number of persons employed or the total number of hours worked. Measures based on simple headcounts of labour input are, to some degree, a reflection of the structure of the employment market and may, for instance, be lowered by a shift from full-time to part-time working practices. As such, it is generally agreed that the number of hours worked provides a more reliable measure of labour input and this is the basis for the information presented in Map 6.3, which shows gross value added per hour worked for NUTS level 2 regions in 2014; note the results are expressed in relation to the EU-28 average (which is set equal to 100).

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 that make-up a particular economy, as some activities have higher levels of labour productivity than others. For example, business services and financial services play a particularly important role in most capital city regions, and this may explain (at least to some degree) the high levels of labour productivity recorded in these regions.

Across the EU-28, there was an average of EUR 33.92 of added value generated for each hour worked in 2014. The highest labour productivity ratio among NUTS level 2 regions was recorded in Inner London - West (the United Kingdom), where value added per hour worked was more than five times as high as the EU-28 average and also considerably higher than in any other region of the EU. Luxembourg (one region at this level of detail), Groningen (the Netherlands) and Île de France (the French capital city region) followed, with labour productivity ratios that were just over twice as high as the EU-28 average.

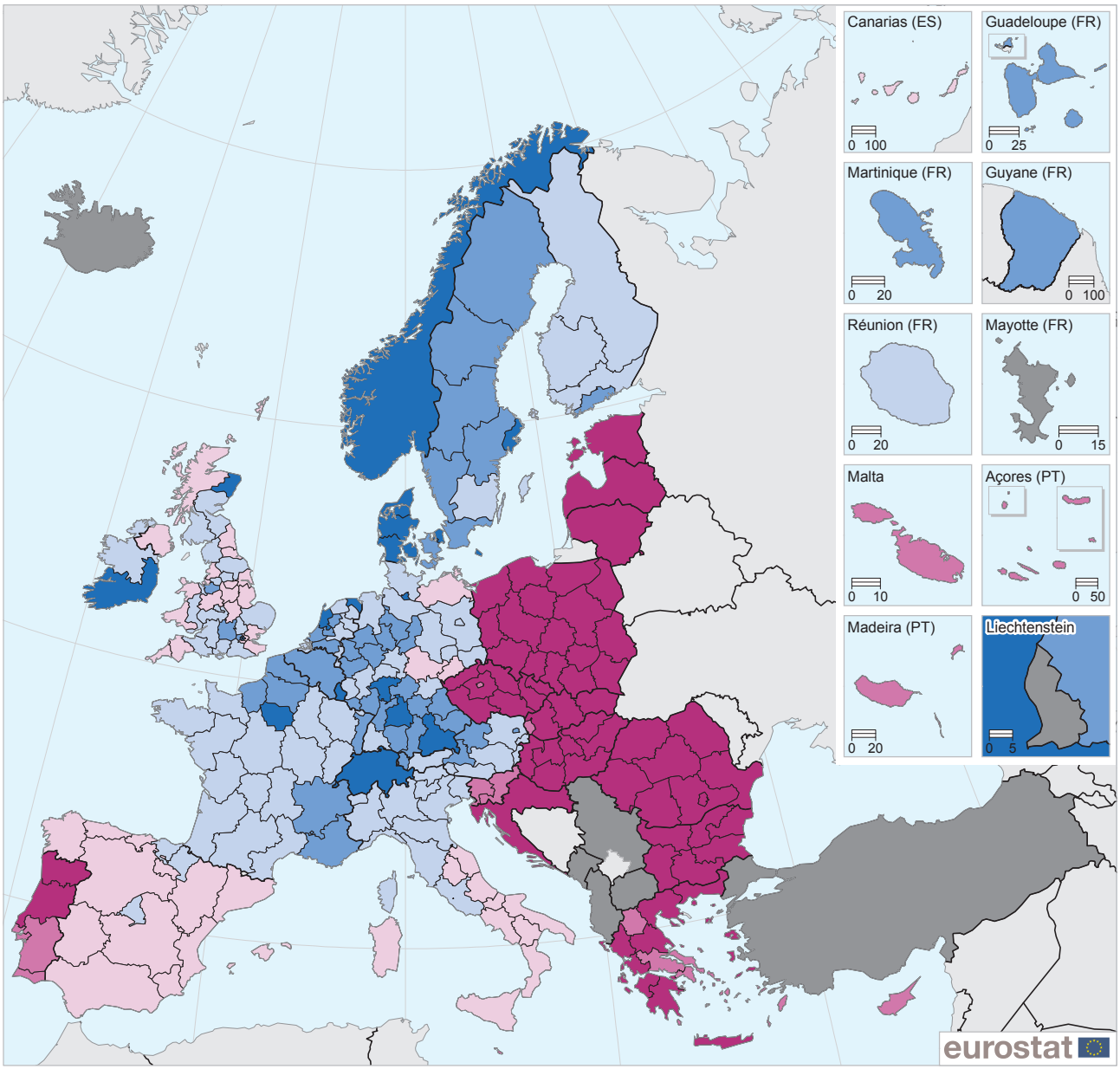
There were 17 regions in the EU where labour productivity was at least 50 % higher than the EU-28 average (as shown by the dark blue shade in Map 6.3). Aside from the four regions mentioned above, the remainder were all located in northern and western regions of the EU, principally in Denmark and Germany (four regions each), with two additional regions from the United Kingdom, an additional region from the Netherlands, and single regions from each of Ireland and Sweden.

Labour productivity lower in those EU Member States that joined the EU in 2004 or more recently

There were 62 NUTS level 2 regions where gross value added per hour worked was less than half the EU-28 average in 2014 (as shown by the darkest shade of purple in Map 6.3). These regions were principally from eastern regions of the EU and all three of the Baltic Member States (each one region at this level of detail), but also included a majority of the Greek regions and two mainland regions from Portugal, namely, Norte and Centro.

A closer examination reveals that there was not a single region from the Member States that joined the EU in 2004 or more recently that had a labour productivity ratio that was above the EU-28 average in 2014. Among these regions, the highest ratio was recorded in Bratislavský kraj (the Slovakian capital city region), where the added value generated by each hour worked was approximately three quarters of the level recorded across the EU-28.

Map 6.3: Gross value added per hour worked in euro and in relation to the EU-28 average, by NUTS 2 regions, 2014
(% of the EU-28 average, EU-28 = 100)



(% of the EU-28 average, EU-28 = 100)

EU-28 = 100
- < 50
- 50 – < 75
- 75 – < 100
- 100 – < 125
- 125 – < 150
- >= 150
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat - GISCO, 07/2017

0 200 400 600 800 km

Note: Belgium, Croatia, Norway and Switzerland: national data.
Source: Eurostat (online data codes: nama_10r_3gva, nama_10_a10, nama_10r_2emhrw and nama_10_a10_e)

STRUCTURAL CHANGES

The final three maps in this chapter (Maps 6.4 to 6.6) should be viewed in unison, insofar as they show structural changes during the period 2004 to 2014 for agriculture, forestry and fishing (NACE Section A), industry and construction (NACE Sections B–F), and services (NACE Sections G–U). Each map is based on developments for gross value added: on one hand the maps identify NUTS level 2 regions by degree of specialisation — the olive shading denotes a low degree of specialisation, while purple shading is a high degree of specialisation; on the other — the rate of change for the share of each activity grouping (in value added terms) is presented relative to the EU-28 average, with lighter shades denoting slower than average growth (or in fact a fall) in the share and darker shades representing higher than average growth in the share. Note also that the scales used in each map are different, reflecting the relative weight of each activity in the total economy.

The poorest region in the EU was characterised by its economic activity being concentrated within agriculture, forestry and fishing activities

Map 6.4 shows those regions in the EU that were relatively specialised in agriculture, forestry and fishing in 2014. As may be expected these tend to be relatively sparsely populated, rural regions. There were 17 NUTS level 2 regions where the share of agriculture, forestry and fishing in total value added was at least five times as high as the EU-28 average (1.6 %). They were predominantly located in eastern and southern regions of the EU: five regions from Greece, three regions from each of Bulgaria, Hungary and Romania, two regions from Portugal, and one from France. The highest degree of specialisation was recorded in Severozapaden in north-eastern Bulgaria — which was the 'poorest' region in the EU; in Severozapaden, agriculture, forestry and fishing accounted for a share of total value added (12.5 %) that was 7.9 times as high as the EU-28 average. There were two more regions where the share of agriculture, forestry and fishing in total value added was at least seven times as high as the EU-28 average, both of which were located in southern Hungary: Dél-Alföld (11.8 %) and Dél-Dunántúl (11.6 %).

Those regions with relatively high specialisation ratios for services tended to be either capital city regions or tourist destinations

Map 6.5 shows specialisation patterns for industry and construction and may be contrasted with the information shown in Map 6.6 for services; in many respects these two maps are complementary, insofar as agriculture, forestry and fishing generally accounts for a very small share of total value added and hence those regions which are relatively specialised in industry and construction tend to be unspecialised in services and vice-versa. Maps 6.5 and 6.6 may also be contrasted with the information shown in Maps 7.1 and 7.2, which provide an analysis of regional structural business statistics for employment (rather than value added) specialisation across industrial activities and non-financial services.

The distribution of regions according to their relative specialisation reveals that there were 113 NUTS level 2 regions where industry and construction accounted for a lower share of total value added than the EU-28 average (24.4 %) in 2014, while there were 163 regions where the share was equal to or above the average. A similar analysis reveals there were 171 regions across the EU where services accounted for a lower share of total value added than the EU-28 average (74.0 %), while there were 105 regions where the share was equal to or above the average. These differences are influenced by the relative (economic) size of each region, and suggest that relatively high specialisation in service activities was concentrated in the most economically dominant regions, often capital city regions.

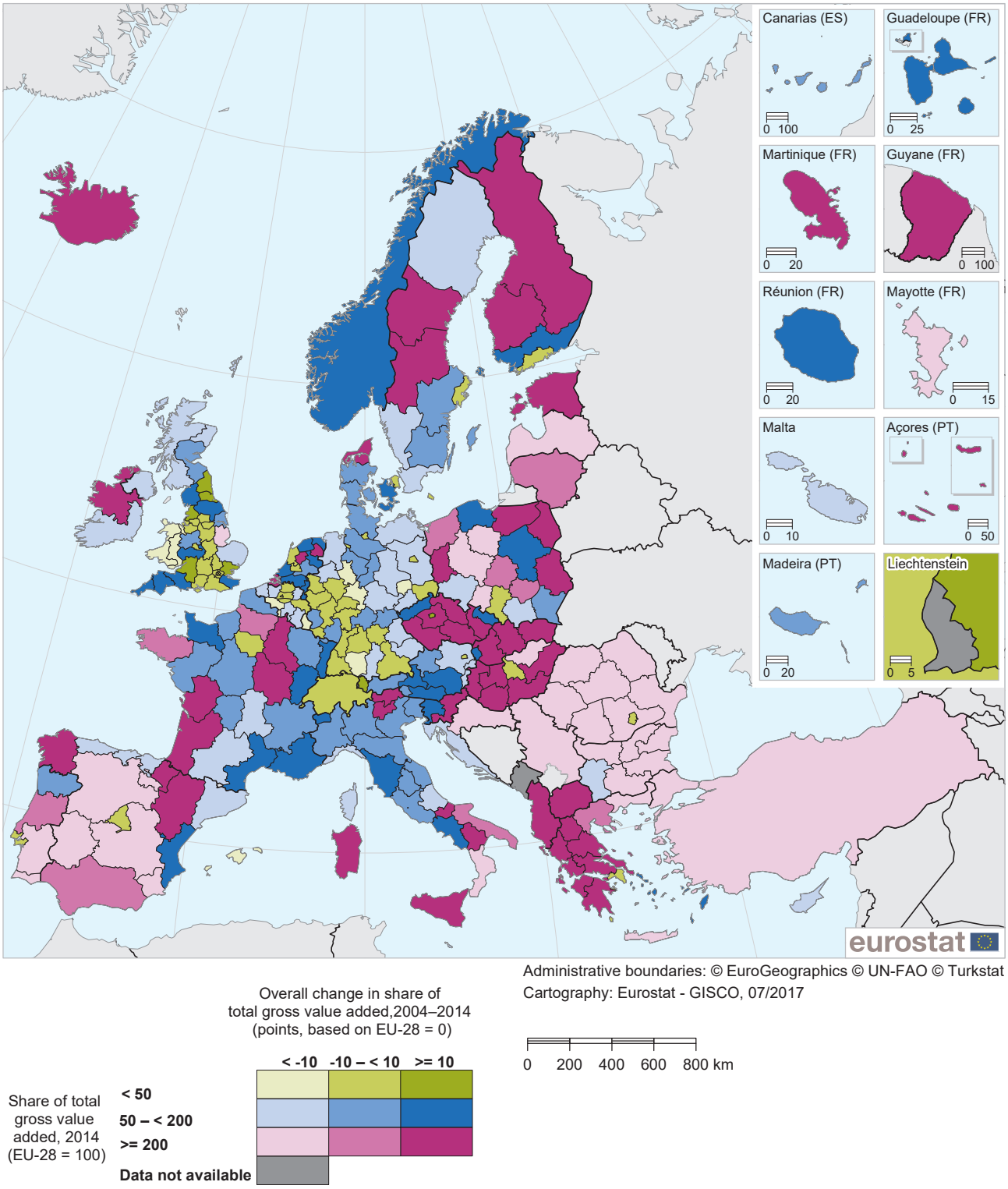
In 2014, there were three NUTS level 2 regions where the share of industry and construction in total value added was more than twice as high as the EU-28 average: Groningen in the north of the Netherlands (particularly specialised in natural gas extraction and related activities), Nyugat-Dunántúl in western Hungary (motor vehicles), and Dytiki Makedonia in norther Greece (mining and power generation). Aside from these, most of the regions where the share of industry and construction in total value added was at least 20 % higher than the EU-28 average (as shown by the purple shades in Map 6.5) were located in Germany and Austria, as well as Poland, the Czech Republic, Slovakia and Romania. The high shares of industry and construction in these four eastern Member States reflects, in part, the relocation within the EU of manufacturing activities to lower cost centres. By contrast, there were 47 regions where the share of total value added accounted for by services was more than 10 % above the EU-28 average (as shown by the purple shades in Map 6.6). These were principally capital city regions or regions characterised as tourist destinations, for example, Ionia Nisia (a Greek island region including Corfu), Algarve (in southern Portugal), or Illes Balears (Spain).

Across the whole of the EU-28, the share of industry and construction in total value added fell from 26.2 % in 2004 to 24.4 % in 2014, while the share of services rose from 71.8 % to 74.0 % during the same period. The information shown in Maps 6.5 and 6.6 may be used to analyse structural shifts in regional economies, identified by their shading — those regions with rates of change that were above the EU-28 average have more intense (darker) shading.

2014

24.4 %
of the EU's total value added is created within industry and construction

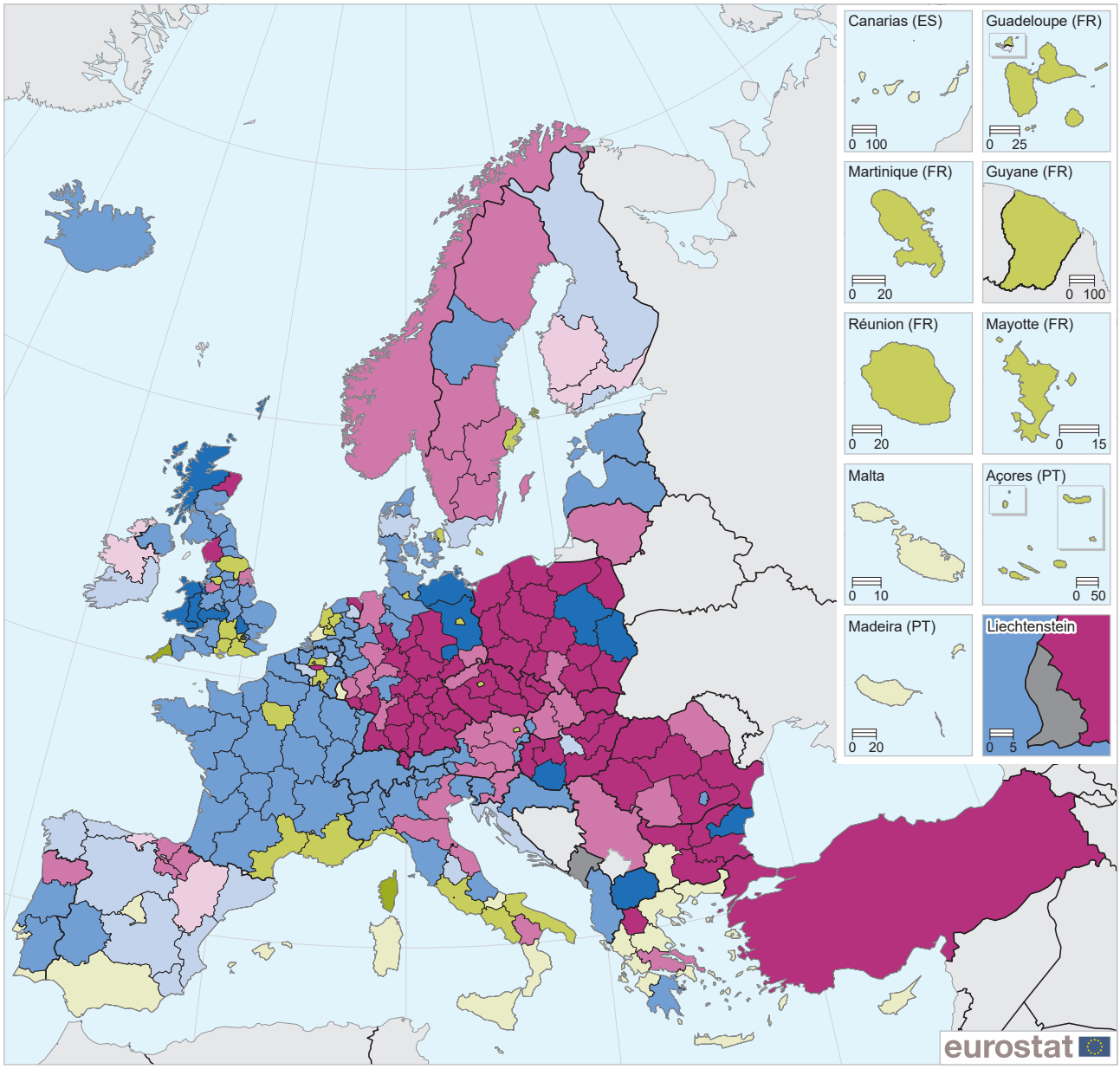
Map 6.4: Share of and overall change in the share of agriculture, forestry and fishing (NACE Section A) in total gross value added, by NUTS 2 regions, 2004–2014



Note: Norway, Switzerland, Albania, Serbia and Turkey: national data. Switzerland and Albania: provisional.

Source: Eurostat (online data codes: nama_10r_3gva and nama_10_a10)

Map 6.5: Share of and overall change in the share of industry and construction (NACE Sections B–F) in total gross value added, by NUTS 2 regions, 2004–2014



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Cartography: Eurostat - GISCO, 07/2017

Overall change in share of total gross value added,2004–2014 (points, based on EU-28 = 0)

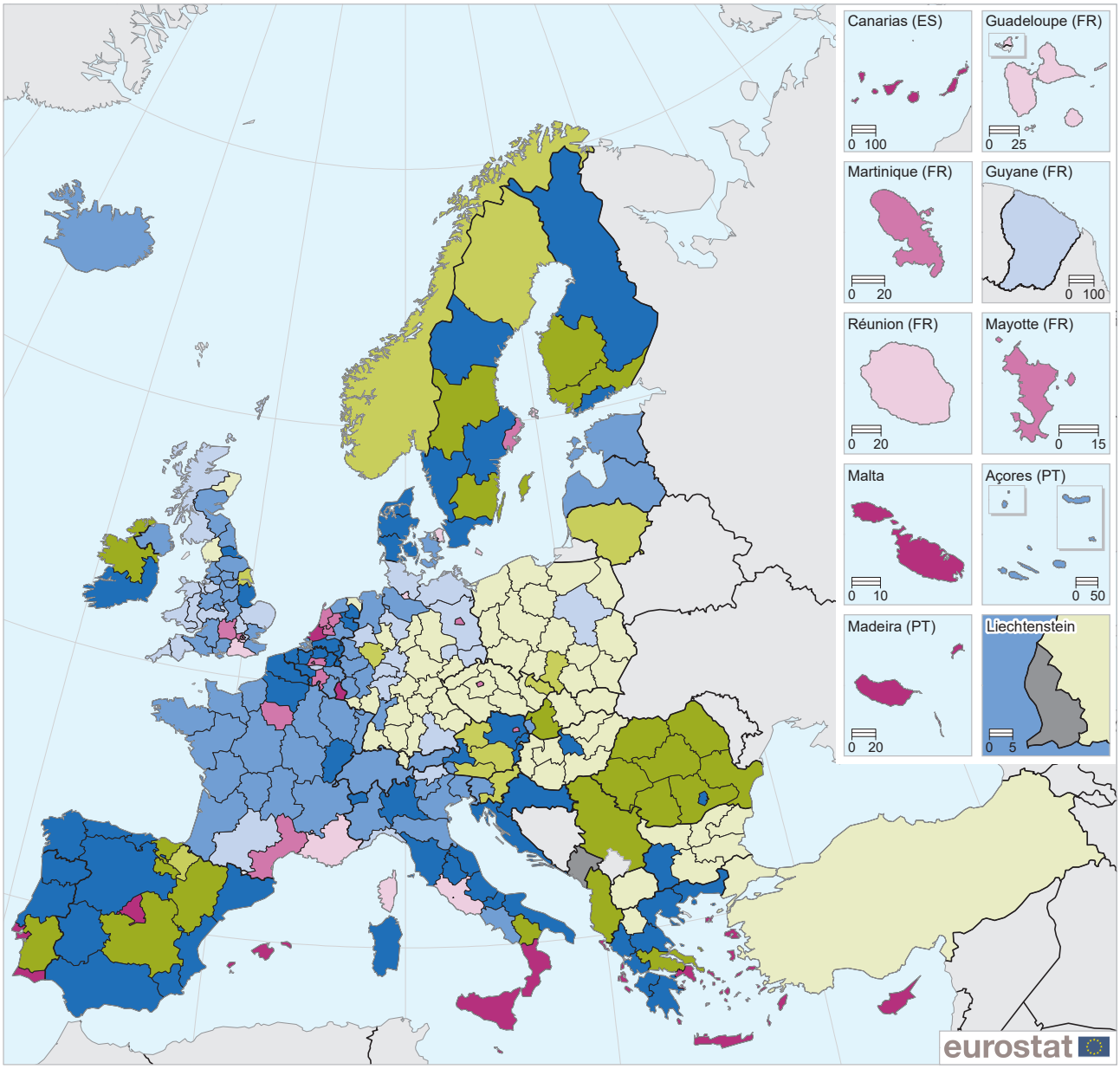
Share of total gross value added, 2014 (EU-28 = 100)	< -10	-10 – < 10	>= 10
< 80			
80 – < 120			
>= 120			
Data not available			

0 200 400 600 800 km

Note: Norway, Switzerland, Albania, Serbia and Turkey: national data. Switzerland and Albania: provisional.

Source: Eurostat (online data codes: nama_10r_3gva and nama_10_a10)

Map 6.6: Share of and overall change in the share of services (NACE Sections G–U) in total gross value added, by NUTS 2 regions, 2004–2014



Note: Norway, Switzerland, Albania, Serbia and Turkey: national data. Switzerland and Albania: provisional.

Source: Eurostat (online data codes: nama_10r_3gva and nama_10_a10)

There were 13 regions in the EU where the share of industry and construction in total value added rose by at least 5.0 percentage points during the period covering 2004 to 2014 (compared with an average reduction of 1.8 points for the EU-28). All of these regions were characterised by being relatively specialised in industrial and construction activities, thereby suggesting the distribution of these activities was becoming more specialised and concentrated within a relatively small number of regions. These 13 regions were primarily located in eastern EU Member States, with five from Bulgaria (all but the capital city region of Yugozapaden), two each from Hungary (Nyugat-Dunántúl and Dél-Alföld), Poland (Lubuskie and Dolnoslaskie) and Romania (Sud-Est and Sud - Muntenia), as well as single regions from each of Germany (Oberpfalz) and the Netherlands (Groningen).

By contrast, those regions where the share of industrial and construction activities in total value added declined at a faster pace than the EU-28 average were often those which already recorded a relatively low degree of relative specialisation in these activities. While the share of industry and construction in total EU-28 value added declined by 1.8 percentage points during the period 2004 to 2014, there were 39 regions where the share of total value added accounted for by industrial and construction activities fell by at least 5.0 percentage points. Among these, the largest contractions in activity were recorded in three Spanish regions (Principado de Asturias, Cataluña and Andalucía); two Greek (Attiki and Dytiki Ellada) and two Finnish regions (Etelä-Suomi and Pohjois- ja Itä-Suomi); the Irish capital city region (Southern and Eastern); and the two Mediterranean islands of Cyprus and Malta (both single regions at this level of detail).

Making a similar analysis for services the patterns of development were less clear. This may, at least in part, reflect the high share of services in total value added, with structural shifts more concentrated on movements between different services rather than between the broader aggregates of services and industry/construction. There were seven NUTS level 2 regions in the EU where value added share of services grew at least 10 % faster than the EU-28 average during the period 2004 to 2014. These seven regions were split: three of them were relatively unspecialised in services —Nord-Est and Sud-Vest Oltenia (in Romania) and Castilla-la Mancha (in Spain); two were highly specialised — the island regions of Cyprus and Malta (both single regions at this level of detail); and in two the weight of services in the regional economies was relatively close to the EU-28 average, although they too recorded rapid growth for the share of added value generated by services —Dytiki Ellada (in Greece) and Principado de Asturias (in Spain).

Data sources and availability

The European system of national and regional accounts (ESA) provides the methodology for national accounts in the EU. The current version, ESA 2010, ensures that economic statistics for EU Member State are compiled in a consistent, comparable, reliable and up-to-date way. The legal basis for these statistics is a Regulation of the European Parliament and of the Council on the European system of national and regional accounts in the European Union (No 549/2013).

Statistics from regional economic accounts are largely shown for NUTS level 2 regions. Data for Switzerland and Serbia are only available at a national level. The latest statistics available for Irish, Norwegian and Albanian regions refer to 2014.

NUTS

The data presented in this chapter are based exclusively on the 2013 version of NUTS.

INDICATOR DEFINITIONS

Glossary entries on Statistics Explained (see: http://ec.europa.eu/eurostat/statistics-explained/index.php/Category:National_accounts_glossary) are available for a wide range of national accounts concepts/indicators.

For more information:
http://ec.europa.eu/eurostat/web/esa-2010/overview
http://ec.europa.eu/eurostat/web/esa-2010/manuals-guidelines

7 Structural business statistics

Presented according to the activity classification, NACE, the first half of this chapter is based on a set of structural business statistics (SBS) which are used to describe the structure and specialisation of the businesses economy across the regions of the European Union (EU). The second half of the chapter provides information relating to regional business demography statistics, detailing enterprise birth and death rates, as well as information pertaining to high-growth enterprises.

POLICY INITIATIVES

The European Commission's Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs is responsible, among others, for policies related to: completing the internal (or single) market for goods and services; helping turn the EU into a 'smart, sustainable, and inclusive economy' by implementing the industrial and sectorial policies of the Europe 2020 initiative; fostering entrepreneurship and growth by reducing the administrative burden on small businesses; facilitating access to funding for SMEs; supporting access to global markets for EU companies; generating policy on the protection and enforcement of industrial property rights, coordinating the EU position and negotiations, and assisting innovators on how to effectively use intellectual property rights; delivering the EU's space policy, as well as research actions to spur technological innovation and economic growth.

SINGLE MARKET STRATEGY

The single market's benefits do not always materialise because rules are not known or implemented, or they are undermined by other barriers. In order to provide a boost to the single market, the European Commission presented a new single market strategy in October 2015. This aims to improve mobility for service providers, ensuring that innovative business models can flourish, making it easier for retailers to do business across borders, and enhancing access to goods and services throughout the EU.

SMALL BUSINESS ACT

Adopted in June 2008, the Small Business Act for Europe (COM(2008) 394 final) reflects the European Commission's recognition of the central role that SMEs play in the EU economy. It provides a policy framework for SMEs, aiming to promote entrepreneurship, help SMEs tackle problems which hamper their development and implant a 'think small first' principle in policymaking.

ENTREPRENEURSHIP 2020

The European Commission adopted an Entrepreneurship 2020 Action Plan (COM(2012) 795 final) at the start of 2013, designed to stimulate and reignite entrepreneurial spirit across the EU and to remove obstacles so that more entrepreneurs are encouraged to start a business. The plan is built on three main pillars: entrepreneurial education and training to support growth and business creation; the creation of an environment where entrepreneurs can flourish and grow, removing existing administrative barriers and supporting entrepreneurs in crucial phases of the business life-cycle; and reigniting the culture of entrepreneurship in the EU and nurturing the new generation of entrepreneurs, developing role models and reaching out to specific groups whose entrepreneurial potential is not being fully tapped (for example, some ethnic minorities). The plan also seeks to remove the stigma attached to business failure and to make it easier for entrepreneurs to attract investors.

EUROPEAN INDUSTRIAL RENAISSANCE

The effects of the global financial and economic crisis were particularly harsh in the industrial economy, with the relative weight of the EU's manufacturing sector declining during the recession. Nevertheless, industrial activities continue to account for the lion's share of EU exports, research and innovation, and also provide a range of high-skilled jobs.

The latest information available from national accounts suggests that gross value added from the EU-28's manufacturing sector accounted for 15.5 % of total gross value added in 2015. In its Communication (COM(2014) 14 final), titled, 'For a European Industrial Renaissance', the European Commission set a target of taking the share of manufacturing back to 20 % of GDP by 2020, calling on EU and national decision-makers to recognise the central importance of modernising the industrial base. This was followed by a complementary Communication in April 2016, titled, 'Digitising European industry — reaping the full benefits of a digital single market' (COM(2016) 180 final) which focuses on the digital transformation of the EU's economy and the Start-up and Scale-up Initiative adopted in November 2016 to try to create conditions for the EU's many innovative entrepreneurs to establish world leading enterprises, adding a focus on venture capital, insolvency law and taxation.

For more information:
https://ec.europa.eu/growth/about-us_en

Statistical analysis

SECTORAL SIZE AND GROWTH

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

Some 136 million persons were employed in the EU-28's non-financial business economy in 2014

According to estimates made using national SBS, there were 23.4 million enterprises active in the EU-28's non-financial business economy in 2014. Together, they generated EUR 6 582 billion of gross value added and employed some 136 million persons. At the NACE section level of detail, the largest activity in the EU-28 was manufacturing on the basis of an analysis by value added (26.0 % of the non-financial business economy total), whereas distributive trades was the largest activity on the basis of an analysis by employment (24.0 % of the non-financial business economy total). Figure 7.1 shows these shares, combining this information with rates of change between 2012 and 2014.

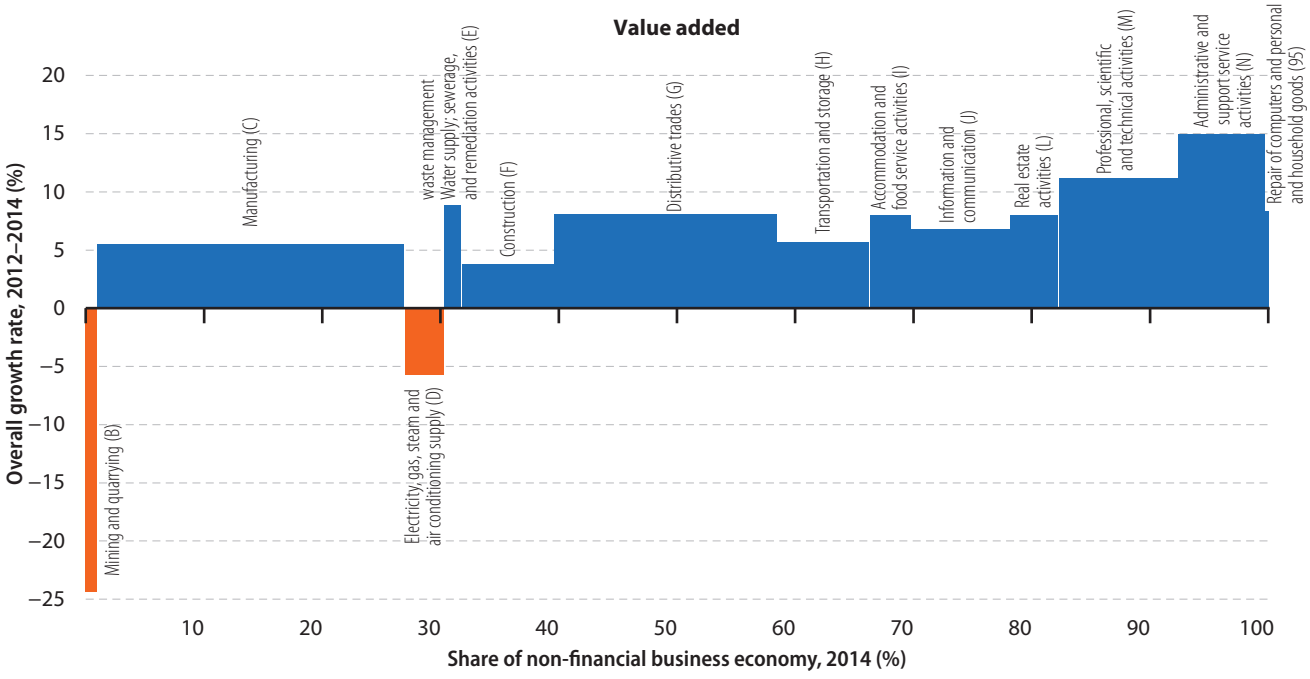
Focusing on value added, nearly all activities reported growth during the period 2012 to 2014, although it should be noted that value added is recorded in current price terms so the rate of change reflects price changes. In many activities prices are likely to have risen during the period under consideration, although this may not be the case for mining and quarrying where a significant part of output is related to energy prices, and so price changes as well as other factors (such as dwindling fossil fuel reserves) may explain part of the large fall in value added for this particular activity. The two highest increases in value added were recorded for two of the business-oriented services: administrative and support service activities; and professional, scientific and technical activities. All non-financial services reported growth over the period under consideration, as did construction to a lesser extent. The four industrial activities reported a more mixed picture: value added grew for the large manufacturing activity as well as for water supply, sewerage, waste management and remediation activities; by contrast, there was a considerable contraction in the value added generated by mining and quarrying, and a less marked reduction for electricity, gas, steam and air conditioning supply.

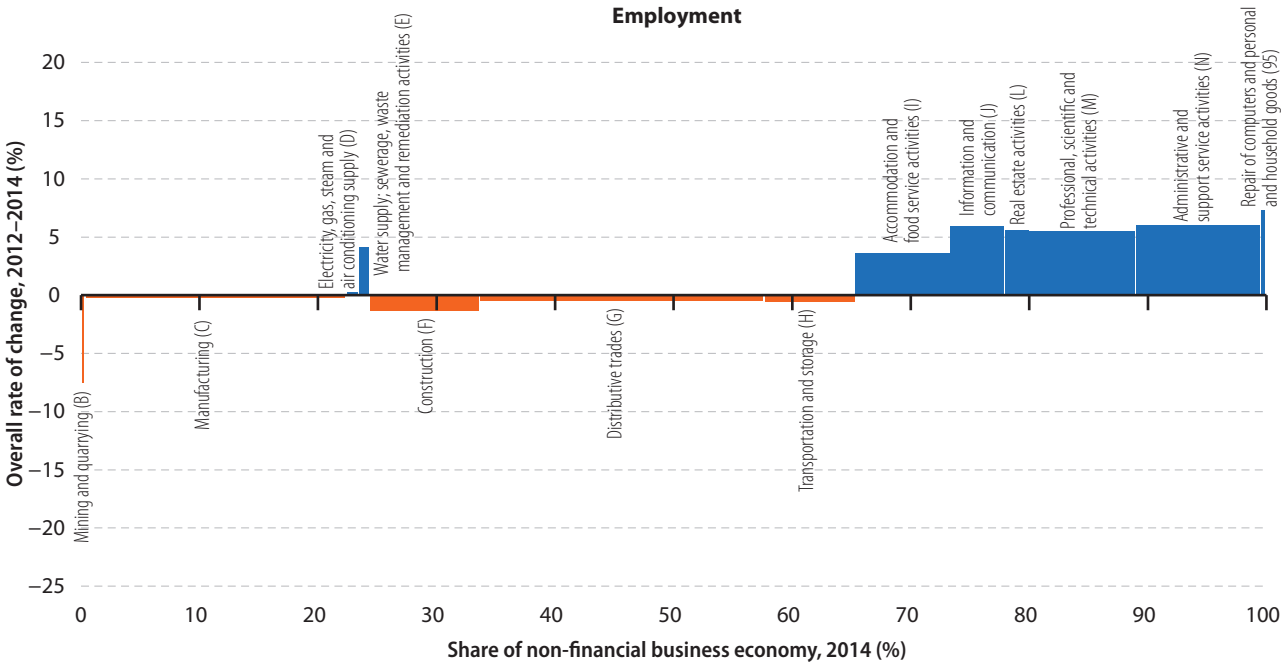
In employment terms, the picture was more varied than for value added. Many of the non-financial business activities reported little or no change in their employment levels between 2012 and 2014, with most activities registering small falls; this was the case for the two largest activities, distributive trades and manufacturing. Larger contractions in the workforce were observed for construction and more notably mining and quarrying, the latter in combination with a large fall in value added over this period as already noted. Employment growth was almost exclusively concentrated in non-financial services (other than distributive trades, and transportation and storage), with overall increases in the number of persons employed reported around 5–6 % for most of the business-oriented services: there was also a marked expansion in employment for water supply, sewerage, waste management and remediation activities.

Main statistical findings

- **The two highest increases in value added (at the NACE Section level) within the non-financial business economy between 2012 and 2014 were recorded for two of the business-oriented services: administrative and support service activities; and professional, scientific and technical activities.**
- **There was a fairly clear east–west split in the relative contribution of industrial activities to non-financial business economy employment in 2014, with industry generally recording a higher share of employment in the easternmost regions of the EU.**
- **The largest employers in the EU were food products manufacturing and retail trade, while the smallest were tobacco products manufacturing and air transport services.**
- **In the capital city regions of the United Kingdom — the western and eastern regions of Inner London — non-financial services accounted for 95.1 % and 92.1 % of the non-financial business economy workforce; Inner London - West was the most specialised region in the EU for multimedia publishing, legal and accounting activities, activities of head offices, and advertising and market research.**
- **Several regions recorded relatively high enterprise birth rates and also relatively high death rates: all of the Portuguese and Slovakian regions, as well as in the Danish and Romanian capital city regions, Latvia, Lithuania and Poland.**

Figure 7.1: Rate of change and share of value added/employment for NACE Sections within the non-financial business economy (NACE Sections B–N and Division 95, excluding Section K), EU-28, 2012–2014
(%)





Note: the horizontal axis shows the share of each activity in the non-financial business economy; the vertical axis shows the overall rate of change for each activity during the period 2012–2014. Manufacturing and water supply; sewerage, waste management and remediation activities: estimates.

Source: Eurostat (online data codes: sbs_na_ind_r2, sbs_na_con_r2, sbs_na_dt_r2, sbs_na_1a_se_r2 and sbs_na_sca_r2)

PATTERNS OF EMPLOYMENT SPECIALISATION IN THE NON-FINANCIAL BUSINESS ECONOMY

While some activities — such as retail trade — ubiquitously appear across all regions, many others exhibit a considerable variation in their level of concentration, often with only a few regions having a particularly high degree of specialisation. The share of a specific NACE activity within the non-financial business economy gives an idea as to which regions are the most or least specialised, regardless of whether the region or the activity considered are large or small. These characteristics are presented for the industrial economy and for non-financial services in Maps 7.1 and 7.2.

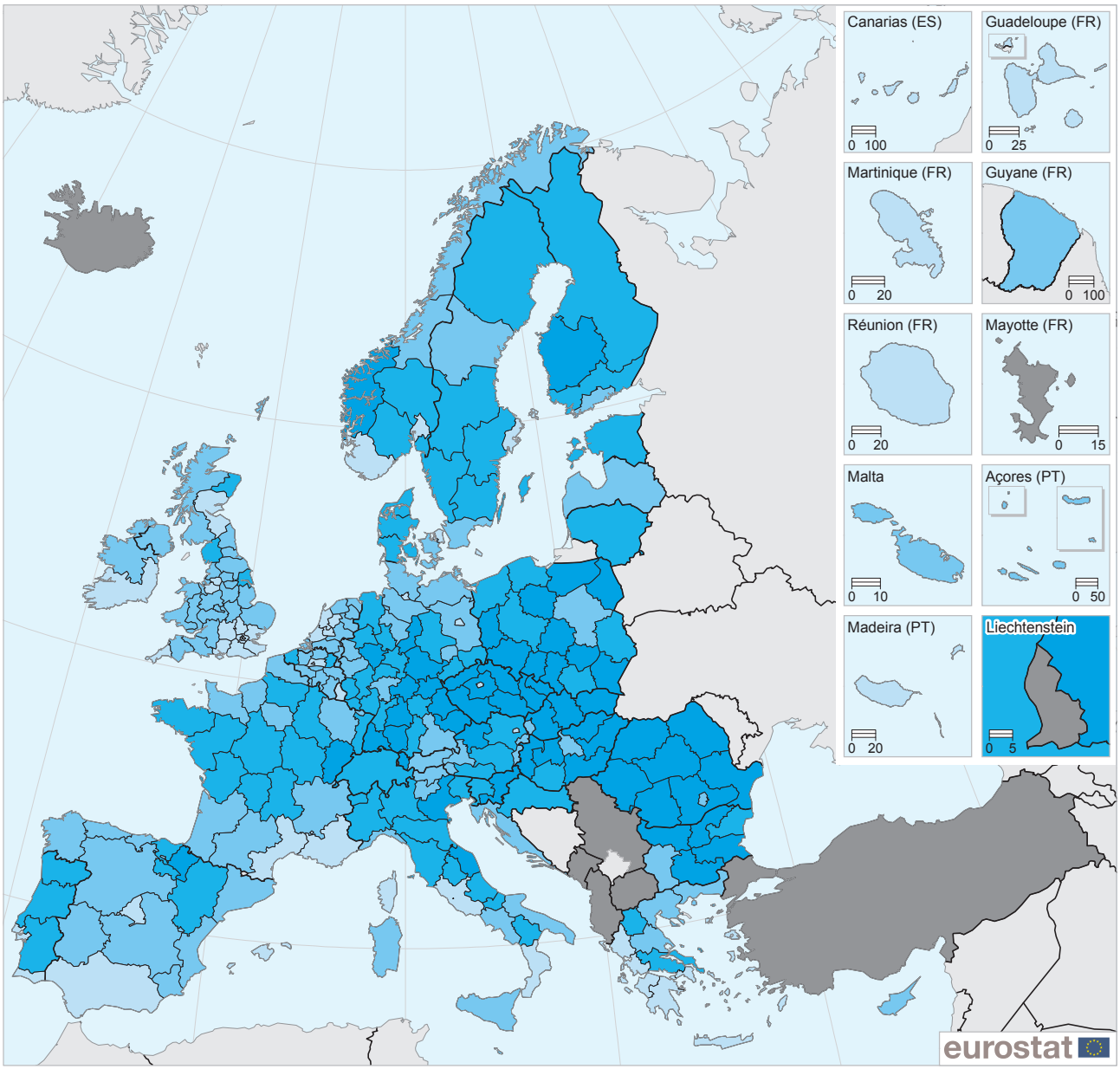
The reasons for such specialisation are varied and include: the availability of natural resources (for example, for mining and quarrying or forest-based manufacturing); access to skilled employees (for example, for scientific research and development); the level of production costs (for example, wages and other labour costs, or the cost and availability of other inputs); adequate provision of infrastructure (for example, transport or telecommunications); climatic and geographic conditions (particularly relevant in relation to tourism activities and water transport); proximity or access to markets; and legislative constraints. All of these may impact upon the considerable disparities that exist between EU regions as regards the importance of different activities within their respective business economies.

Industry accounted for almost one quarter of the EU's non-financial business economy workforce

Across the whole of the EU-28, industrial activities accounted for just less than one quarter (24.4 %) of the total workforce in the non-financial business economy in 2014, with their share continuing to fall gradually. Map 7.1 shows that there was a fairly clear east–west split in the relative contribution of industrial activities to non-financial business economy employment in 2014, with industry generally recording a higher share of employment in the easternmost regions of the EU.

There were 54 NUTS level 2 regions where the industrial workforce accounted for at least 35.0 % of those working in the non-financial business economy in 2014 (as shown by the darkest shade of blue in Map 7.1), none of which were capital city regions. The weight of the industrial economy in the non-financial business economy workforce was most concentrated in a band of regions that ran from Bulgaria up through Romania into Hungary before splitting to the south into Slovenia and northern Italy, and to the north into Slovakia, the Czech Republic and Poland and moving westwards into Germany and Austria. In addition, there were single regions in Spain, France, central Italy and Finland which reported employment shares of at least 35 %.

Map 7.1: Employment share of the industrial economy (NACE Sections B–E), by NUTS 2 regions, 2014
(% of the non-financial business economy)



(% of the non-financial business economy)

EU-28 = 24.4

- < 15
- 15 – < 25
- 25 – < 35
- >= 35
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat - GISCO, 07/2017

0 200 400 600 800 km

Note: Switzerland: national data. Ireland: estimates; 2012.
Source: Eurostat (online data codes: sbs_r_nuts06_r2 and sbs_na_sca_r2)

The relatively high degree of specialisation for industrial activities in eastern regions of the EU may reflect, to some degree, relatively low labour costs, outsourcing and foreign direct investment strategies, as well as natural resource endowments. By contrast, the industrial sectors of the German and Austrian economies are often characterised by engineering activities which produce products that are particularly successful in export markets (for example, machinery and electrical equipment).

Looking in more detail at the NUTS level 2 regions, the industrial workforce accounted for 48.8 % of non-financial business economy employment in the Czech region of Severovýchod in 2014, with the manufacture of motor vehicles, trailers and semi-trailers its largest industrial employer. The industrial economy also accounted for more than 45 % of the non-financial business economy workforce in the Romanian region of Vest, two Bulgarian regions (Severozapaden and Severen tsentralen), the Hungarian region of Közép-Dunántúl and the Slovak region of Západné Slovensko. Outside of these eastern regions of the EU, the central Italian region of Marche (which was the most specialised region in the EU for the manufacture of leather and leather products) recorded the highest share of its non-financial business economy workforce employed within the industrial economy, 39.2 %.

The EU regions with the lowest shares of employment in industrial activities are shown in the lightest shade of blue in Map 7.1: in these regions industrial activities accounted for less than 15 % of non-financial business economy employment. Among these 55 regions were the capital city regions of half of the EU Member States. The lowest share of all was 1.8 % in Inner London - West.

Relative importance of the non-financial services workforce was highest in Inner London

Non-financial services accounted for almost two thirds (66.1 %) of the EU-28's non-financial business economy workforce in 2014, with this share continuing to grow.

2014

66.1 %

of the EU's non-financial business economy workforce is employed in services

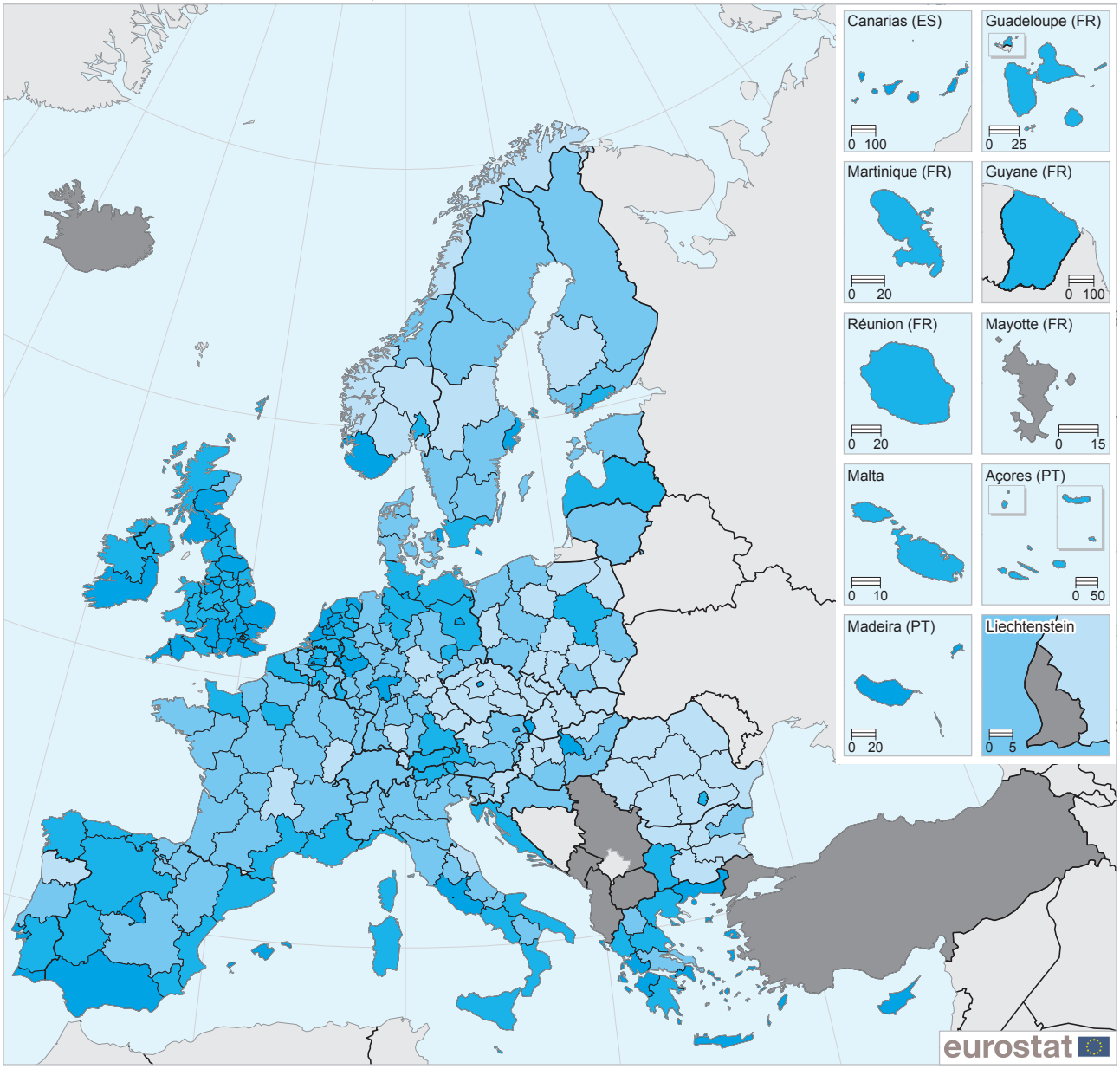
The degree of regional specialisation in non-financial services is often the reverse of the specialisation in industrial activities: typically, regions that were relatively unspecialised in industrial activities reported relatively high degrees of specialisation in non-financial services. A particularly high or low specialisation in construction activities explains the situations where this is not the case.

In the capital city regions of the United Kingdom — the western and eastern regions of Inner London — non-financial services accounted for 95.1 % and 92.1 % of the non-financial business economy workforce. Inner London - West was the most specialised region in the EU for multimedia publishing, legal and accounting activities, activities of head offices, and advertising and market research. Note the service orientation of the two Inner London regions would be even greater if financial services were included, given its position as one of the world's leading financial centres.

There were 15 other EU capital city regions where the share of non-financial services employment was at least 75 % (as shown by the darkest shade of blue in Map 7.2) and several other regions centred around a major city, such as Hamburg and Köln in Germany, Utrecht in the Netherlands or Greater Manchester in the United Kingdom. Another feature of Map 7.2 is that there was a high propensity for service-oriented workforces to be located in regions that are characterised as tourist destinations, for example several of the Greek, Spanish and Portuguese regions, as well as the Finnish island region of Åland.

In 2014, non-financial services accounted for less than 55 % of non-financial business economy employment in 47 regions, mainly in eastern EU Member States; the lowest shares were in regions of the Czech Republic, Slovenia and Romania.

Map 7.2: Employment share of the non-financial services economy (NACE Sections G–N and Division 95, excluding Section K), by NUTS 2 regions, 2014
(% of the non-financial business economy)



(% of the non-financial business economy)

EU-28 = 66.1

- < 55
- 55 – < 65
- 65 – < 75
- >= 75
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat - GISCO, 07/2017

0 200 400 600 800 km

Note: Switzerland: national data. Ireland: estimates; 2012.
Source: Eurostat (online data codes: sbs_r_nuts06_r2 and sbs_na_sca_r2)

REGIONAL EMPLOYMENT SPECIALISATION AND CONCENTRATION MEASURES

Table 7.1 presents a more detailed activity analysis, at the level of NACE divisions. The table indicates the average shares (median and mean) for each NACE division in the non-financial business economy workforce, calculated across all level 2 regions of the EU (except for Irish regions) and Norway. The final two columns of the table show which region was the most specialised, in terms of employment shares in the non-financial business economy total; note that some of the data are confidential although the names of the regions with the highest shares (not their values) are presented.

Polish and North Sea regions were specialised in mining and quarrying

Mining and quarrying activities of energy-producing and metallic minerals tend to be very concentrated as a consequence of the geographical location of deposits, and therefore only a small number of regions were highly specialised in these activities; these characteristics mean that a handful of regions can account for a relatively high share of sectoral employment in some of these activities. The most notable examples include the mining of coal and lignite in Śląskie (Poland) or the extraction of crude petroleum and natural gas off the coast of western Norway or eastern Scotland (the United Kingdom).

Nordic regions had a high degree of specialisation in forest-based industries

Manufacturing activities that involve the primary processing stages of agricultural, fishing or forestry products tend to be concentrated in areas close to the source of their raw materials. The region most specialised in food manufacturing (NACE Division 10) was rural and coastal Bretagne (in the north west of France). Heavily forested and mountainous Nordic regions were among the most specialised for the manufacture of wood and wood products (NACE Division 16) and for the related manufacturing of paper and paper products (NACE Division 17).

Production of chemicals and pharmaceuticals specialised in Germany and Belgium

Several German and Belgian regions were relatively specialised in the production of chemicals and pharmaceuticals, with Rheinhessen-Pfalz the most specialised region for chemicals manufacturing and the Prov. Brabant Wallon for pharmaceutical products and preparations. The highest regional specialisation for the manufacture of rubber and plastics was in the Auvergne region of France, with these activities centred on Clermont-Ferrand.

Island and capital city regions were some of the most specialised regions for transport services

Transport services are influenced by location, with water transport (NACE Division 50) naturally being important for coastal regions and islands, while air transport (NACE Division 51) is generally important in those regions which are close to major cities, as well as some island regions (especially those focused on tourism). The small island region of Åland (Finland) is a centre for ferry services between Sweden and Finland and other Baltic Sea traffic. Outer London - West and North West was the region most specialised in air transport and includes London Heathrow airport.

Traditional holiday destinations are some of the most specialised regions for accommodation services

Regions traditionally associated with tourism, for example, many regions in Cyprus, Greece, Malta, Spain, Austria, Croatia, Portugal and Italy, were among the most specialised in accommodation services (NACE Division 55) and food and beverage service activities (NACE Division 56). The highest shares of non-financial business economy employment from accommodation services and food and beverage service activities were recorded in the Greek region of Ionia Nisia (which includes, among others, the islands of Corfu, Zakynthos and Kefalonia).

Capital city regions often specialised in information and communication services, as well as various business-oriented service activities

Capital city regions were the most specialised regions in many of the information and communication and business-oriented services. As already noted, Inner London - West was the most specialised region in the EU for multimedia publishing, legal and accounting activities, activities of head offices, and advertising and market research. Among the remaining information and communication and business-oriented services divisions, the most specialised regions included the capital city regions of the Czech Republic, Austria, Portugal and Romania.

Table 7.1: Average share of non-financial business economy employment and most specialised regions, by NACE division and by NUTS 2 regions, 2014
(% of non-financial business economy employment)

Activity (NACE code)	Average share across EU regions and Norway (% of non-financial business economy employment)		Most specialised region within EU and Norway	
	Median	Mean	Region name (NUTS level 2)	Share in regional non-financial business economy employment (%)
Mining of coal & lignite (05)	0.0	0.1	Śląskie (PL22)	8.0
Extraction of crude petroleum & natural gas (06)	0.0	0.1	Vestlandet (NO05)	8.2
Mining of metal ores (07)	0.0	0.1	Övre Norrland (SE33)	c
Other mining & quarrying (08)	0.1	0.2	Świętokrzyskie (PL33)	1.4
Mining support service activities (09)	0.0	0.1	North Eastern Scotland (UKM5)	c
Manuf. of food (10)	3.1	3.3	Bretagne (FR52)	12.2
Manuf. of beverages (11)	0.3	0.4	La Rioja (ES23)	3.7
Manuf. of tobacco products (12)	0.0	0.0	Trier (DEB2)	c
Manuf. of textiles (13)	0.3	0.4	Norte (PT11)	3.4
Manuf. of wearing apparel (14)	0.2	0.7	Severozapaden (BG31)	10.6
Manuf. of leather & leather products (15)	0.1	0.3	Marche (ITI3)	6.5
Manuf. of wood & wood products (16)	0.6	0.9	Hedmark og Oppland (NO02)	5.0
Manuf. of paper & paper products (17)	0.4	0.5	Norra Mellansverige (SE31)	3.6
Printing & reproduction of recorded media (18)	0.5	0.5	West Yorkshire (UKE4)	1.5
Manuf. of coke & refined petroleum products (19)	0.0	0.1	Opolskie (PL52)	c
Manuf. of chemicals & chemical products (20)	0.6	0.8	Rheinhessen-Pfalz (DEB3)	8.3
Manuf. of pharmaceutical products & preparations (21)	0.2	0.3	Prov. Brabant Wallon (BE31)	10.1
Manuf. of rubber & plastic products (22)	1.1	1.3	Auvergne (FR72)	11.7
Manuf. of other non-metallic mineral products (23)	0.8	1.0	Świętokrzyskie (PL33)	4.8
Manuf. of basic metals (24)	0.4	0.8	Norra Mellansverige (SE31)	8.6
Manuf. of fabricated metal products (25)	2.3	2.7	Střední Morava (CZ07)	8.7
Manuf. of computer, electronic & optical products (26)	0.5	0.7	Észak-Magyarország (HU31)	5.4
Manuf. of electrical equipment (27)	0.7	1.0	Oberpfalz (DE23)	7.6
Manuf. of other machinery & equipment (28)	1.5	2.0	Tübingen (DE14)	11.2
Manuf. of motor vehicles, trailers & semi-trailers (29)	0.8	1.7	Braunschweig (DE91)	c
Manuf. of other transport equipment (30)	0.3	0.5	Midi-Pyrénées (FR62)	6.2
Manuf. of furniture (31)	0.5	0.7	Warmińsko-Mazurskie (PL62)	8.4
Other manufacturing (32)	0.5	0.6	Kassel (DE73)	2.7
Repair & installation of machinery (33)	0.8	0.9	Vestlandet (NO05)	3.1
Electricity, gas, steam, & air conditioning supply (35)	0.7	0.9	Dytiki Makedonia (EL53)	12.6
Water supply (36)	0.2	0.3	Severozapaden (BG31)	1.8
Sewerage (37)	0.1	0.1	Trier (DEB2)	c
Waste management (38)	0.6	0.7	Ciudad Autónoma de Ceuta (ES63)	c
Remediation (39)	0.0	0.0	Herefordshire, Worcestershire and Warwickshire (UKG1)	0.3

Note: excluding Irish regions.

Source: Eurostat (online data code: sbs_r_nuts06_r2)

Table 7.1 (continued): Average share of non-financial business economy employment and most specialised regions, by NACE division and by NUTS 2 regions, 2014
(% of non-financial business economy employment)

Activity (NACE code)	Average share across EU regions and Norway (% of non-financial business economy employment)		Most specialised region within EU and Norway	
	Median	Mean	Region name (NUTS level 2)	Share in regional non-financial business economy employment (%)
Construction of buildings (41)	2.4	2.7	Hedmark og Oppland (NO02)	8.7
Civil engineering (42)	1.1	1.2	Lubelskie (PL31)	4.5
Specialised construction activities (43)	5.5	6.3	Corse (FR83)	21.7
Motor trades & repair (45)	2.9	2.9	Agder og Rogaland (NO04)	8.1
Wholesale trade (46)	7.1	7.3	Agder og Rogaland (NO04)	18.6
Retail trade (47)	14.2	14.7	Basse-Normandie (FR25)	39.5
Land transport & pipelines (49)	4.2	4.2	Région de Bruxelles-Capitale / Brussels Hoofdstedelijk Gewest (BE10)	11.3
Water transport (50)	0.1	0.4	Åland (FI20)	c
Air transport (51)	0.0	0.2	Outer London - West and North West (UKI7)	5.6
Supporting transport activities (52)	1.7	1.9	Bremen (DE50)	c
Postal & courier activities (53)	1.1	1.1	Köln (DEA2)	11.5
Accommodation (55)	1.6	2.4	Ionia Nisia (EL62)	18.4
Food & beverage service activities (56)	6.1	6.5	Ionia Nisia (EL62)	19.7
Publishing activities (58)	0.4	0.5	Oslo og Akershus (NO01)	3.7
Multimedia publishing (59)	0.1	0.2	Inner London - West (UKI3)	3.3
Programming & broadcasting (60)	0.1	0.1	Outer London - West and North West (UKI7)	2.2
Telecommunications (61)	0.4	0.6	Köln (DEA2)	c
Computer activities (62)	1.4	1.8	Utrecht (NL31)	8.2
Information service activities (63)	0.2	0.3	Wien (AT13)	1.9
Real estate activities (68)	2.0	2.0	Latvija (LV00)	5.0
Legal & accounting activities (69)	2.3	2.4	Inner London - West (UKI3)	9.7
Activities of head offices (70)	1.2	1.6	Inner London - West (UKI3)	10.3
Architectural & engineering activities (71)	2.0	2.2	North Eastern Scotland (UKM5)	10.6
Scientific research & development (72)	0.2	0.4	Trøndelag (NO06)	3.1
Advertising & market research (73)	0.5	0.6	Inner London - West (UKI3)	3.3
Other professional, scientific & technical activities (74)	0.7	0.7	Praha (CZ01)	2.3
Veterinary activities (75)	0.2	0.2	Prov. Luxembourg (BE34)	0.7
Rental & leasing activities (77)	0.5	0.5	North Eastern Scotland (UKM5)	1.7
Employment activities (78)	2.3	3.0	Groningen (NL11)	14.8
Travel agency & related activities (79)	0.3	0.4	Illes Balears (ES53)	1.8
Security & investigation (80)	0.8	0.9	Bucureşti - Ilfov (RO32)	5.7
Service to buildings & landscape activities (81)	2.9	3.1	Ciudad Autónoma de Melilla (ES64)	14.6
Other administrative & business activities (82)	1.3	1.5	Área Metropolitana de Lisboa (PT17)	9.1
Repair of computers & personal & household goods (95)	0.3	0.3	Voreio Aigaio (EL41)	1.9

Note: excluding Irish regions.

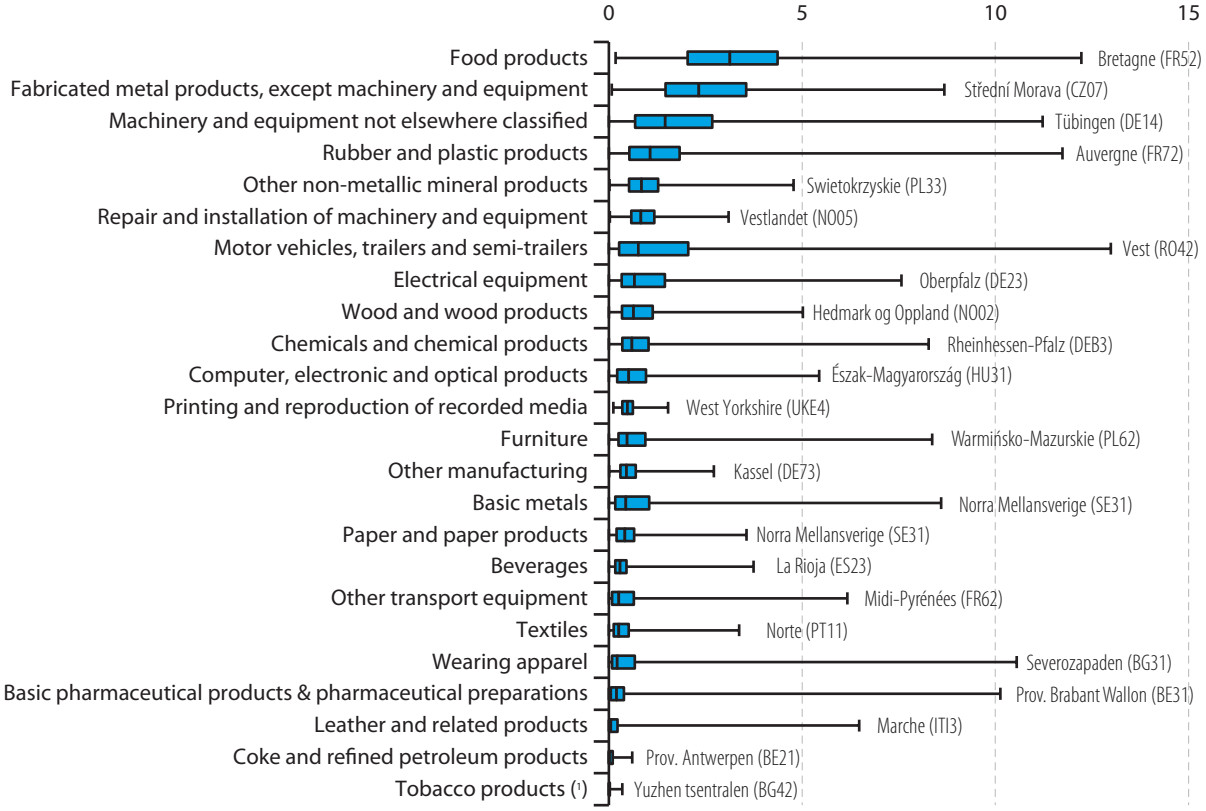
Source: Eurostat (online data code: sbs_r_nuts06_r2)

REGIONAL EMPLOYMENT SPECIALISATION

Figures 7.2 and 7.3 provide an overview of the relative importance of economic activities at the NACE division level in the non-financial business economy workforce: Figure 7.2 concerns manufacturing divisions and Figure 7.3 non-financial services divisions. For each activity, the horizontal lines indicate the spread from the region with the lowest share of that activity in its non-financial business economy workforce to the region with the highest share; the region with the highest share is also named in the figure. The extremes of the highest and lowest shares can be influenced by a single region and so the coloured box shows a narrower range, defined to cover half of the regions (the inter-quartile range), with one quarter of all regions having a higher employment share in that activity and one quarter of the regions having a lower share. The central bar within the coloured box shows the value of the median region. The activities are ranked from the largest employer — food products manufacturing in Figure 7.2 and retail trade in Figure 7.3 — to the smallest — tobacco products manufacturing in Figure 7.2 and air transport in Figure 7.3.

Looking more closely at Figure 7.2, a few activities can be identified where not simply the range from largest to smallest is broad, but where the interquartile range (the width of the box in the figure) is also large. The ratio of the third quartile (the right-hand end of the box) to the first quartile (the left-hand end of the box), was particularly large for some of the smallest manufacturing activities, such as the manufacture of coke and refined petroleum products or the manufacture of leather and related products. Among the larger activities, a relatively high ratio between the third and first quartiles was observed for the manufacture of motor vehicles, trailers and semi-trailers. This reflects a relatively wide range of shares across the central half (in ranking terms) of regions, indicating activities where the level of specialisation is quite diverse. By contrast, activities where the interquartile range is narrow in relative

Figure 7.2: Regional specialisation within the EU-28 and Norway's manufacturing economy (NACE Section C), by NUTS 2 regions, 2014
(% share of regional non-financial business economy employment)



Note: the figure is ranked on the median share for each activity; the minimum and maximum values are shown by the vertical lines (at the extremes); the inter-quartile range is shown by the shaded box, with the median share the vertical line within the box; the name of the region with the highest share is also shown.

(1) The region with maximum value is presented on the basis of a ranking of regions for which data are non-confidential.

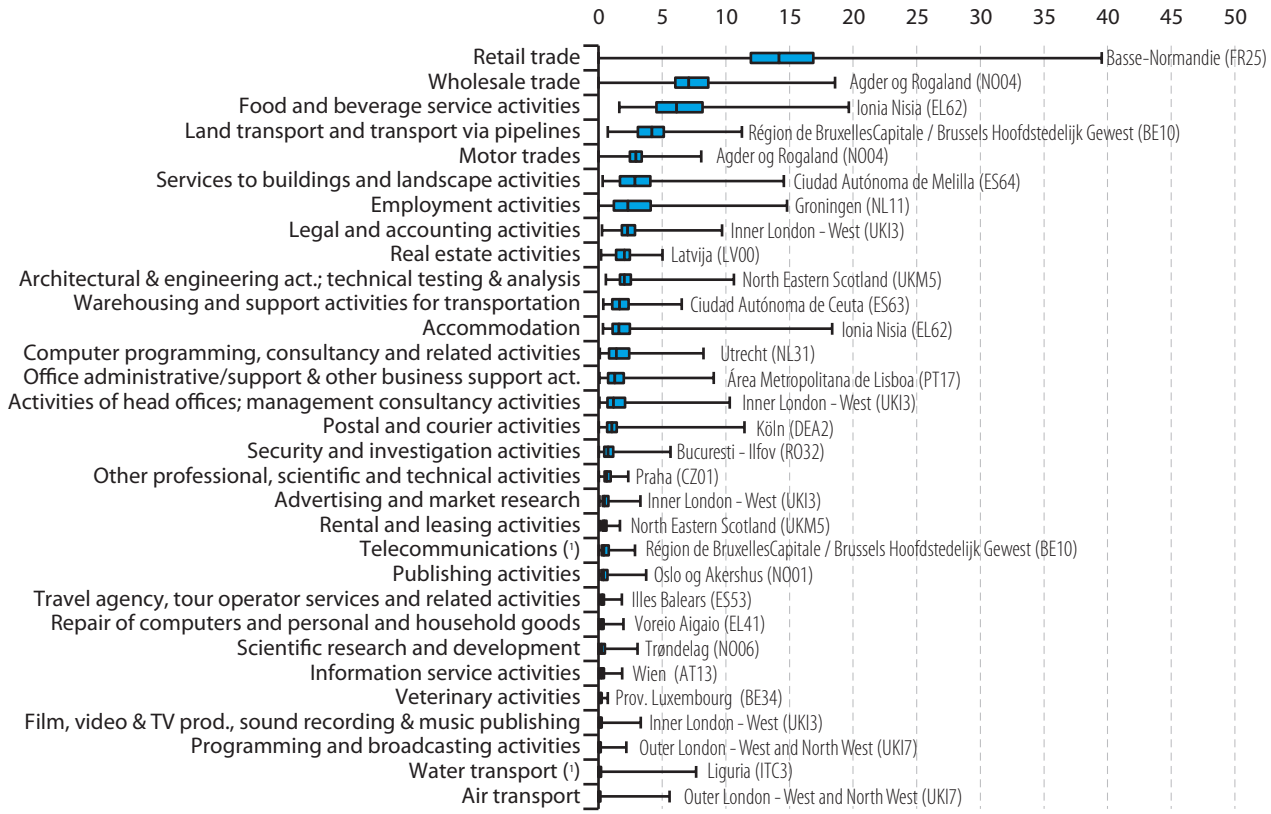
Source: Eurostat (online data codes: sbs_r_nuts06_r2 and sbs_na_sca_r2)

terms — such as the manufacture of food products, the repair and installation of machinery and equipment, or the printing and reproduction of recorded media — have a relatively similar share of non-financial business economy employment across a large number of regions, indicating that many regions are not particularly specialised or non-specialised in these activities.

The employment spread for large, basic services, like motor, wholesale and retail trade, which tend to serve a relatively high proportion of local clients, was relatively narrow in terms of the ratio between the maximum and median values and in terms of the inter-quartile range: for these three trade activities, the ratio between the third quartile and the first quartile was 1.4 : 1, narrower than for any of the other non-financial services.

For transport and storage activities, the extent of specialisation varies greatly between the activities. A relatively small number of regions tend to be specialised in water and air transport activities, resulting in some particularly high ratios between the maximum value and the median and also between the third and first quartiles. By contrast, there is much less regional specialisation in land transport (and transport via pipelines). Equally, within professional, scientific and technical service activities there was greater regional specialisation in scientific research and development activities than in legal and accounting activities or in architectural and engineering activities, technical testing and analysis.

Figure 7.3: Regional specialisation within the EU-28 and Norway's non-financial services economy (NACE Sections G–N and Division 95, excluding Section K), by NUTS 2 regions, 2014
(% share of regional non-financial business economy employment)



Note: the figure is ranked on the median share for each activity; the minimum and maximum values are shown by the vertical lines (at the extremes); the inter-quartile range is shown by the shaded box, with the median share the vertical line within the box; the name of the region with the highest share is also shown.

(1) The region with maximum value is presented on the basis of a ranking of regions for which data are non-confidential.

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

ENTERPRISE DEMOGRAPHY: BIRTHS AND DEATHS

2014

10 %
of all enterprises in the EU's business economy were newly-born

Business demography statistics describe the characteristics of enterprises within the business population. They cover, among other subjects, the birth of new enterprises, the growth and survival of existing enterprises (with particular interest centred on their employment impact), and enterprise deaths. These indicators can provide an important insight into business dynamics, as new enterprises/fast-growing enterprises tend to be innovators that achieve efficiency gains and improve the overall competitiveness of an economy, while relatively high death rates may indicate economic activities that are no longer profitable.

A substantial share of cohesion policy funding has been dedicated to improving entrepreneurship and the business environment. As such, the latest data collection exercise on business demography was designed to support regional cohesion policy (2014–2020), providing important information for monitoring purposes.

The statistics presented in Maps 7.3, 7.4 and 7.5 cover industry, construction and services except holding companies (NACE Sections B to S excluding Group 64.2). Note that business demography statistics are not available for Greece.

Relatively high enterprise birth rates in Lithuania and Romania

The enterprise birth rate measures the number of new enterprises in relation to the total population of active enterprises. The EU's birth rate for new enterprises in the business economy was estimated to be around10 % for 2014, but was considerably higher in Lithuania (a single region at this level of analysis) where it reached 25.1 %, in all four Slovakian regions where it ranged from 18.8 % to 20.4 % and all seven Portuguese regions where it ranged from 13.3 % to 16.6 %; the birth rate was also high in Turkey (only national data available for 2011) at 23.3 %. Birth rates of 12 % or higher (the darkest shade of blue in Map 7.3) were also recorded for two Bulgarian regions, the Danish (2013 data) and Romanian capital city regions and single regions from Spain, France, Latvia (one region at this level of detail); only national data are available for some EU Member States and among these Poland and the United Kingdom also had enterprise birth rates of 12 % or higher.

The lowest enterprise birth rates (below 8 %, shown by the lightest shade of blue in Map 7.3) were recorded in 17 Italian regions, four regions each from Austria and Finland, single regions from Spain and Croatia, as well as in Cyprus and Malta (each one region at this level of detail; 2013 data for Malta); similarly low levels were also reported for enterprise birth rates in Belgium, Germany, Ireland and Sweden, for which only national data are available.

Business demography statistics at a national level can hide substantial differences between regions. Among those multi-regional EU Member States for which regional data are available, the largest differences between the highest and lowest regional enterprise birth rates were recorded in Spain, from a high of 14.7 % recorded in Ciudad Autónoma de Melilla down to a low of 7.3 % in País Vasco.

Capital city regions often recorded some of the highest enterprise birth rates

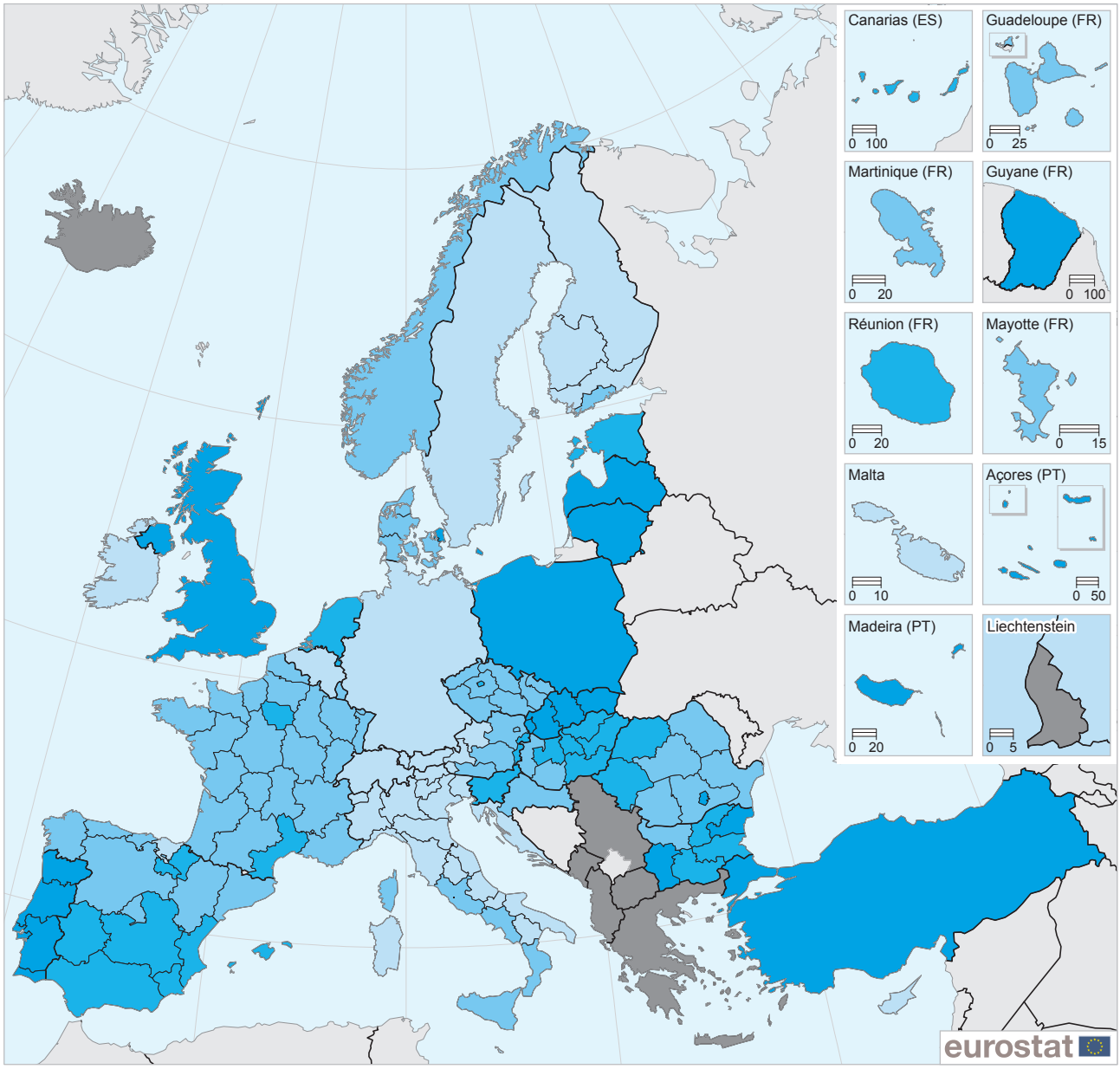
In 2014, enterprise birth rates tended to be higher than average in capital city regions. This may reflect a range of factors, for example, capital city regions generally offer the largest potential market (but also the highest number of competitors), they are often characterised by more highly-educated workforces and studies show that graduates are more likely to start a new business, and they generally have a high proportion of service-based enterprises (where barriers to entry are often quite low).

In Bulgaria, the Czech Republic, Denmark, Croatia, Italy, Hungary, Romania and Finland, the highest enterprise birth rates were registered for the capital city region, while the capital city region had the second highest enterprise birth rate in Portugal and the third highest rate in France and Austria. The two exceptions to this situation were Spain and Slovakia, as enterprise birth rates in their capital city regions were low compared with their other regions and in Slovakia, where the capital city region recorded the lowest enterprise birth rate among the four NUTS level 2 regions.

All Romanian regions had enterprise death rates of 23 % or higher in 2013

The enterprise death rate for industry, construction and services (except holding companies) in the EU was estimated to be about 9 % for 2013. Among the NUTS level 2 regions of the EU, the highest enterprise death rates were recorded in the eight Romanian regions, where rates of 23–27 % were recorded. Rates above 12 % (the darkest shade of blue in Map 7.4) were also recorded in all Portuguese and Slovakian regions, two Danish regions, as well as Latvia, Lithuania (each one region at this level of detail) and Poland (only national data available).

Map 7.3: Enterprise birth rate in the business economy (NACE Sections B–S, excluding Group 64.2), by NUTS 2 regions, 2014
(% of active enterprises)



(% of active enterprises)

- < 8
- 8 – < 10
- 10 – < 12
- >= 12
- Data not available

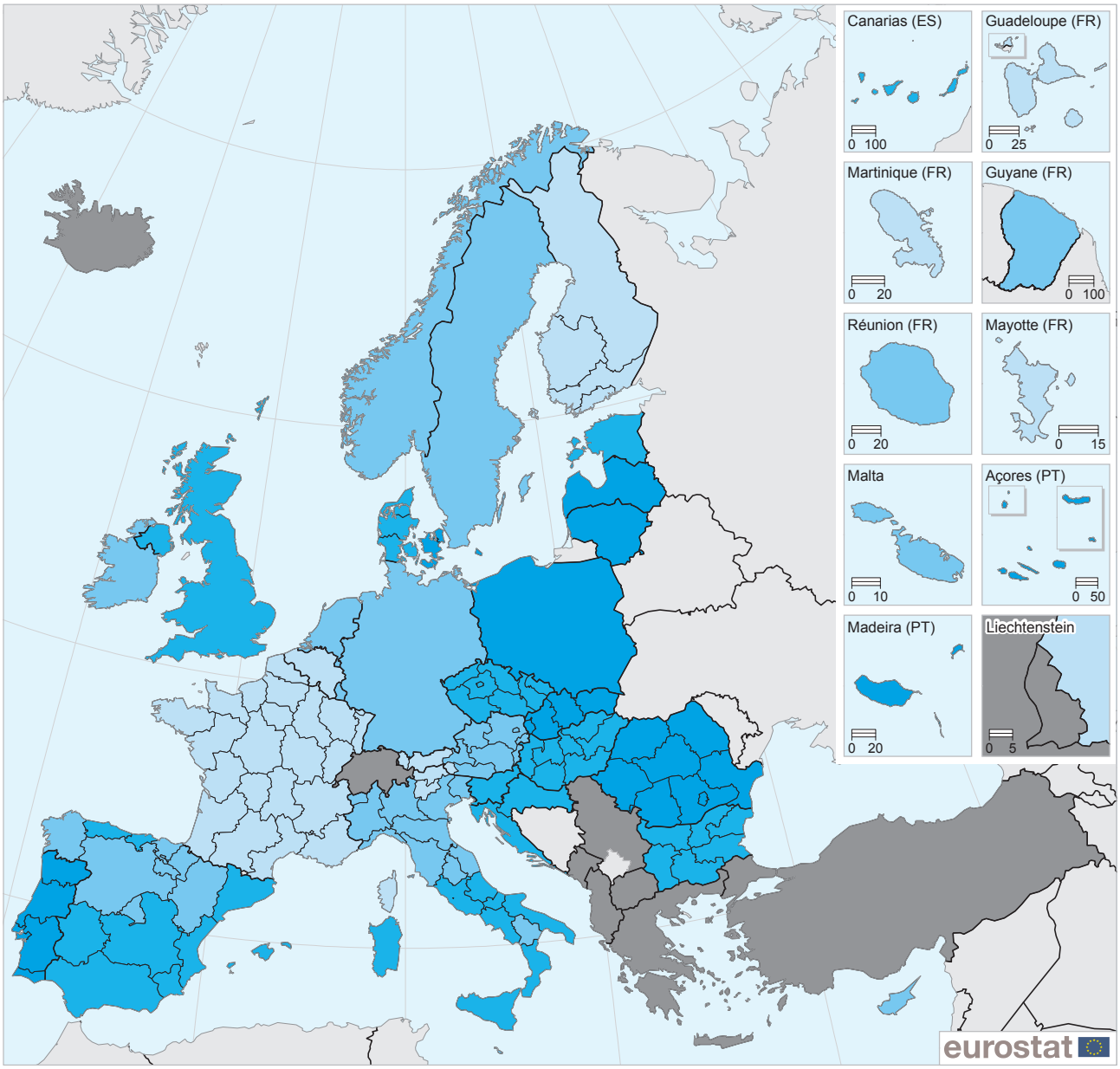
Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat - GISCO, 07/2017

0 200 400 600 800 km

Note: Belgium, Germany, Ireland, the Netherlands, Poland, Slovenia, Sweden, the United Kingdom, Norway, Switzerland and Turkey: national data. Denmark, France and Malta: 2013. Turkey: 2011. Ireland, Poland and Sweden: excluding NACE Sections P to S. France, Austria and Switzerland: provisional.

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

Map 7.4: Enterprise death rate in the business economy (NACE Sections B–S, excluding Group 64.2), by NUTS 2 regions, 2013
(% of active enterprises)



Note: Belgium, Germany, Ireland, the Netherlands, Poland, Slovenia, Sweden, the United Kingdom and Norway: national data. Finland: 2014. Ireland: 2012. Ireland, Poland and Sweden: excluding NACE Sections P to S. Germany: estimate. Bulgaria, the Czech Republic, France, Italy, Lithuania, Hungary, Austria, Poland, Portugal, Slovakia and Norway: provisional.

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

The lowest enterprise death rates were in Belgium (only national data are available), where a rate of 3.5 % was recorded. A total of 25 French regions also reported enterprise death rates below 6 % (the lightest shade of blue in Map 7.4), along with all five Finnish regions (2014 data) and two regions each from Italy and Austria.

Business churn: regions with relatively high enterprise birth and death rates

When analysing the information in Maps 7.3 and 7.4 it can be seen that several of the regions that recorded relatively high enterprise birth rates were also characterised by relatively high enterprise death rates. This is perhaps not surprising, as dynamic and innovative enterprises entering a market may be in a position to drive incumbents out of the market. Relatively high enterprise birth and death rates were observed in all of the Portuguese and Slovakian regions, as well as in the Danish and Romanian capital city regions, Latvia, Lithuania and Poland.

An alternative combined analysis can be made by looking at the difference between enterprise birth and death rates in each region. Enterprise death rates were higher than birth rates in 56 of the 142 regions in the EU for which data are available in both maps. This situation occurred in all Danish, Croatian and Romania regions, nearly all Czech, Italian and Portuguese regions, Cyprus, Malta (each only one region at this level of detail), Germany, Ireland, Poland (only national data available), as well as two regions each in Spain and Hungary. By contrast, relatively large percentage point differences between higher enterprise birth rates and lower death rates were recorded in all Slovakian regions, nearly all French regions, Lithuania (one region at this level of detail) and the United Kingdom (only national data available).

ENTERPRISE DEMOGRAPHY: HIGH-GROWTH ENTERPRISES

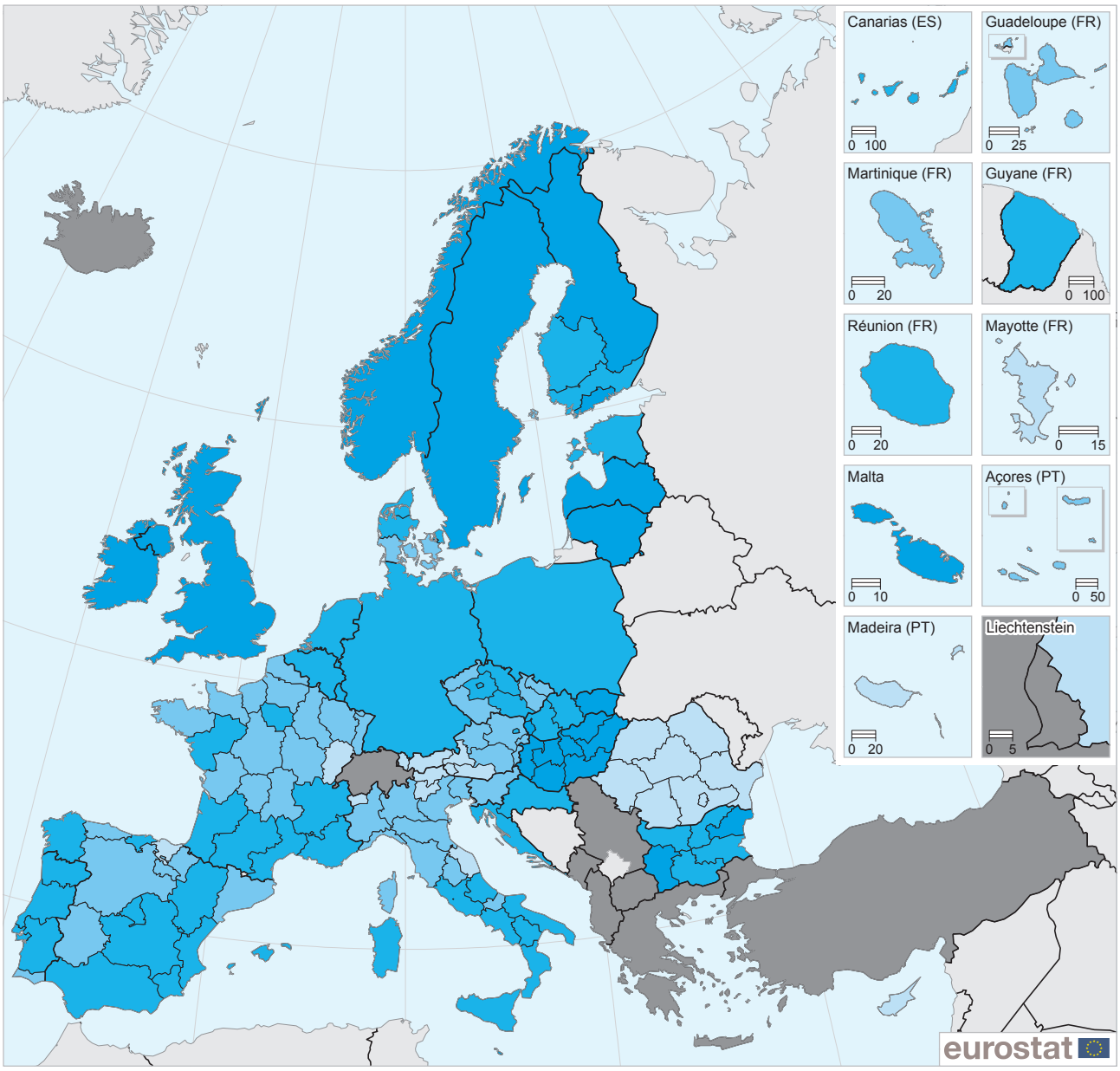
The final analysis presented in this chapter looks not just at whether enterprises survive, but whether they expand their workforce. High-growth enterprises are those which have at least 10 employees at the beginning of a period of time and then average annual growth in the number of employees of more than 10.0 % over a three-year period. Enterprises with high growth are of interest because of their economic impact, particularly in creating employment opportunities. The use of a threshold of 10 employees at the beginning of the period is to avoid including very small enterprises with small absolute growth (with relatively negligible economic impact) but high relative growth, for example increasing from one employee to two employees. There is no restriction on the age of the enterprise (other than that they must be at least four years old in order to be able to measure the average growth over a three-year period), and so high growth enterprises include relatively young and also mature enterprises. The share of high growth enterprises that is shown in Figure 7.5 is calculated relative to the total number of enterprises with at least 10 employees at the end of the period of growth, 2014 in this case.

It is estimated that high growth enterprises made up 9.2 % of the business population (of enterprises with at least 10 employees) in 2014 in the EU-28 and that these enterprises employed 13.0 % of employees in enterprises with at least 10 employees. Although high-growth enterprises operated in all sectors of the business economy, their share in service sectors was higher in a majority of EU Member States, in particular within information and communication services as well as administrative and support service activities.

Looking at the regional analysis in Map 7.5, high growth enterprises made up 10 % or more of the business population (of enterprises with at least 10 employees) in 2014 in 19 of the 142 regions of the EU for which data are available in Map 7.5: these regions are shown in the darkest shade of blue. These included all Hungarian regions, two regions (in all cases including the capital city region) each from Bulgaria, Slovakia (2013 data) and Finland, as well as Latvia, Lithuania and Malta (each one region at this level of detail), and Ireland, Sweden and the United Kingdom (only national data available).

High growth enterprises made up at most 3.0 % of the business population (of enterprises with at least 10 employees) in Mayotte (France; 2013 data), all Romanian regions and Cyprus (one region at this level of detail). In addition, there were five EU Member States where at least one region recorded a share of high growth enterprises below 6.0 % (but above 3.0 %): Spain (two regions), France (one region), Italy, Austria (four regions each) and Portugal (one region).

Map 7.5: Share of high-growth enterprises in the total number of enterprises within the business economy (NACE Sections B–N, excluding Group 64.2), by NUTS 2 regions, 2014
(%)



Note: high-growth enterprises are defined as those enterprises born before 2011 and having survived to 2014 with at least 10 employees in 2011 and with an average employee growth rate of at least 10.0 % per annum for the period 2011–2014; the share of these enterprises is calculated relative to the total number of enterprises with at least 10 employees in 2014. Belgium, Germany, Estonia, Ireland, Cyprus, Latvia, Luxembourg, Malta, the Netherlands, Poland, Slovenia, Sweden, the United Kingdom and Norway: national data. Ireland: estimate. Denmark, France and Slovakia: 2010–2013.

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

Data sources and availability

STRUCTURAL BUSINESS STATISTICS

A recast SBS Regulation (EC) No 295/2008 and its implementing regulations provide the legal basis for the annual collection of SBS; regional statistics are compiled for wages and salaries and the number of persons employed. The information presented in this chapter is restricted in terms of its activity coverage to the non-financial business economy (NACE Sections B–N, excluding Section K, as well as NACE Division 95) and therefore excludes agricultural, forestry and fishing activities and public administration and other services (such as defence, education and health), which are not covered by SBS, and also excludes financial services (NACE Section K) for which only partial information exists. Regional SBS are also available for Norway, while data are presented in Maps 7.1 and 7.2 at a national level for Switzerland but are excluded from the other regional analysis.

The statistical unit used for regional SBS is generally the local unit, which is an enterprise or part of an enterprise situated in a geographically identified place. The nature of regional SBS is such that some data cells are not disclosed for reasons of statistical confidentiality: these cells are flagged as confidential and their values cannot be published. Given that choropleth maps are compiled using a range of values for each colour shade, it has been possible to assign confidential cells to a specific class while respecting non-disclosure procedures.

BUSINESS DEMOGRAPHY

A pilot data collection for regional business demography statistics was launched in 2012 with the support of the European Commission's Directorate-General for Regional and Urban Policy; this voluntary exercise provided a number of grants to national statistical authorities. Another survey was launched in 2015, covering the reference periods of 2011–2013. Regional business demography statistics will continue to be delivered on a voluntary basis until a new legal framework is adopted and implemented.

For more information:
Eurostat–OECD business demography — manual

NUTS

The data presented in this chapter are based exclusively on the 2013 version of NUTS.

INDICATOR DEFINITIONS

Glossary entries on Statistics Explained (see: http://ec.europa.eu/eurostat/statistics-explained/index.php/Category:Structural_business_statistics_glossary) are available for a wide range of concepts/indicators related to structural business statistics.

For more information:
http://ec.europa.eu/eurostat/web/structural-business-statistics/overview
http://ec.europa.eu/eurostat/cache/metadata/en/sbs_esms.htm

8 Research and innovation

This chapter presents statistical information analysing regional developments for a range of research and innovation-related indicators within the European Union (EU), including the following topics: research and development (R & D) expenditure, the number of R & D researchers, human resources in science and technology (HRST), employment in high technology sectors and intellectual property rights.

Regional research, knowledge and innovative capacity depends on a range of factors — business culture, workforce skills, education and training institutions, innovation support services, technology transfer mechanisms, regional infrastructure, the mobility of researchers, sources of finance and creative potential.

POLICY INITIATIVES

A Communication from the European Commission on 'Regional policy contributing to smart growth in Europe 2020' (COM(2010) 553 final) explores ways in which regional policy can be used to unlock the growth potential of the EU through identifying activities that offer the best chance of strengthening a region's competitiveness, while encouraging interaction between businesses, research centres and universities on the one hand and local, regional and national administrations on the other.

In 2014, the European Commission adopted a Communication on 'Research and innovation as sources of renewed growth' (COM(2014) 339 final) which proposed that EU Member States should seek to actively support growth enhancing policies, notably through research and innovation, so as to benefit from the largest internal market in the world, many of the world's leading innovative companies and the highly-educated European workforce.

In order to pool talent and achieve a necessary scale, policymakers seek to encourage transnational cooperation within the European research area (ERA). The ERA was launched at the Lisbon European Council in March 2000 and aims to ensure open and transparent trade in scientific and technical skills, ideas and know-how; it sets out to create a unified research area that is open to the world; it promotes the free movement of researchers, knowledge and technology. In July 2012, the European Commission adopted a Communication titled 'A reinforced European research area partnership for excellence and growth' (COM(2012) 392 final), focusing on five key priority areas for reforming/completing the ERA: more effective national research systems; optimal transnational cooperation and competition; an open labour market for researchers; gender equality and gender mainstreaming in research; and optimal circulation and transfer of scientific knowledge. A second progress report on ERA (COM(2014) 575 final) was released in September 2014. It concluded that while there were still big differences between EU Member States in the way research funding was allocated, virtually all had adopted a national strategy on research and innovation. In May 2015 the ERA Roadmap 2015–2020 was adopted. Its purpose is to identify a limited number of key implementation priorities which are likely to have the biggest impact on Europe's science, research and innovation systems, including: effective national research systems; addressing grand challenges; making optimal use of public investments in research infrastructures; an open labour market for researchers; gender equality and gender mainstreaming in research; optimal circulation and transfer of scientific knowledge; international cooperation. In 2015, a core set of 24 indicators were agreed upon in order to measure the progress of ERA and these are presented in ERA progress reports.

The EU's framework programmes for research have, since their launch in 1984, played a leading role in multidisciplinary research activities. Regulation (EU) No 1291/2013 of the European Parliament and of the Council established Horizon 2020 — the Framework Programme for research and innovation (2014–2020).

Main statistical findings

- **A total of 30 European regions surpassed the Europe 2020 target of 3.00 % R & D intensity in 2014 (see Map 8.1). Regions with higher R & D expenditure relative to gross domestic product (GDP) were mostly concentrated in or around capital city regions, with notable exceptions such as the Midi-Pyrénées (in France) or East Anglia (in the United Kingdom).**
- **Most regions with low R & D intensity were located in eastern and southern Europe, although there were some regions in these areas with higher intensities, for example País Vasco (in Spain), Piemonte (in Italy) and Jihovýchod (in the Czech Republic).**
- **Some regions with very high R & D intensity were located next to regions with relatively low intensity. For example, Trier (in Germany) was among the 30 regions in the EU with an R & D intensity over 3.00 % while one of its neighbouring regions, Koblenz (also in Germany), had a ratio that was less than 1.00 %; a similar situation was observed for Piemonte and Valle d'Aosta/Vallée d'Aoste in northern Italy.**
- **Some EU Member States with high national R & D intensity display large regional disparities, as was the case, for example, in Belgium (see Figure 8.2).**
- **There was a concentration of HRST in several parts of the United Kingdom, around the Belgian and Dutch capital city regions and in south-western Sweden (see Map 8.3). HRST were seen to be generally concentrated in urban areas, with capital city regions often reporting comparatively high shares of HRST.**

The goal is to ensure Europe produces world-class science, removes barriers to innovation and makes it easier for the public and private sectors to work together to deliver innovation. Horizon 2020 has a budget of almost EUR 80 billion, in addition to the private expenditure that it is expected this funding will attract. Work programmes cover two years: the current work programme is for 2016 and 2017.

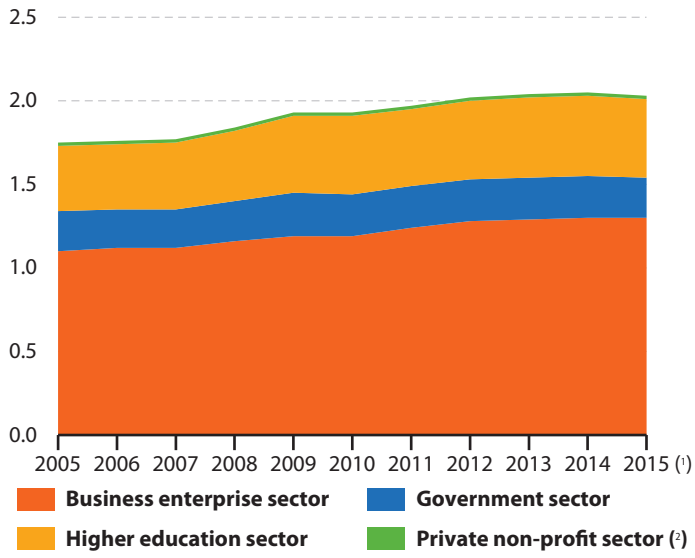
Statistical analysis

R & D INTENSITY IN THE EU-28 STABLE OVER RECENT YEARS

Gross domestic expenditure on R & D (GERD) includes expenditure on R & D by business enterprises, higher education institutions, as well as government and private non-profit organisations. It was estimated to be EUR 298.8 billion across the EU-28 in 2015; this equated to an average of EUR 588 of R & D expenditure per inhabitant.

R & D expenditure was equivalent to 1.77 % of GDP in 2000 (which is the start of the series for the EU-28)

Figure 8.1: Gross domestic expenditure on R & D (GERD) relative to gross domestic product (GDP), by sector of performance, EU-28, 2005–2015
(%)



(1) Provisional.
(2) 2005–2014: estimates.
Source: Eurostat (online data code: rd_e_gerdfund)

Innovation union — a flagship Europe 2020 initiative

The Europe 2020 strategy is the EU's growth strategy to become a 'smart, sustainable and inclusive economy'. In 2010, the European Commission adopted a Communication launching a flagship Europe 2020 initiative, the 'innovation union' (COM(2010) 546 final); this sets out a strategic approach to a range of challenges like climate change, energy and food security, health and an ageing population. It is hoped that the promotion of innovation in these areas will lead to innovative ideas being transformed into new economic activities and products, which in turn will generate jobs, green growth and social progress. The innovation union seeks to use public sector intervention to stimulate the private sector, removing bottlenecks which may prevent ideas from reaching market, such as access to finance, a lack of venture capital, fragmented research systems, the under-use of public procurement for innovation, and speeding-up harmonised standards and technical specifications. To promote the innovation union, more than 30 separate actions have been identified, including a range of European innovation partnerships (EIPs), designed to act as a framework to address major societal challenges.

The Europe 2020 strategy and its predecessor the Lisbon agenda (launched in 2000) set similar targets in relation to R & D intensity, namely that expenditure on R & D should be equivalent to at least 3.00 % of the EU's GDP. This target for the EU as a whole is reflected in national targets, based on the position of each EU Member State and commitments agreed between the European Commission and national administrations. These national targets for R & D intensity 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.

The innovation union scoreboard tracks a broad range of innovation indicators, including educational standards, R & D expenditure, patent production and business innovation. The results are used in the annual growth survey, helping EU Member States to determine their strengths and the areas they need to focus more on.

and there was little or no change in the EU's R & D intensity during the period 2000–2007. In 2008, there was a modest increase, as R & D expenditure relative to GDP rose to 1.84 % and this was followed by a further increase to 1.93 % in 2009 (resulting from the level of R & D expenditure falling at a slower pace than GDP as the full impact of the financial and economic crisis was felt). There was a rebound in economic growth and R & D expenditure in the following years, with further modest gains in the EU-28's R & D intensity, which reached 2.04 % in 2014, a level that was nearly maintained in 2015 (2.03 %). In value terms, not adjusted for inflation, EU-28-wide R & D expenditure rose from EUR 172 billion in 2000 to EUR 299 billion in 2015, an average annual increase of 3.8 %.

Due to its nature, R & D tends to be concentrated physically, such that there are clusters of regions with relatively high R & D intensity. These clusters are often situated around academic institutions or specific high-technology industrial activities and knowledge-based services, which foster a favourable environment, thereby attracting new start-ups and highly qualified personnel such that the competitive advantage of these regions is further intensified.

2014

2.04 %
ratio of spending on research and development in the EU relative to GDP

Map 8.1 presents the regional distribution of R & D intensity for NUTS level 2 regions for 2014; it shows the most concentrated areas of research activity. The Europe 2020 target of 3.00 % for the EU-28 has not been set at a regional level and each EU Member State may choose how to reach their national target (either by general measures across the territory or by encouraging specific regional concentrations/clusters of research activity). Just over 1 in 10 (11.1 %) of the 270 NUTS level 2 regions in the EU for which data are available reported R & D intensity that had reached the Europe 2020 target of at least 3.00 % (as shown by the darkest shade of orange in Map 8.1); together these regions accounted for more than one third (34.1 %) of the EU-28's total R & D expenditure in 2014.

Prov. Brabant Wallon had the highest R & D intensity in the EU

There were three NUTS level 2 regions in the EU where the level of R & D intensity was particularly pronounced. Two of these were in Germany, Stuttgart and Braunschweig, where R & D expenditure relative to GDP rose to 6.00 % and 7.33 % respectively in 2013. However, R & D intensity peaked in the Belgian region of Prov. Brabant Wallon, at 11.36 % (also 2013); as such, its research intensity was almost six times as high as the EU-28 average.

Elsewhere, research activity was often focussed in or around capital city regions, for example, the Nordic regions of Hovedstaden, Helsinki-Uusimaa and Stockholm, with Länsi-Suomi and Pohjois- ja Itä-Suomi (both in Finland) and three Swedish regions also recording R & D intensity of more than 3.00 %. The German and Austrian capital city regions of Berlin and Wien were among those with high R & D intensity, as were seven more German regions and three more Austrian regions. There were also a number of other regions with R & D intensity of at least 3.00 %, many of which have a tradition of research excellence, including: Provincie Vlaams-Brabant in Belgium; Midi-Pyrénées in France; East Anglia and four other regions in the United Kingdom.

Most southern and eastern regions had relatively low levels of R & D intensity

Outside of these clusters, R & D expenditure relative to GDP was generally modest in the remaining western and northern regions of the EU and low in most southern and eastern regions of the EU. Indeed, the Spanish region of País Vasco (2.06 %) and the Italian region of Piemonte (2.27 %) were the only southern EU regions to report R & D intensity above 2.00 % in 2014, while the only eastern regions to record intensities above 2.00 % were: the Czech regions of Jihovýchod (2.91 %), the capital city region of Praha (2.86 %) and Střední Čechy (2.01 %), as well as the Slovenian capital city region of Zahodna Slovenija (2.72 %).

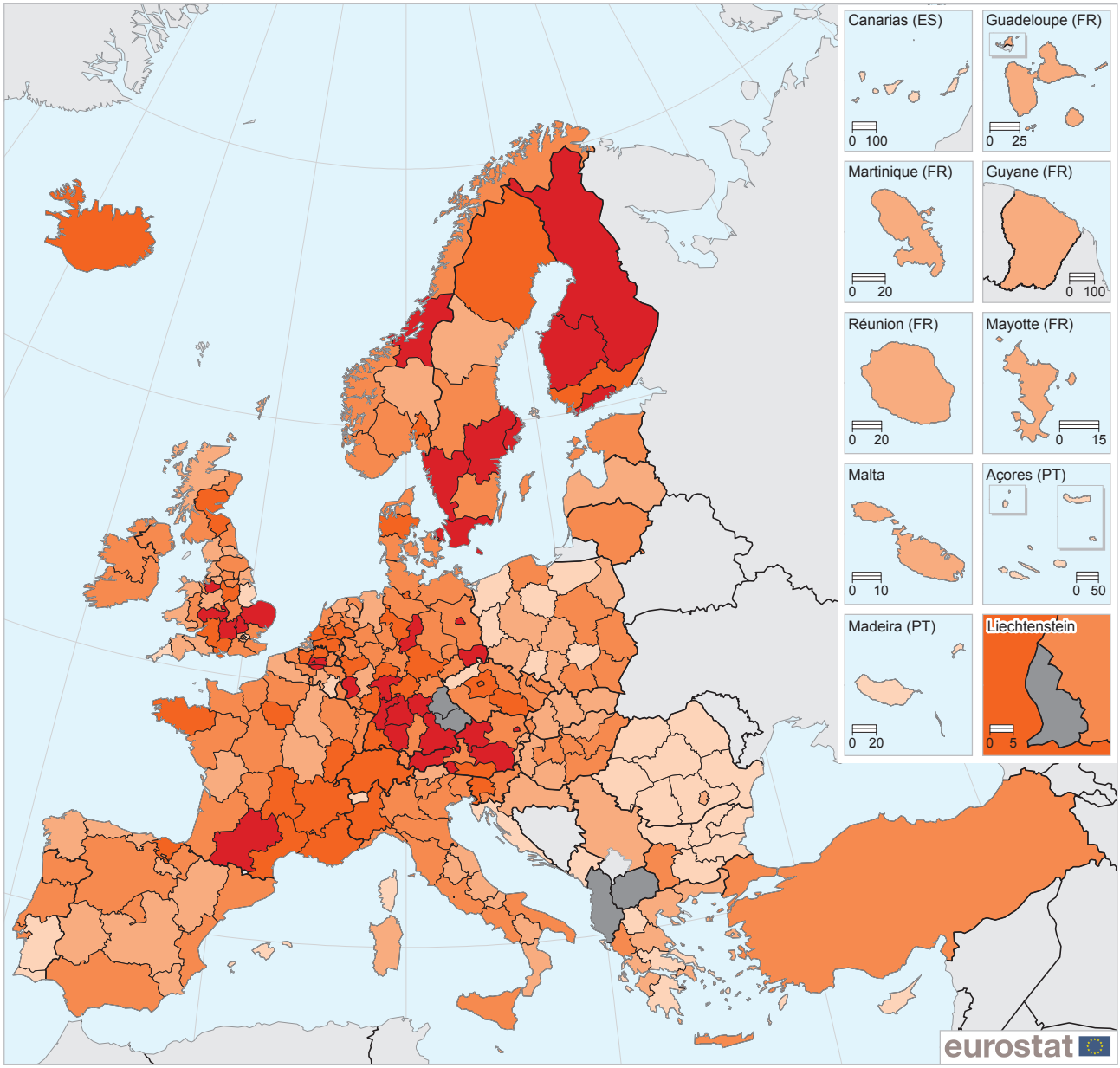
High regional disparities within many EU Member States

One of the most striking aspects of R & D expenditure is the way that it is scattered over the EU territory. Indeed, there are considerable regional disparities (see Figure 8.2), with a small number of regions recording very high levels of R & D intensity and a larger number of regions having relatively low levels of intensity. The biggest regional disparity was observed in Belgium which, as noted above, had a particularly high R & D intensity in one region (Prov. Brabant Wallon).

In some EU Member States, regional disparities reflected a relatively high R & D intensity in the capital city region and below (national) average intensities in other regions, as can be seen clearly in Bulgaria as well as in Denmark, Hungary, Romania, Slovakia and Finland; this was also the case in Croatia and Slovenia which each have only two regions at NUTS level 2. Belgium, Ireland, the Netherlands and the United Kingdom (Inner London – East) were somewhat atypical insofar as their capital city regions recorded levels of R & D intensity that were below their national averages (note there are two capital city regions in the United Kingdom and that

Map 8.1: R & D intensity — gross domestic expenditure on R & D (GERD) relative to gross domestic product (GDP), by NUTS 2 regions, 2014

(%)



(%)

EU-28 = 2.04

- < 0.5
- 0.5 – < 1.0
- 1.0 – < 2.0
- 2.0 – < 3.0
- >= 3.0
- Data not available

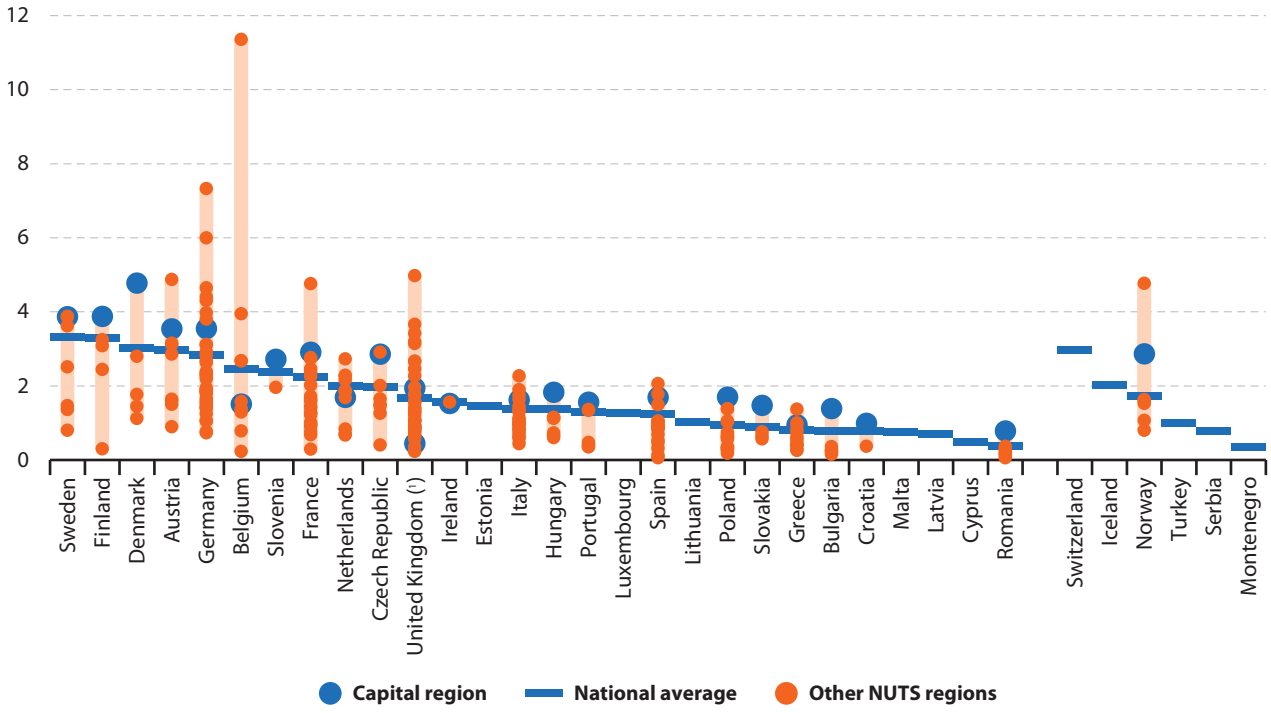
Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat - GISCO, 07/2017

0 200 400 600 800 km

Note: Départements d'outre-mer (FR): NUTS level 1. Switzerland, Serbia and Turkey: national data. Belgium, Germany, Ireland, Greece, France, Austria, Finland, Sweden and Norway: 2013. Switzerland: 2012. Italy and the United Kingdom: estimates.

Source: Eurostat (online data code: rd_e_gerdreg)

Figure 8.2: R & D intensity — gross domestic expenditure on R & D (GERD) relative to gross domestic product (GDP), by NUTS 2 regions, 2014
(%)



Note: ranked on national average. The light orange shaded area shows the range of the highest to lowest region for each country; the blue bar shows the national average; the blue circle shows the capital city region; the orange circles show the other regions. Départements d'outre-mer (FR): NUTS level 1. Switzerland, Serbia and Turkey: national data. Belgium, Germany, Ireland, Greece, France, Austria, Finland, Sweden and Norway: 2013. Switzerland: 2012. Italy and the United Kingdom: estimates. Niederbayern and Oberpfalz (both DE): not available.

(1) Note there are two capital city regions: Inner London - East and Inner London - West.

Source: Eurostat (online data code: rd_e_gerdreg)

the R & D intensity of Inner London – West was slightly above the national average.

R & D RESEARCHERS

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

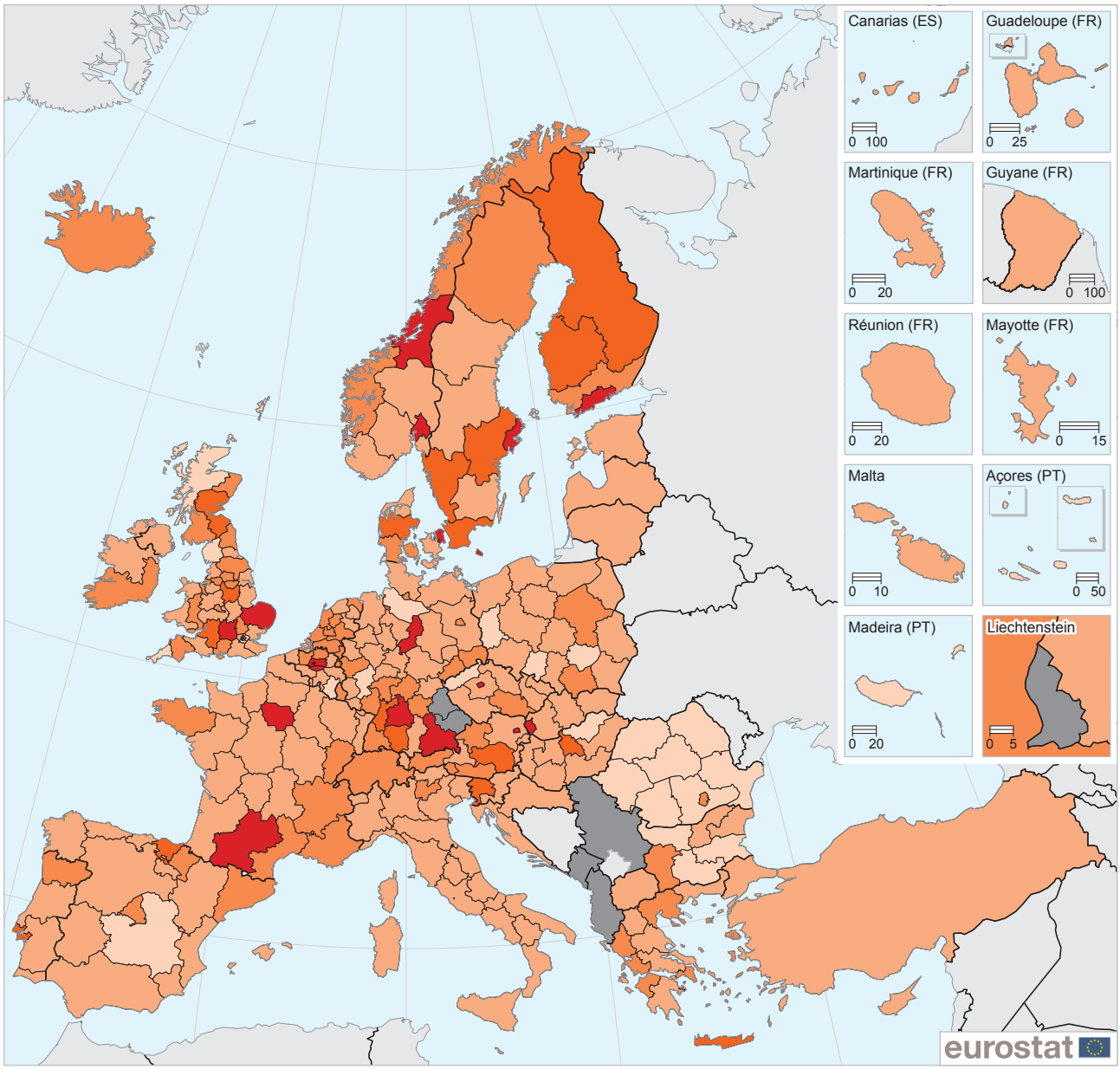
There were an estimated 2.71 million researchers active across the EU-28 in 2013. Their number has grown at a steady pace in recent years, rising from 1.85 million in 2003 (equivalent to an average increase of 3.9 % per annum). An alternative unit of measure for labour input adjusts the number of researchers to take account of different working hours and working patterns. Based on this measure, there were 1.73 million full-time equivalent (FTE) researchers in the EU-28 in 2013, a figure which rose to 1.76 million in 2014 and to 1.82 million in 2015.

The distribution of researchers across the EU was particularly concentrated in capital city regions

Like R & D intensity, the share of researchers among persons employed was skewed, as only 3 in 10 (29.6 %) of the regions shown in Map 8.2 reported a share of researchers that was above the EU-28 value of 0.83 %, while the median share across all NUTS level 2 regions was 0.57 %. The distribution of researchers was relatively concentrated in a few regions, principally in those regions where R & D intensity was high. The main difference compared with R & D intensity is that the share of researchers tended to be somewhat higher in regions characterised as having higher education establishments and research institutes, often capital city regions, although Berlin (Germany) was a notable exception. Equally, the share of researchers was relatively low in Trier (Germany), in Cheshire and in Herefordshire, Worcestershire and Warwickshire (both in the United Kingdom), despite relatively high R & D intensity in these regions.

The draw of capital city regions is underlined by the fact that in more than two thirds of the multi-regional EU Member States the share of researchers among

Map 8.2: Share of R & D researchers in the total number of persons employed, by NUTS 2 regions, 2014
(%)



(%)

EU-28 = 0.83

- < 0.25
- 0.25 – < 0.75
- 0.75 – < 1.25
- 1.25 – < 1.75
- >= 1.75
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 07/2017

0 200 400 600 800 km

Note: the numerator for researchers is presented in full-time equivalents (FTE). Départements d'outre-mer (FR): NUTS level 1. Switzerland and Turkey: national data. Belgium, Germany, Ireland, Greece, France, Austria, Finland, Sweden and Iceland: 2013. Switzerland: 2012. The United Kingdom: estimates.

Source: Eurostat (online data code: rd_p_persreg)

persons employed in the capital city region was higher than in any other region, the exceptions being Belgium, Germany, Greece, Spain, Italy and the Netherlands.

Looking at all EU regions, only 17 reported that researchers made-up at least 1.75 % of their total number of persons employed in 2014 (the darkest shade of orange in Map 8.2), the highest share being 5.0 % in the British capital city region of Inner London - West. Half of the other 16 regions with high shares of researchers were also capital city regions, the most prominent exceptions being Prov. Brabant Wallon (Belgium) and Braunschweig (Germany). By contrast, 29 regions reported shares that were below 0.25 %, with the lowest shares (below 0.10 %) in the Spanish autonomous cities of Melilla and Ceuta, the Scottish Highlands and Islands (the United Kingdom), Prov. Luxembourg (Belgium) and the Romanian region of Sud-Est.

HUMAN RESOURCES IN SCIENCE AND TECHNOLOGY (HRST)

HRST contributed 123 million persons to the EU-28 workforce in 2015, of which 49 million were categorised as core HRST. In 2009, HRST accounted for more than one quarter (27.9 %) of the EU-28's population aged 15–74 (hereafter referred to as the working-age population); this share rose in successive years to reach nearly one third (32.4 %) by 2015.

Map 8.3 shows the regional distribution of HRST for NUTS level 2 regions, with the darkest shade of orange highlighting those regions where the share of HRST in the working-age economically active population (persons employed or unemployed) was at least 50 %. Approximately one in six (15.6 %) of the 276 regions in the EU-28 for which data are available in 2015 met this criterion, in other words where at least half of the economically active population was classified as HRST.

Many of the regions with high shares of HRST were also characterised as having a high degree of R & D intensity and a high share of researchers (see above) and the reverse was also generally true. However, there were some notable differences, for example some of the London regions in the United Kingdom reported relatively low R & D intensity and a low share of researchers, but a high proportion of HRST within the economically active population; this was also the case to a lesser extent in Prov. Luxembourg, Corse (France), Cyprus (one region at NUTS level 2) and the Scottish Highlands and Islands. By contrast, in Kriti (Greece), the share of HRST in the economically active population was low, despite a relatively high share of R & D researchers.

At least two thirds of the working-age economically active population in the Inner London regions were classified as HRST

Once more, capital city regions or regions close to capital city regions often reported the highest share of HRST within the economically active population. Among the 30 regions with a majority of their economically active workforce classified as HRST, almost half — 14 of them — were capital city regions; among these were both Inner London regions which reported the highest values among EU regions, with more than two thirds of their economically active workforces classified as HRST.

Other regions where HRST accounted for a majority of the economically active workforce included clusters around the Belgian and Dutch capital city regions, as well as the neighbouring regions of Sydsverige and Västsverige in south-western Sweden. The large cluster of regions around the British capital extended across southern England as far as East Wales while there were further clusters in the United Kingdom along the east coast of Scotland and in the North West of England. Aside from capital city regions, some individual regions recorded relatively high values setting them apart from their neighbours, such as País Vasco (Spain), Midi-Pyrénées and Rhône-Alpes (southern France), the German regions of Hamburg, Oberbayern and Darmstadt, and the British region of North Yorkshire.

Defining human resources in science and technology (HRST)

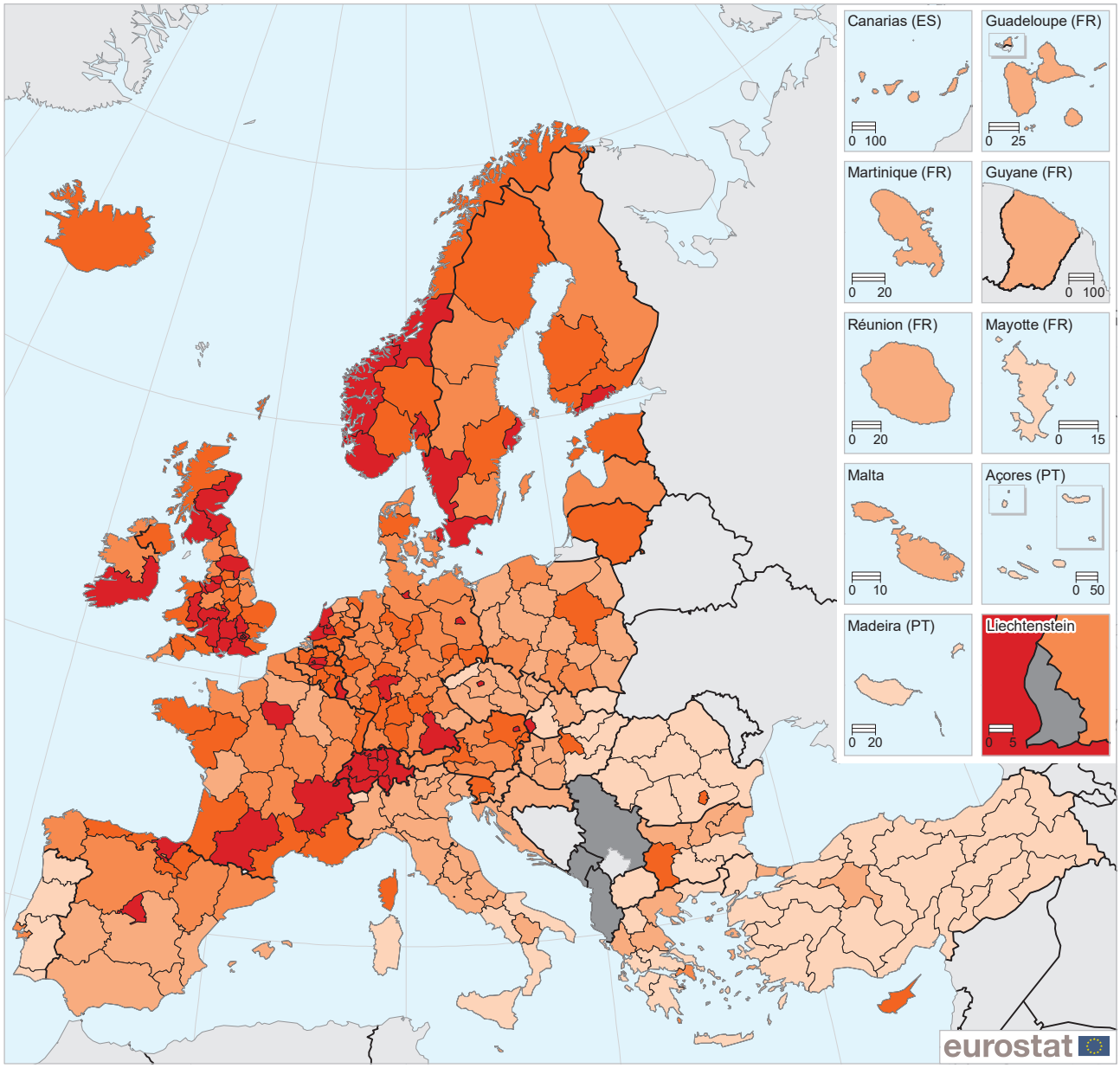
HRST are defined as those persons who fulfil at least one of the following two criteria:

- completed a tertiary level of education;
- are persons 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; for more information: international standard classification of occupations — ISCO).

A more restricted definition, based on persons employed who meet both the educational and occupational criteria is referred to as human resources in science and technology — core (HRSTC).

Map 8.3: Share of human resources in science and technology (HRST) within the economically active population, by NUTS 2 regions, 2015

(%)



(%)

EU-28 = 43.3

- < 30
- 30 – < 40
- 40 – < 45
- 45 – < 50
- >= 50
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 07/2017

0 200 400 600 800 km

Source: Eurostat (online data code: hrst_st_rcat)

For 36 NUTS level 2 regions, HRST accounted for less than 30.0 % of their working-age economically active population in 2015 (as shown by the lightest shade of orange in Map 8.3), with two Romanian regions — Sud - Muntenia and Nord-Est — reporting values below 20.0 %. With the exception of the French overseas region of Mayotte, these 36 regions were all located in southern and eastern parts of the EU, with eight from Greece, seven from Romania, six from Italy (of which five from the south) and Portugal, and between one and three regions each from Bulgaria, the Czech Republic, Hungary and Slovakia.

Figure 8.3 looks at the same indicator, namely the share of HRST within the economically active population aged 15 to 74, but for NUTS level 1 regions and is supplemented by an analysis by gender. Across the EU-28 as a whole, 39.7 % of men in the economically active population in 2015 were classified as HRST with this share rising to 47.5 % for women. In all 20 of the regions with the highest overall shares (from among regions in the EU-28, Norway or Switzerland), a majority of women were classified as HRST, as were a majority of men in 11 regions. Apart from in Switzerland (one region at NUTS level 1), the proportion of HRST within the economically active population of women was higher than the corresponding share recorded among men, with the largest gender gap in Ireland (also one region at NUTS level 1).

The share of core HRST in the working-age economically active population was more than twice as high as the EU-28 average in Inner London - West

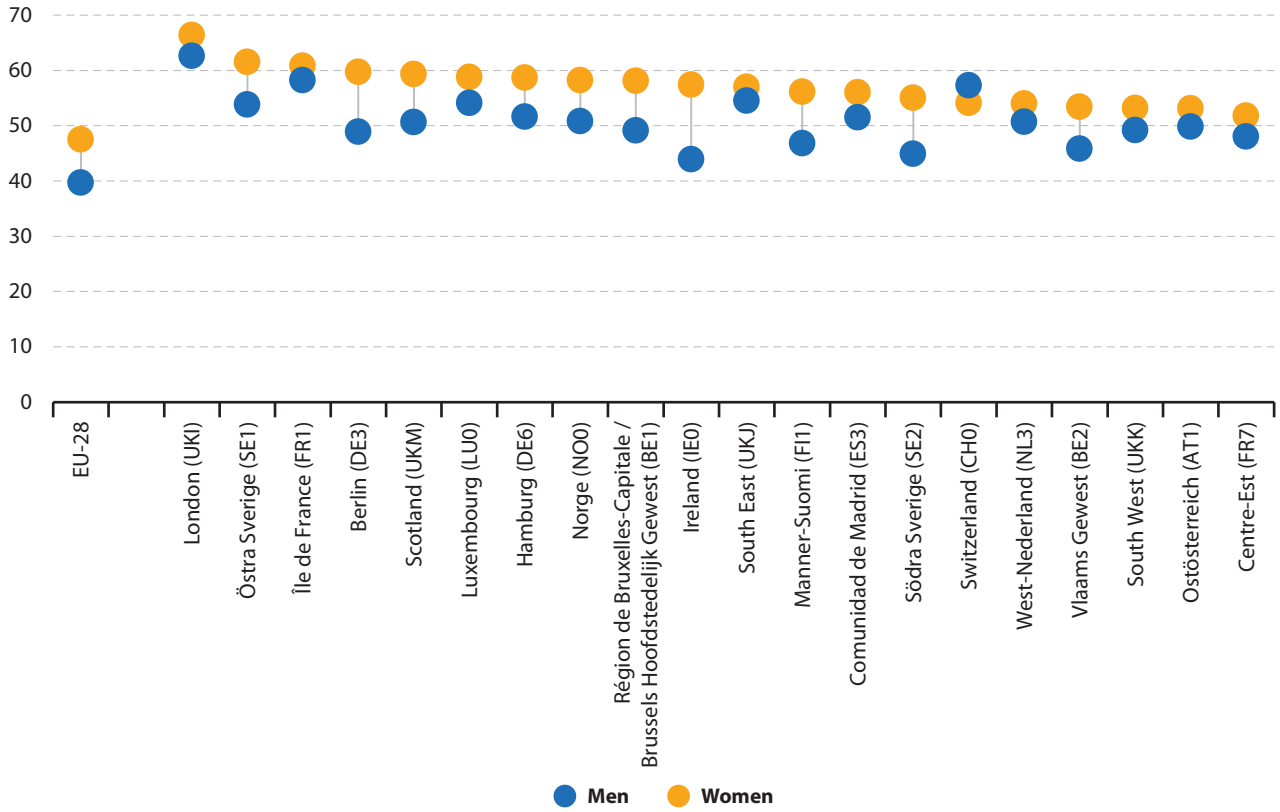
Map 8.4 focuses on core HRST, in other words the subset of HRST that concerns persons with a tertiary level of education and who were persons employed in a science and technology occupation; these statistics are again presented as a share of the economically active population aged 15–74.

Compared with Map 8.3, which looked at the wider concept of HRST in general, core HRST as a share of the economically active population was relatively low in several British regions (for example, East Wales and South Western Scotland), as well as in Darmstadt (Germany), Southern and Eastern (Ireland), Rhône-Alpes (France) and Zuid-Holland (the Netherlands).

Core HRST accounted for 30.0 % or more of the workforce in 13 of the 276 regions in the EU-28 for which data are available, of which seven were

Figure 8.3: Top 20 regions with the highest share of human resources in science and technology (HRST) within the economically active population, by sex and by NUTS 1 regions, 2015

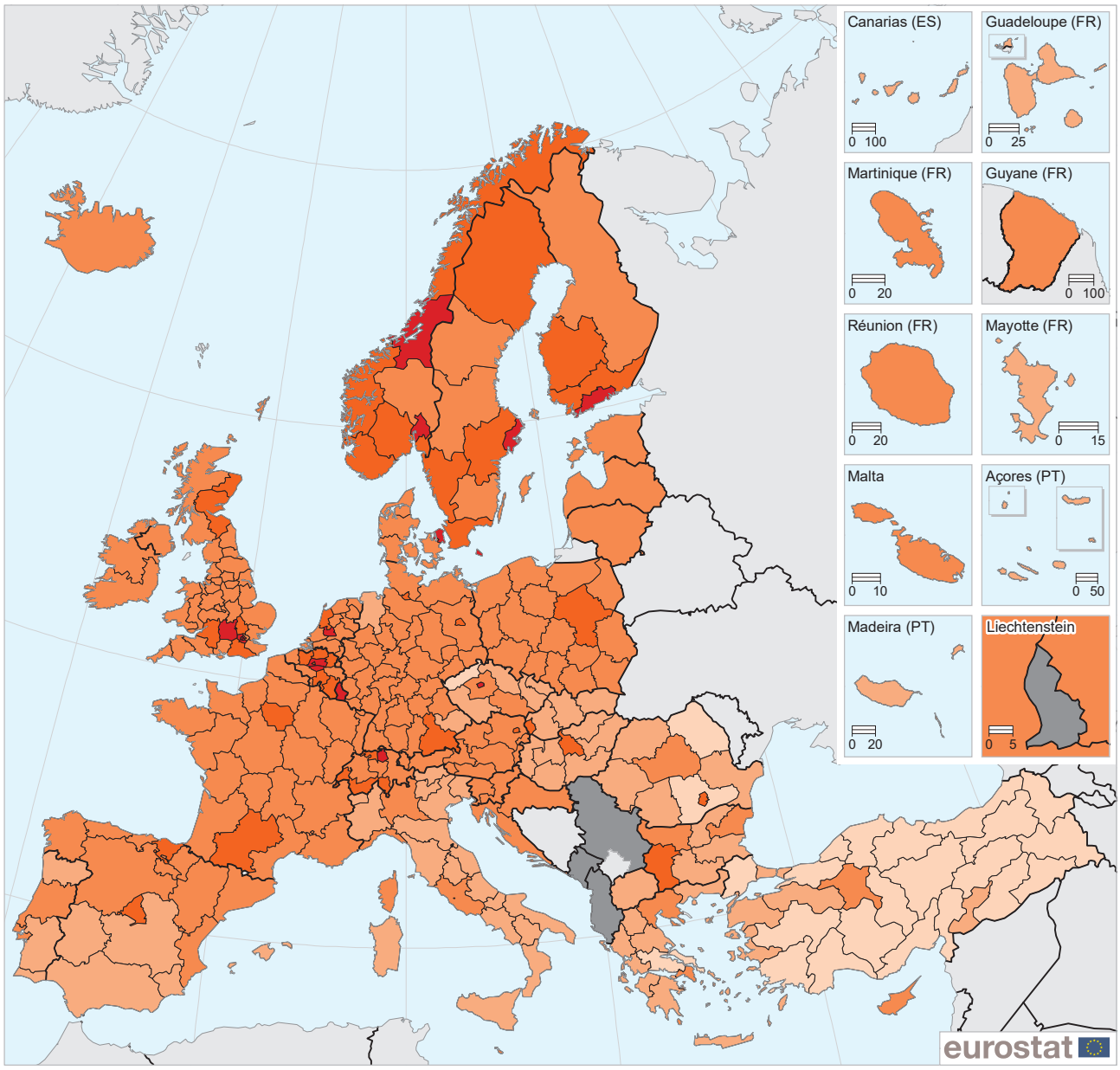
(%)



Note: the figure shows the top 20 regions with the highest overall (men and women combined) share of HRST in the active population; the figure is ranked on the share of women. Åland (FI): low reliability.

Source: Eurostat (online data code: hrst_st_rsex)

Map 8.4: Share of human resources in science and technology core (HRSTC) within the economically active population, by NUTS 2 regions, 2015
(%)



(%)

EU-28 = 20.1

- < 10
- 10 – < 15
- 15 – < 25
- 25 – < 30
- >= 30
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 07/2017

0 200 400 600 800 km

Note: Ciudad Autónoma de Melilla (ES) and Åland (FI): low reliability.
Source: Eurostat (online data code: hrst_st_rcat)

2015

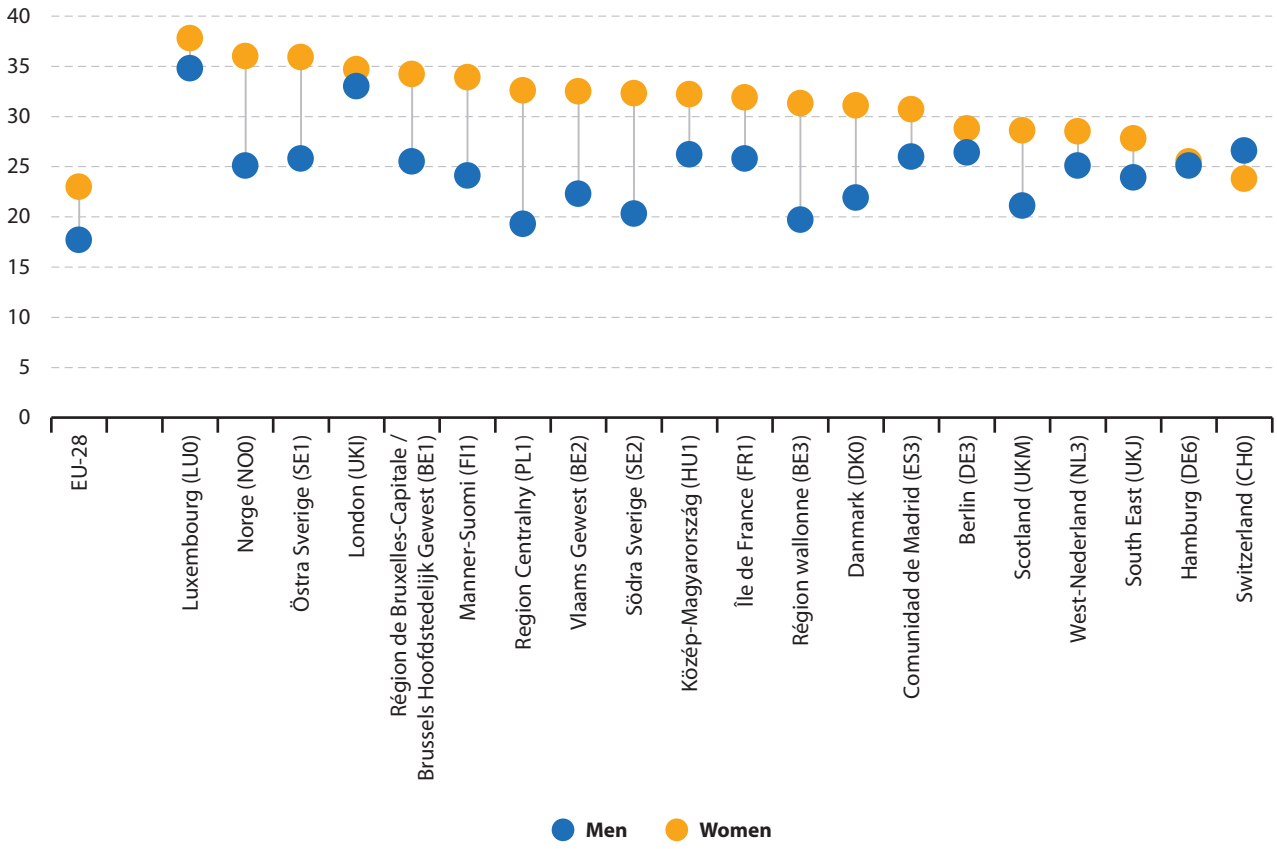
20.1 %
of people in the economically active population have a tertiary education and are working in science and technology

capital city regions — those of the Czech Republic, Luxembourg, the three Nordic Member States and the United Kingdom (both Inner London regions). Five additional regions were located within close proximity of the Belgian and British capital city regions (although it should be noted that the Belgian capital city region itself reported a share that was marginally under 30.0 %) and the final region was Utrecht (the Netherlands).

The highest share of core HRST was 45.0 % in Inner London - West, where the ratio was more than twice the EU-28 average of 20.1 %. As with the other indicators presented in this chapter, a regional analysis for this indicator has a skewed distribution, with more regions (166 of them) having a value below the EU-28 average than above it (108 regions). Among the 68 regions that had shares of core HRST in the economically active population that were below 15.0 % (the two lightest orange shades in Map 8.4), the vast majority were in eastern or southern EU Member States; they were joined by two overseas regions in France (Guadeloupe and Mayotte) and two German regions (Niederbayern and Weser-Ems).

In a similar manner to Figure 8.3, Figure 8.4 presents a supplementary analysis by gender, again based on NUTS level 1 regions. As for HRST in general, there is a clear gender gap for core HRST, with the share of women within the economically active population classified as core HRST standing at 23.0 % in 2015, compared with a ratio of 17.7 % for men. Among the 20 level 1 regions in the EU-28, Norway and Switzerland with the highest overall shares of core HRST only one — Switzerland — reported a higher share of core HRST in its workforce for men than for women. The largest gender gap among these top 20 regions was in Region Centralny (Poland). The highest shares of core HRST for both men and for women were recorded in

Figure 8.4: Top 20 regions with the highest share of human resources in science and technology core (HRSTC) within the economically active population, by sex and by NUTS 1 regions, 2015
(%)



Note: the figure shows the top 20 regions with the highest overall (men and women combined) share of HRSTC in the active population; the figure is ranked on the share of women.

Source: Eurostat (online data code: hrst_st_rsex)

Luxembourg (one region at NUTS level 1), followed by London for men and by Norway (also one region at NUTS level 1) and Östra Sverige (Sweden) for women.

INTELLECTUAL PROPERTY RIGHTS

The term intellectual property rights is used to cover the granting of different kinds of protection through the issuing of patents, copyrights and trademarks. The protection of intellectual property allows the holder to exercise a monopoly on the use of the item in question for a set period, as imitation and duplication are restricted. By doing so, enterprises may be encouraged to invest more in research and creative activity.

The French capital city region of Paris had the highest number of EU trademark applications and registrations and the highest number of Community design applications and designs

Table 8.1 provides information on the application for and granting of EU trademarks and Community designs. The top 10 regions in 2015 are shown for each of these, with the highest number of applications and registrations of EU trademarks and the highest number of Community design applications and Community designs in the French capital city region of Paris. For each part of Table 8.1, the top 10 regions accounted for a 12–18 % share of the EU-28 total, with each ranking dominated by some of the most populous regions in the EU, either capital city regions or other regions with large cities. Along with Paris, Barcelona (Spain), Milano (Italy) and München, Kreisfreie Stadt (Germany) also appear in all four of the top 10 rankings shown, while Berlin (Germany), Luxembourg (a single region at this level of detail) and Stockholms län (Sweden) each appear in three of the four rankings. The top 10 list for Community design applications stands out as it includes the Polish region of Miasto Warszawa which is the only region from the eastern EU Member States to feature in any of the rankings.

As the criterion for inclusion in Table 8.1 is the absolute number of applications or registrations, NUTS level 3 regions that make up large cities are favoured, whereas large cities that cover many NUTS level 3 regions are less likely to figure. An analysis of the number of

Table 8.1: Top 10 regions for EU trademarks and Community designs, by NUTS 3 regions, 2015

EU trademark applications				EU trademark registrations			
	(number)	(per million inhabitants)	Share of EU-28 (%)		(number)	(per million inhabitants)	Share of EU-28 (%)
EU-28	89 412	175.9	-	**EU-28**	76 442	150.3	-
Paris (FR101)	2 347	1 061.6	2.6	Paris (FR101)	2 032	919.1	2.7
Barcelona (ES511)	2 220	408.6	2.5	Barcelona (ES511)	1 903	350.3	2.5
Madrid (ES300)	1 955	306.2	2.2	Madrid (ES300)	1 664	260.6	2.2
Milano (ITC4C)	1 536	480.5	1.7	Milano (ITC4C)	1 411	441.4	1.8
Berlin (DE300)	1 381	398.0	1.5	Stockholms län (SE110)	1 174	534.1	1.5
Stockholms län (SE110)	1 330	605.1	1.5	Luxembourg (LU000)	1 105	1 962.8	1.4
Westminster (UKI32)	1 234	5 287.2	1.4	Berlin (DE300)	1 102	317.6	1.4
Luxembourg (LU000)	1 233	2 190.2	1.4	Westminster (UKI32)	1 091	4 674.5	1.4
München, Kreisfreie Stadt (DE212)	1 185	828.9	1.3	München, Kreisfreie Stadt (DE212)	968	677.1	1.3
Camden & City of London (UKI31)	1 088	4 471.9	1.2	Hamburg (DE600)	928	526.4	1.2
Community design applications				**Community design registrations**			
	(number)	(per million inhabitants)	Share of EU-28 (%)		(number)	(per million inhabitants)	Share of EU-28 (%)
EU-28	14 982	29.5	-	**EU-28**	59 818	117.6	-
Paris (FR101)	293	132.5	2.0	Paris (FR101)	1 705	771.2	2.9
Milano (ITC4C)	225	70.4	1.5	Milano (ITC4C)	1 321	413.2	2.2
Barcelona (ES511)	222	40.9	1.5	Stuttgart, Stadtkreis (DE111)	824	1 345.4	1.4
München, Kreisfreie Stadt (DE212)	180	125.9	1.2	München, Kreisfreie Stadt (DE212)	774	541.4	1.3
Stockholms län (SE110)	171	77.8	1.1	Treviso (ITH34)	732	825.0	1.2
Miasto Warszawa (PL127)	163	94.2	1.1	Luxembourg (LU000)	707	1 255.9	1.2
Nord (FR301)	150	57.4	1.0	Udine (ITH42)	701	1 307.4	1.2
Zuidoost-Noord-Brabant (NL414)	146	194.0	1.0	Perugia (ITI21)	680	1 023.9	1.1
Berlin (DE300)	141	40.6	0.9	Barcelona (ES511)	668	123.0	1.1
Hauts-de-Seine (FR105)	138	86.1	0.9	Bologna (ITH55)	580	577.5	1.0

Source: Eurostat (online data codes: ipr_ta_reg, ipr_tr_reg, ipr_da_reg, ipr_dfa_reg and demo_r_pjanaggr3)

Defining trademarks and Community designs

Regulation (EU) No 2015/2424 of the European Parliament and the Council amending the Community trade mark regulation entered into force on 23 March 2016. Among other changes, are the renaming of the European Union Intellectual Property Office (EUIPO) and the European Union trade mark (EUTM).

Data on EU trademarks and designs refer to trademark and design protections throughout the EU. Since the implementation of the new legal framework adopted in 2015 (Regulation (EU) No 2015/2424 and Directive (EU) 2015/2436) trademarks no longer need to be represented graphically making it possible to protect colours and non-visual signs, such as sounds. Trademarks can be an essential part of the identity of goods and services, as they help to deliver brand recognition and play a role in marketing and communication.

A Community design is 'the appearance of the whole or a part of a product resulting from the features of, in particular, the lines, contours, colours, shape, texture and/or materials of the product itself and/or its ornamentation', as defined by Council Regulation (EC) No 6/2002 on Community designs.

applications or registrations relative to population size standardises the presentation of this indicator to some extent. From Table 8.1 it can be seen that, among the top 10 regions in absolute numbers, the largest number of trademark applications and registrations relative to population size were in regions of Inner London, whereas the highest number of Community design applications relative to population size was recorded in the Dutch region of Zuidoost-Noord-Brabant and the highest number of Community designs relative to population size was in the German region of Stuttgart, Stadtkreis.

Data sources and availability

LEGAL BASIS AND SOURCES

Commission Regulation (EU) No 995/2012 concerning the production and development of Community statistics on science and technology provides the legal requirements and determines the datasets, analysis (breakdowns), frequency and transmission delays to be respected by the EU Member States for these statistics.

Many of the remaining statistics that are used to analyse research and innovation are derived from other statistical domains within Eurostat or from a range of international databases provided by other organisations:

- statistics on HRST which are compiled annually based on microdata from the EU's labour force survey (LFS);
- the European Union Intellectual Property Office (EUIPO) which registers EU trademarks and Community designs.

METHODOLOGY

The methodology for R & D statistics is laid down in the 'Frascati manual: proposed standard practice for surveys on research and experimental development' (OECD, 2002), which is also used by many non-member countries. A new edition of the Frascati manual was published in 2015 and will be used for future data collection.

The methodology for statistics on HRST is laid down in the Canberra manual (OECD, 1995), which lists all HRST concepts.

NUTS

The data presented in this chapter are based exclusively on the 2013 version of NUTS. The data concerning R & D intensity and R & D researchers presented for NUTS level 2 are not available for the French départements d'outre-mer which are therefore shown at NUTS level 1.

INDICATOR DEFINITIONS

Glossary entries on Statistics Explained (see: http://ec.europa.eu/eurostat/statistics-explained/index.php/Category:Science_and_technology_glossary) are available for a wide range of concepts/indicators relating to research and innovation.

For more information:
http://ec.europa.eu/eurostat/web/science-technology-innovation/overview

9 Digital economy and society

Information and communication technology (ICTs) affect people's everyday lives in many ways, both at work and in the home, for example, when communicating or buying goods or services online. This chapter emphasises the geographic aspects of the digital divide by presenting statistical data for a range of issues linked to the use of the internet across the regions of the European Union (EU).

A fast connection to the internet (coupled with knowledge and relevant skills) makes it easy to carry out a wide range of activities online: for example, obtaining information about almost any topic; communicating via e-mail, message or video services; accessing files; using audio-visual services; buying or selling goods and services. Indeed, 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 the working environment (for example, working from home or other remote locations) and offering a wider range of leisure activities. These developments have created new dimensions of not only economic, but also social and political participation for individuals and groups. The presence and reach of ICTs has also had a profound effect on transforming society, allowing completely new ways of working, socialising and sharing information, irrespective of geographical location.

Although the internet is an almost constant part of the daily lives of many Europeans, some parts of the population continue to be excluded from the digital world. As an increasing share of tasks are carried out online, digital skills and access to technology become increasingly important as a means of allowing everyone to participate in this part of society. On 10 June 2016, the European Commission adopted a new Skills Agenda for Europe which seeks to promote a number of actions to ensure that the right training, skills and support are available to people in the EU so that they are equipped with the skills that are needed in a modern working environment.

Main statistical findings

- **The proportion of the population regularly using the internet increased in 2016 by 3 percentage points compared with 2015. Nearly four in five (79 %) people aged 16 to 74 used the internet at least once a week. British, Dutch and Danish regions, as well as Luxembourg had the highest shares of regular internet use in 2016.**
- **Nearly three in five (59 %) people aged 16 to 74 in the EU-28 used mobile devices to connect to the internet when away from home or work in 2016. Compared with regular internet use, the use of mobile devices in this way was relatively low in many Italian and Polish regions. People in cities were generally the most likely to use mobile devices to access the internet when away from home or work, while people in rural areas were the least likely.**
- **Just over half (52 %) of individuals aged 16 to 74 in the EU-28 used the internet for social networking in 2016, with particularly high shares in capital city regions and more generally in regions across Nordic and western EU Member States; France was an exception with many regions reporting relatively low shares participating in social networking.**
- **Just under half (48 %) of individuals aged 16 to 74 in the EU-28 used the internet for e-government purposes in the 12 months prior to the 2016 survey. Such activities were particularly common for people living across the regions of the Netherlands and the Nordic Member States, while interaction with e-government services was least common across the regions of Bulgaria, Italy and Romania.**
- **In 2016, 55 % of individuals in the EU-28 aged 16 to 74 reported that they had made online purchases of goods or services. The use of e-commerce was quite closely related to regular use of the internet and was therefore relatively high in regions of northern and western EU Member States and lower in regions of southern and eastern Member States.**

POLICY INITIATIVES

EU policies in this area cover a range of issues: from regulating entire areas such as e-commerce, to devising methods that help protect an individual's privacy.

In May 2015, the European Commission adopted a digital single market strategy (COM(2015) 192 final) as one of its top 10 political priorities. The strategy had 16 initiatives that covered three broad pillars: promoting better online access to goods and services across Europe; designing an optimal environment for digital networks and services to develop; ensuring that the European economy and industry takes full advantage of the digital economy as a potential driver for growth. In the European Commission's work programme for 2017 'Delivering a Europe that protects, empowers and defends' (COM(2016) 710), the European Commission proposed to advance swiftly on proposals that had already been put forward and to undertake a review of the progress made towards completing the digital single market.

At the end of 2015, the European Commission published a framework called monitoring the digital economy and society 2016–2021; it describes main policy developments and outlines data requirements for these, with a digital scoreboard introduced to measure progress in the European digital economy. Furthermore, the European Commission adopted a review of the digital single market; two years on during 2016.

For more information:
https://ec.europa.eu/digital-single-market/en/digital-scoreboard

Statistical analysis

INTERNET USE

In the early years of global use of the internet, access was mainly available to people who worked with or owned a desktop computer. Thereafter, a number of technological (and commercial) developments occurred, such that a wider range of alternative devices can now be used to go online, particularly when people are on the move. Possibly, the introduction of smartphones and tablet computers has helped bridge some of the digital divide, providing internet access to a variety of groups who previously had difficulties in accessing the internet, for example, those with low educational attainment or those with low incomes.

Almost one in seven people in the EU-28 has never used the internet

An internet user, in this context, is defined as a person making use of the internet in whatever way: whether at home, at work, or anywhere else; whether for private or professional purposes; regardless of the device (desktop computer, laptop, netbook or tablet, smart phone, games console or e-book reader) or type of connection being used. Regular internet users are those who used the internet, on average, at least once a week within the three months prior to the survey.

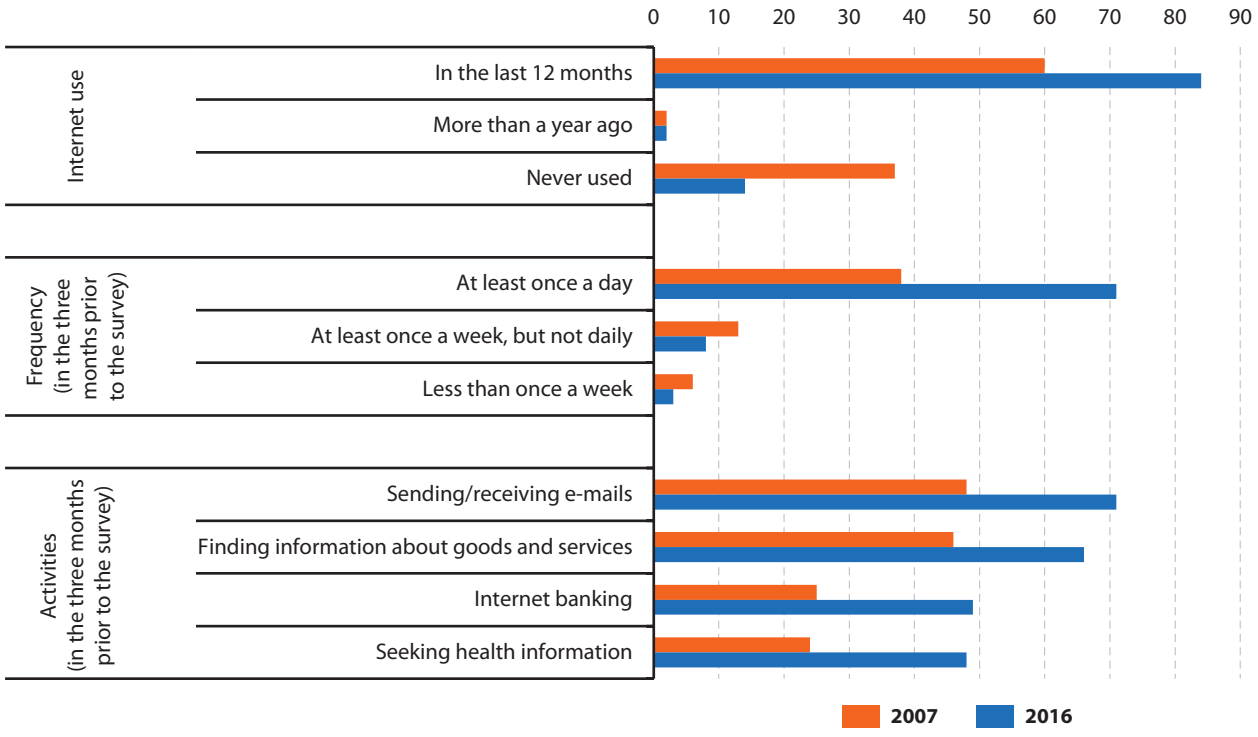
In 2016, the share of the population (aged 16 to 74) who had never used the internet dropped to just under one person in seven in the EU-28, which was around 14 % as shown in the left half of Figure 9.1, while approximately 2 % of the population had used the internet more than a year before the 2016 survey. Some 71 % of the population used the internet on a daily basis during the three months prior to the 2016 survey, while a further 8 % used it at least once a week and 3 % used less than once a week (but within the previous three months). Summing the shares for these three groups of internet users provides confirmation that more than four fifths (82 %) of the EU-28 population used the internet in the three months prior to the 2016 survey. Comparing the frequency of usage in 2016 with that in 2007 (beginning of the time series for EU-28), daily usage increased greatly, while the share of all other frequencies fell, most notably for the category of people never having used the internet.

The bottom third of Figure 9.1 presents an overview of some common uses of the internet. Exchanging e-mails was done by 71 % of individuals during the three months prior to the 2016 survey, in other words, a very large proportion of the 82 % of the population (aged 16 to 74) who had used the internet at all during

2016

71 %
of people in the EU use the internet every day

Figure 9.1: Individuals' use of the internet, EU-28, 2007 and 2016
(% of all individuals)



Source: Eurostat (online data codes: isoc_ci_ifp_iu, isoc_ci_ifp_fu and isoc_ci_ac_i)

this period. The proportion who had used the internet to find information about goods and services was also relatively high, nearly two thirds (66 %) of the population, while internet banking and looking for health information were used by nearly half of the population. The share of the population undertaking such internet activities increased between 2007 and 2016 by 20–24 percentage points for each of the four uses. The increase in the share of individuals using the internet for these activities rose at a rapid pace most notably among those looking for health information (for which the share doubled) and those using internet banking (for which the share nearly doubled).

REGULAR USE OF THE INTERNET

The proportion of individuals (aged 16 to 74) in the EU-28 making regular use of the internet (daily or weekly) continued to rise in recent years. The magnitude of increases slowed from 4–5 percentage points per year between 2008 and 2010, to 2–3 percentage points between 2010 and 2014, and stood at just 1 percentage point in 2015; however, the increase in 2016 was 3 percentage points indicating a new stimulus. The share of regular internet users in the EU-28 increased overall by 28 percentage points from 51 % in 2007 to 79 % in 2016.

Looking in more detail at the regional results (generally for NUTS level 2 regions, although data for Germany, Greece, Poland and the United Kingdom are only available at NUTS level 1), there were 135 regions out of the 205 in the EU-28 for which data are available, where at least 75 % of the population (aged 16 to 74) made regular use of the internet in 2016 (as shown by the darkest three shades of orange in Map 9.1). There was almost an even split between the number of regions (99 regions) with a value above the EU-28 average and the number with a value below (101 regions), with five regions reporting the same share as the EU-28.

Particularly high proportions of regular internet use in British, Dutch and Danish regions, as well as in Luxembourg

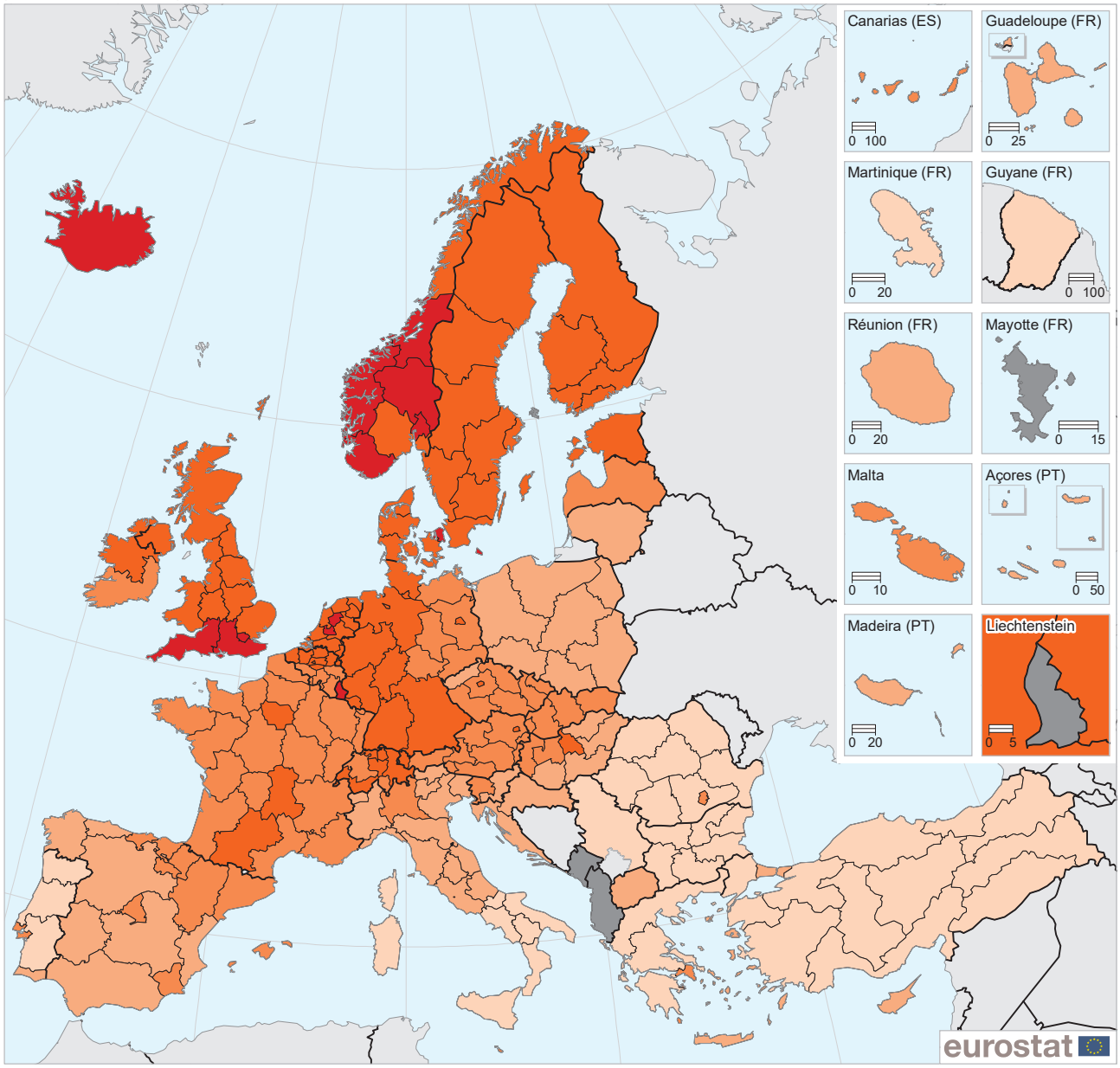
The share of the population (aged 16 to 74) making regular use of the internet reached 97 % in Luxembourg (one region at this level of detail) and in South East England in the United Kingdom, and was just below this level in the Danish capital city region, two Dutch regions (Utrecht and Flevoland) and two more British regions (South West England and London). These seven regions where regular internet use was 95 % or more were joined by a further 62 EU regions where the share reached or surpassed 85 %; these were concentrated in western (mainly German, Dutch, British and Belgian regions, but also French, Austrian and Irish) and northern (Swedish, Danish, Finnish and Estonian) regions, with the Czech and Hungarian capital city regions the only exceptions.

Less than half of the population used the internet on a regular basis in Sud - Muntenia in Romania

By contrast, there was one region in the EU-28 where less than half of the population (aged 16 to 74) made regular use of the internet in 2016, namely Sud - Muntenia (Romania), where the share was 48 %. Looking more broadly, the 28 regions where regular internet use was below 65 % (those depicted with the lightest shade of orange in Map 9.1), were mainly in southern and eastern parts of the EU, with three French regions (Corse, Guyane and Martinique) the only exceptions.

In a majority of EU Member States, the capital city region recorded the highest regional share of regular internet users, although among the multi-regional Member States this was not the case in Belgium, Germany, Ireland, France, Italy, the Netherlands, Slovakia or the United Kingdom.

Map 9.1: Proportion of individuals who were regular users of the internet (accessed the internet on average at least once every week) in the three months prior to the survey, by NUTS 2 regions, 2016
(% of all individuals)



(% of all individuals)

EU-28 = 79

- < 65
- 65 – < 75
- 75 – < 85
- 85 – < 95
- >= 95
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 07/2017

0 200 400 600 800 km

Note: Germany, Greece, Poland, the United Kingdom and Turkey: NUTS level 1. Serbia: national data, 2015. Iceland and Switzerland: 2014. Corse (France): low reliability.

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

MOBILE INTERNET USE

Having established that regular use of the internet was relatively high in most EU regions, the remainder of this chapter focuses not so much on the question of whether or not people use the internet, but rather how they use it. The use of mobile devices (such as smart phones) to access the internet away from home or work has increased greatly within the EU-28, complementing or supplementing more traditional fixed connections (usually at home, work or in a place of study). In 2012 (beginning of the time series), just over one third (36 %) of individuals aged 16 to 74 in the EU-28 had used a mobile device to access the internet within the three months prior to the survey, with this share increasing 23 percentage points to reach 59 % by 2016.

Between 2012 and 2016, the proportion of the population (aged 16 to 74) that had used the internet at all in the three months prior to the survey increased just nine percentage points, from 73 % to 82 %. As such, in 2012 around half of all internet users used a mobile device (with or without also using more traditional devices), with this proportion increasing to more than 7 out of 10 internet users by 2016, underlining that mobile devices have become increasingly common in recent years.

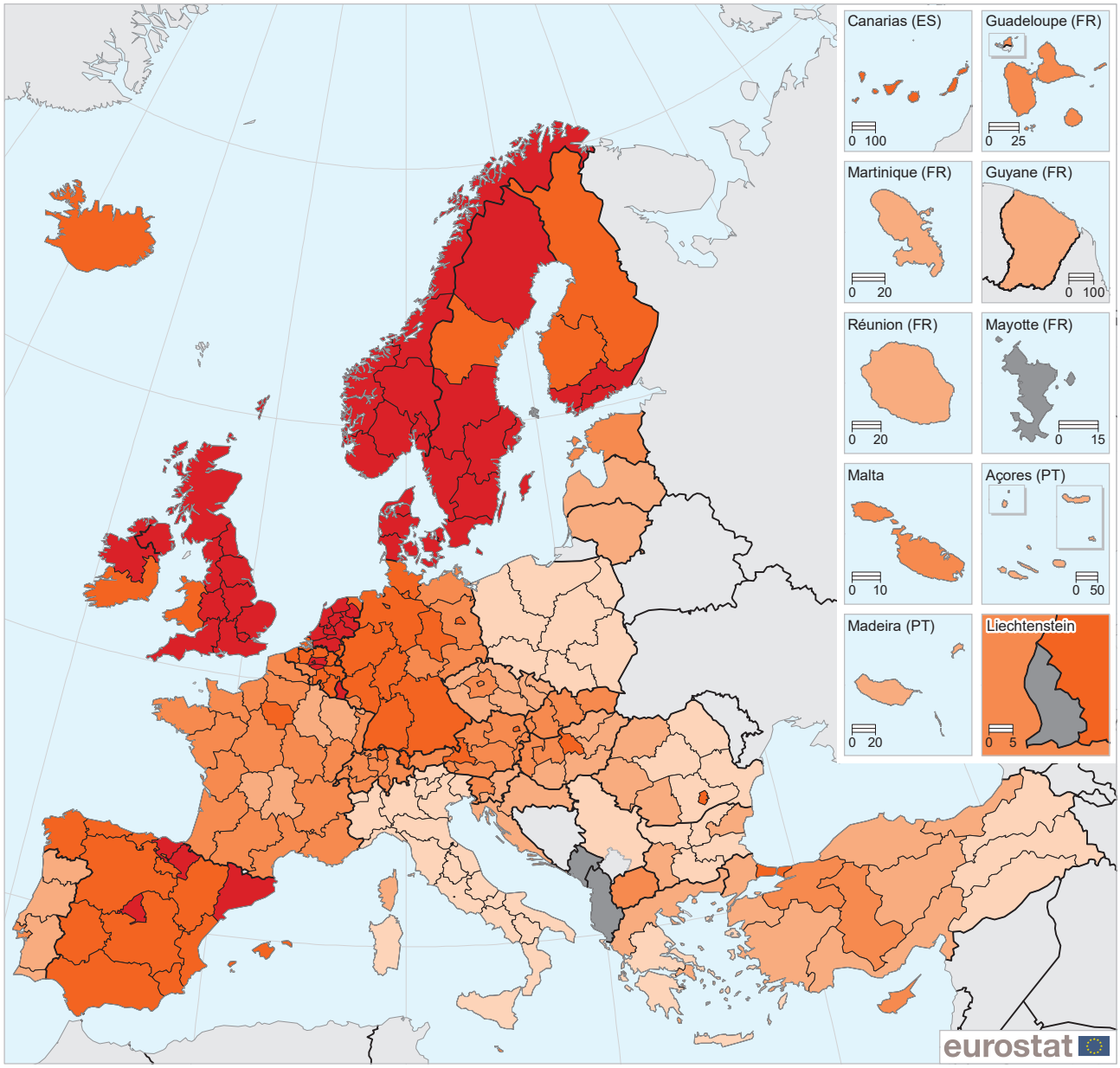
A regional analysis of the use of mobile devices to access the internet shows a broadly similar pattern to that observed for regular internet access in general, namely relatively high usage in northern and western EU Member States and lower usage in southern and eastern Member States, with usage generally higher in capital city regions. The highest usage of mobile devices for internet access (85 % or over) was reported in two Dutch (Flevoland and Utrecht) and two British (London and South East England) regions, as well as in the Danish and Swedish capital city regions. Looking more broadly at all regions where this share was 75 % or higher (the darkest shade of orange in Map 9.2) the only regions that were not in northern or western Member States were located in Spain, the rest being in the United Kingdom, Ireland, the Benelux Member States or the Nordic Member States. The regions reporting relatively low shares of the population accessing the internet away from home or work using mobile devices were exclusively in southern (Italy and Greece) and eastern (Poland, Bulgaria and Romania) Member States.

Compared with regular internet access, mobile internet use was particularly low in many Italian and Polish regions and high in Spanish regions

Although the broad patterns observed in Maps 9.1 and 9.2 were quite similar, there were several notable differences. For example, in Lombardia (Italy) three quarters (75 %) of the population (aged 16 to 74) were regular internet users in 2016, just 4 percentage points below the EU-28 average, while only 29 % of these individuals used mobile devices for this purpose, 30 percentage points below the EU-28 average. Large differences between the incidence of regular internet access and the incidence of internet access away from home or work through mobile devices were observed in many Italian regions, particularly those in northern Italy. Other regions with a similar situation included all of the Polish regions, several Czech regions and Auvergne in France. By contrast, a particularly high incidence of the use of mobile devices to access the internet away from home or work (compared with the overall incidence for the regular use of the internet) was reported for many Spanish regions, for example the autonomous cities of Ceuta and Melilla, Extremadura, Cataluña and Principado de Asturias.

An analysis by degree of urbanisation shows that the use of mobile phones (or smart phones) to access the internet when away from home or work was greater among people in cities (61 %) in the EU-28 in 2016, than it was among people living in towns and suburbs (55 %) or those living in rural areas (47 %). This pattern was observed in almost every EU Member State, the exceptions being: Luxembourg, where the pattern was reversed; Belgium and Cyprus (and to a lesser extent France and the United Kingdom), where the incidence was slightly higher in towns and suburbs than in cities; and Ireland (and to a lesser extent Estonia), where the incidence was lower in towns and suburbs than in rural areas.

Map 9.2: Proportion of individuals who used any mobile device to access the internet when away from home or work in the three months prior to the survey, by NUTS 2 regions, 2016
(% of all individuals)



(% of all individuals)

EU-28 = 59

- < 45
- 45 – < 55
- 55 – < 65
- 65 – < 75
- >= 75
- Data not available

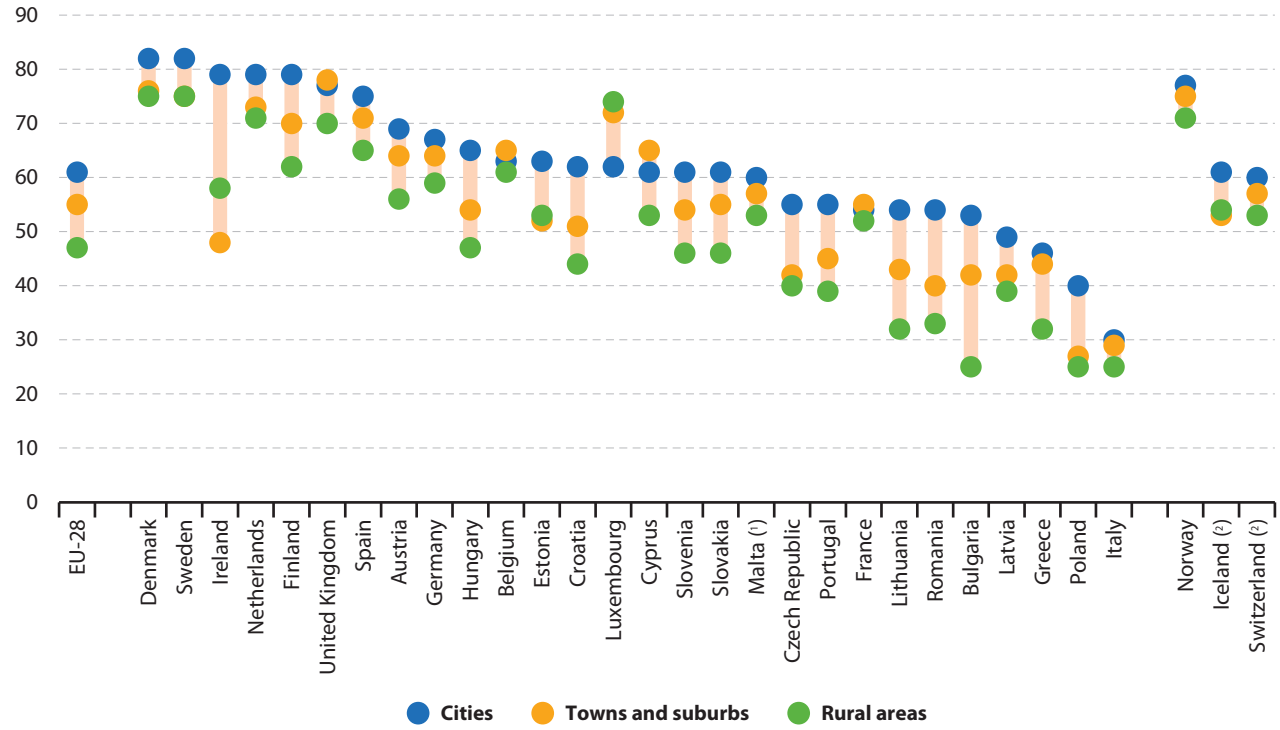
Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 07/2017

0 200 400 600 800 km

Note: mobile device includes mobile phones, smartphones, portable computers or handheld devices. Germany, Greece, Poland, the United Kingdom and Turkey: NUTS level 1. Serbia: national data, 2015. Iceland and Switzerland: 2014. Corse (France): low reliability.

Source: Eurostat (online data codes: isoc_r_iumd_i and isoc_ci_ifp_pu)

Figure 9.2: Proportion of individuals who used a mobile phone or smart phone to access the internet when away from home or work in the three months prior to the survey, by degree of urbanisation, 2016
(% of all individuals)



Note: ranked on cities.
(1) Rural areas: low reliability.
(2) 2014.
Source: Eurostat (online data code: isoc_bde15b_i)

SOCIAL NETWORKS

2016

52 % of people in the EU participate in online social networks

One of the most common online activities is participation in social networking. More than half (52 %) of individuals (aged 16 to 74) in the EU-28 used the internet for social networking in 2016, for example using sites such as Facebook or Twitter. This share was 14 percentage points higher than it had been in 2011 (start of the time series). The incidence of this activity has a clear age profile, with 85 % of people aged 16–24 in the EU-28 using social networks in 2016, compared with 16 % of the population aged 65–74.

A regional ranking of the incidence of social network participation shows that the most popular places were often capital city regions: 78 % of the population (aged 16 to 74) used social networks in the Danish capital city region, 77 % in the Swedish capital city region and 76 % in the Belgian capital city region, the latter sharing third place with the Danish region of Midtjylland and the British region of Scotland (NUTS level 1). Four of the five Danish regions reported shares of 70 % or higher (shown as the darkest shade of orange in Map 9.3), with the fifth Danish region just below this level. Other EU Member States where several regions had a 70 % or higher incidence of social networking included Belgium, Sweden and the United Kingdom, with the Finnish and Hungarian capital city regions also reaching this level.

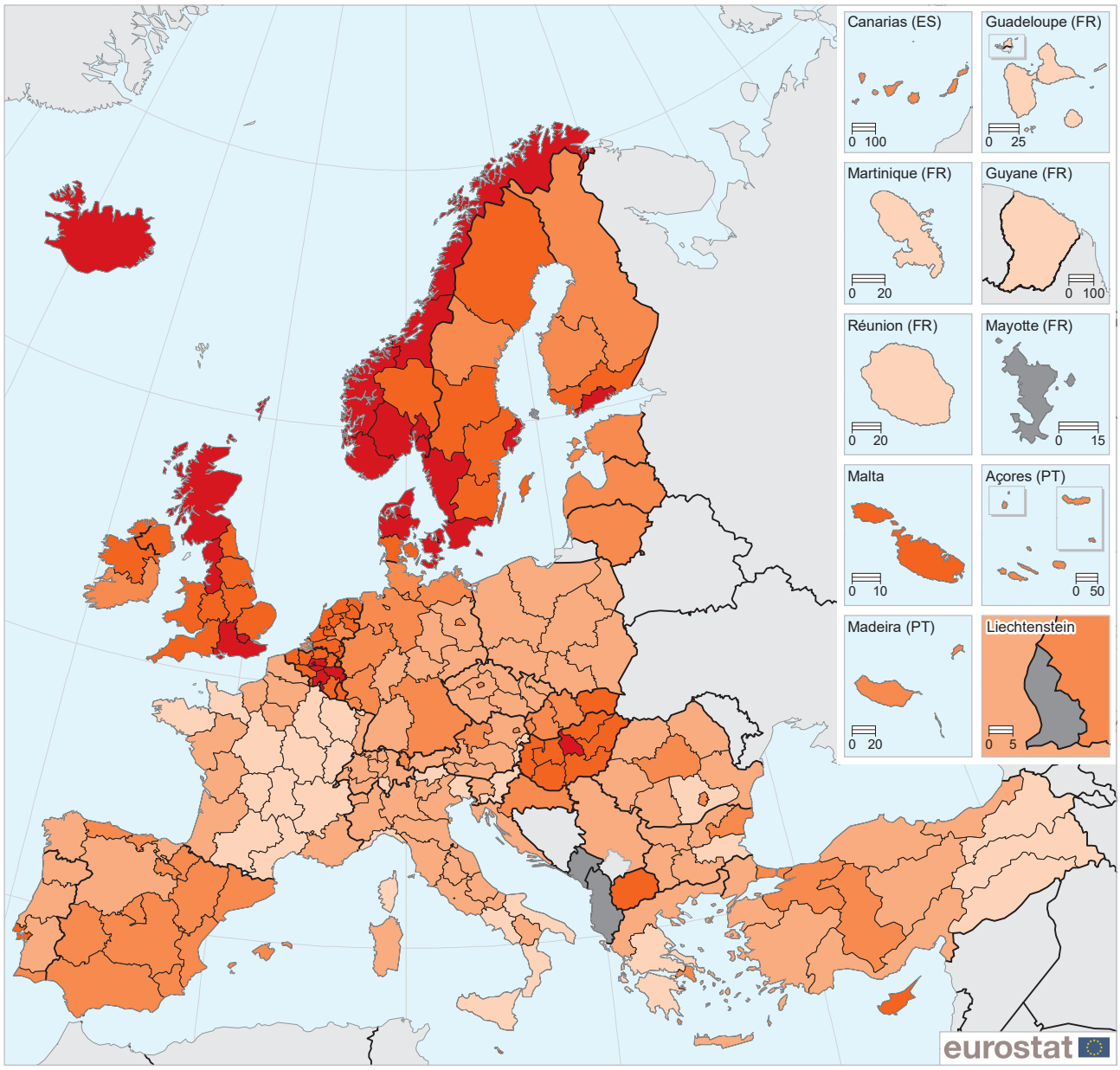
The distribution of regions was slightly skewed, with 94 regions above and 108 regions below the EU-28 average of 52 %, with three regions recording the same share as the EU-28 average.

In seven French regions less than 35 % of the population (aged 16 to 74) participated in social networking, with Limousin (28 %), Guyane (27 %) and Corse (13 %) recording the lowest shares. Looking at all 29 regions where the share was below 40 % (shown in Map 9.3 with the lightest shade of orange), 17 were French and seven were Italian; the remaining five were in five different EU Member States.

Compared with regular internet access, participation in social networks was particularly low in many French and German regions and high in Belgian, Bulgarian, Hungarian, Portuguese and Romanian regions, as well as in Cyprus and Malta

There are many regions where there are sizable differences between the incidence of regular internet use (as shown in Map 9.1) and participation in social networking (as depicted in Map 9.3). For example, in Bourgogne (France) more than four fifths (83 %) of the survey population were regular internet users in 2016, 4 percentage points above the EU-28 average, while only

Map 9.3: Proportion of individuals who participated in social networks in the three months prior to the survey, by NUTS 2 regions, 2016
(% of all individuals)



(% of all individuals)

EU-28 = 52

- < 40
- 40 – < 50
- 50 – < 60
- 60 – < 70
- >= 70
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 07/2017

0 200 400 600 800 km

Note: Germany, Greece, Poland, the United Kingdom and Turkey: NUTS level 1. Serbia: national data, 2015. Iceland and Switzerland: 2014. Corse (France): low reliability.

Source: Eurostat (online data codes: isoc_r_iuse_i and isoc_bde15cua)

33 % used social networks, 19 percentage points below the EU-28 average. In fact, large differences between the incidence of regular internet access and the incidence of social networking were observed in many French and German regions as well as in Burgenland (Austria). By contrast, a particularly high incidence of the use of social networking (compared with the overall incidence for the regular use of the internet) was reported for several Belgian, Bulgarian, Hungarian, Portuguese and Romanian regions, as well as Cyprus and Malta (each one region at this level of detail). For example, in the Belgian Prov. Namur, 79 % of the survey population were regular internet users, in line with the EU-28 average, whereas 71 % used social networks, 19 percentage points above the EU-28 average.

E-GOVERNMENT

For the purpose of official EU statistics, e-government concerns electronic contacts via the internet with public authorities and some public services; contacts through manually typed e-mails should be excluded. Contacts with public authorities via the internet may concern obligations (such as tax returns), rights (such as social benefits), documentation (such as birth certificates), or services (such as public education or health). The contact may take the form of searching for information online, downloading or uploading forms.

Just under half (48 %) of individuals (aged 16 to 74) in the EU-28 used the internet for e-government purposes in the 12 months prior to the 2016 survey: 29 % used the internet for downloading forms, 28 % for submitting completed forms, and more than two fifths (42 %) for obtaining information. The overall use of e-government increased 13 percentage points from 35 % in 2008. The use of e-government was most common in the age group 25–34 and 35–44 where it was used by about three fifths of people, with the use of e-government somewhat lower for younger users (45 % for persons aged 16–24), perhaps reflecting less need for such services. Use of e-government was less common among older age groups, declining to 41 % among persons aged 55–64 and 27 % among persons aged 65–74. These declines mainly reflect lower levels of internet use among the older generations: when analysed as a share of individuals using the internet (rather than of all individuals) the incidence of e-government was between 53 % and 62 % for all 10-year age groups between the ages of 25 and 74.

Use of e-government most common in Dutch and Nordic regions and least common in Bulgarian, Italian and Romanian regions

A regional ranking of the incidence of e-government use shows five of the top seven places taken by Danish regions, accompanied by the Finnish and Swedish capital city regions, all with at least 86 % of individuals (aged 16 to 74) having used e-government during the 12 months prior to the 2016 survey. A total of 32 regions reported shares of 70 % or higher (shown with the darkest shade of orange in Map 9.4), including not only all Danish regions but also all Dutch regions, four of the five Finnish regions (data are not available for the fifth region), six of the eight Swedish regions, and one region each from five other EU Member States, namely, Border, Midland and Western (Ireland), Île de France (France), Estonia and Luxembourg (both single regions at this level of detail) and South West (the United Kingdom, a NUTS level 1 region).

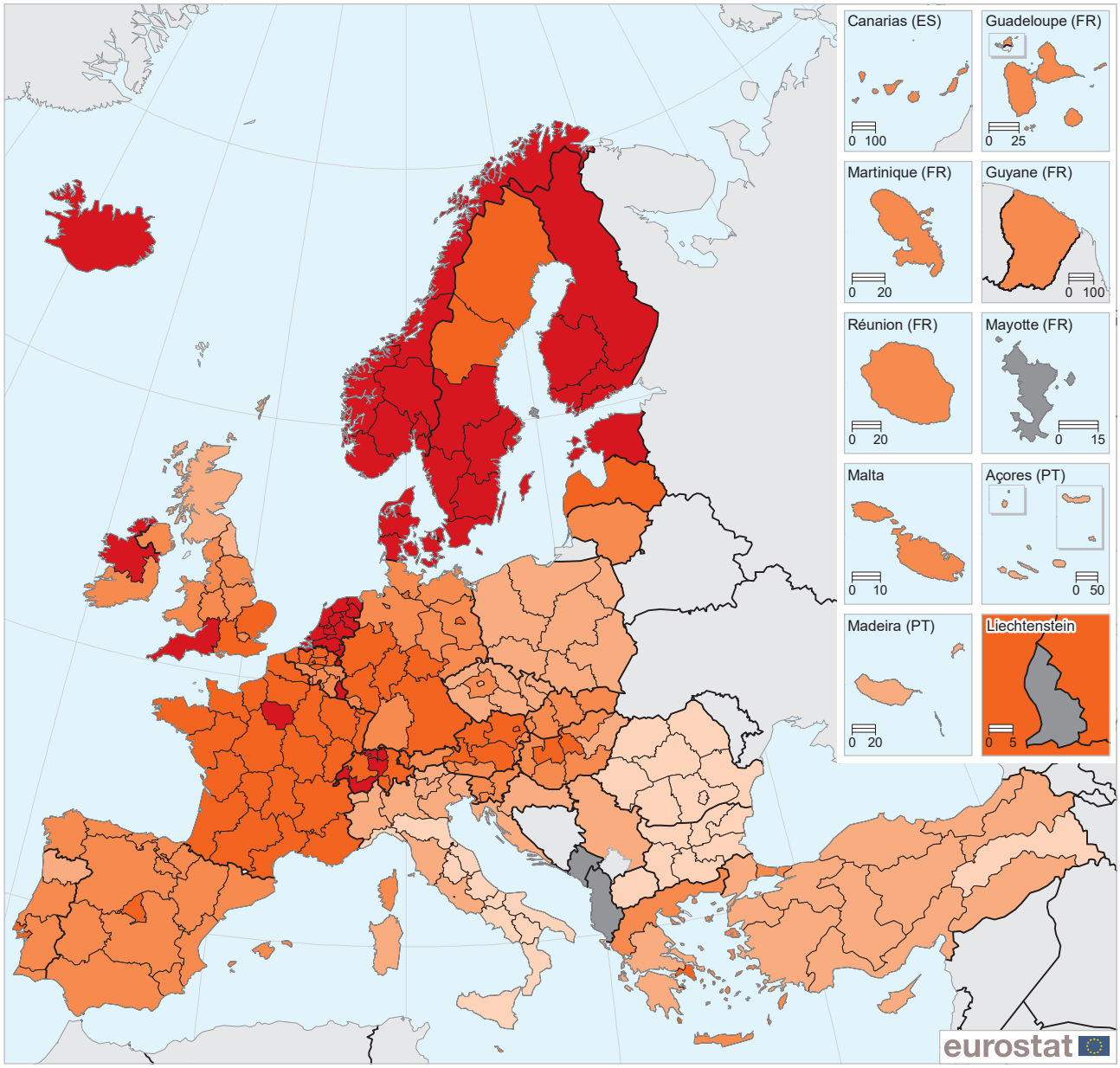
The distribution of regions was quite strongly skewed, with more regions recording values above the EU-28 average of 48 % than the number recording values below it. In part this reflected some very low shares of e-government use in specific regions: five Romanian regions reported that less than 10 % of individuals (aged 16 to 74) used e-government and a further 20 regions — all from Bulgaria, Italy or Romania — also reported shares below 25 % (shown with the lightest shade of orange in Map 9.4). These low shares may be linked, at least in part, to a lack of widespread e-government service provision.

The use of e-government services was particularly high — compared with regular internet access — in some French overseas regions and Corse, while it was low in Scotland, North East England, Bucuresti - Ilfov and Praha

There are only a few regions where the pattern of regular internet use (as shown in Map 9.1) is particularly different from that for the use of e-government services (as depicted in Map 9.4). Most notably, in the French overseas regions of Guyane and Martinique and the French island region of Corse the incidence of regular internet users was at least 15 percentage points below the EU-28 average (79 %), whereas the share of the population (aged 16 to 74) using e-government services was close to the EU-28 average (48 %) in Guyane (46 %) and above it in Corse (51 %) and Martinique (52 %); to a lesser extent a similar situation was observed in Alentejo and Centro (both Portugal) and in the Greek region of Voreia Ellada.

In Scotland and the North East of England (the United Kingdom) as well as Praha (the capital city region of the Czech Republic), regular internet use was at least 7 percentage points more common than in the EU-28 as a whole, whereas the use of e-government services was at least 9 percentage points less common. In Bucuresti - Ilfov (the capital city region of Romania) regular internet use was, at 75 %, just 4 percentage points below the EU-28 average, whereas the incidence of the use of e-government services was 19 %, which was 29 percentage points below — or less than half — the EU-28 average of 48 %.

Map 9.4: Proportion of individuals who made use of the internet for interaction with public authorities in the 12 months prior to the survey, by NUTS 2 regions, 2016
(% of all individuals)



(% of all individuals)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 07/2017

EU-28 = 48

- < 25
- 25 – < 40
- 40 – < 55
- 55 – < 70
- >= 70
- Data not available

0 200 400 600 800 km

Note: Germany, Greece, Poland, the United Kingdom and Turkey: NUTS level 1. Serbia: national data, 2015. Iceland and Switzerland: 2014. Corse (France): low reliability.

Source: Eurostat (online data codes: isoc_r_gov_i and isoc_bde15ei)

E-COMMERCE

E-commerce may be defined generally as the sale or purchase of goods or services through electronic transactions conducted via the internet or other computer-mediated (online communication) networks. For the survey on ICT usage in households and by individuals it is defined more specifically as the placing of orders for goods or services via the internet (payment and the ultimate delivery of the goods or service may be conducted either online or offline). As well as buying goods such as books, groceries, clothes and electrical/electronic goods, it also includes buying, among others: telecommunication services; films and music; software; reservations for accommodation and travel; lottery tickets; information services subscriptions; via online auctions. Note that orders via manually typed e-mails are excluded from the statistics presented.

In 2016, 55 % of individuals (aged 16 to 74) in the EU-28 reported that they had made online purchases of goods or services (at least once within the 12 months prior to the survey date); this figure has grown from 30 % in 2007, through 40 % in 2010 and 50 % in 2014. The share of the population using e-commerce was relatively high among the youngest age group (67 % for persons aged 16 to 24) and peaked among the group covering those aged 25 to 34 (72 %). Thereafter the use of e-commerce declined as a function of age, with the lowest share (27 %) recorded among those aged 65 to 74. This age profile is in large part, but not completely, explained by the lower overall proportion of older persons using the internet: e-commerce had been used during the 12 months prior to the 2016 survey by 75 % of individuals aged 25 to 34 who had made use of the internet, whereas the corresponding share among those aged 65 to 74 was just over half (53 % of internet users within this age group).

More than three quarters of the population made online purchases of goods and services in many western and Nordic regions

In 2016, the proportion of individuals (aged 16 to 74) making online purchases ranged from a high of 90 % in South East England (the United Kingdom) down to a low of 8 % in the Vest region of Romania (see Map 9.5). The difference between these two regions with the highest and lowest propensity to make online purchases was comparable with the gap recorded between the highest and lowest propensities to make use of e-government (as presented in Map 9.4) and far greater than that for the other ICT indicators (as presented in Maps 9.1 to 9.3).

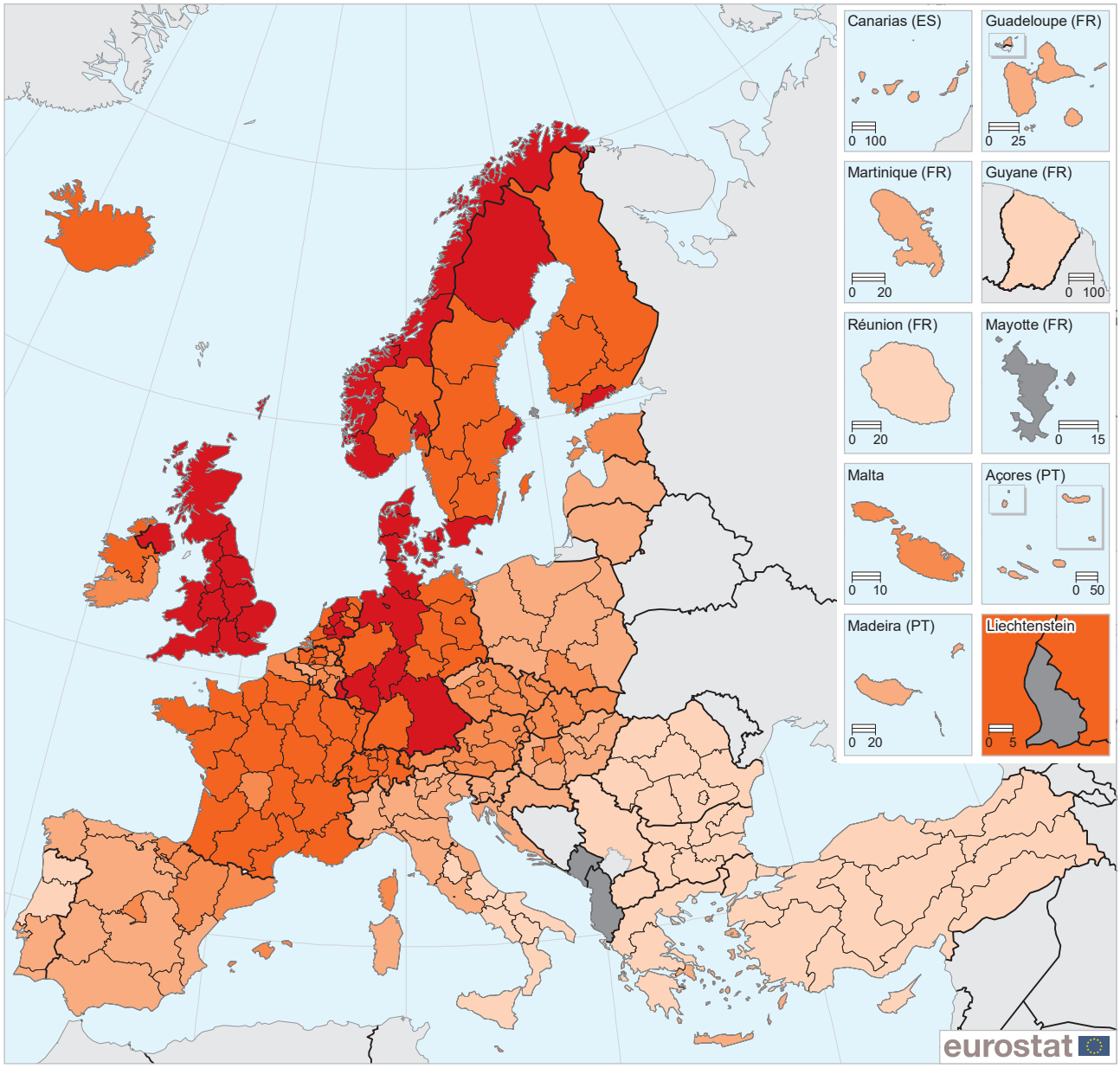
All of the regions for which data are available for the proportion of individuals making online purchases in Denmark, Germany (NUTS level 1), Ireland, the Netherlands, Austria, Slovakia, Finland, Sweden and the United Kingdom (NUTS level 1), as well as Estonia and Luxembourg (both of which are just one region at this level of detail), reported a majority of their populations making online purchases in the 12 months prior to the 2016 survey. Focusing on the regions with the highest shares (those in the darkest shade of orange in Map 9.5), 75 % or more of the population (aged 16 to 74) made e-commerce purchases in a wide range of regions spread across western or Nordic Member States: the United Kingdom (12 NUTS level 1 regions), Germany (seven NUTS level 1 regions), Denmark (all five regions), the Netherlands (four regions), Sweden (three regions), as well as in the capital city region of Finland and Luxembourg (one region at this level of detail).

By contrast, all of the regions in Greece (NUTS level 1), Croatia, Italy, Hungary, Poland (NUTS level 1), Portugal, Romania and Slovenia, as well as Cyprus, Latvia, Lithuania and Malta (all four of which are each one region at this level of detail), reported a minority of their populations making online purchases in the 12 months prior to the 2016 survey. The regions where less than 30 % of the population (aged 16 to 74) made online purchases of goods and services (as shown by the lightest shade of orange in Map 9.5) included all eight Romanian regions, all six Bulgarian regions, eight Italian regions, two regions each from Greece (NUTS level 1), France and Portugal, as well as Cyprus (one region at this level of detail).

The use of e-commerce was often quite closely related to regular internet use

There are very few regions where the pattern of regular internet use (as shown in Map 9.1) is particularly different from that of the use of e-commerce (as shown in Map 9.5). In North East (the United Kingdom, a NUTS level 1 region), the incidence of regular internet use was, at 86 % some 7 percentage points higher than the EU-28 average of 79 %), whereas e-commerce was used in the 12 months prior to the 2016 survey by 81 % of the population (aged 16 to 74) in North East, some 26 percentage points above the EU-28 average. By contrast, in a few regions, including the Hungarian and Romanian capital city regions, the use of e-commerce was relatively low, compared with the proportion of individuals making regular use of the internet: in Közép-Magyarország, regular internet use was 8 percentage points higher than the EU-28 average, whereas the use of e-commerce was 13 percentage points below; in Bucuresti - Ilfov, regular internet use was just 4 percentage points less common than in the EU-28 as a whole, whereas the incidence of the use of e-commerce was only 19 %, some 36 percentage points below the EU-28 average.

Map 9.5: Proportion of individuals who ordered/bought goods or services over the internet for private use in the 12 months prior to the survey, by NUTS 2 regions, 2016
(% of all individuals)



(% of all individuals)

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 07/2017

EU-28 = 55

- < 30
- 30 – < 45
- 45 – < 60
- 60 – < 75
- >= 75
- Data not available

0 200 400 600 800 km

Note: Germany, Greece, Poland, the United Kingdom and Turkey: NUTS level 1. Serbia: national data, 2015. Iceland and Switzerland: 2014. Corse (France): low reliability.

Source: Eurostat (online data codes: isoc_r_blt12_i and isoc_ec_ibuy)

Figure 9.3 looks in more detail at online purchases of three categories of goods and services with the analysis based on the degree of urbanisation. Differences in the online purchase of goods and services by degree of urbanisation may reflect not only fluctuations in the use of the internet overall or a willingness to use the internet for purchases, but also underlying differences in the need or wish for particular types of goods and services.

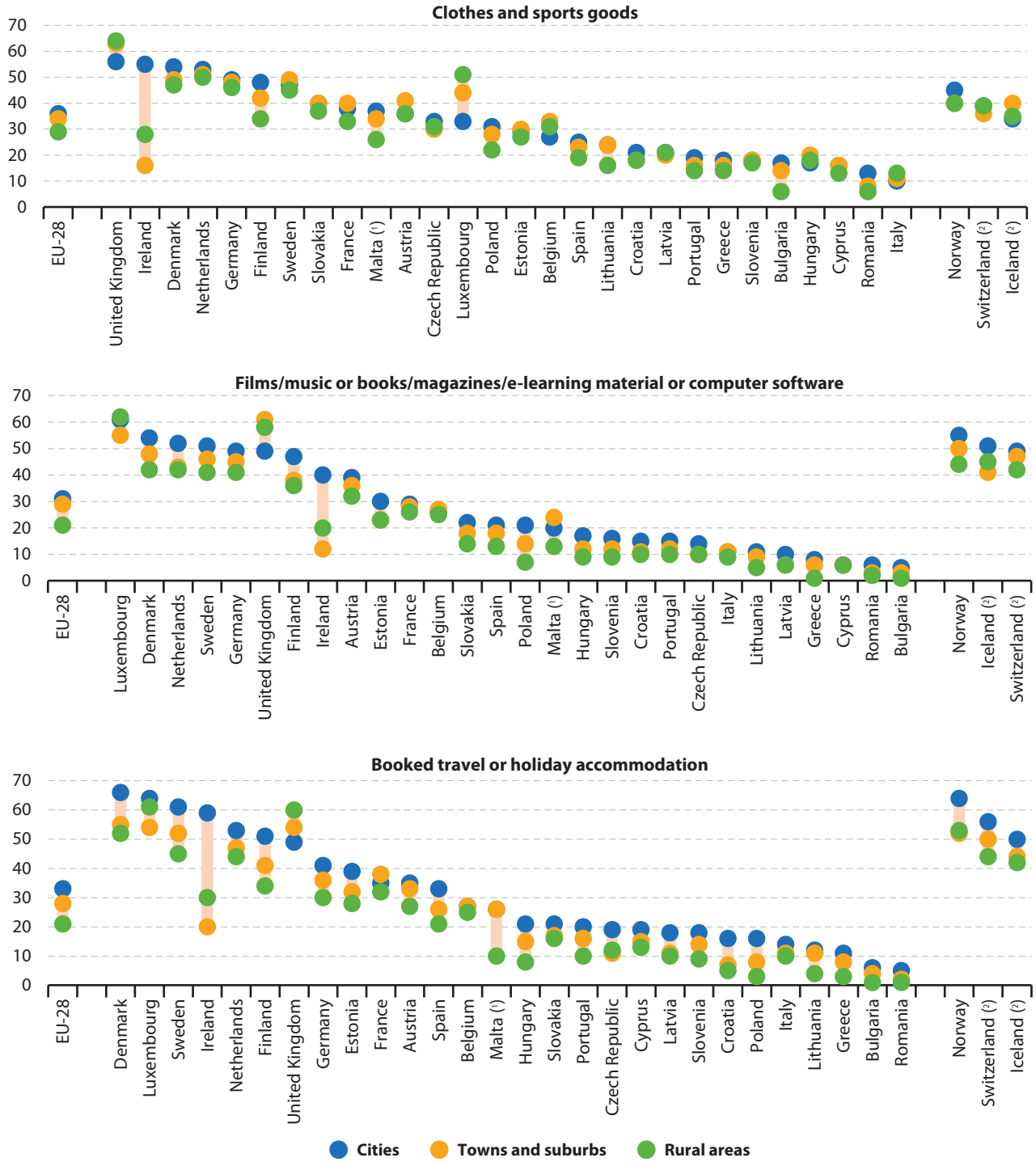
Among the three types of goods and services shown in Figure 9.3, the one for which the EU-28 as a whole had the greatest variation by degree of urbanisation was travel and holiday accommodation: 21 % of people living in rural areas purchased such services online in 2016, compared with 33 % in cities, a range of 12 percentage points. For films/music and/or books/magazines/e-learning material and/or computer software (hereafter referred to as audio-visual products), the range was slightly narrower at 10 percentage points, while for clothes and sports goods the range was 7 percentage points. For all three product groups, people living in rural areas recorded the lowest propensity to purchase online, while the highest shares were recorded among those living in cities, closely followed by people living in towns and suburbs.

A closer analysis for online purchases of clothes and sports goods reveals that 16 of the 28 EU Member States reported a similar pattern to that observed for the EU-28 as a whole, namely the highest shares of individuals making purchases of these goods over the internet in 2016 were recorded for those people living in cities and the lowest shares for people living in rural areas. Three of the exceptions were Luxembourg, the United Kingdom and Italy where the pattern was reversed. In the other exceptions, towns and suburbs in Belgium, Estonia, France, Hungary, Austria and Sweden reported the highest share of individuals making use of e-commerce to purchase clothes and sports goods, whereas in the Czech Republic, Ireland and Latvia the opposite was true, as towns and suburbs recorded the lowest share of individuals. In Ireland, the range in values between the different degrees of urbanisation was particularly large, with the propensity of people living in cities to make purchases of clothes and sports goods over the internet nearly three and a half times that recorded for people living in towns and suburbs; in fact Ireland reported a large range for all three product groups presented in Figure 9.3.

Concerning audio-visual products an even larger number of EU Member States displayed the same pattern as the EU-28: in 23 EU Member States the highest share of people purchasing such products online was in cities and the lowest in rural areas. Ireland again was an exception as the share of people making such purchases in towns and suburbs was particularly low, while in contrast the share was highest in towns and suburbs in Belgium, Malta and the United Kingdom. As for clothes and sports goods, the highest share of people purchasing audio-visual products online in Luxembourg was in rural areas.

In a similar manner, those individuals living in cities had the highest propensity to make purchases of travel or holiday accommodation online; this pattern was generally observed (24 of the EU Member States), as Belgium and Malta (cities and towns and suburbs had the same propensity) and the United Kingdom (where rural areas had the highest propensity) were once again exceptions, along with France (towns and suburbs recorded the highest propensity).

Figure 9.3: Proportion of individuals who bought goods or services over the internet for private use in the 12 months prior to the survey, by degree of urbanisation, 2016
(% of all individuals)



Note: ranked on cities.

(1) Rural areas: low reliability.
(2) 2014.

Source: Eurostat (online data code: isoc_ec_ibuy)

Data sources and availability

European ICT surveys aim to provide timely statistics on individuals and households relating to their use of ICTs. Many of these statistics are used in the benchmarking framework associated with the EU's digital scoreboard. EU statistics on the use of ICT are based on Regulation (EC) No 808/2004 concerning Community statistics on the information society. The regulation concerns statistics on the use of ICT in enterprises and statistics on ICT use in households and by individuals — only the latter are presented in this chapter. Since 2005, European Commission implementing regulations have been passed annually, specifying particular areas of interest for data collection, thereby allowing policymakers to compile data that aim to measure the impact of new technologies and services in this rapidly changing domain.

The statistical unit for regional data on ICTs is either the household or the individual. The population of households consists of all households having at least one member in the age group 16–74 years. The population of individuals consists of all individuals aged 16–74. Questions on access to ICTs are addressed to households, while questions on the use of ICTs are answered by individuals within the household.

In general, the data presented were collected in the second quarter of the survey year (2016). EU-28 aggregates are compiled when the information available for EU Member States represents at least 60 % of the EU's population and at least 55 % of the 28 Member States that make-up the EU aggregate. If additional national data become available, these are included in revised aggregates; as such, these statistics may be revised to reflect the supply of additional information.

Regional statistics on ICT for the EU Member States are generally available for NUTS level 2 regions. However, the latest data for Germany, Greece, Poland and the United Kingdom are only provided for NUTS level 1 regions. Recent ICT statistics are also presented for Iceland (2014), Norway, Switzerland (2014), the former Yugoslav Republic of Macedonia, Serbia (2015) and Turkey; of these, only Norway, Switzerland and Turkey are multi-regional and provide a regional breakdown (the latter only for NUTS level 1 regions).

NUTS

The data presented in this chapter are based exclusively on the 2013 version of NUTS. Data are not available for the French region of Mayotte and the Finnish region of Åland.

INDICATOR DEFINITIONS

Glossary entries on Statistics Explained (see: http://ec.europa.eu/eurostat/statistics-explained/index.php/Category:Digital_economy_and_society_glossary) are available for a wide range of concepts/indicators covering the digital economy and society.

For more information:
http://ec.europa.eu/eurostat/web/digital-economy-and-society/overview
http://ec.europa.eu/eurostat/web/digital-economy-and-society/methodology

10 Tourism

This chapter presents regional patterns of tourism across the European Union (EU); its main focus is tourist accommodation occupancy, as measured by the number of nights spent in tourist accommodation establishments. The data are presented for different regions across the EU, with a focus on tourism pressures and sustainability issues. The chapter closes with some information on tourist accommodation capacity, as measured by bedroom occupancy rates.

Tourism has the potential to play a significant role in the economic aspirations of many EU regions: it can be of particular importance in remote/peripheral regions, such as the EU's island states and regions, as well as in coastal and Alpine regions.

Main statistical findings

- **According to the United Nations World Tourism Organisation (UNWTO), Europe was the most frequently visited region in the world in 2016, accounting for close to half (49.8 %) of the 1.24 billion international tourist arrivals. The wealth of European cultures, the variety of its landscapes and the quality of its tourist infrastructure are likely to be among the varied reasons why tourists choose to take their holidays in Europe.**
- **Across the EU, more nights were spent in tourist accommodation establishments located in rural areas (than in cities); many of these were coastal areas or Alpine regions.**
- **The most popular tourist region in the EU was Canarias, the Spanish island region.**
- **In most of the multi-regional EU Member States, international tourists spent a relatively high number of their overall nights in capital city regions.**
- **Between 2014 and 2015, the highest growth rate for total nights spent in tourist accommodation establishments was recorded by Bratislavský kraj (up 26.2 %), the Slovakian capital city region.**
- **Among the most popular tourist regions in the EU, Berlin, the German capital city region, recorded the fastest expansion between 2005 and 2015 in its total number of nights spent in tourist accommodation.**

POLICY INITIATIVES

A European Commission communication titled 'Europe, the world's No. 1 tourist destination — a new political framework for tourism in Europe' (COM(2010) 352 final) was adopted in June 2010; it provides a framework for the development of tourism within Europe, with four priority areas for action, to: stimulate competitiveness; promote sustainable and responsible tourism; consolidate Europe's image as a collection of sustainable, high-quality destinations; maximise the potential of EU policies and financial instruments for developing tourism. The European Commission has encouraged the diversification of Europe's tourism offer through initiatives relating to maritime/coastal tourism, sustainable tourism, cultural tourism, tourism for all, accessible tourism, low-season tourism or collaborative tourism and it seeks to maintain Europe's position as the world's leading tourist destination, while maximising the contribution of the tourism industry to growth and employment, through making a wide range of EU funds available during the period 2014–2020. Furthermore, the European Commission provides ad-hoc grants to the European Travel Commission (ETC), a non-profit organisation responsible for promoting Europe as an international tourist destination: this has resulted in the creation and maintenance of websites such as visiteurope.com and tastingeurope.com.

To enhance the visibility of Europe as a tourist destination and increase international tourist arrivals, the European Commission undertakes a wide range of communication and promotion activities, among which 2018 has been pronounced the EU–China tourism year, which is seen as an opportunity to increase visitor numbers and investment, while encouraging EU and Chinese citizens to get to know each other. The EU's main priorities include: supporting cooperative marketing campaigns that show Chinese visitors what the EU has to offer; helping domestic tourist industries to be 'China-ready'; and facilitating business summits and contacts/meetings.

In a communication on maritime and coastal tourism titled 'A European strategy for more growth and jobs in coastal and maritime tourism' (COM(2014) 86 final), the European Commission reflected on the diversity of the EU's coastal regions and their capacity to generate

Defining the scope of tourism

It is important to note that the statistical definition of tourism is wider than the common everyday definition, as it encompasses not only private trips but also 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 (transport, accommodation and restaurant/catering services).

The number of tourist nights spent/overnight stays provides information pertaining to each night a guest/tourist actually spends (sleeps or stays) in a tourist accommodation establishment. It therefore measures both the length of stay and the number of visitors and is considered a key indicator for analyses.

wealth and jobs, in line with the EU's 'Blue growth strategy — opportunities for marine and maritime sustainable growth' (COM(2012) 494 final).

Statistical analysis

NUMBER OF OVERNIGHT STAYS

In 2015, there were 2.78 billion nights spent in EU-28 tourist accommodation establishments. This figure marked a 3.8 % increase when compared with 2014; as such, the pace at which the number of nights spent increased more than doubled when compared with the growth rate for the year before (1.5 %).

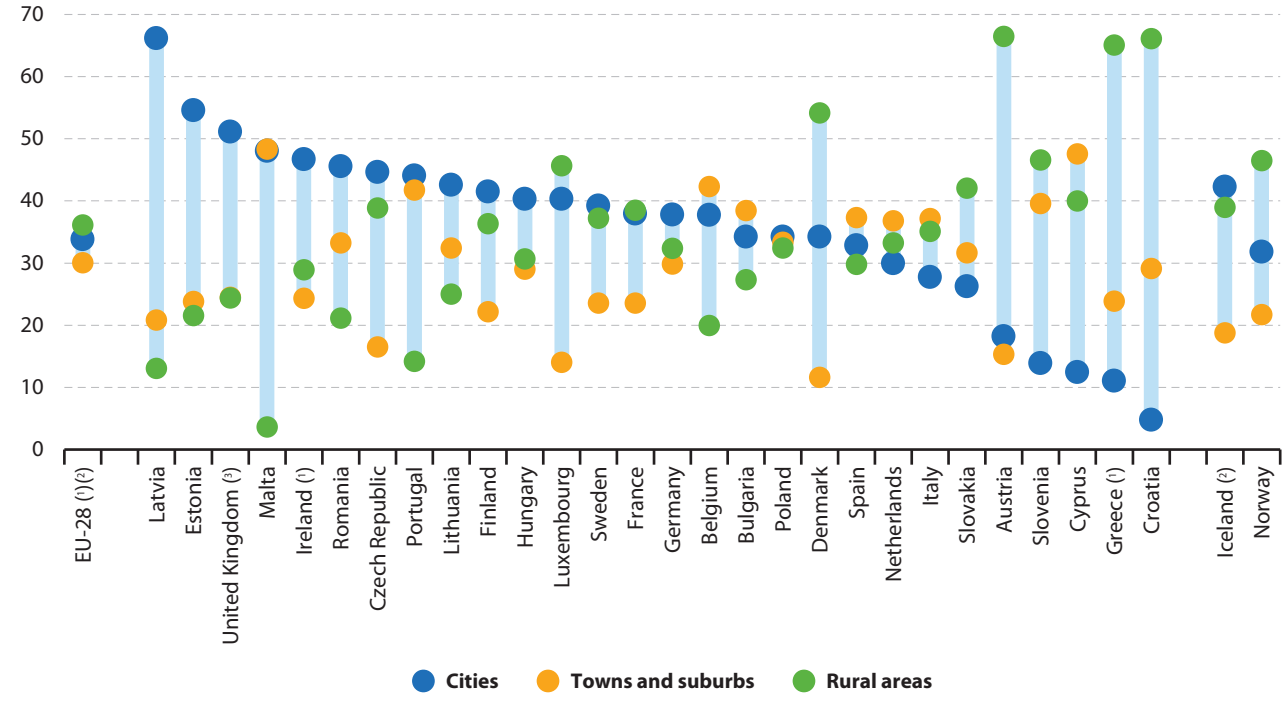
There is a wide range of tourism opportunities across the EU, from coastal and Alpine destinations to popular cities

Figure 10.1 provides an analysis by degree of urbanisation for the distribution of the total number of nights spent by domestic (resident) and inbound international (non-resident) tourists in all types of tourist accommodation. It reflects the diverse range of tourism opportunities that exist across the EU, with the total number of nights spent in 2014 relatively evenly distributed between rural areas (36.1 %), cities (33.8 %) and towns and suburbs (30.0 %); note that the statistics presented include business travellers who are generally more likely to stay in urban areas.

More recent data are available for most of the EU Member States, showing that rural areas — predominantly on the coast — accounted for almost two thirds of the total nights spent in Croatia (66.1 %) and Greece (65.1 %) in 2015, while rural areas — predominantly in alpine locations — accounted for a similar share of the total nights spent in Austria (66.5 %); Denmark (which is exclusively coastal) was the only other Member State where more than half (54.2 %) of the total nights spent in tourist accommodation were located in rural areas.

In two of the Baltic Member States — Latvia (66.1 %) and Estonia (54.6 %) — cities accounted for a particularly high share of total nights spent in 2015; cities also accounted for more than half of the total nights spent in the United Kingdom (51.1 %; 2012 data), and for the highest share of total nights spent in 11 additional Member States. For more detailed information on the most popular tourist regions in each of the EU Member States, see Table 10.1.

Figure 10.1: Share of total nights spent in tourist accommodation establishments, by degree of urbanisation, 2015
(%)



Note: ranked on cities.

(1) Estimates.
(2) 2014.
(3) 2012.

Source: Eurostat (online data code: tour_occ_ninatd)

2014

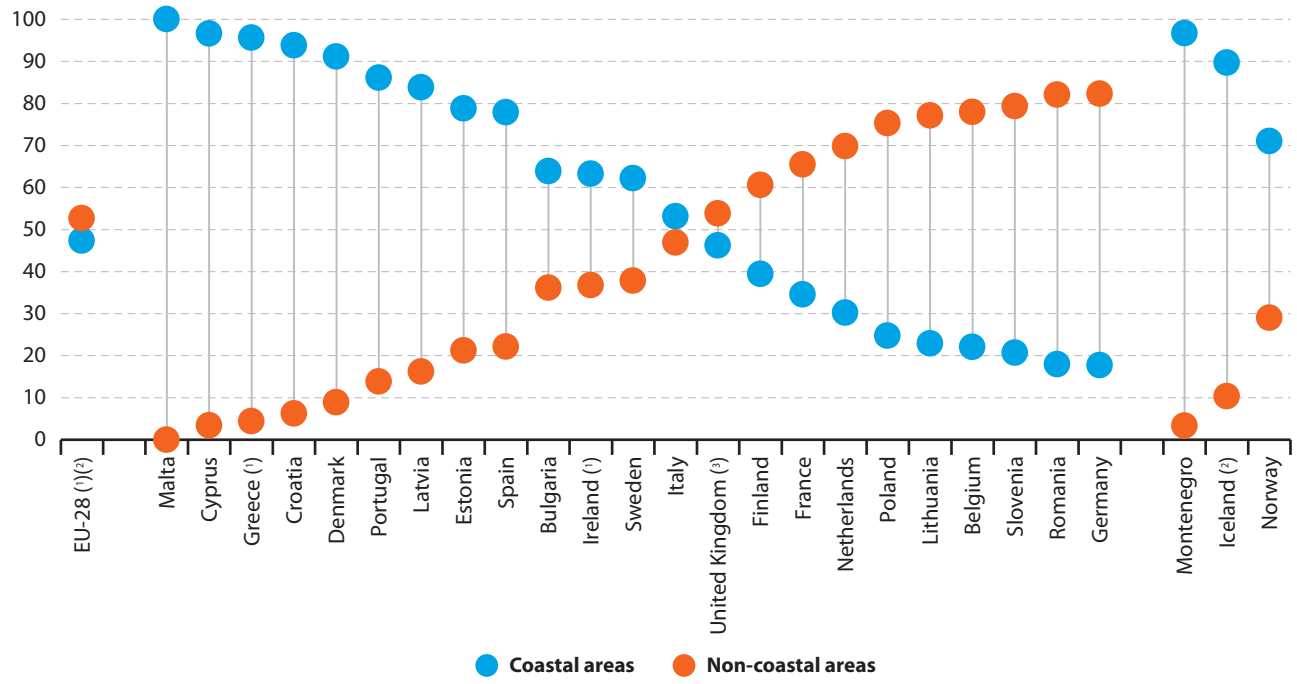
47.4 %
of the total nights spent by tourists in the EU were in coastal areas

Coastal areas are defined on the basis of and consist of local administrative units or municipalities that border the sea, or have at least half of their total surface area within a distance of 10 km from the sea. Many coastal areas are characterised by considerable building activity as an increasing number of people choose to live near the sea and mass-market coastal tourism expands its footprint. These regions are characterised by a range of economic activities, covering among others: shipping and ports, fisheries and energy, as well as tourism-related activities such as construction, food and accommodation services, distributive trades and transport services. A high level of activity can potentially have serious implications in relation to sustainable development.

The latest statistics available indicate that almost half (47.4 %) of the total nights spent in EU-28 tourist accommodation establishments in 2014 were in coastal areas; the split between nights spent in coastal and non-coastal areas is presented in Figure 10.2 (note that five of the EU Member States are landlocked and are therefore not shown). Unsurprisingly, the inclination to stay in coastal areas was generally higher in southern EU Member States which are generally characterised by climatic conditions more conducive to coastal tourism, although topography also clearly plays a role in the split between nights spent in coastal and non-coastal regions. In 2015, more than 9 out of every 10 nights spent in the tourist accommodation establishments of Malta, Cyprus, Greece, Croatia and Denmark were located in coastal areas, while coastal areas also accounted for at least three quarters of the total nights spent in Portugal, Latvia, Estonia and Spain and for a majority of the nights spent in a further four Member States.

The 10 EU Member States where non-coastal areas accounted for a majority of the total nights spent in tourist accommodation establishments were widely distributed across all but southern areas of the EU. In 2015, more than four out of every five nights spent in Germany and Romania were in non-coastal areas, while non-coastal areas also accounted for more than three quarters of the total nights spent in Slovenia, Belgium, Lithuania and Poland.

Figure 10.2: Share of total nights spent in tourist accommodation establishments, coastal and non-coastal areas, 2015
(%)



Note: ranked on coastal areas. The Czech Republic, Luxembourg, Hungary, Austria, Slovakia, Liechtenstein, the former Yugoslav Republic of Macedonia and Serbia: landlocked countries and therefore not shown.

(1) Estimates.
(2) 2014.
(3) 2012.

Source: Eurostat (online data code: tour_occ_ninatc)

In 2015, the most popular tourist region in the EU was Canarias, the Spanish island region

Map 10.1 shows that tourism in the EU was concentrated in coastal regions — principally, but not exclusively, in the Mediterranean — Alpine regions, and some of the EU's capital cities. A total of 56 NUTS level 2 regions each recorded at least 12.5 million nights spent in tourist accommodation (as shown by the darkest shade of blue in Map 10.1), among which 20 recorded at least 30 million nights. These top 20 tourist destinations included five regions from each of Spain, France and Italy, two regions from Germany, and a single region from each of Croatia, Austria and the United Kingdom (2012 data) and also featured four capital city regions, namely those of Germany, France, Italy and the United Kingdom (the data presented refer to a NUTS level 1 region).

The most popular coastal destinations generally ran from southern Spain around the Mediterranean coastline into southern France and then across northern Italy to the Adriatic coastline of Croatia, along with several island regions located within the Mediterranean, including both Malta and Cyprus (which are single regions at this level of detail). The highest numbers of overnight stays in Alpine destinations were recorded in the neighbouring regions of Tirol (western Austria) and Oberbayern (southern Germany).

Looking in more detail, the highest number of nights spent by domestic and international tourists in tourist accommodation establishments was recorded in Canarias, one of the Spanish island regions, which includes popular destinations such as Gran Canaria, Lanzarote and Tenerife (94.0 million nights in 2015); as such, it accounted for 3.4 % of the total nights spent in the whole of the EU-28. Two other Spanish regions featured among the top five tourist regions: Cataluña, which includes (among others) Barcelona, popular Costa Brava resorts and the Pyrenees mountain range (75.5 million nights); and Illes Balears, which includes (among others) Mallorca, Menorca and Ibiza (65.2 million nights). Completing the list of the five most popular destinations were Île de France, the capital city region of France (76.8 million nights) and Jadranska Hrvatska, which covers coastal areas of Croatia (68.1 million nights). There were three other regions in the EU where more than 60 million nights were spent in tourist accommodation establishments in 2015, namely, Veneto in north-eastern Italy (63.3 million nights), Andalucía in southern Spain (61.4 million nights) and London, the capital city region of the United Kingdom (60.7 million nights; note that the data presented refer to 2012 and to a NUTS level 1 region).

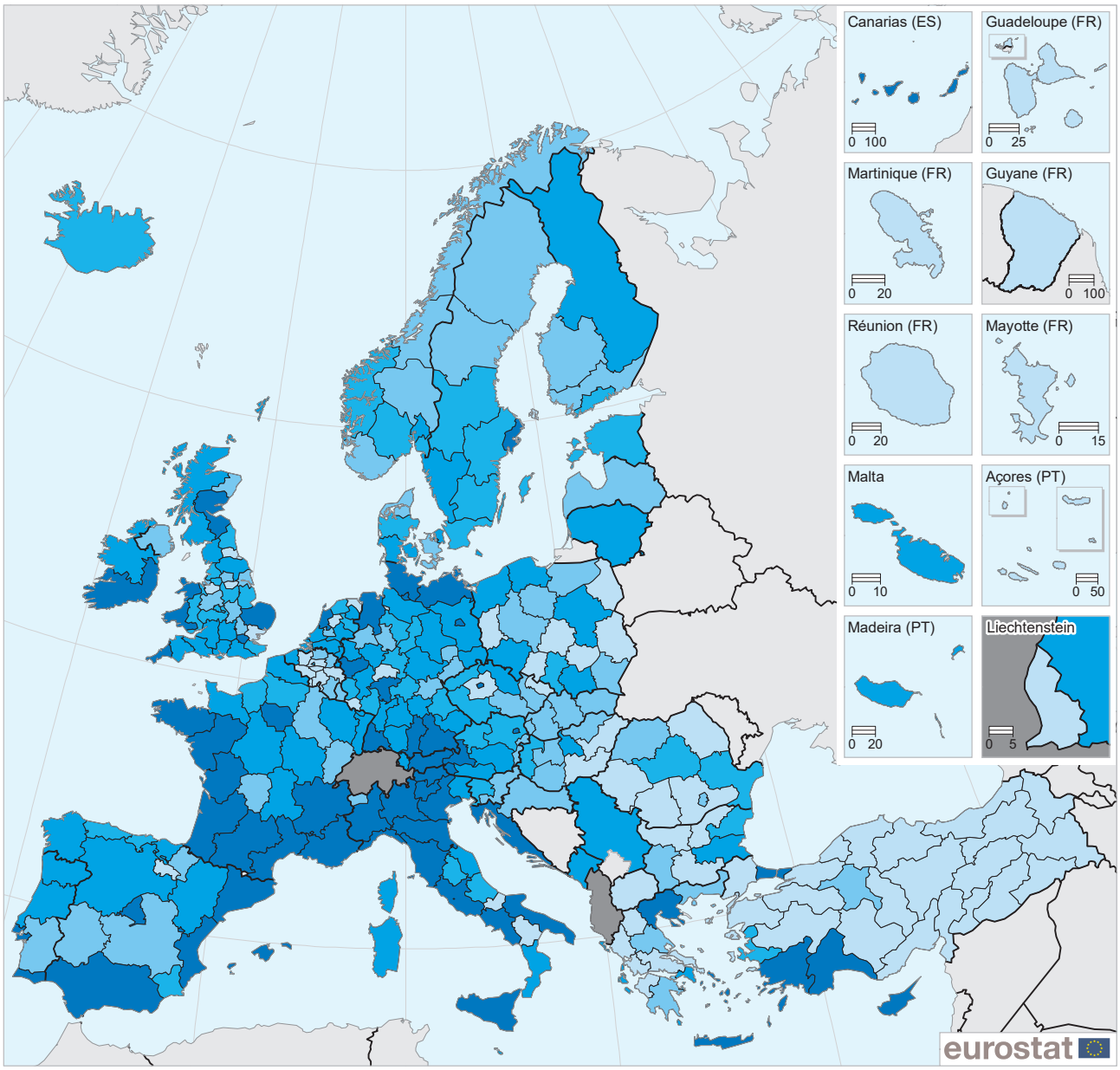
The Turkish coastal region of Antalya, Isparta, Burdur that is situated on the Aegean Sea was, by far, the most popular tourist destination among non-member regions for which data are available (70.7 million nights spent in 2015), while its neighbouring region of Aydın, Denizli, Muğla — which includes the resorts of Bodrum and Marmaris — recorded the second highest number of nights spent (19.3 million).

Between 2014 and 2015, the Slovakian capital city region recorded the fastest expansion in nights spent in tourist accommodation

An analysis of the rate of change for the number of nights spent in tourist accommodation establishments between 2014 and 2015 reveals that some of the highest growth rates were recorded in eastern regions of the EU; note there are no data available for this comparison for regions in Belgium or the United Kingdom. The most rapid growth was recorded in Bratislavský kraj, the Slovakian capital city region, where the total number of nights spent increased by 26.2 % to reach 2.5 million, while an increase of 22.1 % was recorded for the western Romanian region of Vest, whose largest city is Timişoara. The number of nights spent in tourist accommodation establishments increased by 15–20 % in six NUTS level 2 regions: two of these were located in Romania (Nord-Vest and Centru), while the others included Opolskie in southern Poland and the north-eastern Czech region of Severovýchod. The other two regions were from southern EU Member States, namely, the Portuguese island Região Autónoma dos Açores, and Molise in central Italy, both of which are characterised by mountainous regions and coastline. None of these eight regions with the highest growth rates were among the most popular tourist destinations in 2015, as the highest overall number of overnight stays among them was recorded in Severovýchod (7.4 million), followed by Centru (5.0 million) and Sud-Est (4.9 million).

Among the top 20 NUTS level 2 tourist destinations in the EU, there were 17 which reported an increase in their total number of nights spent in tourist accommodation establishments between 2014 and 2015, while two regions recorded a decline and there were no data available for London. The most rapid increase (+10.4 %) was registered in the northern Italian region of Lombardia (which includes the city of Milano), while increases within the range of 5–10 % were registered for Jadranska Hrvatska (Croatia), Andalucía and Comunidad Valenciana (both in southern Spain), as well as Berlin. By contrast, the number of nights spent in the EU's most popular tourist destination, Canarias, fell slightly (-0.3 %), while the reduction recorded in Île de France was somewhat greater (-1.2 %).

Map 10.1: Nights spent in tourist accommodation establishments, by NUTS 2 regions, 2015
(million nights spent by residents and non-residents)



(million nights spent by residents and non-residents)

EU-28 = 2 784

- < 2.5
- 2.5 – < 4.5
- 4.5 – < 6.5
- 6.5 – < 12.5
- >= 12.5
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 07/2017

0 200 400 600 800 km

Note: London (UKI): NUTS level 1. Serbia: national data. Iceland: 2014. The United Kingdom: 2012. EU-28, Ireland and Greece: estimates.

Source: Eurostat (online data code: tour_occ_nin2)

Capital city regions are a popular choice for international tourists

Within the EU-28, domestic tourists accounted for 54.6 % of the total number of nights spent in tourist accommodation establishments in 2015, with the remaining 45.4 % accounted for by international tourists who may have travelled from other EU Member States or from outside of the EU.

There were considerable regional disparities between the number of nights spent by domestic tourists and international tourists (see Figure 10.3). For example, Közép-Magyarország, the capital city region, was the only one of the seven NUTS level 2 Hungarian regions to attract more international tourists (81.2 % of all overnight stays in the region), while domestic tourists accounted for between 56.1 % and 84.2 % of the total nights spent in the other Hungarian regions.

This pattern of international tourists being particularly attracted to capital city regions was often repeated across the 22 multi-regional EU Member States; note these developments may be driven by business travel as well as personal travel. In 14 of these 22 Member States, the capital city region registered the highest proportion of overnight stays by international tourists in 2015 (data for the United Kingdom refer to 2012).

The share of nights spent by domestic tourists in tourist accommodation establishments was relatively low for most capital city regions; this may be explained by the concentration of international tourists visiting capital cities, while domestic tourists may choose to explore other (sometimes internationally less well-known) regions of their country. The clearest example was in the United Kingdom, where domestic tourists accounted for less than one in five (17.8 %) of the total nights spent in London (2012 data; NUTS level 1), while they accounted for almost two thirds (65.3 %) of the total nights spent across the whole of the United Kingdom (also 2012 data). In a similar vein, the shares of domestic tourists in the total number of overnight stays in Praha and Bucuresti - Ilfov were approximately 40 percentage points lower than the shares of domestic tourists in the total number of nights spent across the whole of the Czech Republic and Romania.

Indeed, domestic tourists generally accounted for a much higher share of the total nights spent outside of capital city regions. They accounted for at least 50 % of the overnight stays in every region outside of the capital city regions in Denmark, Germany, Ireland, France, Hungary, the Netherlands, Poland, Romania, Slovenia, Slovakia, Sweden and the United Kingdom and in four of these — Germany, Ireland, Poland and Sweden — domestic tourists accounted for a majority of the overnight stays in the capital city region too. By contrast, the total number of nights spent by international tourists outnumbered those of domestic tourists in both Croatian regions, as well as in five out of the six (relatively small) mono-regional EU Member States — Estonia, Cyprus, Latvia, Luxembourg and Malta — the exception being Lithuania.

2015

45.4 %
of nights spent by tourists in the EU were by visitors from another country

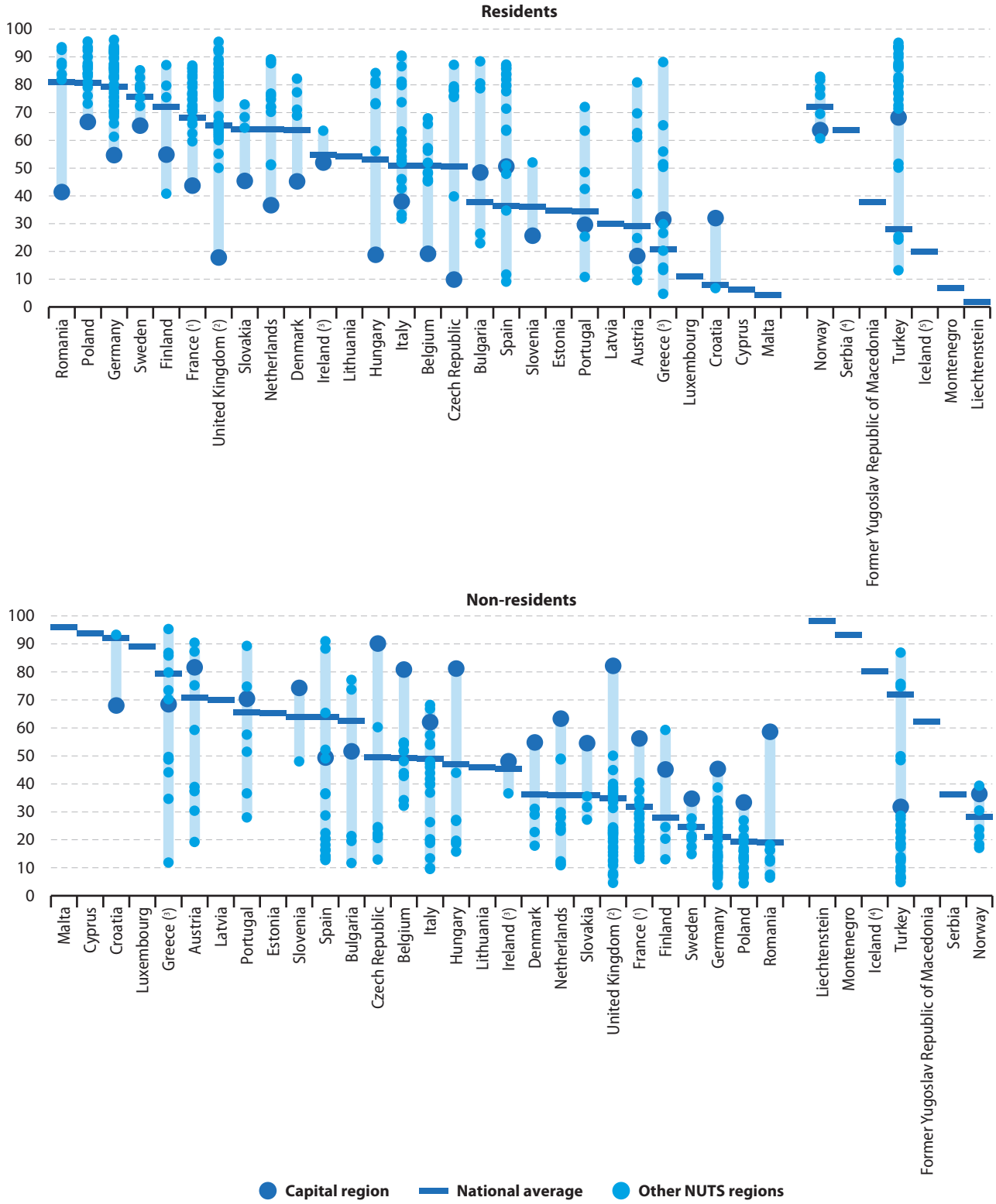
Berlin grew quickly in popularity during the most recent decade, both for domestic and international tourists

The top 20 tourist regions — in terms of nights spent by domestic and international tourists in all types of tourist accommodation — are shown in Figure 10.4. These 20 regions together accounted for more than one third (36.9 %) of the total number of overnight stays across the whole of the EU in 2015. A majority (60.7 %) of the nights spent in these 20 most popular tourist regions were accounted for by international tourists, suggesting there could be considerable pressure on sustainability issues from mass tourism, particularly during high/peak seasons, during the summer months for coastal regions or the period between Christmas and Easter in Alpine regions.

As already noted, in 2015, Canarias had the highest number (94.0 million nights) of overnight stays in tourist accommodation among any of the NUTS level 2 regions of the EU; a closer analysis reveals that international tourists accounted for an overwhelming majority (88.3 %) of these. In a similar vein, international tourists accounted for a majority of the total number of nights spent in tourist accommodation in 12 of the top 20 most popular tourist regions: of these, the highest shares for international tourists were recorded in Jadranska Hrvatska (93.2 %), Illes Balears (90.9 %) and Tirol (90.4 %).

The highest absolute number of overnight stays made by domestic tourists was recorded in the southern French region of Provence-Alpes-Côte d'Azur, at 35.9 million in 2015, equivalent to almost two thirds (65.8 %) of the total number of overnight stays in this region. Seven more of the top 20 most popular tourist regions in the EU recorded a higher proportion of nights spent by domestic (compared with international) tourists, they included: three additional regions from southern France, Rhône-Alpes (70.7 %), Aquitaine (76.4 %) and Languedoc-Roussillon (76.6 %); two German regions, Berlin (54.7 %) and Oberbayern (68.5 %); and Comunidad Valenciana (51.0 %) in Spain and Emilia-Romagna (73.7 %) in Italy.

Figure 10.3: Share of nights spent in tourist accommodation establishments, by residents and non-residents, by NUTS 2 regions, 2015
(% of total nights spent)



Note: ranked on national average. The light turquoise shaded area shows the range of the highest to lowest region for each country; the blue bar shows the national average; the blue circle shows the capital city region; the turquoise circles show the other regions.

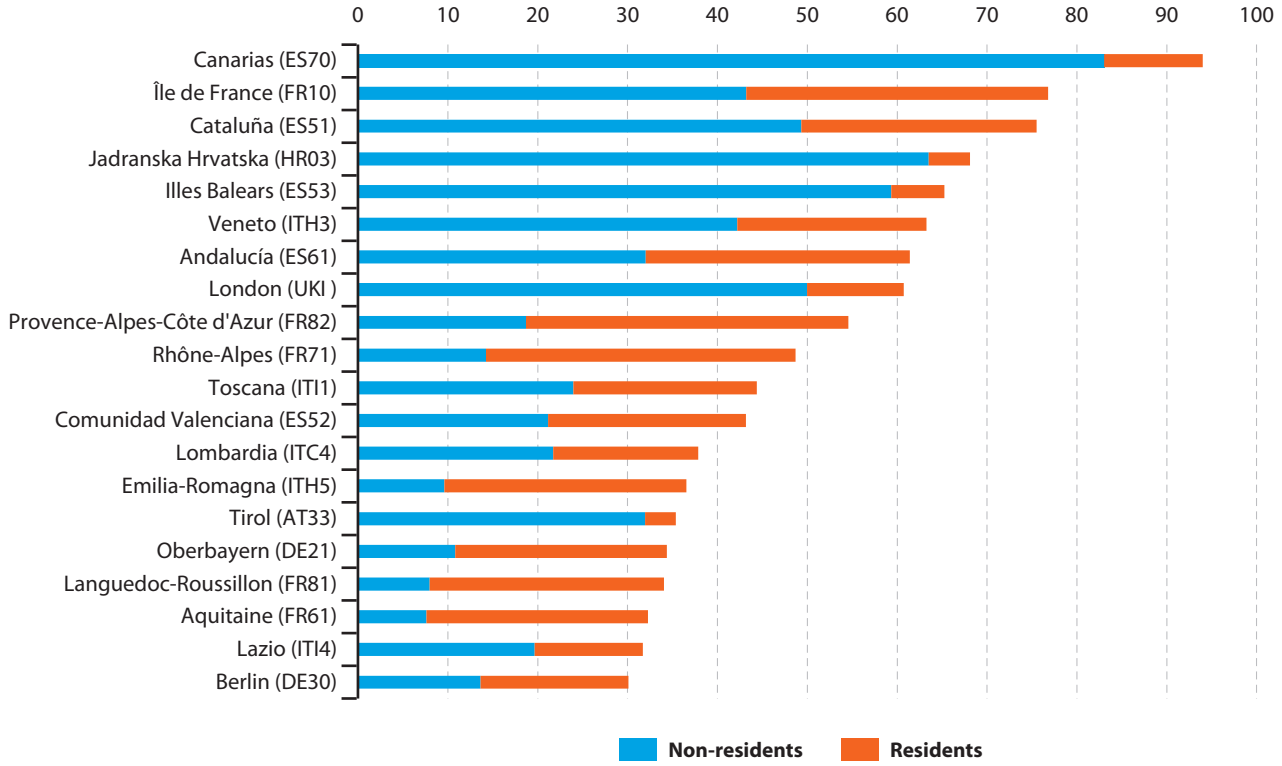
(1) Mayotte (FRA5): not available.
(2) 2012. London (UKI): NUTS level 1.
(3) Estimates.
(4) National data.
(5) 2014.

Source: Eurostat (online data code: tour_occ_nin2)

A time series analysis between 2005 and 2015 reveals that among the top 20 most popular tourist regions in the EU, only Lazio, the Italian capital city region, observed a reduction in its total number of overnight stays, with a modest decline in the number of nights spent by domestic tourists (-0.4 % per annum) that slightly outweighed a small increase of 0.2 % per annum for international tourists. Aside from Lazio, there were four other regions among the top 20 which recorded a fall in their total number of overnight stays by domestic tourists: two additional Italian regions (Emilia-Romagna and Veneto) and two Spanish regions (Canarias and Illes Balears). However, in all four cases, the growth in international tourism more than made up for the decline in domestic tourism. During the period 2005–2015 the fastest expansions in the number of overnight stays by domestic tourists were recorded in the French regions of Rhône-Alpes (7.0 % per annum), Provence-Alpes-Côte d'Azur (5.9 % per annum) and Aquitaine (5.1 % per annum), as well as in Berlin (5.5 % per annum). These figures tend to suggest that the relatively high inclination of French tourists to holiday in some of the most popular regions in their own country was a growing (rather than fading) pattern.

Between 2005 and 2015, there was a positive development to the overall number of nights spent by international tourists in each of the top 20 most popular tourist regions of the EU. The fastest growth rate was recorded in Berlin (10.5 % per annum), followed by Jadranska Hrvatska (7.1 % per annum) and London (6.2 % per annum; data are for the period 2005–2012 and for a NUTS level 1 region). Combining the impact of domestic and international tourists, Berlin recorded the most rapid expansion in its total number of overnight stays, rising on average by 7.5 % per annum during the period under consideration.

Figure 10.4: Number of nights spent in tourist accommodation establishments in the top 20 EU-28 tourist regions, by NUTS 2 regions, 2015
(million nights spent)



Note: London (UKI): NUTS level 1. Mayotte (FRA5): not available. The United Kingdom: 2012. Ireland and Greece: estimates.
Source: Eurostat (online data code: tour_occ_nin2)

Capital city regions were rarely the most popular region for domestic tourists

Table 10.1 shows separately for domestic (resident) and international (non-resident) tourists, which NUTS level 2 regions had the most overnight stays in tourist accommodation. As shown, many tourists have a preference for visiting regions with a coastline and this is, by definition, the case for 10 of the EU Member States which are characterised by all of their NUTS 2 regions having a coastline. Half of these have more than one region and among these there was a north–south divide apparent: international tourists were most likely to visit the capital city regions of Denmark, Ireland, Finland and Sweden; in Portugal the most popular destination for international tourists was the southern region of Algarve which is characterised by a high number of popular resorts. By contrast, among domestic tourists, regions other than the capital city region were generally more popular, except in Ireland.

Among the four landlocked EU Member States with more than one region, the most popular regions for international tourists were also capital city regions in the Czech Republic, Hungary and Slovakia, whereas international tourists spent a higher number of nights in the Alpine region of Tirol compared with Wien, the Austrian capital city region; this may, at least in part, be due to winter skiing or summer hiking holidays often lasting a week or more, whereas tourist trips to (capital) cities are often shorter, for example, if they are for a business meeting or for a (long) weekend. Among domestic tourists in the four landlocked EU Member States with more than one region, regions other than the capital city region were again the most popular destinations.

Of the remaining 13 EU Member States — that were neither landlocked nor completely coastal — the most visited region was generally different for domestic and international tourists. There were three exceptions where the same region was most popular for both types of tourists: the Black Sea coastal region of Yugoiztochen (Bulgaria), the Adriatic coastline and islands of Jadranska Hrvatska (Croatia), and the Baltic Sea coastal and lakeland region of Zachodniopomorskie (Poland). The capital city regions of Belgium, Germany, France, the Netherlands, Romania, Slovenia and the United Kingdom (note that the data presented refer to 2012 and to a NUTS level 1 region) attracted more international tourists than any other region in these Member States. By contrast, the most popular regions for international tourists in each of the remaining Member States were all coastal regions: along with the Bulgarian, Croatian and Polish regions mentioned above, the others were Kriti (Greece), Canarias (Spain) and Veneto (Italy). Among domestic tourists, coastal regions often occupied the position of being the most popular destinations in these 13 Member States, the only exceptions were the central and relatively large Dutch region of Gelderland (whose capital city is Arnhem) and the eastern Slovenian region of Vzhodna Slovenija (whose attractions include the Alps, wine-growing areas, natural spas and considerable biodiversity, as well as the second city of Maribor).

International tourism was generally more concentrated than domestic tourism

There tended to be a relatively high concentration of international tourism within the most popular regions, whereas domestic tourism was often more dispersed across regions; this pattern was particularly apparent in some of the larger EU Member States and may be explained, at least in part, by a high share of international (first-time) visitors choosing to focus their trips on the most popular or well-known tourist sights. For example, in 2015 Île de France (the capital city region) accounted for approximately one third (33.1 %) of the total nights spent by international tourists in the whole of France, whereas the southern region of Provence-Alpes-Côte d'Azur accounted for 12.8 % of the total nights spent by domestic tourists. In a similar vein, Praha (the capital city region) accounted for 61.6 % of the total nights spent by international tourists in the Czech Republic, while the most popular region for domestic tourists was Severovýchod (24.3 % of the national total). Belgium and Slovakia were exceptions to this rule, insofar as they both reported a higher concentration of nights spent by domestic (rather than international) tourists in their most popular regions, namely, the coastal region of the Prov. West-Vlaanderen (which accounted for 40.4 % of all nights spent by Belgians in their own country) and the central region of Stredné Slovensko (35.2 % of the overnights stays of domestic tourists in Slovakia).

Table 10.1: Nights spent in tourist accommodation establishments in the most popular tourist regions, by NUTS 2 regions, 2015

	Residents			Non-residents		
	Total nights spent in country (million nights)	Most popular region (NUTS level 2 regions)	Share of most popular region in national total (%)	Total nights spent in country (million nights)	Most popular region (NUTS level 2 regions)	Share of most popular region in national total (%)
Countries where all regions are coastal						
Denmark	19.6	Syddanmark (DK03)	30.4	11.2	Hovedstaden (DK01)	50.5
Estonia	2.0		–	3.8		–
Ireland	*16.2*	Southern and Eastern (IE02)	*72.4*	*13.5*	Southern and Eastern (IE02)	*80.8*
Cyprus	0.8		–	12.6		–
Latvia	1.2		–	2.9		–
Lithuania	3.6		–	3.0		–
Malta	0.4		–	8.5		–
Portugal	20.5	Algarve (PT15)	23.3	38.9	Algarve (PT15)	36.2
Finland	14.2	Pohjois- ja Itä-Suomi (FI1D)	37.4	5.5	Helsinki-Uusimaa (FI1B)	44.1
Sweden	42.0	Västsverige (SE23)	21.5	13.6	Stockholm (SE11)	32.9
Iceland (1)	1.1		–	4.4		–
Montenegro	0.7		–	10.3		–
Countries with coastal and non-coastal regions						
Belgium	19.5	Prov. West-Vlaanderen (BE25)	40.4	18.9	Région de Bruxelles-Capitale / Brussels Hoofdstedelijk Gewest (BE10)	27.6
Bulgaria	8.0	Yugoiztochen (BG34)	26.6	13.4	Yugoiztochen (BG34)	44.7
Germany	299.2	Mecklenburg-Vorpommern (DE80)	8.4	78.8	Berlin (DE30)	17.3
Greece	*20.4*	Kentriki Makedonia (EL52)	*18.5*	*78.3*	Kriti (EL43)	*28.3*
Spain	152.8	Andalucía (ES61)	19.2	269.4	Canarias (ES70)	30.8
France (2)	279.6	Provence-Alpes-Côte d'Azur (FR82)	12.8	130.5	Île de France (FR10)	33.1
Croatia	5.7	Jadranska Hrvatska (HR03)	81.8	65.7	Jadranska Hrvatska (HR03)	96.7
Italy	200.2	Emilia-Romagna (ITH5)	13.5	192.6	Veneto (ITH3)	21.9
Netherlands	66.2	Gelderland (NL22)	15.2	37.3	Noord-Holland (NL32)	43.4
Poland	57.5	Zachodniopomorskie (PL42)	16.3	13.8	Zachodniopomorskie (PL42)	21.5
Romania	19.0	Sud-Est (RO22)	23.9	4.5	Bucuresti - Ilfov (RO32)	39.9
Slovenia	3.7	Vzhodna Slovenija (SI03)	57.0	6.5	Zahodna Slovenija (SI04)	70.2
United Kingdom (3)	198.1	West Wales and The Valleys (UKL1)	8.1	105.5	London (UKI)	47.4
Norway	22.7	Sør-Østlandet (NO03)	21.1	8.9	Oslo og Akershus (NO01)	27.6
Turkey	37.5	Antalya, Isparta, Burdur (TR61)	24.9	96.4	Antalya, Isparta, Burdur (TR61)	63.7
Landlocked countries						
Czech Republic	23.8	Severovýchod (CZ05)	24.3	23.3	Praha (CZ01)	61.6
Luxembourg	0.3		–	2.7		–
Hungary	14.6	Nyugat-Dunántúl (HU22)	19.3	13.0	Közép-Magyarország (HU10)	61.8
Austria	33.1	Steiermark (AT22)	18.9	80.3	Tirol (AT33)	39.8
Slovakia	7.8	Stredné Slovensko (SK03)	35.2	4.4	Bratislavský kraj (SK01)	31.7
Liechtenstein	0.0		–	0.1		–
Former Yugoslav Republic of Macedonia	0.6		–	1.0		–
Serbia	4.2		–	2.4		–

(1) 2014.
(2) Mayotte (FRA5): not available.
(3) 2012. London (UKI): NUTS level 1.

Source: Eurostat (online data code: tour_occ_nin2)

TOURISM PRESSURES

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 intensity and tourism density (defined here as the relationship between the total number of nights spent and the total area of each region) provide two measures that may be used to analyse sustainability issues linked to tourism pressures. Tourism intensity averaged 5 292 nights spent in EU-28 tourist accommodation establishments per 1 000 inhabitants in 2015, while tourism density was 597 nights spent per square kilometre (km^2). Map 10.2 shows the distribution of tourism intensity rates across the EU, with the highest concentrations often recorded in popular coastal regions or regions that may be characterised by their relatively low number of inhabitants. Map 10.3 shows that regional tourism density ratios usually peaked in capital city regions, where space is generally at a premium.

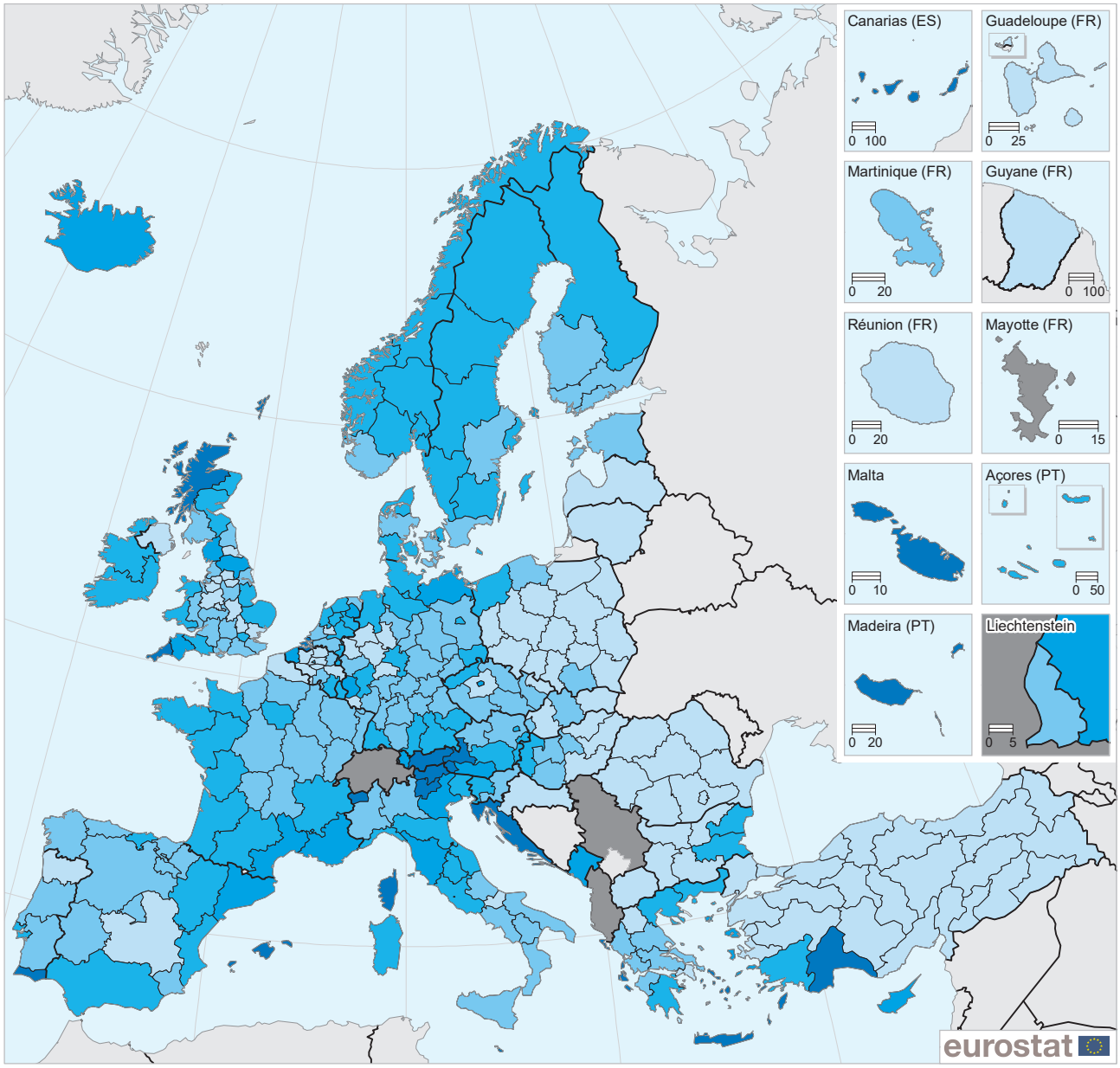
Looking in more detail, there were 18 NUTS level 2 regions (as shown by the darkest shade of blue in Map 10.2) where the tourism intensity ratio was at least 20 000 nights per 1 000 inhabitants in 2015. The highest ratio was recorded in the Greek island region of Notio Aigaio (which covers the Cyclades and Dodecanese island groups and includes the popular holiday destinations of Paros, Thira (Santorini), Mykonos and Rodos), its ratio peaked at 69 777 overnight stays per 1 000 inhabitants. There followed three regions with similar ratios, as tourism intensity averaged 56 000–58 000 nights spent per 1 000 inhabitants in two further island regions — Illes Balears in Spain and Ionia Nisia in Greece (which includes Corfu) — as well as the Alpine region of Provincia Autonoma di Bolzano/Bozen in northern Italy. There were five regions that recorded ratios within the range of 40 000–50 000 nights spent per 1 000 inhabitants, including: one further island region, Canarias in Spain; two further Alpine regions, Tirol and Salzburg, both in Austria; and two coastal regions, Jadranska Hrvatska (Croatia) and Algarve (southern Portugal).

Across the 22 multi-regional EU Member States for which data are available, the highest regional tourism intensity ratios were predominantly recorded for island/coastal regions, but also included: three capital city regions in eastern (landlocked) Member States, Praha (the Czech Republic), Zahodna Slovenija (Slovenia) and Bratislavský kraj (Slovakia); two Alpine regions, Provincia Autonoma di Bolzano/Bozen (Italy) and Tirol (Austria); as well as Nyugat-Dunántúl (the westernmost region of Hungary), Centru (Romania) and Mellersta Norrland (northern Sweden).

In 2015, regional tourism density rose above 5 000 nights spent per km^2 in 17 NUTS level 2 regions of the EU (as shown by the darkest shade of blue in Map 10.3). The highest density ratio was recorded in Région de Bruxelles-Capitale/Brussels Hoofdstedelijk Gewest (40 020 overnight stays per km^2), the Belgian capital city region, followed by five other capital city regions: London (38 093 nights spent per km^2; data are for 2012 and refer to a NUTS level 1 region), Wien (34 204), Berlin (33 742), Praha (32 091) and Malta (28 267; a single region at this level of detail). There were only four other regions in the EU where tourism density was higher than 10 000 overnight stays per 1 000 inhabitants: the largely urbanised northern German region of Hamburg, and three Spanish regions — Illes Balears, Canarias and Ciudad Autónoma de Melilla — that were located off the mainland.

An analysis for the multi-regional EU Member States reveals that capital city regions tended to record the highest tourism density ratios: this pattern held in 15 of the 21 of the Member States for which data are available. The exceptions included the Black Sea coastal region of Severoiztochen (Bulgaria), Ionia Nisia (Greece), Illes Balears (Spain), Provincia Autonoma di Bolzano/Bozen (Italy), Malopolskie in southern Poland (which includes Kraków) and Algarve (Portugal).

Map 10.2: Number of nights spent at tourist accommodation establishments relative to population size, by NUTS 2 regions, 2015
(per 1 000 inhabitants)



(per 1 000 inhabitants)

EU-28 = 5 292

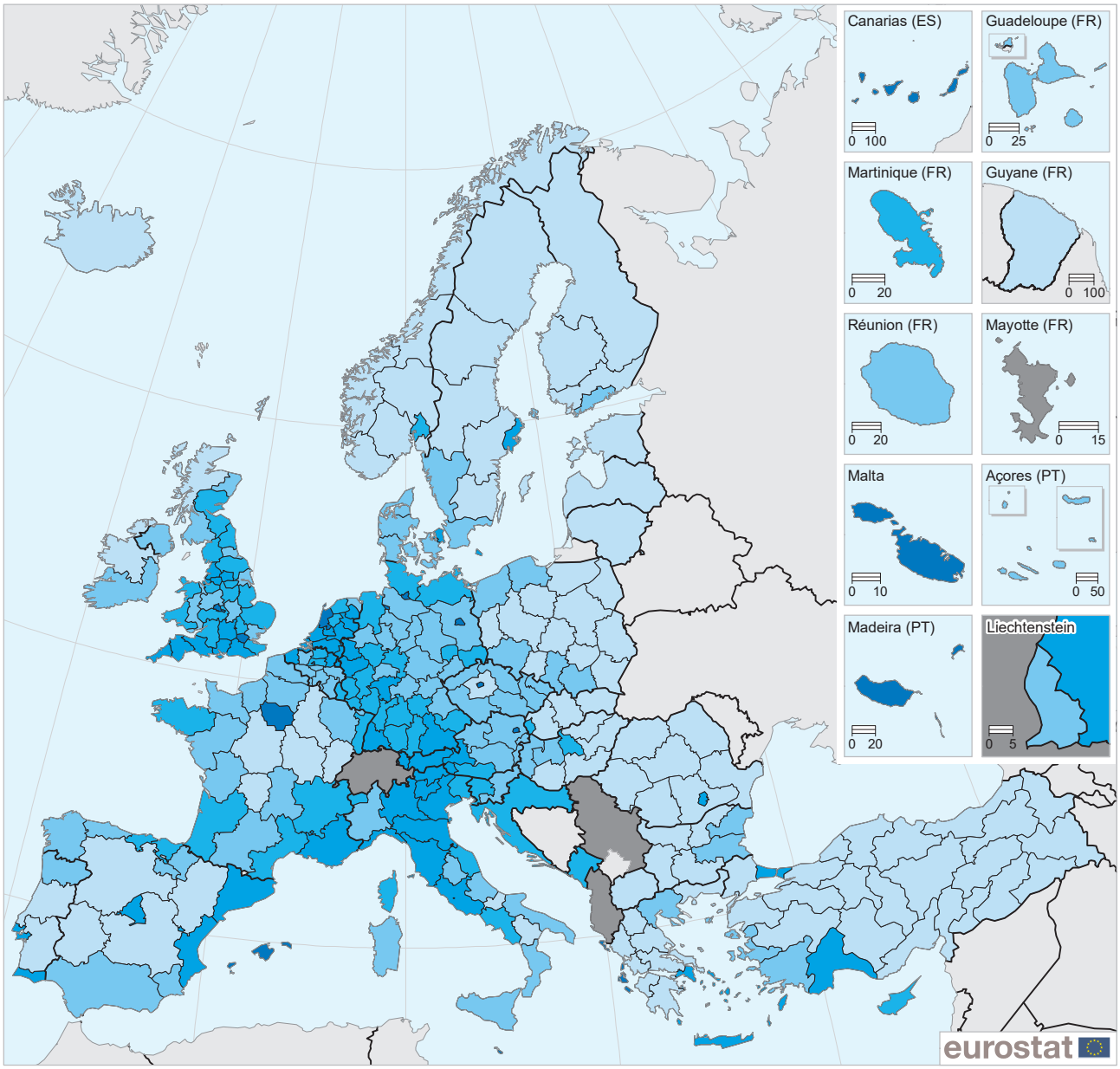
- < 2 500
- 2 500 – < 5 000
- 5 000 – < 10 000
- 10 000 – < 20 000
- >= 20 000
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 07/2017

0 200 400 600 800 km

Note: London (UKI): NUTS level 1. EU-28 and Iceland: 2014. The United Kingdom: 2012. EU-28, Ireland and Greece: estimates.
Source: Eurostat (online data code: tour_occ_nin2)

Map 10.3: Number of nights spent at tourist accommodation establishments relative to total area, by NUTS 2 regions, 2015 (per km²)



(per km²)

EU-28 = 597

- < 250
- 250 – < 750
- 750 – < 1 500
- 1 500 – < 5 000
- >= 5 000
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 07/2017

0 200 400 600 800 km

Note: London (UKI): NUTS level 1. Croatia: national data. EU-28 and Iceland: 2014. The United Kingdom: 2012. EU-28, Ireland and Greece: estimates.

Source: Eurostat (online data code: tour_occ_nin2)

BEDROOM OCCUPANCY RATES

Of the estimated 578 thousand tourist accommodation establishments in the EU-28 in 2015, just under one third (32.3 %) were hotels and similar establishments. These 187 thousand hotels and similar establishments provided a total of 6.6 million bedrooms and 13.5 million bed places, equivalent to an average of 35.4 bedrooms and 72.4 bed places per establishment; note these ratios are likely to be overstated as many national statistical authorities apply a threshold (for example, only collecting data from establishments with at least 10 bed places) and therefore exclude smaller establishments. While a count of the total number of bed places may be of interest in relation to the capacity of different regions to respond to tourism demand, those providing accommodation services are more likely to be interested in net occupancy rates for bedrooms or beds.

Occupancy in urban regions is more likely to be characterised by large numbers of visitors who tend to stay for a relatively short period of time, with tourist trips to cities often spread throughout the year. Visitors to these regions may also be travelling for professional reasons, in which case demand for rooms will probably be spread throughout the working week, supplemented by private trips during weekends and holiday periods. By contrast, the average length of stay is generally substantially longer in more traditional holiday destinations, with these coastal and rural regions visited chiefly for recreational purposes. Tourism demand for trips to these regions is usually concentrated in the summer months (especially for those regions with coastlines), while there is a secondary peak in demand during the winter months, most apparent in Alpine regions and smaller peaks that may coincide with other public or school holiday periods. Note that some hotels and similar establishments in holiday destinations may close during the off-season, while others seek to keep their occupancy rates high through special offers which may, for example, encourage pensioners (typically from northern and western EU Member States) to spend longer periods on vacation during the winter months.

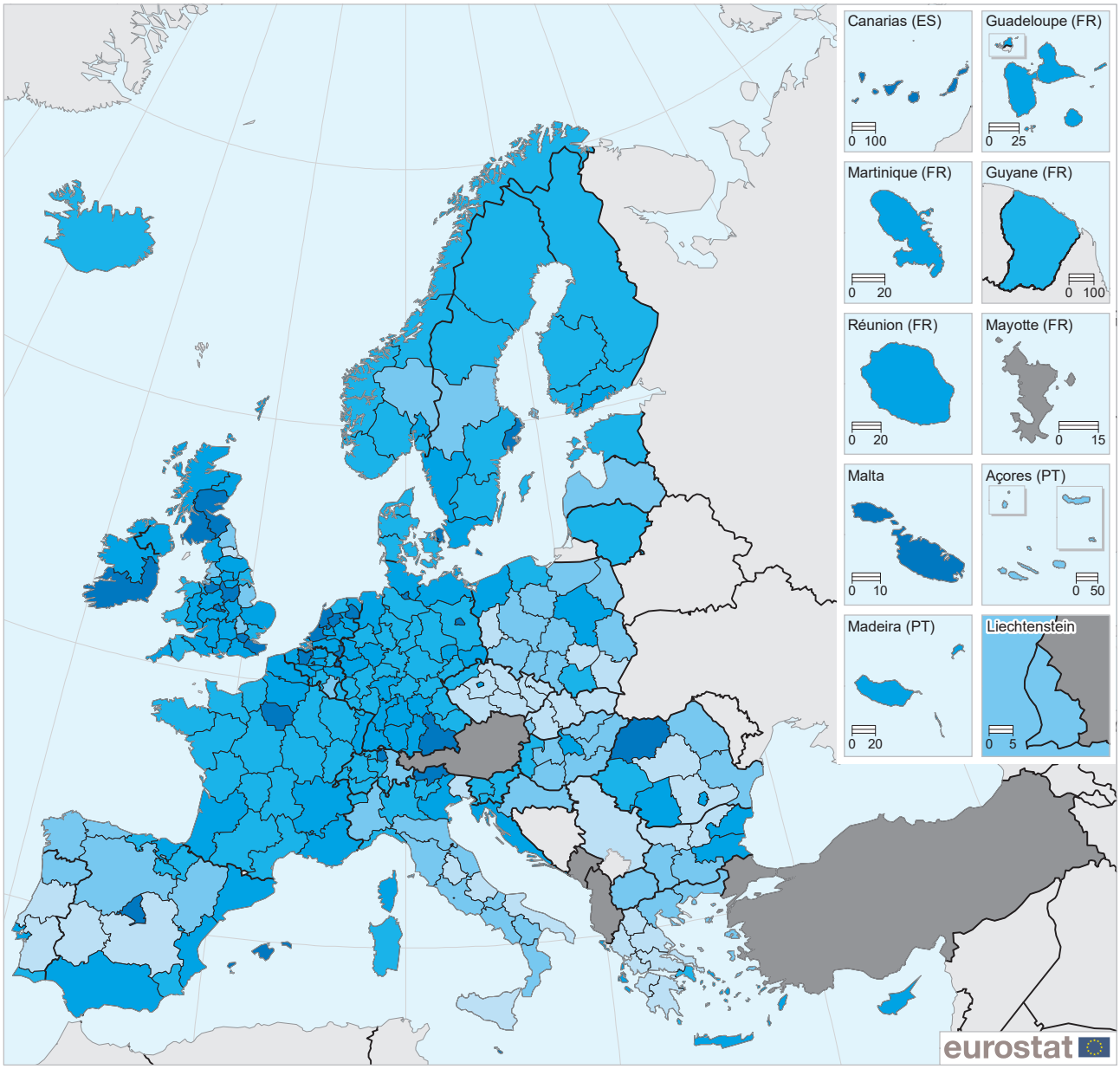
Bedroom occupancy rates were highest in London

A regional analysis of bedroom occupancy rates in hotels and similar establishments reveals that of the 262 NUTS level 2 regions for which data are available, a majority (148) reported bedroom occupancy rates of at least 50 % in 2015, while there were 114 regions with rates below 50 %. The darkest shade of blue in Map 10.4 identifies the 27 NUTS level 2 regions which recorded bedroom occupancy rates of at least 65 % in 2015. Among these, the highest rate was recorded in Nord-Vest (northern Transylvanian) Romania, an area characterised by its expanding tourism sector (based around national and natural parks, mountain resorts, thermal waters, historic monuments and characteristic wooden structures) and by foreign direct investment in, among others, ICT sectors and motor vehicle manufacturing; its net bedroom occupancy rate was 88.9 %. There were two other regions in the EU which recorded occupancy rates of more than 80 %, namely: London (81.7 %; the data presented refer to 2013 and to a NUTS level 1 region) and Canarias (81.2 %), which appeals as a year-round destination due to very mild winters and the cooling influence of the Atlantic Ocean during the summer months.

In total, there were 10 capital city regions which recorded bedroom occupancy rates of at least 65 % in 2015. A closer analysis of the 27 regions with the highest rates reveals that they were predominantly located in western EU regions, as they included seven regions from the United Kingdom (2013 data), five regions from the Netherlands, three regions from Germany, two regions from Belgium and single regions from each of Ireland and France. The remaining regions were distributed across the EU as follows: five regions from southern Europe, three in Spain, a single Italian region, and Malta (one region at this level of detail); two regions from the Nordic Member States, the capital city regions of Denmark (Hovedstaden) and Sweden (Stockholm); and a single eastern region (as mentioned above), Nord-Vest in Romania.

At the other end of the range, there were 32 regions in the EU where the net occupancy rate for bedrooms was below 35 % (as shown by the lightest shade of blue in Map 10.4). These were principally concentrated in southern and eastern regions of the EU, with the lowest rate of 17.3 % recorded in the northern Greek region of Dytiki Makedonia, which was the only region where less than one out of five available bedrooms was occupied in 2015. The only region among these 32 that was outside of southern and eastern EU regions was Tees Valley and Durham (in the United Kingdom), where a bedroom occupancy rate of 31.6 % was recorded (2013 data).

Map 10.4: Bedroom occupancy rates in hotels and similar establishments, by NUTS 2 regions, 2015
(%)



(%)

< 35
35 – < 45
45 – < 55
55 – < 65
>= 65
Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 07/2017

0 200 400 600 800 km

Note: London (UKI): NUTS level 1. Serbia: national data. Iceland: 2014. The United Kingdom: 2013. Ireland: estimates. The Netherlands: low reliability.

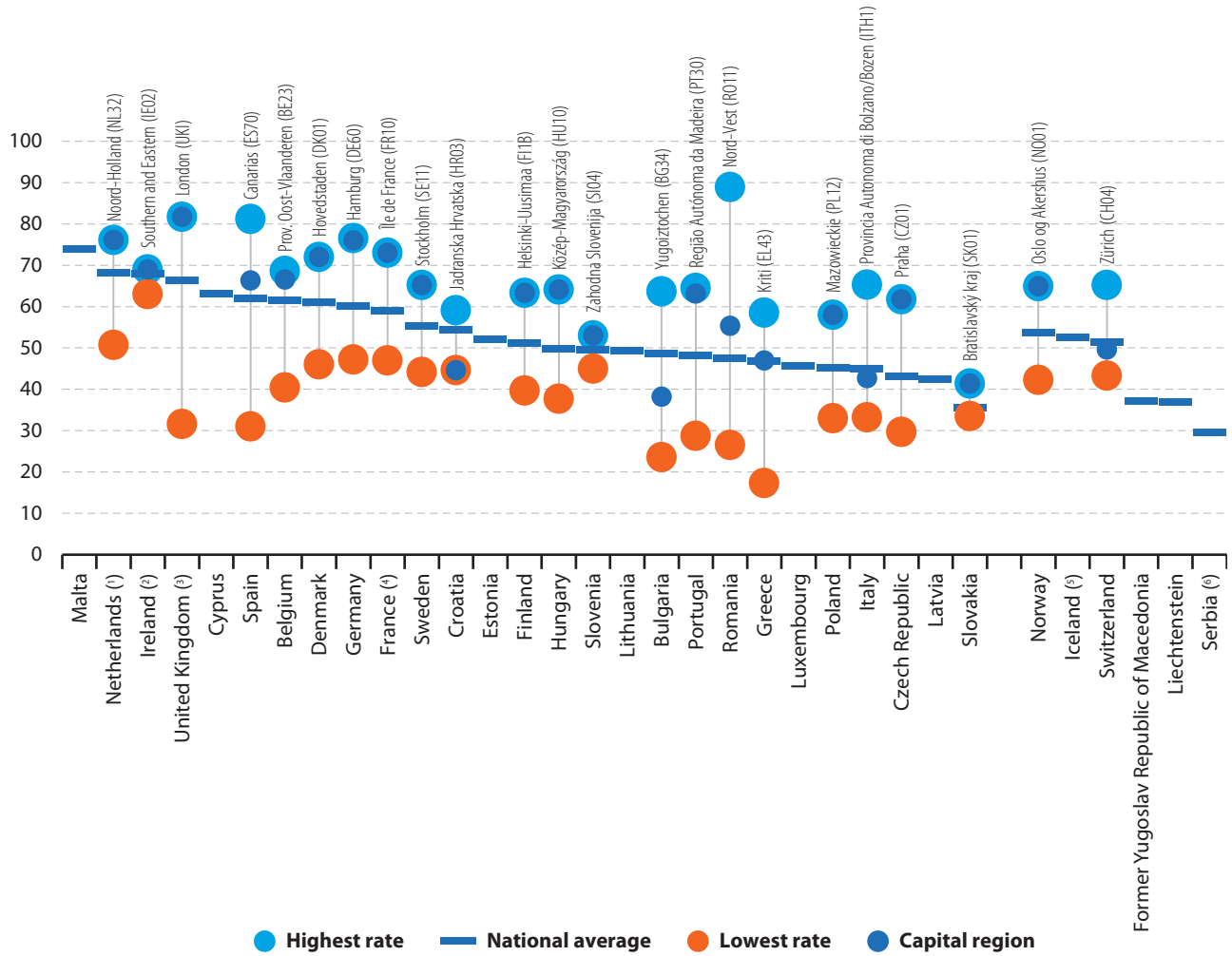
Source: Eurostat (online data code: tour_occ_anor2)

Figure 10.5 confirms that capital city regions tended to record some of the highest bedroom occupancy rates; this pattern was repeated in just over half (12 out of 21) of the multi-regional EU Member States for which data are available in 2015. In those cases where the capital city region did not exhibit the highest rate, the occupancy rate of the capital city region was, nevertheless, generally above the national average. There were three exceptions to this rule, as Yugozapaden (Bulgaria), Kontinentalna Hrvatska (Croatia) and Lazio (Italy) each recorded bedroom occupancy rates below their respective national averages; a similar pattern was observed for Bern, the Swiss capital city.

An analysis of the ratio between the highest and lowest bedroom occupancy rates in each EU Member State for 2015 reveals considerable variations across the regions of Greece and Romania, as the highest occupancy rates were recorded in Kriti and Nord-Vest, some 3.4 times as high as those recorded in Dytiki Makedonia and Centru (where the lowest rates were registered). There were also relatively large discrepancies between the highest and lowest regional occupancy rates in Bulgaria, Spain and the United Kingdom (2013 data).

In 2015, the lowest regional occupancy rate in each of the EU Member States was generally below 50 %, with the only exceptions in Ireland (which only has two regions at this level of detail) and the Netherlands; the net occupancy rate for bedrooms in hotels and similar establishments was 63.0 % in Border, Midland and Western (Ireland) and 50.7 % in Friesland (north-west of the Netherlands), which were the regions with the lowest rates in these Member States. As noted above, the lowest regional bedroom occupancy rate in the EU was recorded in the northern Greek region of Dytiki Makedonia, while the lowest regional rate was below 30 % in four additional Member States, namely, Severen tsentralen (northern Bulgaria), Centru (central Romania), Alentejo (southern Portugal) and Moravskoslezsko (eastern Czech Republic).

Figure 10.5: Range of bedroom occupancy rates in hotels and similar establishments, by NUTS 2 regions, 2015
(%)



Note: ranked on national average. Austria, Montenegro, Albania and Turkey: not available.

(1) Low reliability.
(2) Estimates.
(3) 2013. London (UKI): NUTS level 1.
(4) Mayotte (FRA5): not available.
(5) 2014.
(6) National data.

Source: Eurostat (online data code: tour_occ_anor2)

Data sources and availability

As of reference year 2012, the legal basis for the collection of tourism statistics is a Regulation of the European Parliament and of the Council concerning European statistics on tourism ((EU) no 692/2011) and a European Commission implementing regulation ((EU) no 1051/2011).

Regional tourism statistics are only available from suppliers of tourism services; they are collected through surveys of tourist accommodation establishments. These surveys provide information that covers accommodation capacity (counts of establishments, rooms and bed places) and occupancy (the number of arrivals and nights spent/overnight stays) at NUTS level 2, by degree of urbanisation and for coastal/non-coastal localities.

Tourism statistics may be broken down according to the tourist's country of residence (not the tourist's citizenship): domestic tourism covers the activities of residents who stay in their own country (but outside their usual environment) and this may be contrasted with the activities of international tourists (also referred to as inbound or non-resident tourists).

A tourist accommodation establishment is a local kind-of-activity unit. It includes all establishments providing, as a paid service, accommodation for tourists, regardless of whether or not the provision of tourist accommodation is the main or a secondary activity. These establishments are defined according to the activity classification, NACE, as units providing, short-term or short-stay accommodation services as a paid service:

- hotels and similar accommodation (NACE Group 55.1) — this includes accommodation provided by hotels, resort hotels, suite/apartment hotels, motels;
- holiday and other short-stay accommodation (NACE Group 55.2) — this includes holiday homes, visitor flats and bungalows, cottages and cabins without housekeeping services, youth hostels and mountain refuges;
- camping grounds, recreational vehicle parks and trailer parks (NACE Group 55.3), otherwise referred to as campsites — this includes the provision of accommodation in campgrounds, trailer parks, recreational camps and fishing and hunting camps for short-stay visitors.

NUTS

The data presented in this chapter are based exclusively on the 2013 version of NUTS. Nearly all of the regional data were available in NUTS 2013, and only data for London (the United Kingdom) have been converted from NUTS 2010 with the consequence that data are shown at NUTS level 1 instead of NUTS level 2.

INDICATOR DEFINITIONS

Glossary entries on Statistics Explained (see: http://ec.europa.eu/eurostat/statistics-explained/index.php/Category:Tourism_glossary) are available for a wide range of tourism concepts/indicators.

For more information:
http://ec.europa.eu/eurostat/web/tourism/overview
http://ec.europa.eu/eurostat/web/tourism/methodology/manuals-and-guidelines

11 Transport

This chapter focuses on regional transport statistics, other than for road transport (which was covered in the previous edition and which will feature again in the 2018 edition); its main focus concerns air and maritime transport services. Regional transport statistics are collected for a broad range of transport modes covering passengers and freight and aim to quantify flows between, within and through regions; differences between regions are often closely related to their levels of economic activity and numbers of inhabitants as well as their geographical location.

Transport and mobility play a fundamental role in the European Union (EU) by joining regions together, while policy measures can be used to reduce regional inequality and improve cohesion. 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. At the same time, the EU's transport sector is considered essential for delivering the overarching goals of smart, sustainable and inclusive growth, through the promotion of a more efficient and interconnected transport network that promotes mobility and carbon reductions, thereby improving competitiveness and productivity, stimulating job creation and underpinning a sustainable social market economy.

Main statistical findings

- **There was little change in the modal split of the EU's inland passenger and freight transport during the last decade, as cars continued to dominate as the principal means of passenger transport and road transport was the main mode of freight transport.**
- **Several of the largest airports for freight and mail — for example Leipzig/Halle, Köln/Bonn, Liège or Luxembourg — were specialised in freight activities and acted as logistical hubs for freight forwarding, cargo transportation services and parcel delivery.**
- **London Heathrow was the busiest airport in the EU for air passengers, with 75.0 million passengers carried in 2015.**
- **Rotterdam was the busiest maritime port in the EU, both in terms of the quantity of freight loaded/unloaded and the number of freight containers handled; the next busiest ports were Antwerpen, Hamburg and Amsterdam.**
- **Attiki, the Greek capital city region, a gateway to the Greek islands, had the highest number of maritime passengers, 18.4 million in 2015.**

EUROPEAN TRANSPORT POLICY

The European Commission's Directorate-General for Mobility and Transport is responsible for developing transport policy within the EU. Its remit is to ensure mobility in a single European transport area, integrating the needs of the population and the economy at large, while minimising adverse environmental effects.

In March 2011, the European Commission adopted a White paper titled 'Roadmap to a single European transport area — towards a competitive and resource-efficient transport system' (COM(2011) 144 final). It contains 40 specific initiatives designed to help build a competitive transport system in the EU and also set a range of environmental goals to be achieved by 2050, including:

- no more conventionally-fuelled cars in cities;
- 40 % of the fuel being used in the aviation sector to come from sustainable low-carbon fuels;
- a reduction of at least 40 % in shipping emissions;
- a 50 % shift in medium-distance inter-city passenger and freight journeys from road to either rail or waterborne transport.

The European Commission's jobs, growth and investment package, adopted in 2014, highlights a range of infrastructure projects including: transport links between EU Member States; the expansion and upgrading of freight and passenger capacities in ports and airports; dedicated rail connections between important airports and urban centres; 'green' projects in the area of maritime transport; or the promotion of alternative fuel-infrastructures along major roads. When re-assessing its investment plan for Europe in 2016, the European Commission made proposals to double the duration of the fund and its financial capacity.

Defining the scope of transport statistics

A passenger-kilometre (pkm) is a unit of measurement representing the transport of one passenger by a defined mode of transport (road, rail, air, sea, inland waterways etc.) over one kilometre. A tonne-kilometre (tkm) is a unit of measure of freight transport which represents the transport of one tonne of goods (including packaging and tare weights of intermodal transport units) by a given transport mode over a distance of one kilometre; only transported distances on the national territory of the reporting country are taken into account. As the modal split is based on total inland passenger and freight transport performance it therefore excludes, for example, air and/or maritime transport services.

Statistics on rail and inland waterways transport are reported according to the 'territorial principle' (only transport performance that takes place on the domestic territory should be included, regardless of nationality). However, road transport data are generally reported on the basis of the 'nationality principle' (in other words, all movements of vehicles registered in the reporting country, irrespective of whether these are on the domestic or international territories). Given this conceptual difference, road transport statistics have been adjusted to reflect the 'territorial principle', thereby providing greater coherence across different transport modes. Note that regional statistics for the modal split of passenger or freight transport are not available.

Statistical analysis

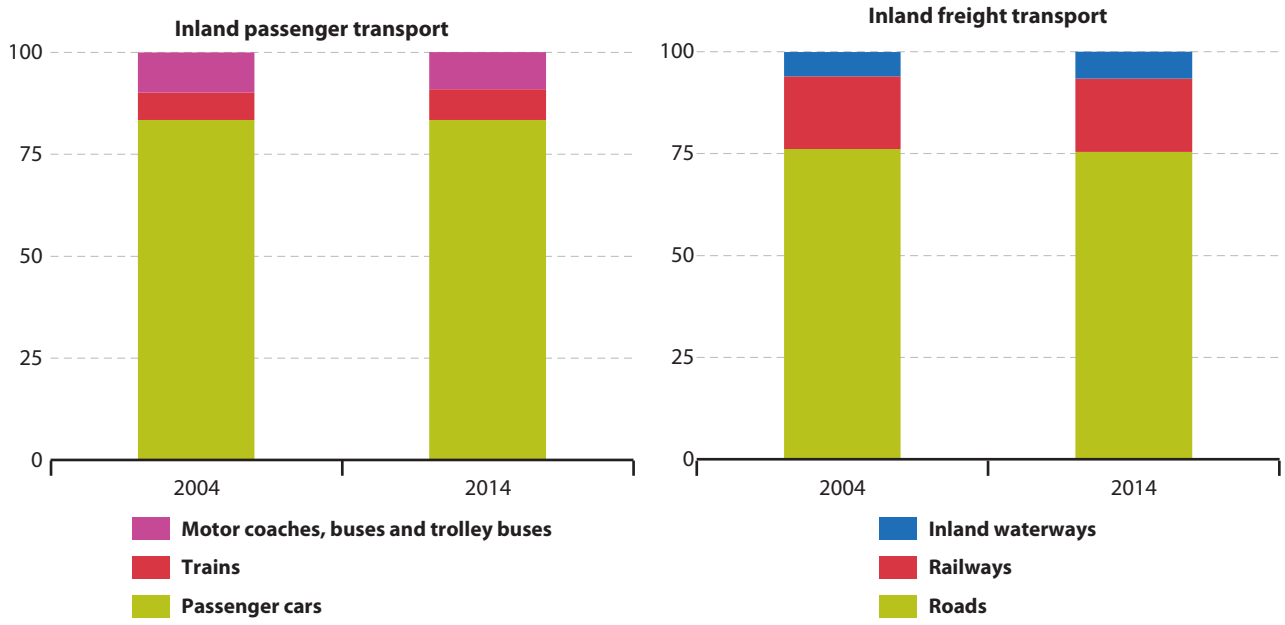
In 2014, the modal split of inland passenger transport was dominated by passenger cars, which accounted for more than four fifths (83.4 %) of all passenger-kilometres within the EU-28; motor coaches, buses and trolley buses, and trains both accounted for single-digit shares, at 9.1 % and 7.6 % respectively (see Figure 11.1). A comparison between 2004 and 2014 reveals that there was little change in the modal split for passenger transport during the last decade, with a modest increase in the share of trains being offset by a small decline in the use of motor coaches, buses and trolley buses; there was no change in the relative use of cars.

Turning to freight transport analysed by inland mode, road transport was also the most popular mode of transport, accounting for three quarters (75.4 %) of all tonne-kilometres within the EU-28 in 2014; the share of inland freight transported by rail (18.0 %) was almost three times as high as the share recorded for inland waterways (6.6 %). There was a small shift in inland freight developments between 2004 and 2014, as the quantity of goods transported by inland waterways and by railways rose moderately, while the relative share transported by road fell, suggesting that alternatives to congested roads for transporting goods were being pursued to some extent.

2014

83.4 %
of inland passenger transport in the EU was made by car

Figure 11.1: Modal split of transport, EU-28, 2004 and 2014
(%)



Source: Eurostat (online data codes: tran_hv_psmod and tran_hv_frmod)

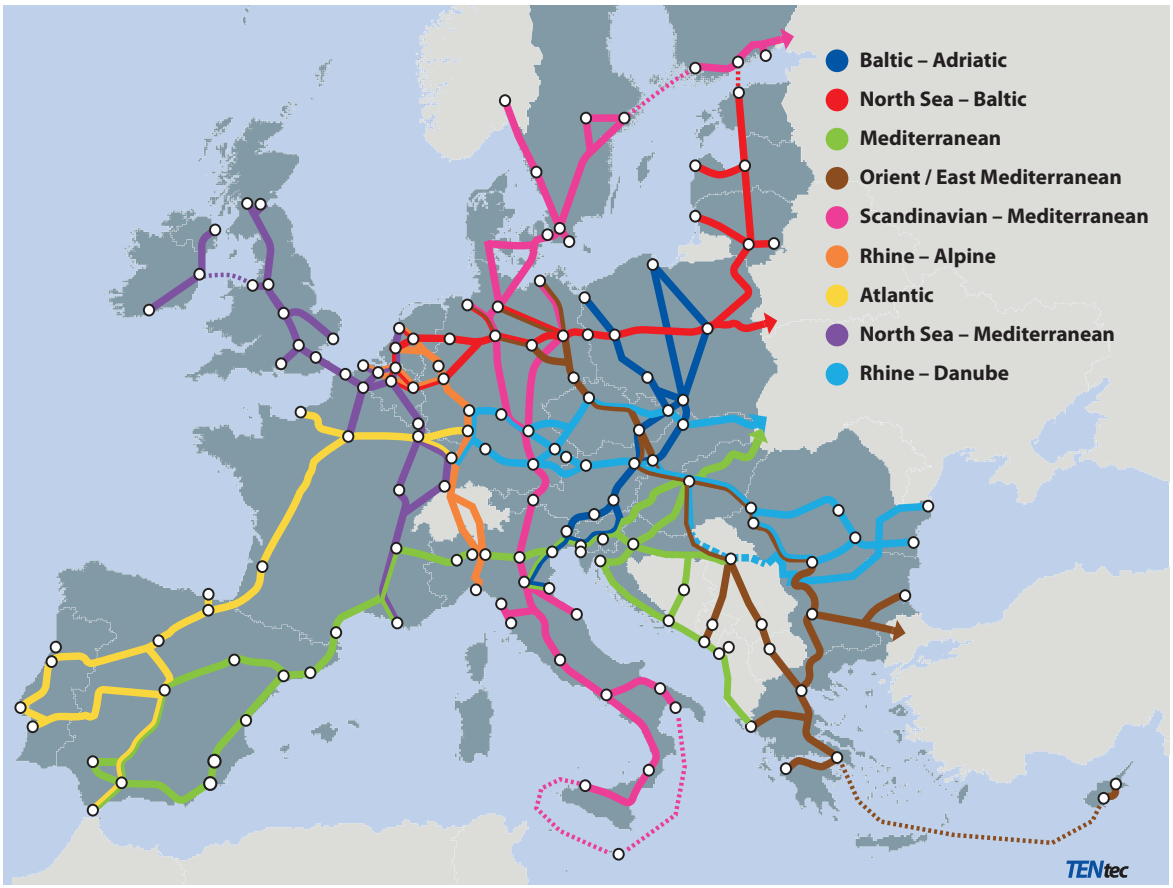
Trans-European Transport Networks (TEN-T)

At the beginning of the 1990s, the EU agreed to set up an infrastructure policy to support the development of efficient networks in the fields of transport, energy and telecommunications. A substantial policy review was launched in 2009 and this led to a new legislative framework that came into force in January 2014: Union guidelines for the development of the trans-European transport network (Regulation (EU) No 1315/2013).

Under the Connecting Europe Facility (CEF) for transport, EUR 24.05 billion will be made available from the EU's 2014–2020 budget to co-fund trans-European transport network (TEN-T) projects. Through its investment plan for Europe, the EU is seeking new and innovative ways to finance these infrastructure developments, with financing from public financial institutions, the private sector, or the European Fund for Strategic Investments (EFSI).

The TEN-T programme consists of hundreds of projects: their ultimate purpose is to ensure the interconnectedness and interoperability of the EU's transport network. At its core are nine transport corridors — due to be completed by 2030 — spread across Europe (see the Map below). Each of these corridors is detailed in the annex to the CEF Regulation, while individual work plans have been drawn up to set out the current status of infrastructure and a schedule for removing physical, technical, operational and administrative bottlenecks.

TEN-T core network corridors (freight and passenger)



Note: the nine TEN-T core network corridors are based on the CEF and TEN-T Regulations (1316/2013 & 1315/2013); they have been created as a coordination instrument to facilitate the completion of major parts of the core network of strategic importance.

Source: European Commission, Directorate-General for Mobility and Transport, TENtec Information System

AIR TRANSPORT — FREIGHT

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).

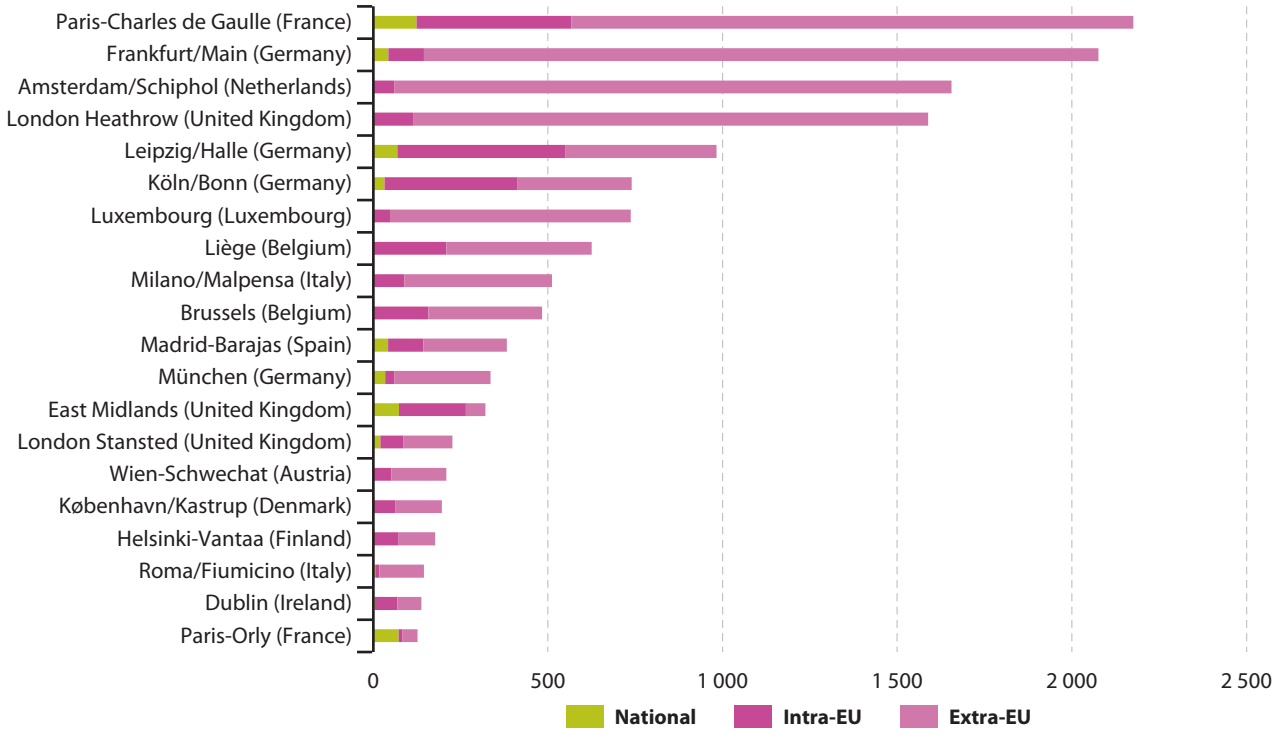
The total quantity of air freight and mail in the EU-28 peaked at 14.6 million tonnes of goods loaded and unloaded in 2015. This marked an increase of 2.1 % when compared with the year before, and an increase of 13.4 % when compared with the previous peak recorded in 2008 (prior to the global financial and economic crisis).

The biggest cargo airports in the EU were generally located within close proximity of a large population base and highly developed transport infrastructures

Figure 11.2 shows a ranking of the top 20 EU airports in terms of air freight and mail, as measured by the quantity of goods transported (loaded and unloaded). In 2015, the busiest cargo airport in the EU was Paris-Charles de Gaulle (2.2 million tonnes), closely followed by Frankfurt/Main (2.1 million tonnes), while Amsterdam/Schiphol (1.7 million tonnes) and London Heathrow (1.6 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; see Figure 11.3 below for the ranking of EU passenger airports).

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. Comparing the top 20 ranking for air freight and mail with that for air passenger travel reveals that there were 13 airports that appeared in both lists. The seven airports that only appeared in the top 20 ranking for freight and mail were: Leipzig/Halle and Köln/Bonn (both Germany), Luxembourg, Liège (Belgium) and Milano/Malpensa (Italy) — all of which were in the top 10 cargo airports — as well as East Midlands (the United Kingdom) and Helsinki-Vantaa (Finland).

Figure 11.2: Top 20 EU airports for air freight and mail (loaded and unloaded), 2015
(thousand tonnes)



Source: Eurostat (online data code: avia_gooa)

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 and London Heathrow.

Some of the top 20 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 as a hub for UPS, or Paris-Charles de Gaulle, Köln/Bonn and Liège airports which are all hubs for the recently merged FedEx/TNT.

AIR TRANSPORT — PASSENGERS

2015

32.9 %
of air passengers in the EU's top 20 airports travelled either to or from countries outside the EU

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 the main international airports.

Figure 11.3 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 75.0 million passengers carried in 2015. There were three other airports which carried more than 50 million passengers the same year (all of which act as hubs): Paris-Charles de Gaulle (France), Frankfurt/Main (Germany) and Amsterdam/Schiphol (the Netherlands). Note that all four of these airports were relatively close to each other in geographic terms, as flight times between them were no more than an hour and a half.

The seven airports that appear exclusively in the top 20 ranking for passengers (and did not feature in the ranking for freight and mail) were: London Gatwick (the United Kingdom), Barcelona/El Prat, Palma de Mallorca (both Spain), Stockholm/Arlanda (Sweden), Manchester (the United Kingdom), Düsseldorf and Berlin-Tegel (both Germany); some of these airports are popular tourist destinations or airports that are predominantly used for package holidays.

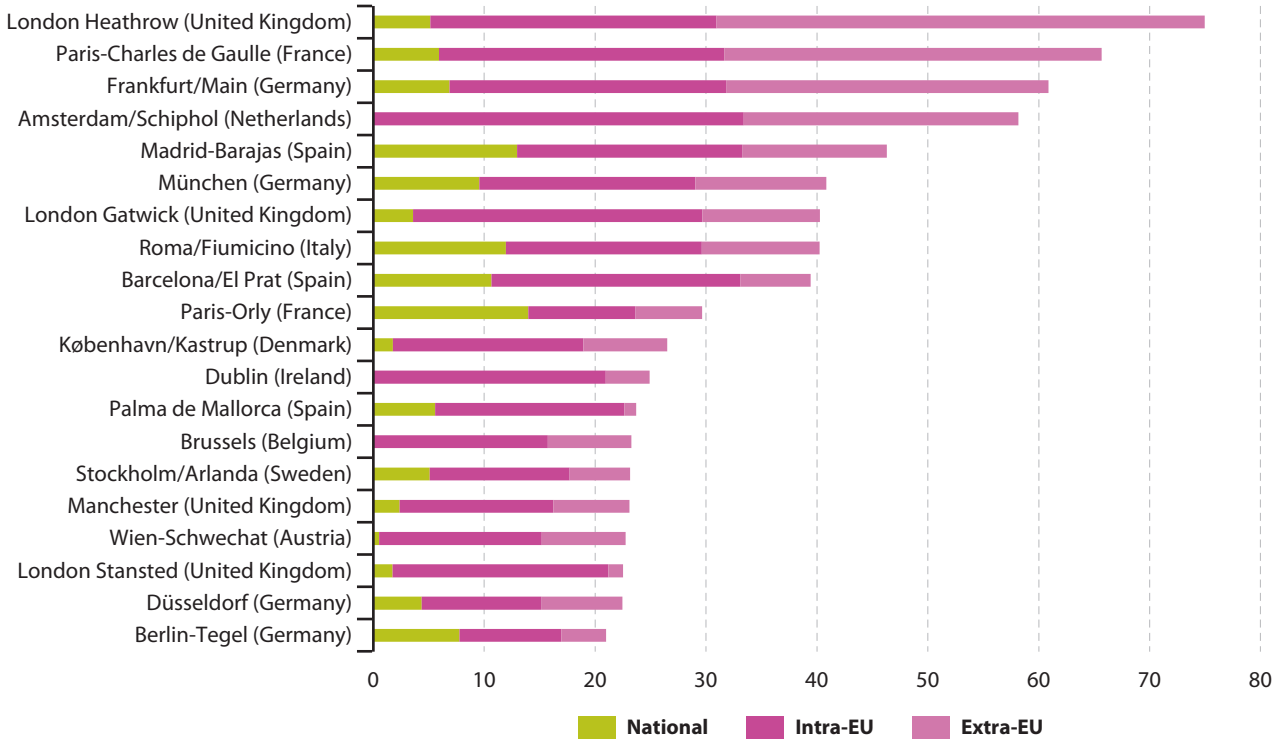
A high proportion of the passengers using the largest airports in the EU were carried to medium and long-haul destinations

A total of 730 million passengers passed through (as measured by passengers carried) the top 20 passenger airports in the EU in 2015, approximately half (50.5 %) of the total number of air passengers that were carried 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 almost three quarters (71.1 %) 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 (47.9 %), and fell to just over a third (34.8 %) for passengers travelling on national flights; for the latter there was a much higher degree of competition from regional and local airports.

In 2015, more than half of the passengers carried through London Heathrow (58.7 %) and Paris-Charles de Gaulle (51.8 %) 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 (5.9 %) or Palma de Mallorca (4.5 %) airports. Paris-Orly stood out as almost half of its passengers in 2015 were travelling on national flights; the next highest shares for national passengers were recorded for Berlin-Tegel (36.9 %) and Roma/Fiumicino (29.7 %).

The 28 NUTS level 2 regions which reported at least 15 million air passengers in 2015 (as shown by the largest circles on Map 11.1) were located exclusively in Member States that were already part of the EU prior to 2004; relatively high numbers of air passengers were also recorded in Oslo og Akershus, the Norwegian capital city region, and Zürich and Région lémanique (which includes Geneva) in Switzerland.

Figure 11.3: Top 20 EU airports for passengers carried (arrivals and departures), 2015
(million passengers carried)



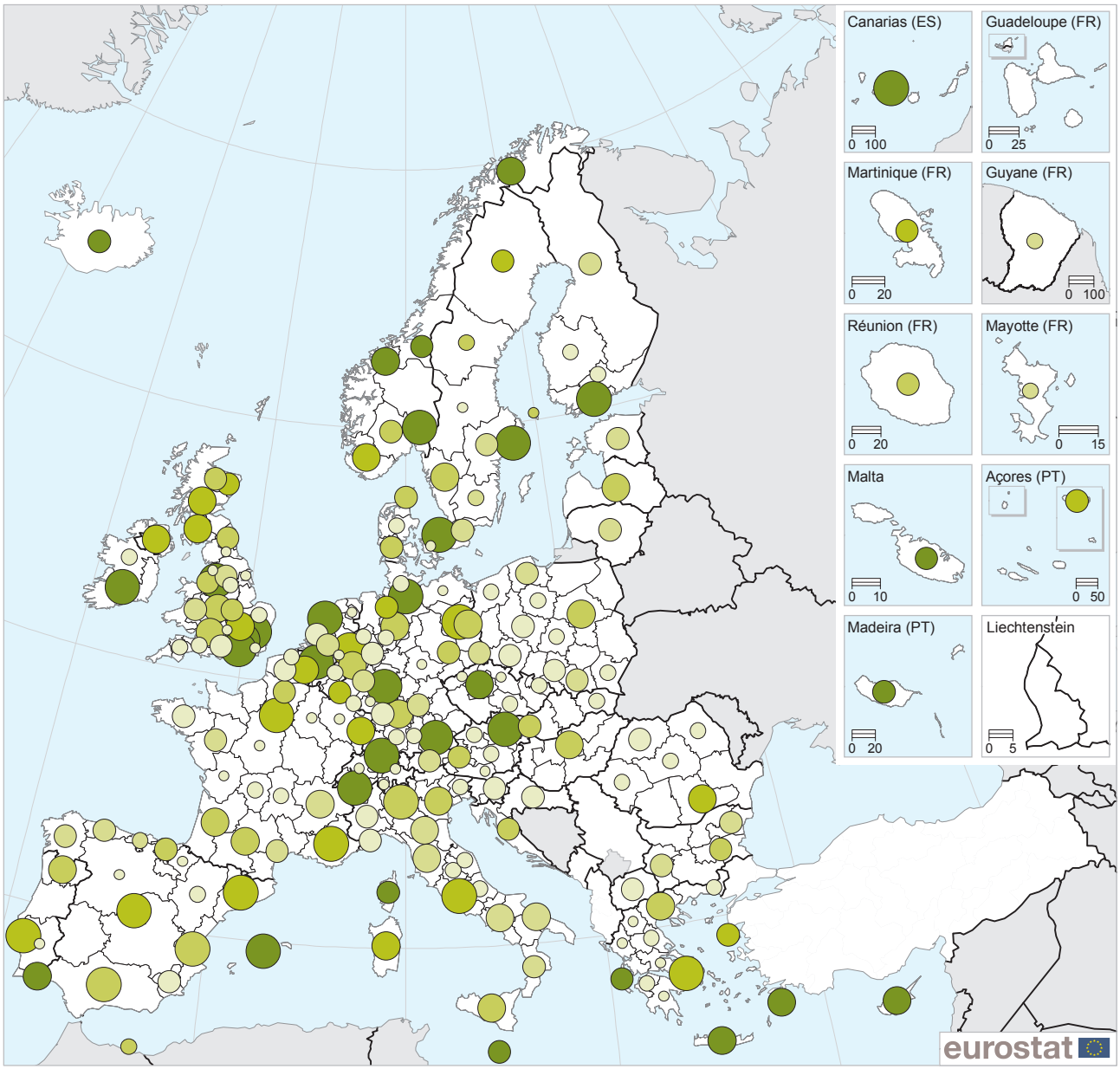
Source: Eurostat (online data code: avia_tf_ala)

The regions with the highest numbers of air passengers in the EU unsurprisingly reflected the locations of some of the busiest airports and those regions with airports that had catchment areas with high levels of population density. The two peak values for passenger numbers were recorded in the French and British capital city regions: Île de France (95.4 million passengers) and London (79.3 million passengers; the data refer to a NUTS level 1 region). These were followed by the German region of Darmstadt (60.9 million passengers) which includes Frankfurt/Main airport. Note that there were several capital city airports 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 (40.3 million passengers) and in Essex (23.4 million passengers) respectively, while Brussels airport is situated in Prov. Vlaams-Brabant (23.3 million passengers) and Wien-Schwechat airport is situated in Niederösterreich (22.7 million passengers).

The 28 NUTS level 2 regions with more than 15 million air passengers in 2015 were distributed as follows: six Spanish regions (reflecting both popular holiday destinations as well as a relatively developed national market for domestic air travel), five German regions, four regions from the United Kingdom, two regions from each of France and Italy, the capital city regions of Denmark, Ireland, Greece, the Netherlands, Portugal, Finland and Sweden, as well as single regions from Belgium and Austria (as mentioned above).

Map 11.1 also provides information concerning the ratio of air passengers per inhabitant; this indicator may be used to analyse environmental pressures associated with a high number of flights/air passengers. There were 25 NUTS level 2 regions in the EU which recorded an average ratio of at least 8 air passengers per inhabitant in 2015 (as shown by the darkest shade of olive). This ratio peaked in the relatively sparsely populated island destinations of Notio Aigaio (Greece) and Illes Balears (Spain), with 28.8 and 28.6 air passengers per inhabitant. The third and fourth highest ratios were recorded in Noord-Holland and Prov. Vlaams-Brabant (21.0 and 20.8 air passengers per inhabitant); these two regions host the principal airports of the Netherlands and Belgium. Other regions with relatively high ratios included the island destinations of Ionia Nisia and Kriti (both Greece), Canarias (Spain), Corse (France), Região Autónoma da Madeira (Portugal), as well as island nations of Cyprus and Malta (both single regions at this level of detail). In each of these, the considerable influx of tourists (often highly seasonal) is likely to put pressure on the environment; this was also the case in the southern Portuguese region of Algarve.

Map 11.1: Number of air passengers carried (arrivals and departures), by NUTS 2 regions, 2015
(passengers per inhabitant and thousand passengers)



EU-28 = 1.8
Average number of passengers per inhabitant

- < 1
- 1 – < 2
- 2 – < 4
- 4 – < 8
- >= 8

EU-28 = 918 209
Number of passengers (thousands)

- < 250
- 250 – < 1 000
- 1 000 – < 5 000
- 5 000 – < 15 000
- >= 15 000

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 08/2017

0 200 400 600 800 km

Note: London (UKI): NUTS level 1. Slovenia: national data. Mecklenburg-Vorpommern (DE80), Rheinhessen-Pfalz (DEB3) and Norra Mellansverige (SE31): 2013. EU-28, Portugal, Romania and the United Kingdom: estimates. France: provisional.

Source: Eurostat (online data codes: tran_r_avpa_nm, avia_paoc and demo_r_d2jan)

MARITIME TRANSPORT — FREIGHT

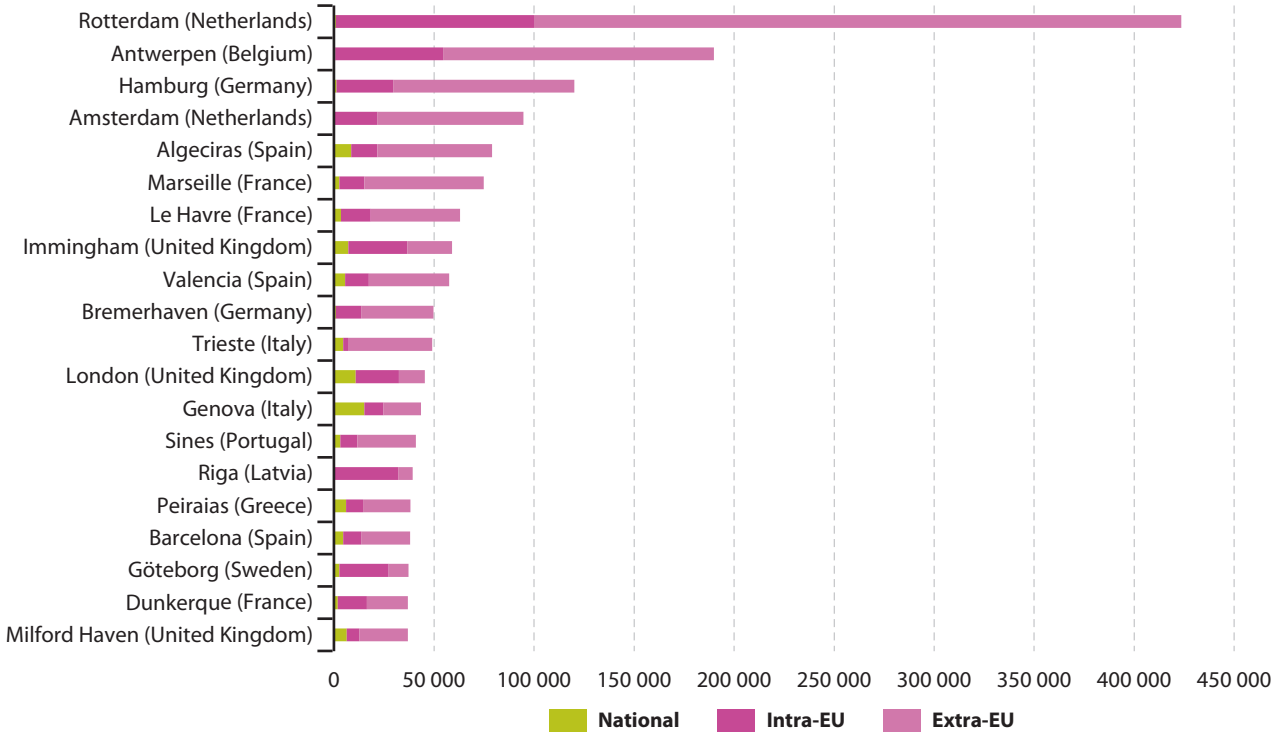
Maritime transport facilitates international trade between EU Member States and the rest of the world and contributes towards, among others, the security of supply of energy, food and other goods, while providing EU exporters with a means of reaching international markets; indeed, the vast majority (in tonnage) of the EU's international freight is transported by sea.

More than two thirds of the maritime freight handled in the top 20 EU ports arrived from or was destined for a non-member country

In 2015, the total quantity of maritime freight handled (goods loaded and unloaded) in all EU-28 ports was 3.8 billion tonnes, with main ports accounting for 3.1 billion tonnes; note that regional maritime statistics only concern main ports that handle more than a million tonnes of goods or 200 thousand passengers annually. Figure 11.4 shows the top 20 EU ports for maritime freight in 2015. The main areas of activity were concentrated on North Sea coastlines, close to some of the most densely populated regions of the EU that are served by an extensive network of motorways, railways, rivers and canals. The Dutch city of Rotterdam had, by far, the largest port in the EU, with 424 million tonnes of maritime freight (excluding the transport of goods on maritime vessels within the port), equivalent to 13.6 % of the EU-28 total for main ports. The second, third and fourth largest freight ports in the EU were all located within relatively close proximity of Rotterdam: the Belgian port of Antwerpen (190 million tonnes of maritime freight), the German port of Hamburg (120 million tonnes), and another Dutch port, in the capital city of Amsterdam (95 million tonnes). Away from the North Sea, the next largest ports were around the Mediterranean Sea: the Spanish port of Algeciras (79 million tonnes) and the French port of Marseille (75 million tonnes).

Together the top 20 maritime ports in the EU carried 1.6 billion tonnes of freight in 2015, which represented just over half (51.7 %) of the total freight that was loaded/unloaded in the EU's main ports. Just over two thirds (67.9 %) of all the freight that was handled in these 20 ports arrived from or was destined for markets outside the EU, just over a quarter (26.5 %) arrived from or was destined for intra-EU markets, while just 5.6 % arrived from or was destined for national markets. There were five freight ports among the top 20 in the EU that reported in excess of 75 % of their maritime freight arriving from or being destined for extra-EU markets: Trieste (north-eastern Italy), Marseille, Amsterdam, Rotterdam and Hamburg. By contrast, at least half of the maritime freight handled in the North Sea ports of Immingham (in the east of the United Kingdom) and Göteborg (western Sweden), as well as the Baltic port of Rīga (the capital of Latvia), arrived from or was destined for intra-EU markets.

Figure 11.4: Top 20 EU ports for maritime freight, 2015
(thousand tonnes)



Source: Eurostat (online data code: mar_go_qm)

There were 18 NUTS level 2 regions where the quantity of maritime freight that was loaded/unloaded stood above 50 million tonnes in 2015. The biggest concentration of regions with at least 50 million tonnes of maritime freight (as shown by the largest circles on Map 11.2) ran along the northern coastlines of France, Belgium, the Netherlands and Germany: Haute-Normandie and Nord - Pas-de-Calais; Prov. Antwerpen; Noord-Holland and Zuid-Holland; Bremen and Hamburg. Within northern and western Europe, the only other regions to report more than 50 million tonnes of maritime freight were: Latvia (a single region at this level of detail); East Yorkshire and Northern Lincolnshire (which includes the United Kingdom's largest port by tonnage, Immingham) and West Wales and The Valleys (which includes the largest energy port in the United Kingdom, Milford Haven). The regions with the highest levels of maritime freight were otherwise widely distributed around the Mediterranean, running from Andalucía, Comunidad Valenciana and Cataluña (in Spain) through Provence-Alpes-Côte d'Azur (in France), into Liguria, Friuli-Venezia Giulia and Sicilia (Italy), as well as Attiki (Greece).

Map 11.2 also shows the density of maritime freight transport, defined here as the average freight loaded/unloaded per inhabitant; the EU-28 average for all regions was 7.5 tonnes. In 2015, the highest density of maritime freight was recorded in the Dutch region of Zuid-Holland, which includes the port city of Rotterdam, with an average of 124.2 tonnes per inhabitant (almost 17 times as high as the EU average). The next highest density ratios were recorded in the Belgian region of Prov. Antwerpen (104.3 tonnes per inhabitant) and the German region of Bremen (93.7 tonnes per inhabitant).

MARITIME TRANSPORT — PASSENGERS

The quality of life on many European islands and in peripheral maritime regions depends, to a large extent, upon the provision of maritime transport services — providing a means for passengers to arrive/leave, and for goods to be delivered. The total number of maritime passengers that embarked or disembarked in EU-28 ports reached a relative peak of 439 million in 2008 at the onset of the global financial and economic crisis. There followed four successive reductions, as the total number of maritime passengers fell to 398 million. The modest increases in maritime passengers in both 2013 (0.5 %) and 2015 (0.6 %) were more than offset by a 1.7 % reduction in 2014, with the total number of maritime passengers in the EU standing at 395 million in 2015.

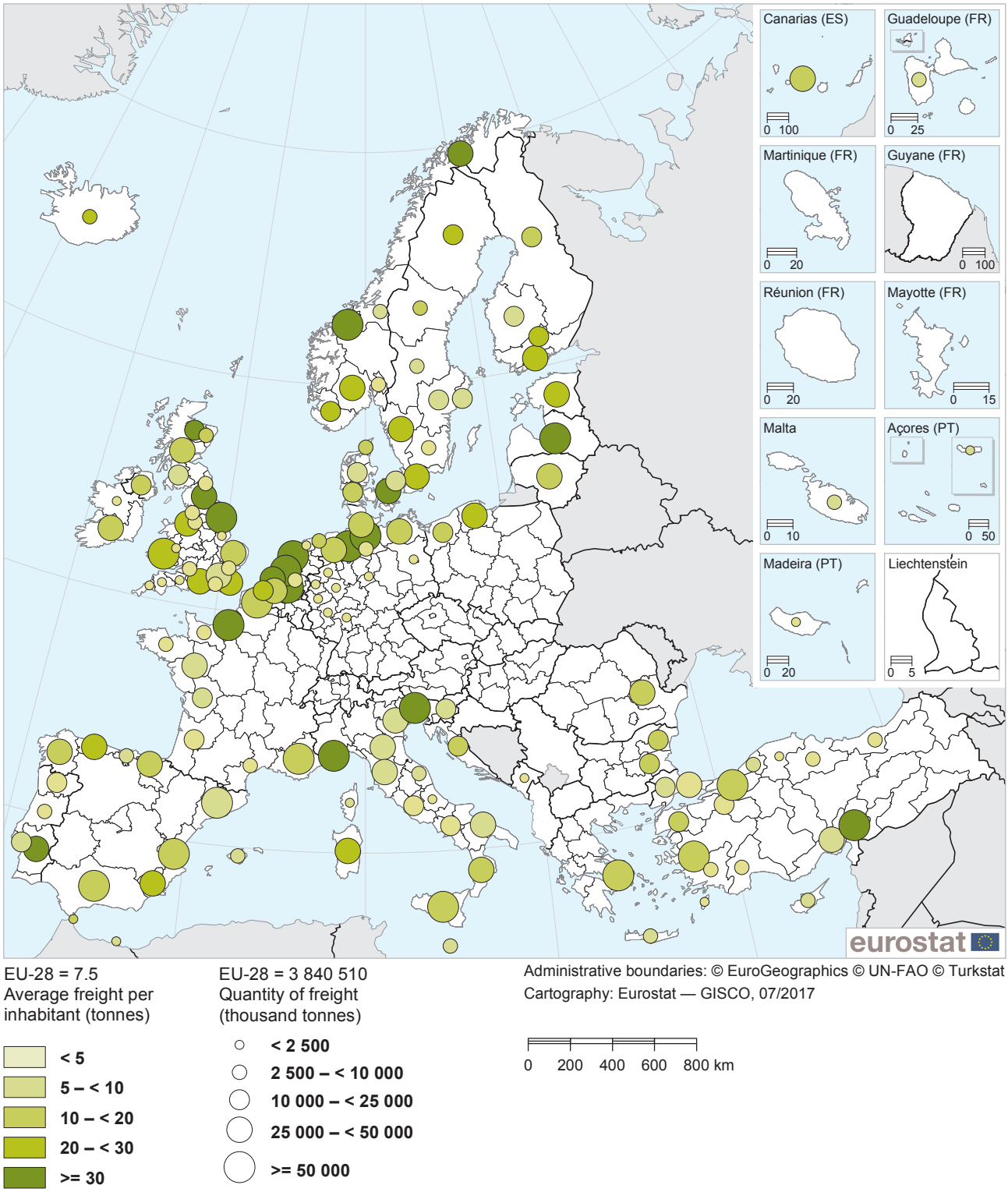
Some of the EU's most popular maritime routes were to and from the Greek islands or across the Baltic Sea

Map 11.3 identifies the 13 NUTS level 2 regions with the highest number of maritime passengers in 2015 (those with the largest circles); each of these had at least 10 million passengers. Attiki, the Greek capital city region, had the largest number of maritime passengers (18.4 million); as noted above, three of the EU's main ports are within close proximity of the Greek capital and these are often used as a starting point for visiting the Greek islands or for connecting to the island of Salamína (which sits just off the mainland to the west of Athens). The number of maritime passengers passing through Attiki was approximately 1.4 times as high as in the region with the second largest number of maritime passengers, namely the Croatian region of Jadranska Hrvatska (13.3 million maritime passengers in 2015); the main ports in this coastal Croatian region include Dubrovnik, Split and Zadar, which act, in a similar fashion to the ports around Athens, as hubs for reaching the Croatian islands. The only other regions in the Mediterranean with more than 10 million maritime passengers in 2015 were the Italian regions of Campania (which includes Napoli, a popular cruise destination and also a gateway for ferry services to several Italian islands) and the island region of Sicilia (whose main ports include Messina — for connecting to the Italian mainland — as well as Palermo and Catania).

The majority of the nine remaining regions with more than 10 million maritime passengers were largely concentrated in and around the Baltic Sea, reflecting the considerable flow of sea passengers within and between the Nordic and Baltic Member States. The four capital city regions of Hovedstaden (Denmark), Estonia (a single region at this level of detail), Helsinki-Uusimaa (Finland) and Stockholm (Sweden) were joined by further Danish (Sjælland) and Swedish regions (Sydsverige, which includes the ports of Malmö and Helsingborg); there was also a high number of sea passengers in the northernmost German region of Schleswig-Holstein (which includes the ports of Puttgarden and Kiel). The only other regions with more than 10 million sea passengers were located on either side of the English Channel, Kent (in the United Kingdom) and Nord - Pas-de-Calais (in France).

The ratio of the average number of maritime passengers per inhabitant provides an indication of the opportunities and pressures faced in EU regions which have a high dependence on maritime passenger services. Most of the regions with the highest densities of maritime passengers in relation to inhabitants (as

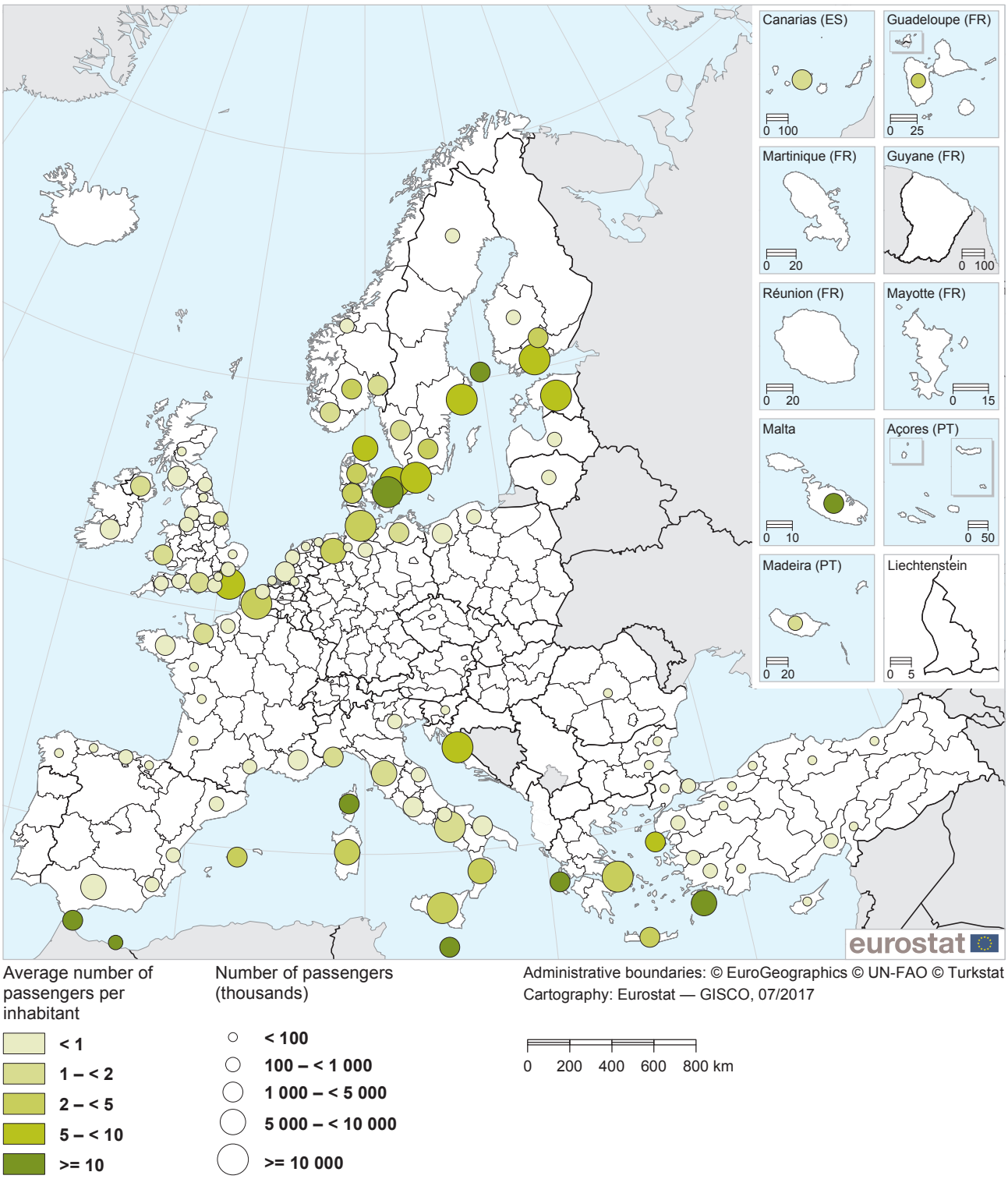
Map 11.2: Maritime freight (loaded and unloaded), by NUTS 2 regions, 2015
(tonnes per inhabitant and thousand tonnes)



Note: London (UKI): NUTS level 1. Slovenia: national data. Münster (DEA3): 2014. EU-28, Portugal, Romania and the United Kingdom: estimates. France: provisional.

Source: Eurostat (online data codes: tran_r_mago_nm, mar_go_aa and demo_r_d2jan)

Map 11.3: Number of maritime passengers (embarked and disembarked), by NUTS 2 regions, 2015
(passengers per inhabitant and thousand passengers)



Note: Greece: passengers per inhabitant estimated using population as of 1 January 2013. London (UKI): NUTS 1. Romania and Slovenia: national data. Bulgaria, Bremen (DE50), Principado de Asturias (ES12) and Aquitaine (FR61): 2014. Galicia (ES11), Pays de la Loire (FR51) and Molise (ITF2): 2013. Região Autónoma da Madeira (PT30), Romania and the United Kingdom: estimates. France: provisional.

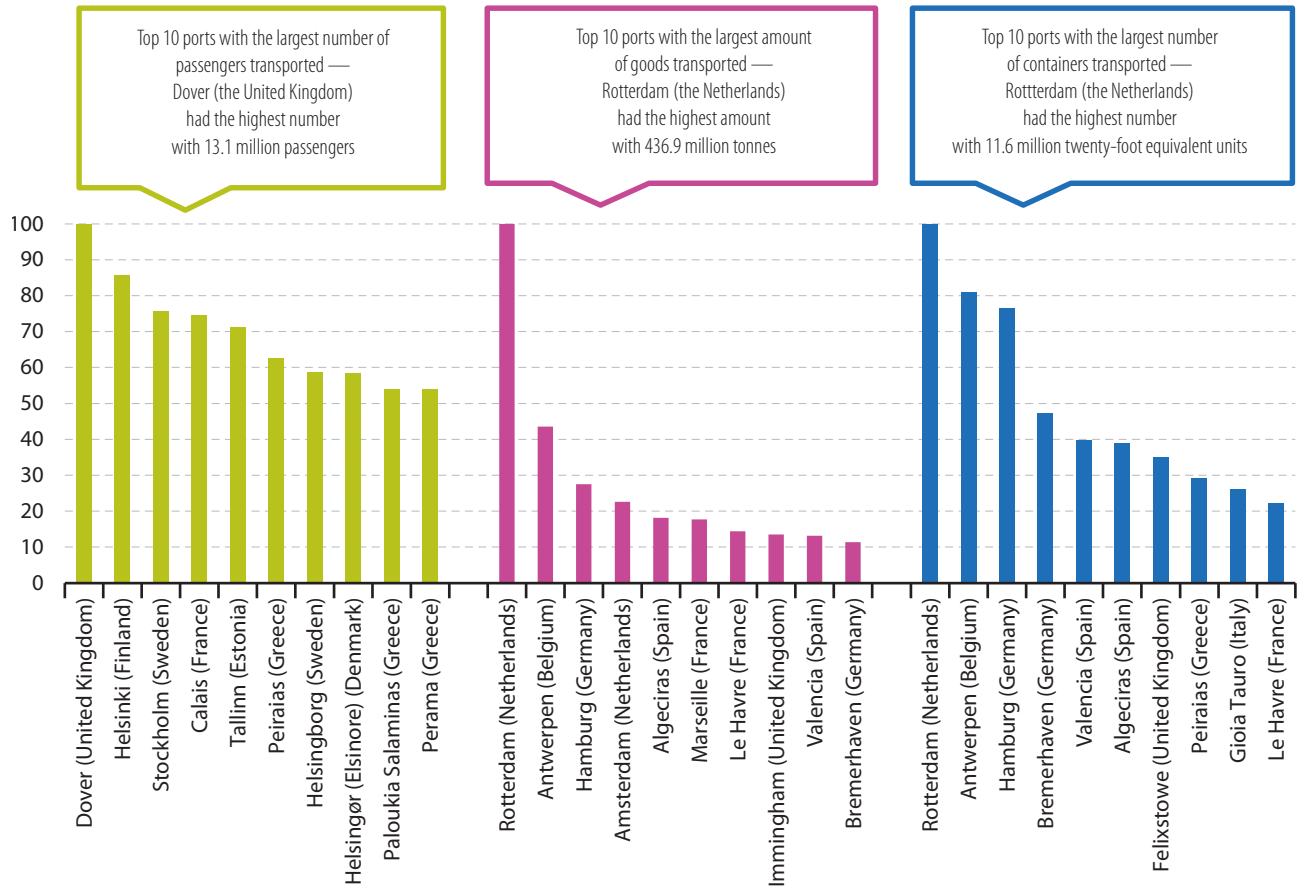
Source: Eurostat (online data codes: tran_r_mapa_nm and demo_r_d2jan)

shown by the darkest shade of olive in Map 11.3) were relatively sparsely populated island regions. The region with the highest number of maritime passengers per inhabitant was Åland (Finland), an archipelago situated between Finland and Sweden; it had an average of 138 maritime passengers per inhabitant in 2015, while the Greek island regions of Notio Aigaio and Ionia Nisia, the French island of Corse, and Malta also recorded high ratios.

Figure 11.5 summarises information pertaining to the main ports in the EU for both maritime passenger and freight transport, with the latter analysed by total freight transported and the number of containers transported. The position of Rotterdam as the EU's leading freight port is clearly evident, as the 436.9 million tonnes of goods that were loaded/unloaded in 2015 was more than double the quantity for any of the other main ports in the EU. Rotterdam was also the leading port in the EU for transporting freight containers, with 11.6 million twenty-foot equivalent units (TEUs) in 2015. The number of freight containers that passed through Antwerpen and Hamburg was also relatively high, between three quarters and four fifths of the number passing through Rotterdam, while none of the other ports in the EU recorded more than half the number of containers passing through Rotterdam.

In 2015, the Channel port of Dover in the south-east of the United Kingdom recorded the highest number of maritime passengers, at 13.1 million. Passenger maritime traffic was also relatively high in Helsinki (Finland), reaching 11.2 million. The eight remaining ports in the top 10 for maritime passenger transport each recorded at least half as many passengers as Dover. They were principally located in the Baltic and North Seas: Stockholm (Sweden), Calais (France), Tallinn (Estonia), Helsingborg (Sweden) and Helsingør/Elsinore (Denmark); but also included three ports situated close to the Greek capital — Peiraias, Paloukia Salaminas and Perama.

Figure 11.5: Top 10 EU ports, by type of port, 2015
(index, leading port = 100)



Source: Eurostat (online data codes: mar_mp_aa_pphd, mar_mg_aa_pwhd and mar_mg_am_pvh)

Data sources and availability

The legal basis for air transport statistics is Regulation (EC) No 437/2003 of the European Parliament and of the Council of 27 February 2003 on statistical returns in respect of the carriage of passengers, freight and mail by air, while for maritime transport statistics it is the recast Directive 2009/42/EC of the European Parliament and of the Council of 6 May 2009 on statistical returns in respect of carriage of goods and passengers by seas. Note that the collection of regional data for rail and inland waterway transport statistics is currently conducted on a voluntary basis.

Regional data by NUTS for air/maritime passenger and freight transport are aggregated from data at the level of main airports/ports. Only main airports (with more than 150 thousand passengers per annum) and main ports (those handling more than one million tonnes of goods or recording more than 200 thousand passengers per annum) are taken into account.

NUTS

The data presented in this chapter are based exclusively on the 2013 version of NUTS. Nearly all of the regional data in this chapter were available in NUTS 2013 with only a small amount of data converted from NUTS 2010. This conversion has had the following consequences at NUTS level 2: some data for the French départements d'outre-mer are not available; data for London are shown at NUTS level 1.

INDICATOR DEFINITIONS

Glossary entries on Statistics Explained (see: http://ec.europa.eu/eurostat/statistics-explained/index.php/Category:Transport_glossary) are available for a wide range of transport concepts/indicators.

For more information:
http://ec.europa.eu/eurostat/web/transport/overview
Reference manual on air transport statistics, 2017, Eurostat
Reference manual on maritime transport statistics, 2016, Eurostat
Guidelines for regional data providers, 2015, Eurostat

12 Agriculture

This chapter presents regional agricultural statistics within the European Union (EU) and provides a selection of Eurostat's data within this domain, including information covering the structure of agriculture (in relation to agricultural holdings and agricultural land use), crop production (cereals and oilseeds) and animal production (livestock specialisation and cows' milk production). Note also that the final chapter in this publication provides a special focus on the related topic of rural areas.

Although the economic significance of agriculture within the EU economy has been in almost perpetual decline over the last 50 years, it remains a vital sector. Agricultural products form a major part of Europe's regional and cultural identity: this is, at least in part, due to a diverse range of natural environments, climates and farming practices that feed through into a wide array of agricultural products. Many valuable habitats in Europe are maintained by extensive farming, while inappropriate agricultural practices/land use can impact on natural resources, for example, through the fragmentation of natural habitats and the loss of wildlife or soil, water and air pollution.

Policy initiatives

The sustainable development of rural areas is one of the key objectives of the EU's common agricultural policy (CAP). Launched in 1962, it sets conditions for farmers to fulfil multiple functions, including their principal aim of producing high-quality, safe food. Significant reforms of the CAP have taken place in recent years, most notably in 2003, 2008 and 2013.

The CAP is financed by two funds: on the one hand, the European Agricultural Guarantee Fund (EAGF) finances direct payments to farmers, as well as measures to respond to market disturbances; on the other, the European Agricultural Fund for Rural Development (EAFRD) finances rural development programmes. Changes to the CAP are designed to make it more effective in delivering a competitive and sustainable agriculture sector. The reforms may also be seen within the context of helping the EU attain its targets within the Europe 2020 strategy.

Reform of the CAP — greening the EU's agricultural sector

In December 2013, the latest reform of the CAP was formally adopted, promoting a fairer distribution of direct payments (with targeted support and convergence goals). It was based on four legislative instruments, covering:

- support for rural development, Regulation (EU) No 1305/2013;
- financing, management and monitoring of the CAP, Regulation (EU) No 1306/2013;
- direct payments, Regulation (EU) No 1307/2013;
- measures linked to agricultural products, Regulation (EU) No 1308/2013.

In order to fully implement these policy agreements, the European Commission drafted a set of delegated and implementing acts designed to provide further detailed rules regarding transitional arrangements and the implementation of CAP reforms.

One of the features of the 2013 reform was the reinforcement of the link between the support to farmers and environmentally-friendly farming practices. 'Greening' is a term that has been coined in relation to making the farm payments system more environment-friendly, whereby farmers who use the land more sustainably and care for natural resources as part of their everyday work benefit financially.

The 'green payment' is an integral part of CAP compulsory schemes that have targeted farmers since 2015. Green direct payments account for 30 % of the payments budget, with farmers having to make use of various practices that benefit the environment and the climate, including: diversifying crops; maintaining permanent grassland; dedicating 5 % of arable land to ecologically beneficial elements/ ecological focus areas.

Statistical analysis

FARM LABOUR FORCE AND FARMS

A comprehensive farm structure survey (FSS) is carried out by EU Member States every 10 years, based on the agricultural census, the last of which was conducted in 2010. Intermediate sample surveys are carried out twice between these basic surveys, with the latest farm structure survey conducted for the 2013 reference year while the next one is foreseen for the 2016 reference year. In these surveys, EU Member States collect information from individual agricultural holdings (hereafter referred to simply as farms), covering: the use of agricultural land; livestock numbers; rural development (for example, activities other than agriculture); management and farm labour input (including age, sex and relationship to the holder). Thresholds are defined under which a unit is considered to be too small to be counted as a farm — such as 1 hectare of utilised agricultural area (UAA), a minimum of 5 pigs, 50 m^2 under glass, or 100 m^2 of vineyards; each Member State defines its own set of thresholds, with most setting a threshold to include farms with a utilised agricultural area over 1 hectare, although some have raised this to higher levels, for example 3 or 5 hectares. The use of different thresholds should be borne in mind when analysing data on the number of farms or the structure of the labour force; for more information on the thresholds used please refer to the section titled, Data sources and availability (below).

More than three quarters of the labour input on farms in the EU in 2013 was family labour

There were 22.2 million persons in the EU-28's farm labour force in 2013. Although engaged in production on farms, these people did not necessarily work on a full-time basis. To take account of part-time and seasonal work, both of which are widespread in agriculture, labour input can be measured in annual work units (AWU): one such unit corresponds to the input, measured in working time, of one person engaged in agricultural activities on a farm on a full-time basis over an entire year. On this basis, there were 9.5 million AWUs in the EU-28's labour force directly working on farms in 2013: this was composed of holders, other family labour and non-family labour — see Figure 12.1. This overall figure for the total number of AWUs was lower than the 10.8 million farms that were active in the EU-28 in 2013; as such, there was an average of less than one AWU for each farm.

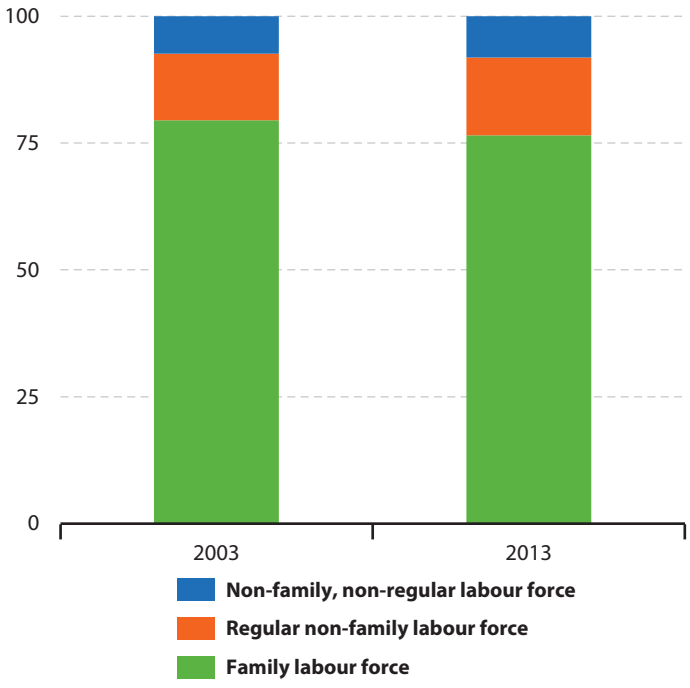
A high proportion (44.1 % or 4.2 million AWUs) of the labour force was composed of sole holders, while family members accounted for almost one third of the total (32.4 %; 3.1 million AWUs). An analysis of the non-family workforce shows that nearly two thirds worked on a regular basis (throughout the year) and the rest irregularly, accounting for 15.4 % and 8.1 % respectively of the total workforce.

Between 2003 and 2013 the structure of the farm labour force changed somewhat, with the share of the family labour force falling and the share of the non-family labour force rising. This resulted from an overall fall in the labour force (which may in part reflect the introduction of thresholds in the data collection between 2003 and 2013) which was strongest among the family labour force and weakest among the regular non-family labour force.

Main statistical findings

- **More than three quarters of the labour input on EU farms in 2013 was family labour.**
- **The largest farms were most common in regions of the Netherlands and Germany; the smallest farms were most common in regions of Bulgaria, Greece, Croatia, Hungary and Romania.**
- **Regions across Denmark and northern France reported a high intensity of cereals production within agricultural land use, while the same was true for oilseed crop production in parts of northern Italy.**
- **Permanent crops were most commonly found in regions spread across the southern EU Member States.**
- **Regions with large livestock populations were most likely to be relatively specialised in swine or sheep.**

Figure 12.1: Distribution of farm labour force, by type of labour, EU-28, 2003 and 2013
(% of annual work units)



Source: Eurostat (online data codes: ef_olfftecs and ef_ov_lfsum)

Of the 9.5 million AWUs of labour input on EU-28 farms in 2013, Poland accounted for just over one fifth (20.2 %) of the total, while the next highest share was recorded by Romania (16.3 %), where the agricultural labour force was almost twice the size as in Spain and Italy, which both accounted for 8.6 % of the EU-28 total.

An analysis of the distribution of the 10.8 million farms in the EU-28 shows that one third (33.5 %) were in Romania and more than one tenth (13.2 %) in Poland; the next highest shares were in Italy (9.3 % of the EU-28 total), Spain (8.9 %) and Greece (6.5 %), with none of the other Member States reporting shares in excess of 5.0 % of the EU-28 total.

Farms were relatively small in some of the EU Member States which reported a high share of the EU-28 agricultural labour force or its total number of farms. Farm size can be measured in various ways: the most common are physical measures (such as the agricultural area or employment) or economic measures (such as the standard output). Note there is no fixed definition as to when a small farm is considered as a subsistence household producing food for its own consumption rather than as an economic unit.

More than four fifths of farms in the EU-28 had a standard output of less than EUR 25 thousand

An analysis, based on the economic size of farms, shows that 83.5 % of all farms in the EU-28 in 2013 were very small (defined here as those farms with a standard output of less than EUR 25 thousand), 5.9 % were small (with a standard output of EUR 25–50 thousand), 4.3 % were medium-sized (with a standard output of EUR 50–100 thousand), and 6.3 % were large or very large farms (with a standard output of EUR 100 thousand or more); less than 1.0 % of farms in the EU-28 had a standard output of more than EUR 500 thousand. An article (on Statistics Explained) provides more detailed information on small and large farms in the EU.

There was a wide variation between the EU Member States in 2013 as regards the share of their farms that were of different economic sizes; the varying survey thresholds used in different Member States may play a role, as a higher threshold can be expected to exclude a large number of relatively small farms, so inflating the average size. In Romania, very small farms (with a standard output of less than EUR 25 thousand) made up 99.0 % of the total population of all farms, with this share also exceeding 90.0 % in Hungary, Bulgaria, Lithuania, Latvia, Cyprus, Malta and Croatia. By contrast, less than half of all farms were very small in the United Kingdom, Denmark, France, Germany and the Benelux Member States, with the lowest share (21.7 %) in Belgium.

The average size of the 10.8 million farms in the EU-28 in 2013 was EUR 30.5 thousand of standard output. Map 12.1 presents an analysis of average farm size (in terms of standard output) for NUTS level 2 regions; again the use of different survey thresholds should be considered.

The largest farms were most common in regions of the Netherlands and Germany

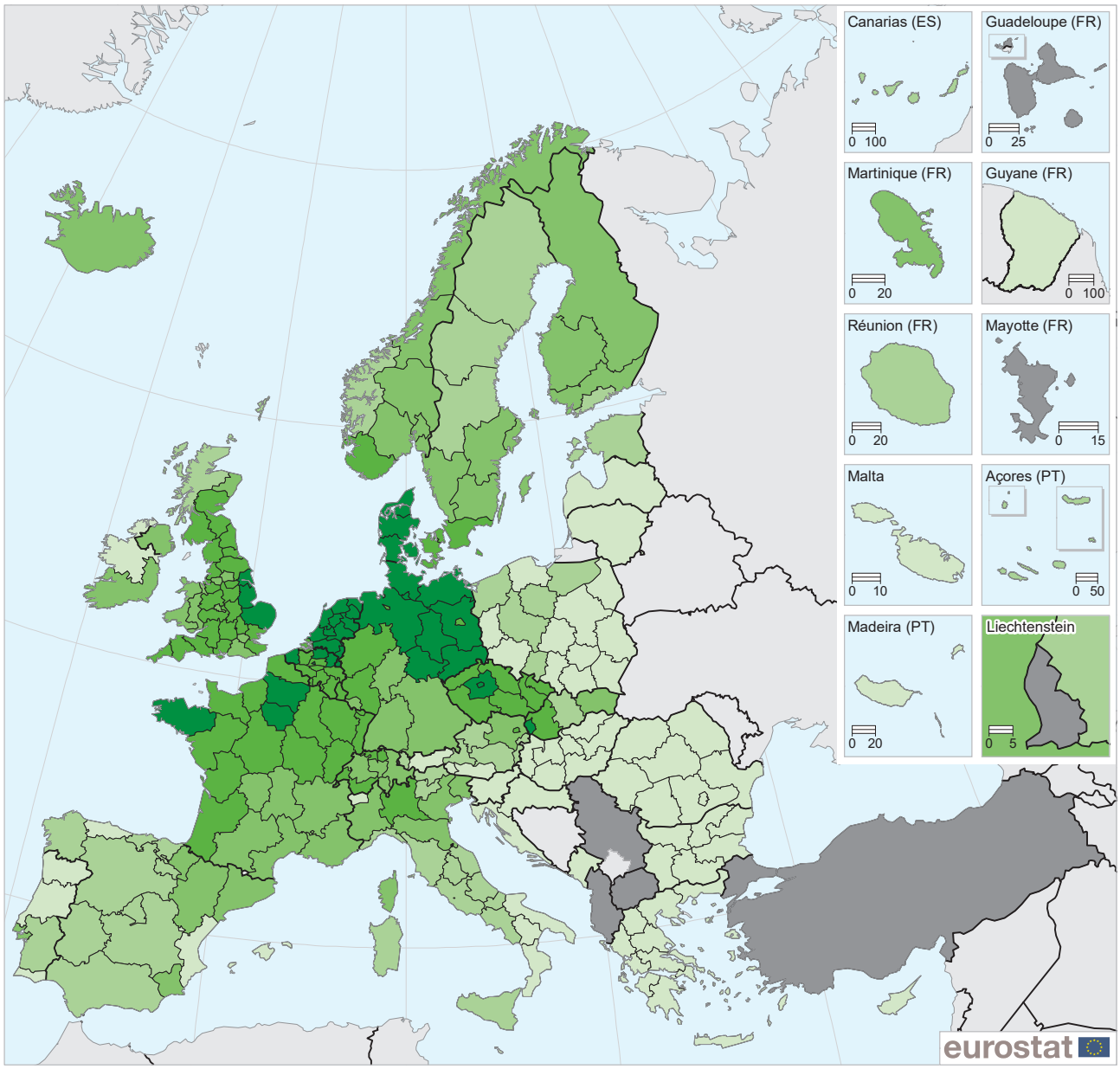
There were 35 regions across the EU-28 where the standard output per farm averaged at least EUR 200 thousand (as shown by the darkest shade in the map). These regions were located in the Netherlands (every region except for Zeeland), Germany (eight NUTS level 1 regions), Belgium (four regions), Denmark, France and the United Kingdom (three regions each), the Czech Republic (two regions) and Slovakia (one region). Standard output per farm peaked at EUR 542 thousand in the German region of Sachsen-Anhalt, while two other German regions — Mecklenburg-Vorpommern and Thüringen — were also present among the top four regions in the EU with the largest average sized farms in economic terms (all with an average standard output in excess of EUR 400 thousand); they were joined by the Dutch region of Zuid-Holland.

The smallest farms were most common in regions of Bulgaria, Greece, Croatia, Hungary and Romania

At the other end of the range, there were 69 regions in the EU-28 where farms on average generated less than EUR 25 thousand of standard output in 2013 (as shown by the lightest shade in the map). All of the Bulgarian, Greek, Croatian, Hungarian and Romanian regions figured in this list, along with 11 of the 16 Polish regions, five Spanish regions, four regions each from Italy and Portugal, two from Austria and single regions from France and Ireland, as well as Cyprus, Lithuania, Latvia and Malta (which are all single regions at this level of detail) and Slovenia (only national data available). As such, the vast majority of these regions with a low average size were in eastern or southern EU Member States. Leaving aside the two Spanish autonomous cities of Ceuta and Melilla, the region with the lowest level of standard output per farm (EUR 2 600) was Sud-Vest Oltenia in Romania.

In the Czech Republic, Ireland, Croatia, Austria, Portugal and Slovakia, farms in the capital city region had the highest average standard output (note that these capital city regions may also contain land that encircles the capital city itself); the relatively high values recorded in some of these regions may be linked to farmers providing high value horticultural products to local markets. By contrast, in Bulgaria, Denmark, Hungary and Finland, the capital city region recorded the lowest average levels of standard output per farm. Other regions that recorded low average standard output per farm compared with national averages were typically remote, often upland/highland regions, where it may be difficult to farm or transport goods to market, for example, the mountainous region of

Map 12.1: Average economic size of farm holdings, by NUTS 2 regions, 2013
(thousand EUR)



(thousand EUR)

EU-28 = 30.5

- < 25
- 25 – < 50
- 50 – < 100
- 100 – < 200
- ≥ 200
- Data not available

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 07/2017

0 200 400 600 800 km

Note: Germany and London (UKI): NUTS level 1. Slovenia: national data. Iceland, Switzerland and Montenegro: 2010.
Source: Eurostat (online data code: ef_kvecsleg)

Asturias (Spain), the overseas French regions of Guyane and La Réunion, the southernmost regions of mainland Italy, south eastern regions of Poland, the island Região Autónoma da Madeira (Portugal), the north of Sweden, and the Highlands and Islands of Scotland (the United Kingdom).

The average size of farms (in terms of standard output per farm) was more than four times as high in 2013 as it had been in 2007 in Slovakia. In all Slovakian regions the average size at least doubled, with particularly strong growth in the capital city region (where the average size in 2013 was 6.1 times as high as in 2007). Other regions of the EU with large increases during this period include the Bulgarian regions of Severozapaden, Severen tsentralen and Severoiztochen, as well as the Belgian capital city region. In 10 regions of the EU the average farm size fell between 2007 and 2013, most notably in Rheinland-Pfalz in Germany where it halved.

SPECIALISATION IN AGRICULTURAL REGIONS

2015

59.8 %
of the EU's utilised agricultural area is arable land

Land used for agriculture makes up just over two fifths of the EU's land area with just under another fifth of the land area also belonging to farms, either in the form of wooded areas or other land not used for agriculture. Arable land (which includes land for cereals and other arable land) accounted for three fifths (59.8 %) of the utilised agricultural area in the EU-28 in 2015, with permanent grassland (which is composed of pasture, meadow and rough grazing) accounting for one third (33.2 %). Permanent crops, such as vineyards, olive groves and orchards, accounted for a 6.6 % share, with the remaining 0.4 % partly attributed to kitchen gardens.

There were not only considerable differences in the size of farms and the farm labour force across the regions of the EU-28, but also in the types of usage made of farm land, as illustrated by Figure 12.2. Decisions to specialise in a particular type of farming (and therefore to make a particular use of farm land) are based upon a wide range of factors, including physical, economic and environmental issues. For example, physical factors may include the climate, relief or soil type, economic factors may include land tenure, the availability of labour, access to markets or capital, and environmental factors may include restrictions on the use of pesticides or price support systems for encouraging sustainable production methods.

In 2015, the largest area of arable land in any of the EU regions was recorded in the central Spanish region of Castilla y León (3.5 million hectares). This was followed by another central Spanish region, Castilla-la Mancha, Lithuania (a single region at this level of detail), the southern German region of Bayern (a NUTS level 1 region) and Centre in France; in all four of these regions the area of arable land was within the range of 2–3 million hectares. The largest areas of grassland were recorded in the north of the United Kingdom in Scotland (4.7 million hectares; note this is a NUTS level 1 region) and in the two Irish regions (each of these had an area of grassland that was close to 2 million hectares). The largest area of permanent crops was located in southern Spain in Andalucía (1.9 million hectares), an area that was far greater in size than the next two largest areas of permanent crops, Castilla-la Mancha (0.9 million hectares) and the southern Italian region of Puglia (0.5 million hectares).

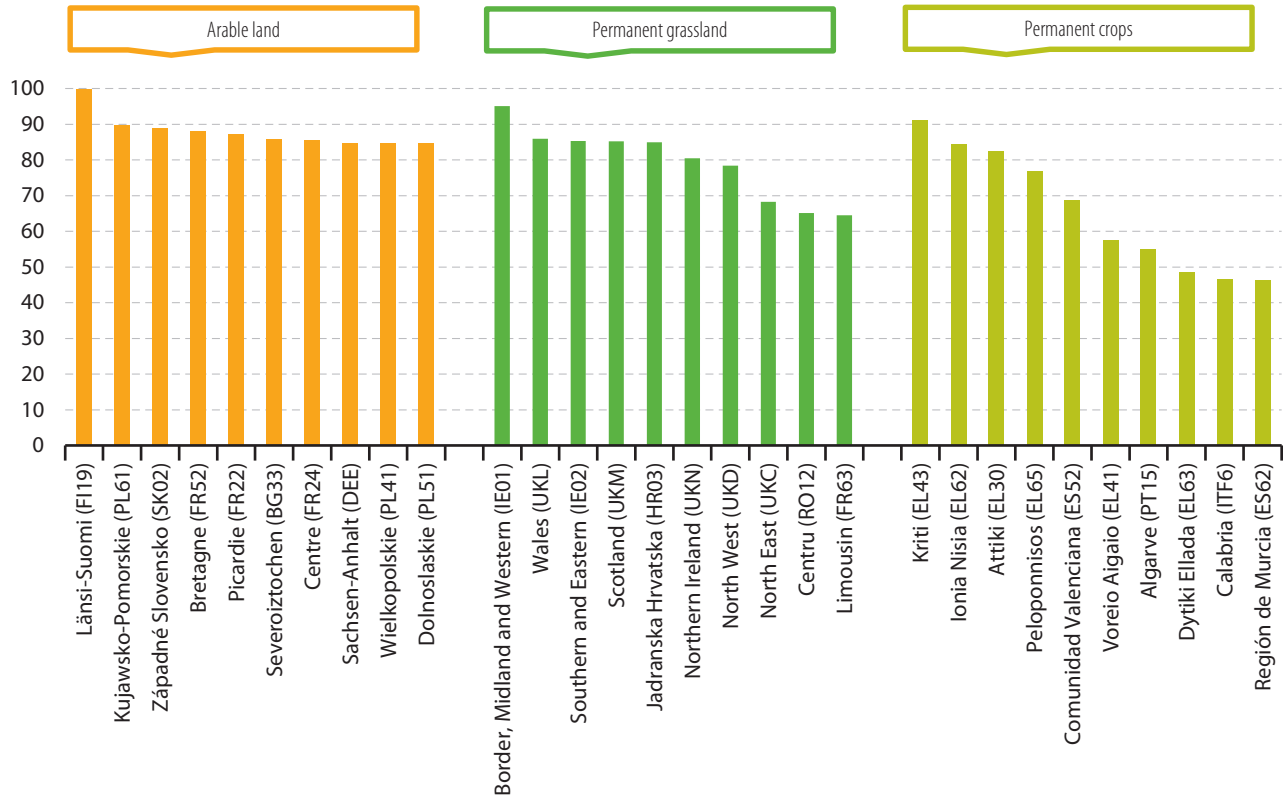
Figure 12.2 identifies three lists, each showing the 10 NUTS level 2 regions that were most specialised in each of the three main types of agricultural land use. To avoid focusing on regions with small areas or a low level of agricultural activity, a preselection was made to include only the 50 largest regions for each type of agricultural land use and only then was the ranking of the 10 most specialised made.

No southern regions appeared in the 10 most specialised regions for arable land as this list was split fairly evenly between regions from eastern and western EU Member States, although it was topped by Länsi-Suomi (Finland) where practically the whole (99.8 %) utilised agricultural area was given over to arable crops. Six out of the top 10 regions for arable land were either in France or Poland.

Grasslands are commonly found in regions where it is difficult to farm intensively and where livestock production remains the traditional form of agriculture, particularly sheep or cattle farming. The list of the 10 regions most specialised for permanent grassland was dominated by regions in western EU Member States, particularly the United Kingdom (NUTS level 1 regions) and Ireland. Two eastern regions were in the list, Jadranska Hrvatska (Croatia) and Centru (Romania). By far the most specialised region was Border, Midland and Western Ireland, where 95.1 % of the utilised agricultural area was permanent grassland; hilly/mountainous parts of western Ireland are particularly affected by prevailing Atlantic weather systems and often record averages of more than 2 000 mm of rain per year.

Only in seven EU regions did permanent crops account for more than half of the utilised agricultural area, five of which were in Greece while the other two were in Spain and Portugal. The three other regions in the top 10 were also from southern Member States and as such all of the regions most specialised (in terms of agricultural land use) in permanent crops were from the south of the EU.

Figure 12.2: Top 10 NUTS 2 regions in the EU-28 specialised in selected types of agricultural land use, 2015
(% share of total utilised agricultural area)



Note: the ranking shown is based on two criteria. In a first step the top 50 NUTS 2 regions with the largest main areas for each type of agricultural land use were identified. In a second step these regions were ranked according to the share of the main area for each of the three types of type of agricultural land use in their utilised agricultural area. Germany and the United Kingdom: NUTS level 1. The Czech Republic and Denmark: 2014 for permanent crops.

Source: Eurostat (online data code: agr_r_acs)

CEREALS

One of the main uses of arable land is for the production of cereals: these are the largest group of crops in the world and are also one of the most important outputs of the EU's agricultural sector. Cereals are used primarily for human consumption and animal feed; they are also used to produce drinks and for industrial products (for example, starch).

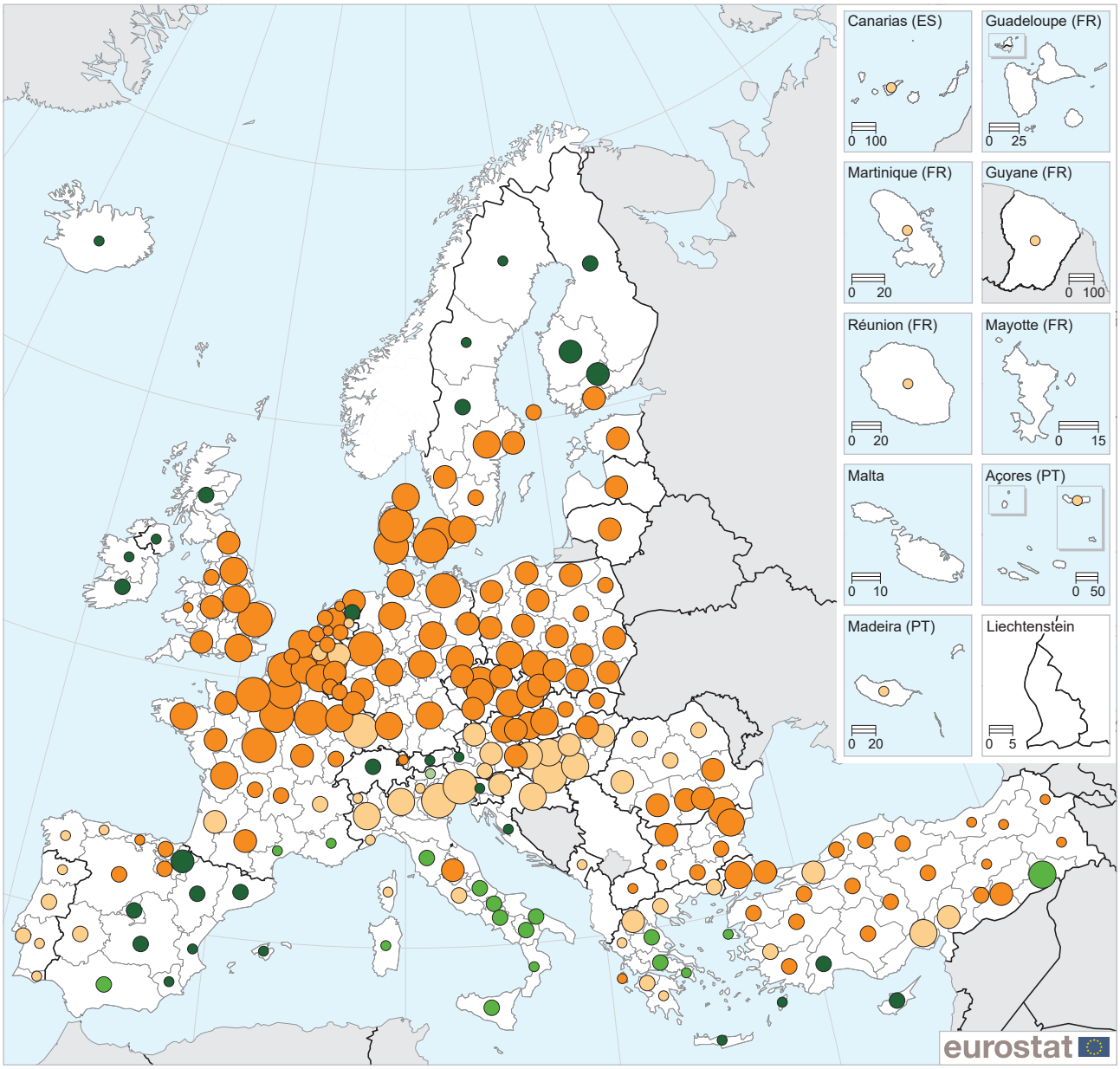
In 2015, the area of agricultural land that was used for the production of cereals (including rice) in the EU-28 was 57.4 million hectares. The EU-28's harvested production of cereals was 315.2 million tonnes. The EU harvest in 2015 was lower than in 2014, but higher than in all of the years from 2009 to 2013.

Cereals production in Europe thrives in lowland regions that are characterised by large plains, with a temperate climate and relatively modest levels of rainfall. Common wheat and spelt are together the most widely grown cereal in the EU.

France was the largest producer of cereals in the EU, accounting for 23.0 % of the EU-28 total in 2015, while Germany (15.5 %) was the only other EU Member State to record a double-digit share of the total. At a regional level, harvested production of cereals peaked at over 7 million tonnes in 2015 in four regions: Centre (France), Bayern, Niedersachsen (both Germany; note these are NUTS level 1 regions) and Castilla y León (Spain).

As well as showing the most commonly grown type of cereal in each of the NUTS level 2 regions in 2015, Map 12.2 also provides information on the harvested production level for cereals. Note that the production statistics presented have been normalised by dividing by the region's total utilised agricultural area in order to take account of the different size of regions in terms of their agricultural land use (and the availability of data at different levels of NUTS in some EU Member States). It should be noted that the resulting information is not equivalent to a yield, as the latter is based on the level of production of a crop divided by the cultivated area for the same crop.

Map 12.2: Harvested production of cereals (including seed) and most commonly grown cereals, by NUTS 2 regions, 2015
(tonnes per hectare of total utilised agricultural area)



EU-28 = Common wheat and spelt
Most commonly grown cereal relative to EU-28 average

- Common wheat and spelt
- Grain maize and corn-cob mix
- Barley
- Durum wheat
- Rye and winter cereal mixtures (maslin)

EU-28 = 1.8
Harvested production of cereals (including seed)

- < 0.5
- 0.5 – < 1.5
- 1.5 – < 2.5
- 2.5 – < 3.5
- >= 3.5

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 09/2017

0 200 400 600 800 km

Note: the map shows the harvested production of cereals (including seed) per hectare of total utilised agricultural area as proportional circles for each region, while the colour of each circle denotes the most commonly grown cereal in each region.
Germany and the United Kingdom: NUTS level 1. Switzerland and Albania: national data. Italy, the Netherlands and Switzerland: 2014.

Source: Eurostat (online data code: agr_r_acs)

Regions across Denmark and northern France reported a high intensity of cereals production within agricultural land use

The most specialised areas of cereals production were in the northern half of France, eastern England, Belgium, Denmark, northern Germany, the Czech capital city region, southern Hungary and northern Italy — as shown by the largest circles in Map 12.2. Cereals production (relative to a region's utilised agricultural area) peaked in Île de France, the French capital city region, followed by Alsace in eastern France and Sjælland in Denmark.

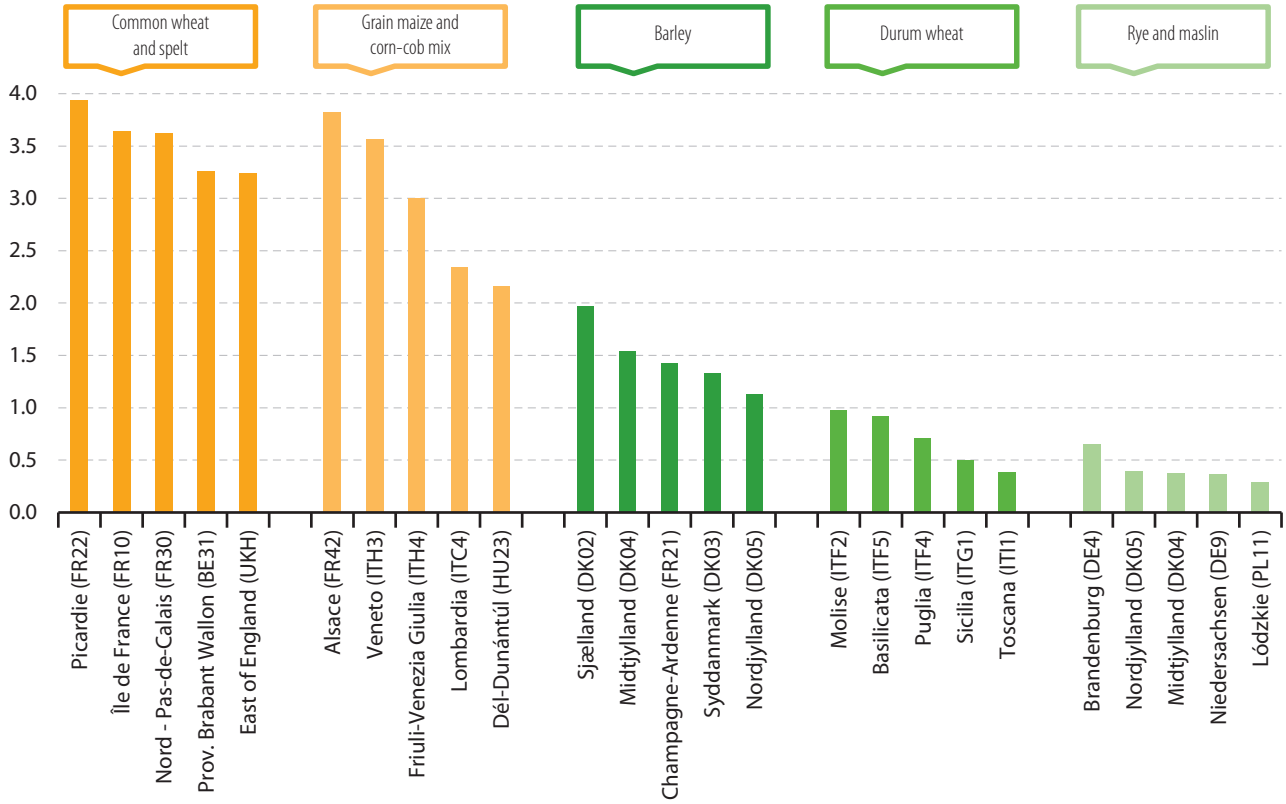
By contrast, the smallest circles in Map 12.2 show the 45 regions in the EU (and eight regions in non-member countries) where the harvested production of cereals was small. Among these were 20 EU regions (as well as Iceland and Montenegro) where cereals production was particularly low, including several Greek, Spanish, French and Portuguese island regions, as well as mountainous and coastal regions in Spain, Italy and Austria.

The type of cereal in which regions were specialised was regionally focused to some extent, however common wheat and spelt was the main cereal crop in a large number of regions spread across many parts of the EU, but with relatively few regions in southern EU Member States. Common wheat and spelt was the main cereal crop in most regions of the Benelux Member States, northern and central France (but also Midi-Pyrénées), all of Germany (subject to data availability), eastern Austria (but also Vorarlberg) and much of England and Wales in the United Kingdom. In northern Europe, common wheat and spelt was the main cereal crop in the Baltic Member States, Denmark and the more southerly Swedish regions, while in eastern Member States it was the main cereal crop in all regions of Bulgaria, the Czech Republic, Poland and Slovakia.

In contrast to the situation for common wheat and spelt, durum wheat was the most commonly grown type of cereal in southern parts of Italy, France and Spain, as well as in several Greek regions.

Barley was the most common cereal in more remote or mountainous regions, often in northern or southern Member States, for example in Cyprus, some Greek islands, several Spanish regions, central and northern Finland and northern Sweden. Barley was also the most common cereal crop in the two Irish regions, in Northern Ireland and Scotland in the United Kingdom,

Figure 12.3: Harvested production in the top five NUTS 2 regions in the EU-28 specialised in the production of selected cereals, 2015
(tonnes per hectare of total utilised agricultural area)



Note: Germany and the United Kingdom: NUTS level 1. Italy and the Netherlands (except for durum wheat): 2014. Slovenia: 2014 for durum wheat. Övre Norrland (SE33): 2014 for rye and maslin. Sweden (except Småland med öarna (SE21) and Sydsverige (SE22)): 2014 for grain maize and corn-cob mix.

Source: Eurostat (online data code: agr_r_acs)

as well as in one Dutch region and two mountainous Austrian regions. Only in two regions from eastern Member States — one each in Croatia and Slovenia — was barley the most common cereal crop.

Rye and winter cereal was the most common cereal crop in just one region, the mountainous Italian Provincia Autonoma di Bolzano/Bozen.

Like common wheat and spelt, the regions where grain maize and corn-cob mix were the most common cereal crop were spread across many parts of the EU, although in this case there were no regions from northern EU Member States. Nevertheless, the largest concentration of regions specialising in grain maize and corn-cob mix was across southern Member States: northern and central Italy, Portugal, southern France (and Alsace) and several French overseas regions, northern and central Greece, and parts of Spain. Elsewhere, grain maize and corn-cob mix was the most common crop in nearly all Hungarian regions, northern and western Romania, as well as one region each in Croatia and Slovenia, while it was the most common cereal crop in two regions from each of Belgium and the Netherlands.

A broadly similar picture can be seen in Figure 12.3, which shows the five most specialised regions for each of the same five types of crops as shown in Map 12.2. The most specialised regions (again in terms of the level of harvested production relative to the total utilised agricultural area) for each of these crops were quite geographically concentrated. The most specialised regions for barley were mainly in Denmark (four regions out of the top five), with two of these also figuring among the most specialised regions for rye and maslin, along with regions from eastern Germany and Poland. Southern Italian regions dominated the list of the regions most specialised in the production of durum wheat, while a majority of the top five regions most specialised in grain maize and corn-cob mix were from northern Italy. The five regions most specialised in the production of common wheat and spelt were situated either side of the English channel/North Sea, with three from northern France, one in central Belgium and one in the East of England (the United Kingdom).

OILSEEDS

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 biofuels, inks or paints.

In 2014, the area of agricultural land that was used for the production of oilseed crops in the EU-28 was approximately 11.6 million hectares. Note that this concerns four types of oilseed crops: linseed (2015 data for the harvested area), rape and turnip rape seeds, sunflower seed and soya. The EU-28's harvested production of oilseed crops was 35.5 million tonnes in 2014. Data for the harvested production of linseed are not available for many earlier years, but focusing on an aggregate for the other types of oilseed, it is clear that the EU-28's harvest in 2014 was the highest recorded since the time series began (2000). Rape and turnip rape seeds were together the most widely grown oilseed crop in the EU.

France was the largest producer of oilseed crops in the EU, accounting for 20.6 % of the EU-28 total in 2014, while Germany (17.8 %, excluding linseed) was the only other EU Member State to record a double-digit share of the total. At a regional level, harvested production of oilseed crops peaked at nearly 1.2 million tonnes in 2015 in Centre (France), while it also exceeded 900 thousand tonnes in Sud - Muntenia and Sud-Est (Romania) and Mecklenburg-Vorpommern (note this is a NUTS level 1 region).

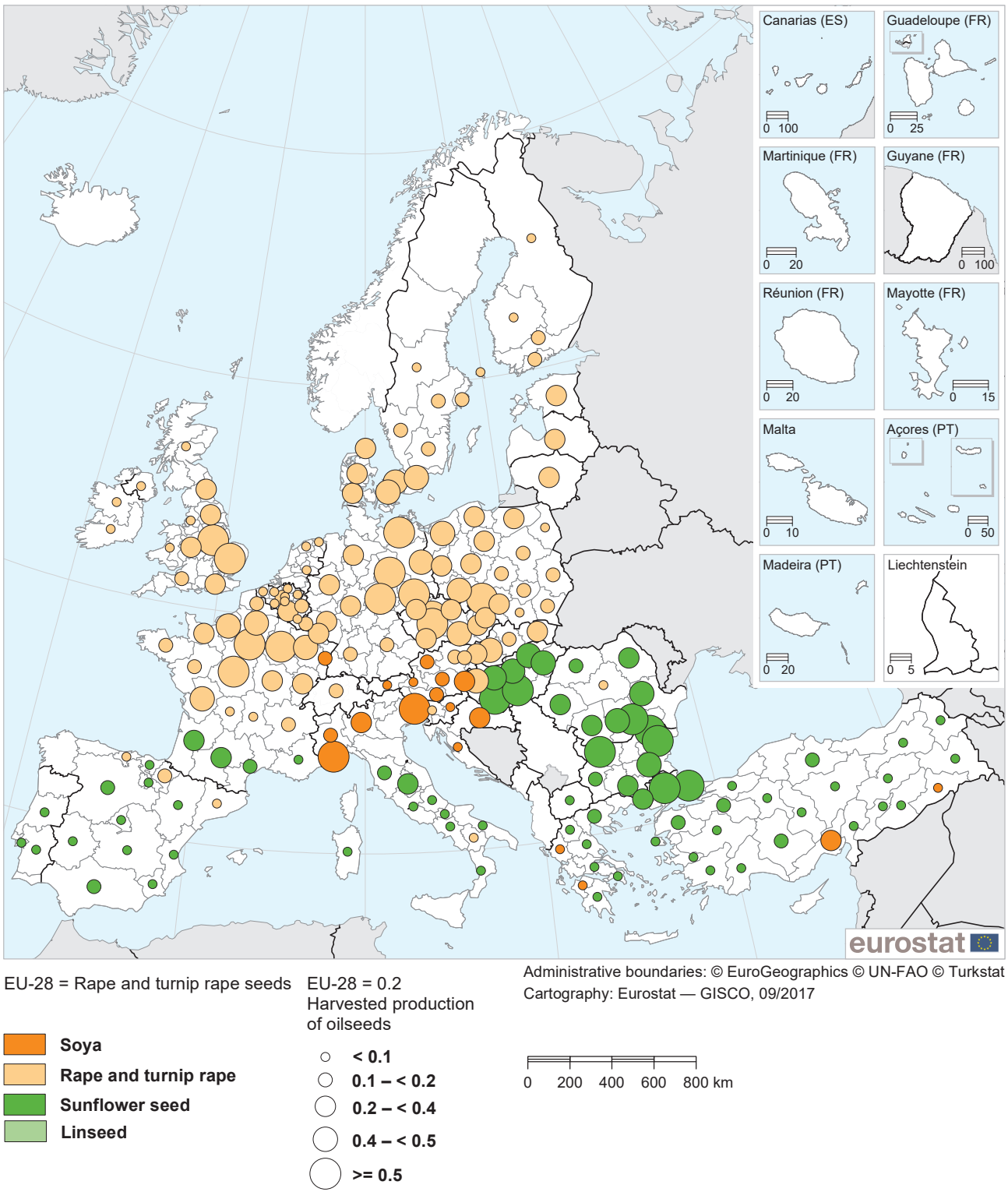
As well as showing the most commonly grown type of oilseed crop in each of the NUTS level 2 regions of the EU in 2015, Map 12.3 provides information on the harvested production level for oilseed crops; as such it is similar to Map 12.2 concerning cereals. As for cereals production, the data for the harvested production of oilseed crops have been related to the total utilised agricultural area, which adjusts to some extent for the use of different NUTS levels.

Particularly high intensity of oilseed crop production within agricultural land use in parts of northern Italy

Two northern Italian regions — Friuli-Venezia Giulia and Liguria (2014 data) — stood out as by far the most specialised for the production of oilseed crops, followed by four regions in Germany (NUTS level 1 regions), three each in Bulgaria and France, two each in the Czech Republic, Hungary and the United Kingdom and one each in Poland and Romania.

There were a number of regions that had not only a high intensity of oilseed crop production but also of cereals production, as shown by the largest circles in Maps 12.2 and 12.3, namely: Praha (the Czech Republic), Mecklenburg-Vorpommern, Île de France, Champagne-Ardenne and Centre (all France), Friuli-Venezia Giulia, Dél-Dunántúl (Hungary) and the East of England. That a relatively large number of regions had a high intensity for both of these categories of crops is not surprising, as arable farming in general tends to thrive in regions where the summers are warm and relatively dry and the land is low, flat and fertile.

Map 12.3: Harvested production of oilseed and most commonly grown oilseeds, by NUTS 2 regions, 2015
(tonnes per hectare of total utilised agricultural area)



Note: the map shows the harvested production of oilseeds per hectare of total utilised agricultural area as proportional circles for each region, while the colour of each circle denotes the most commonly grown oilseed in each region. Linseed (oilflax) was not the most commonly grown cereal in any of the regions shown. Germany and the United Kingdom: NUTS level 1. Switzerland and Albania: national data. EU-28, Italy, the Netherlands and Switzerland: 2014.

Source: Eurostat (online data code: agr_r_acs)

The production of rape, turnip rape and sunflower seeds was very low in both northern and southern regions of Europe, with the vast majority of production running in a band between these two extremes. There were, however, exceptions in this central zone, as most of the regions in Belgium, the Netherlands and Slovenia reported low levels of production relative to the size of their utilised agricultural area. The production of oilseed crops was also non-existent in mountainous regions, for example, in the Alpine regions of western Austria. Equally, there were exceptions in northern and southern countries, as there were a few with a relatively high intensity of oilseed crop production. These included not only the two northern Italian regions that reported the highest intensities among all EU regions, but also Hovedstaden and Sjælland in Denmark and Sydsverige in Sweden.

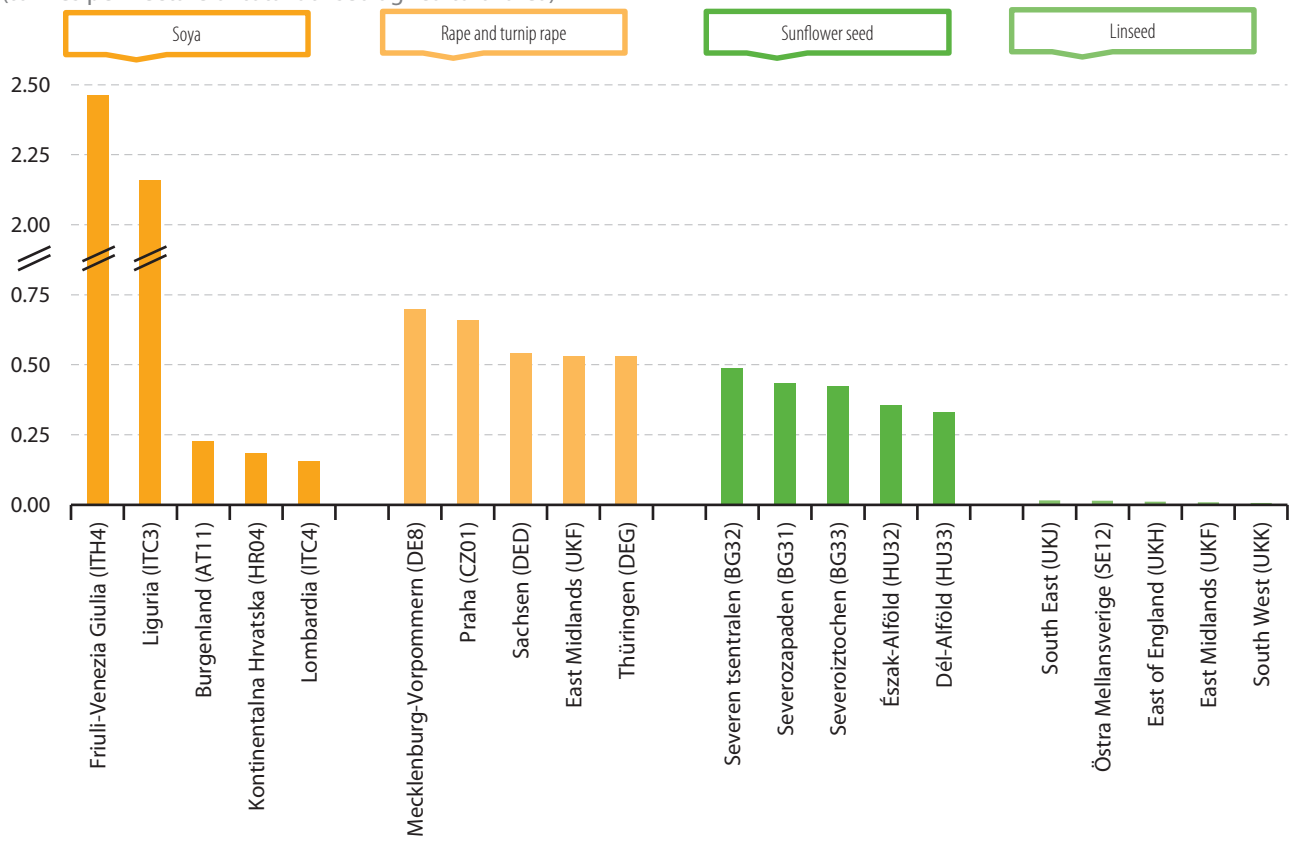
Focusing on the 42 regions in Map 12.3 where oilseed crop production was relatively high, the two Italian regions of Friuli-Venezia Giulia and Liguria were again outliers, not just because of their high level of production relative to their size, but also because their main oilseed crop was soya (shaded in dark yellow).

Among the remaining 40 regions (38 in the EU and two in Turkey), the main oilseed crop was rape and turnip rape seed in 25 regions (light yellow) and sunflower seed in the remaining 15 regions (dark green).

In fact, soya was the main oilseed crop in less than 20 of the 207 regions for which the main crop is identified in Map 12.3, most of these being in Austria, northern Italy (2014 data), Greece, Croatia or Slovenia. In general, sunflower seed was the main oilseed crop in many regions of the southern EU Member States, as well as in Bulgaria and most of Hungary and Romania in the east, and in southern France in the west. By contrast, among all of the regions in the southern EU Member States only three Spanish regions and one Italian region (2014 data) reported that rape and turnip rape seed was the main oilseed crop. None of the EU regions were most specialised in the production of linseed oil.

Figure 12.4 shows the five most specialised regions for each of the same four types of crops shown in Map 12.3. As for cereals, the most specialised regions (again in terms of the level of harvested production relative to the total utilised agricultural area) for each of

Figure 12.4: Harvested production in the top five NUTS 2 regions in the EU-28 specialised in the production of selected oilseeds, 2015
(tonnes per hectare of total utilised agricultural area)



Note: the y-axis has been cut. Rankings are based on those regions for which data are available (the majority of regions for which no data are available are considered to have insignificant levels of production). Germany and the United Kingdom: NUTS level 1. Italy and the Netherlands: rape and turnip rape, sunflower seed and soya, 2014. Jadranska Hrvatska (HR03): rape and turnip rape and sunflower seed, 2014. Bulgaria, the Czech Republic, the Netherlands, Mellersta Norrland (SE32) and Övre Norrland (SE33): linseed, 2014. The United Kingdom: linseed, 2013.

Source: Eurostat (online data code: agr_r_acs)

these crops were quite geographically concentrated. Three of the most specialised regions for soya were in northern Italy, while three of the most specialised regions for rape and turnip rape seed were in eastern Germany. The five regions in the EU most specialised in sunflower seed production were all in Bulgaria or Hungary, while four out of the five most specialised linseed producing regions were in the United Kingdom.

LIVESTOCK AND MILK PRODUCTION

Moving from arable farming to livestock farming, in the EU-28 as a whole, there were 336 million head of livestock in 2015; this total covers bovines, swine, sheep and goats (and therefore excludes poultry as well as less common animals). The composition of this livestock population was 148.5 million head of swine, 89.1 million head of bovines, 85.5 million head of sheep and 12.5 million head of goats (the latter two figures being estimates made specifically for the purpose of this publication).

Overall, Spain, Germany, France and the United Kingdom held the largest populations of livestock in 2015, their totals (an aggregate for swine, bovines, sheep and goats) ranging from 53 million head in Spain to 37 million head in the United Kingdom. The highest numbers of pigs were recorded in Spain and Germany (around 28 million), more than double the next highest number which was in France (13 million). However, the highest number of bovines was in France (19 million), followed by Germany (13 million). The United Kingdom (23 million) had by far the highest number of sheep, ahead of Spain (16 million), while Greece had the highest number of goats (4 million), also ahead of Spain (3 million). In a majority (17) of the EU Member States, the most common type of livestock was swine, with cattle the most common in Ireland, France, Latvia, Lithuania, Luxembourg and Slovenia, and sheep the most common in Bulgaria, Greece, Cyprus, Romania and the United Kingdom.

Regions with large livestock populations were most likely to be relatively specialised in swine or sheep, with the reverse true in regions with smaller livestock populations

Map 12.4 shows patterns of regional specialisation for livestock; note this is not based simply on a count of the number of head of each type of animal, but is rather determined in relation to the EU average and therefore shows a relative rather than absolute measure of specialisation. When considering these livestock populations it should be remembered that some regions are larger than others and that data for Germany and the United Kingdom are shown for NUTS level 1 regions which are, by definition, generally larger than the NUTS level 2 regions used elsewhere; note also that national data are shown for Serbia and Turkey.

Among the NUTS regions shown in Map 12.4, several EU Member States had clear livestock rearing specialisations (relative to the EU average) that were common to all (or nearly all) regions in 2015: this was the case for goats in Bulgaria and Greece, swine in Denmark, and (to a somewhat lesser extent) bovines in the Czech Republic and Sweden, as well as sheep in the United Kingdom. In most of the other Member States, a smaller majority of regions were relatively specialised in one particular type of livestock rearing: swine in Poland, bovines in Belgium, Germany, France, the Netherlands and Finland, or goats in Portugal and Romania. A more diverse picture was apparent in Spain, Italy and to a lesser extent Slovakia, with no clear national specialisation at the regional level of analysis.

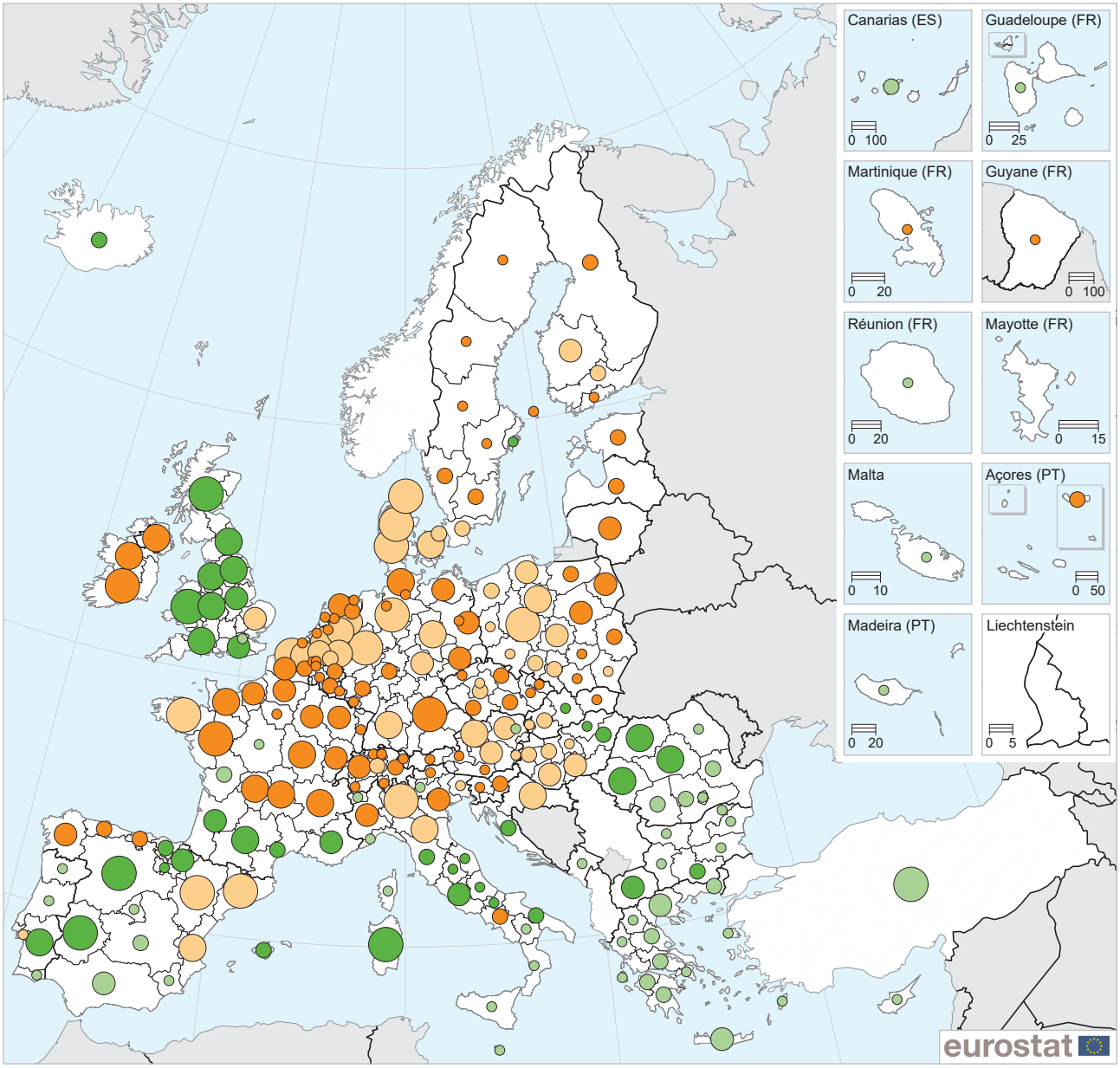
Counts of livestock vary considerably between regions, reflecting not only the size of each region but also its typology, climate and alternative uses for land (not just agricultural). Among the 85 regions in the EU which were relatively specialised in rearing bovines in 2015, there were 11 where the number of head rose above one million, six of these were located in France (Rhône-Alpes, Limousin, Bourgogne, Basse-Normandie, Auvergne and Pays de la Loire), two were from Germany (Schleswig-Holstein and Bayern; note these are both NUTS level 1 regions), one was from the United Kingdom (Northern Ireland; also a NUTS level 1 region) and the final two were the Irish regions, namely, Border, Midland and Western, and Southern and Eastern (which had the highest count at 4.0 million head).

A similar analysis reveals there were 54 regions in the EU that were relatively specialised in rearing swine, of which 24 regions recorded in excess of a million head, with half of these having more than two million heads. The 12 regions with the highest numbers of swine were located in Denmark (three regions), Spain (two regions; 2014 data), Germany (two regions; note these were both NUTS level 1 regions), as well as single regions from each of Belgium (2013 data), France, Italy, the Netherlands and Poland (2012 data). The highest count of swine was recorded in the German region of Niedersachsen (8.7 million head), while there were 7.3-7.5 million head in Nordrhein-Westfalen (also Germany), Cataluña (Spain; 2014 data) and Bretagne (France).

There were 37 regions across the EU where rearing sheep was the most specialised form of livestock farming (relative to the EU average) in 2015. A total of 15 of these regions had more than one million head of sheep, among which seven were from the north and west of the United Kingdom (note these are all NUTS level 1 regions), while there were three Romanian regions, two Spanish regions (2014 data) and single regions from each of France, Italy and Portugal. The highest numbers of sheep were recorded in Scotland (5.0 million head) and Wales (5.9 million head).

Finally, there were 47 regions in the EU where the rearing of goats was the most specialised form of livestock farming (relative to the EU average) in 2015. In none of these regions did the count of the number

Map 12.4: Relative livestock specialisation and number of heads, by NUTS 2 regions, 2015
(based on % share of livestock in the EU-28)



EU-28 = Swine
Most commonly reared animal type relative to EU-28 average

- Bovines
- Swine
- Sheep
- Goats

EU-28 = 148 528
Most commonly reared animal type relative to EU-28 average (thousand head)

- < 250
- 250 – < 500
- 500 – < 1 000
- 1 000 – < 2 500
- >= 2 500

Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 09/2017

0 200 400 600 800 km

Note: the colour of each circle denotes the relative specialisation of each region by animal type (relative to the EU-28 average), while the size of each circle represents the number of head of the most commonly reared animal type (relative to the EU-28 average). When compiling the specialisation ratios, a fixed denominator based on 2015 was used, even in those cases where an earlier reference period was used for a specific region. Germany and the United Kingdom: NUTS level 1. Serbia and Turkey: national data. EU-28: Eurostat estimates for sheep and goats (made for the purpose of this publication). Switzerland: estimates. Germany, Estonia, Attiki (EL30), Comunidad de Madrid (ES30), France, Cyprus, Latvia, Lithuania, Região Autónoma dos Açores (PT20), Região Autónoma da Madeira (PT30), Slovenia and Turkey: provisional. Spain: 2014. Belgium and Iceland: 2013. Poland: 2012.

Source: Eurostat (online data codes: agr_r_animal and demo_r_d3area)

of head rise above one million, with the highest count in the southern Spanish region of Andalucía (985 thousand heads; 2014 data). The only other regions to record more than half a million head of goats were both located in Greece: the island of Kriti (558 thousand head) and Kentriki Makedonia (515 thousand head).

AGRICULTURAL PRODUCTS: COWS' MILK PRODUCTION

The diversity of landscapes and climatic conditions within some EU Member States often helps explain regional specialisations as regards dairy farming pasture, which is generally grown in lowland areas with a temperate climate and a relatively high degree of rainfall. This was particularly the case in the Benelux Member States, Denmark, Germany, Ireland, much of France, central Poland, many Alpine regions and western England. In those regions where grassland is rarer (for example, around the Mediterranean or in south-eastern EU regions) dairy farming tends to be relatively uncommon. Indeed, dairy farming is often substituted by sheep (or goat) farming when livestock farmers are confronted with relatively arid landscapes and less favourable climatic conditions; this is also true to some degree in upland regions.

As noted above, around 27 % of the EU-28's livestock population in 2015 were bovines, some 89 million in number. Of these, 24 million were dairy cows (used mainly or exclusively for the production of milk for human consumption and/or processing into dairy products). Cows produce about 97 % of all milk produced in the EU-28, the remainder coming from sheep, goats and buffaloes. Dairy cows produced 161 million tonnes of milk in the EU-28 in 2015, with 152 million tonnes being delivered to dairies from which various products could be obtained, such as drinking milk, whey, cheese, milk powder and butter; the remainder was used on farms (as feed, for own consumption or for own further processing) or sold directly from farms to consumers.

Dutch regions had particularly high production of cows' milk relative to their size

The highest levels of cows' milk production among the EU Member States were recorded by Germany and France, producing 33 million tonnes and 26 million tonnes of milk respectively in 2015, equivalent to 20.3 % and 16.1 % of the EU-28 total. Given Ireland's relatively small size, its 4.4 % share of the EU-28 milk production is noteworthy. On a regional level, taking account of each region's size, production was greatest in the Dutch region of Overijssel, where 633 tonnes of cows' milk were produced per km^2. Indeed, 8 of the 10 regions with the highest production relative to size were in the Netherlands, the other two being Cheshire (the United Kingdom) and Região Autónoma dos Açores (Portugal). A total of 51 regions recorded at least 100 tonnes of cows' milk production per km^2 in 2015 (shown with the darkest shade of green in Map 12.5). The vast majority of these were in Denmark or western EU Member States, specifically in Ireland, the United Kingdom, northern France, the Benelux Member States and Germany. Other regions with a high level of milk production relative to their area were Lombardia and Emilia-Romagna in northern Italy, Malta (a single region at this level of detail), Podlaskie in eastern Poland, and the aforementioned Região Autónoma dos Açores.

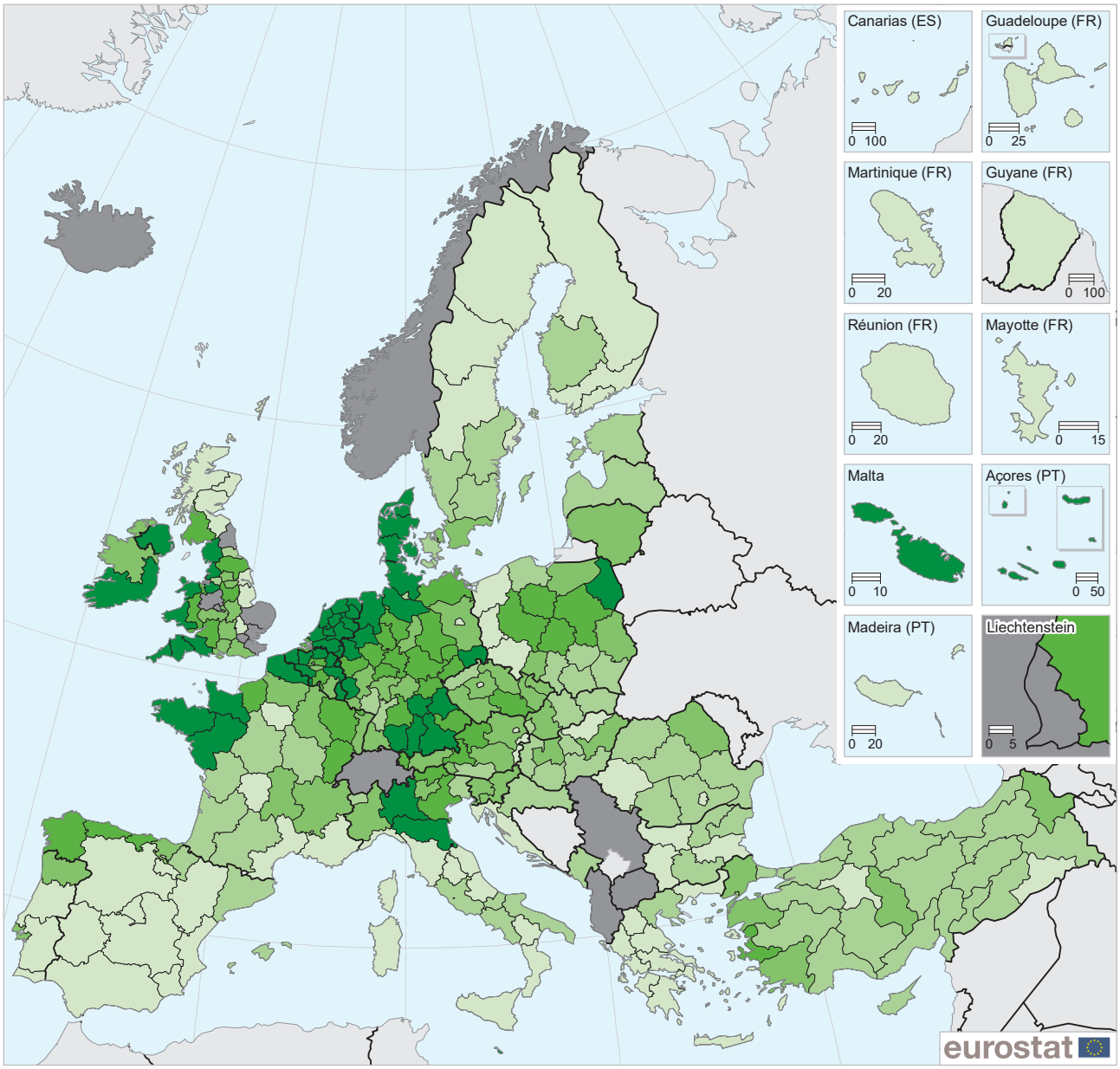
A total of 75 regions reported a low level of cows' milk production relative to their size, less than 10 tonnes per km^2 in 2015. Approximately half of these were in southern EU Member States, including 12 of the 13 Greek regions and four of the seven Portuguese regions. Ten of the 75 regions were capital city regions, such as Wien (Austria), Région de Bruxelles-Capitale/Brussels Hoofdstedelijk Gewest (Belgium), Berlin (Germany) and Attiki (Greece). Several regions in eastern and western EU Member States were more focused on arable rather than dairy farming, for example Severozapaden in Bulgaria, Bedfordshire and Hertfordshire in the United Kingdom, Burgenland in western Austria, or Észak-Magyarország in Hungary. Others were particularly remote regions, for example in the north of Finland, Sweden or Scotland (the United Kingdom).

The second analysis of cows' milk production is presented in Figure 12.5. This shows, for each EU Member State, which region had the highest level of cows' milk production. For these selected regions it contrasts the number of dairy cows with the level of cows' milk production relative to the size of the region. The EU regions with the highest levels of cows' milk production in 2015 were Bayern and Niedersachsen, while three more German regions — Nordrhein-Westfalen, Schleswig-Holstein and Baden-Württemberg — featured among the top 20 regions with the highest levels of cows' milk production in the EU; it should be noted that data for Germany refer to NUTS level 1 regions. The next highest levels of cows' milk production were recorded in Southern and Eastern Ireland, Bretagne in France, and Lombardia in Italy, while Pays de la Loire and Basse-Normandie (both France) and Emilia-Romagna (Italy) were also present among the top 20 regions with the highest levels of cows' milk production in 2015. Mazowieckie and Galicia were the largest regions in terms of cows' milk production in Poland and Spain respectively and were the 10th and 11th largest milk producing regions in the EU; a second Polish region, Podlaskie, was also in the top 20. Northern Ireland and Friesland were the 13th and 14th largest cows' milk producing regions in the EU and the largest in the United Kingdom and the Netherlands respectively, while three further Dutch regions, Overijssel, Gelderland and Noord-Brabant, were also present in the top 20 for the EU, which was completed by the Danish region of Syddanmark.

2015

97 %
of milk production from animals in the EU comes from dairy cows

Map 12.5: Cows' milk production relative to total area, by NUTS 2 regions, 2015
(tonnes/km²)



(tonnes/km²)

EU-28 = 36.1

- < 10
- 10 – < 25
- 25 – < 50
- 50 – < 100
- >= 100
- Data not available

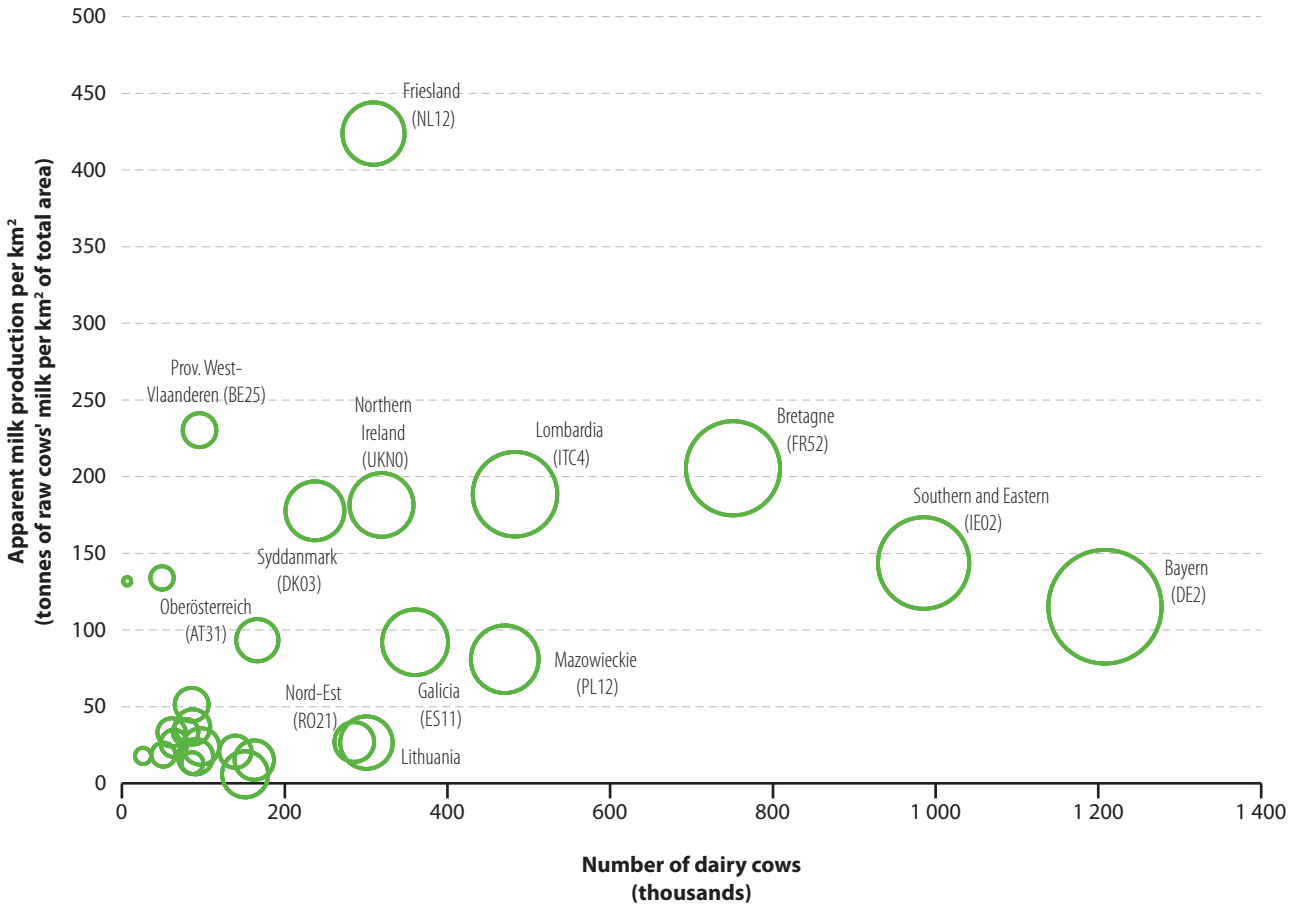
Administrative boundaries: © EuroGeographics © UN-FAO © Turkstat
Cartography: Eurostat — GISCO, 07/2017

0 200 400 600 800 km

Note: Mayotte (FRA5): 2014. Croatia: ratio based on land area and not total area. Belgium: estimates. EU-28, Spain, France, Cyprus and the United Kingdom: provisional.

Source: Eurostat (online data codes: agr_r_milkpr, apro_mk_farm and demo_r_d3area)

Figure 12.5: Cows' milk production for selected NUTS 2 regions, 2015



Note: based on the NUTS level 2 region with the highest level of milk production in each EU Member State; the diameter of each circle is proportional to the total cows' milk production. Germany: NUTS level 1. Belgium: estimates. Estonia, Spain, France, Cyprus, Latvia, Lithuania and Slovenia: provisional. United Kingdom: several regions are not available.

Source: Eurostat (online data codes: agr_r_animal, agr_r_milkpr and demo_r_d3area)

End of milk quotas

In 1984, following years of significant overproduction of milk and milk products, the common agricultural policy (CAP) introduced milk quotas, replacing guaranteed milk prices. The guaranteed price had had an impact on world market prices as it was considerably higher than market prices and the EU frequently subsidised exports to the markets outside of the EU. The quotas that were introduced had two elements, fixing the maximum amount of milk to be delivered to dairies and also limiting the amount that could be sold directly by farms; if the quantities of milk were above the defined thresholds a levy was applied to the farmers concerned. The quotas not only stopped the over-supply of milk and milk products, but it also stabilised dairy farmers' revenues.

In 2009, a decision was taken to prepare for the end of milk quotas by increasing the quotas by 1 % every year over five consecutive years. The intention was to give back to farmers the flexibility to expand their production and also to allow EU dairy farmers to profit from growing markets outside of the EU. In April 2015, 31 years after being put into place, dairy quotas were abolished. An article (on Statistics Explained) provides more information about the production of milk and milk products during the era of milk quotas.

Data sources and availability

The farm structure survey is a major source of agricultural statistics. A comprehensive survey is carried out by EU Member States every 10 years (the last of which was conducted in 2010) and is referred to as the agricultural census. This is complemented by intermediate sample surveys which are carried out two times between each census (the last of which was conducted in 2013). The legal basis for the farm structure survey is provided by a Regulation of the European Parliament and of the Council on farm structure surveys and the survey on agricultural production methods (EC) No 1166/2008, together with an implementing Regulation (EC) No 1200/2009 amended by Regulation (EU) 2015/1391. As noted above, thresholds used for the farm structure survey are generally set so as to include farms with a utilised agricultural area over 1 hectare, although thresholds are raised to two hectares for Slovakia, three hectares for Luxembourg, and five hectares for the Czech Republic, Denmark, Germany and the United Kingdom.

The legal basis for crop statistics was revised in 2015 with the adoption of a new Regulation (EU) 2015/1557 and is supplemented by an ESS agreement. Crop statistics relate to: harvested production; harvested or production area or the area under cultivation; and the main area.

The legal basis for livestock statistics is Regulation (EC) No 1165/2008, while milk and milk product statistics are collected under Decision 97/80/EC implementing Directive 96/16/EC on statistical surveys of milk and milk products.

Eurostat traditionally relies on additive variables showing absolute values. For illustrative purposes some indicators in this chapter have been normalised, dividing regional values by a region's total utilised agricultural area (in hectares). It should be noted that Map 12.5 and Figure 12.5 on cows' milk production per km^2 show the spatial distribution across EU regions and that the information presented does not refer, per se, to milk yields (which should instead employ the utilised agricultural area of dairy farming as a denominator).

NUTS

The data presented in this chapter are based exclusively on the 2013 version of NUTS. For the vast majority of regions there is no difference between the 2010 and 2013 versions of NUTS. The regional data from the farm structure survey used in Map 12.1 in this chapter have been converted from NUTS 2010. The conversion of these data has generally had the following consequences at NUTS level 2: data for the French regions of Guadeloupe and Mayotte are not available, only national data are available for Slovenia, and data for London are shown at NUTS level 1.

INDICATOR DEFINITIONS

Glossary entries on Statistics Explained (see: http://ec.europa.eu/eurostat/statistics-explained/index.php/Category:Agriculture_glossary) are available for a wide range of agricultural concepts/indicators.

For more information:
http://ec.europa.eu/eurostat/web/agriculture/overview
http://ec.europa.eu/eurostat/web/agriculture/methodology

13 Focus on European cities

Cities are often seen as centres of economic growth, providing opportunities for study, innovation and employment. An increasing share of the European Union (EU's) population lives and works in cities and it is widely expected that it is likely that these patterns will continue as urban areas account for a greater share of activity. Although population numbers are falling in some cities which may be characterised as former industrial heartlands, most (when measured with their surrounding suburbs) are expanding at a rapid pace and such growth is accompanied by a range of complex challenges: for example, issues relating to social cohesion, an ample supply of housing, or the provision of efficient transport services, each of which may impact on the quality of life. This chapter analyses the sustainability of cities in the EU: it focuses on three principal areas — demographic and socioeconomic developments; the use of different means of transport for going to work; and the environment — as measured by air quality and municipal waste.

The manner in which cities across the EU are governed and their autonomy varies considerably between EU Member States, according to a combination of administrative layers, at a national, regional, metropolitan/urban, city or borough level.

EUROPE 2020

The Europe 2020 strategy represents the EU's growth strategy until 2020: its aim is to support the recovery from the global financial and economic crisis through smart, sustainable and inclusive growth. The strategy is implemented at different political levels, taking account of the diversity of regional developments in the EU, through tailor-made contributions by individual regions and cities.

Looking at the five targets which are used to measure progress under the Europe 2020 strategy, capital cities are often seen to outperform other areas. The gap between capital cities and other cities was particularly large in several EU Member States characterised by a broadly monocentric pattern of development (for example, Greece or France). By contrast, in those Member States characterised by a broadly polycentric pattern of development (for example, Germany or Italy), the performance of the capital city was often quite similar to that recorded for other cities. Several western EU Member States (for example, Belgium or the United Kingdom) displayed relatively low scores for several cities — in particular those that developed rapidly during the industrial revolution — with a large proportion of their inhabitants facing considerable socioeconomic difficulties, such as relatively low employment rates and levels of educational attainment, or relatively high rates of social exclusion and poverty. By contrast, in the eastern Member States, cities generally tended to outperform rural areas and this was especially the case for capital cities.

SUSTAINABLE CITIES

The European Commission's Directorate-General for Environment (DG Environment) works on a range of issues with the goal of improving urban environments, for example:

- the United Nations (UN) sustainable development goals, in particular goal 11, which seeks to ensure that all cities are inclusive, safe, resilient and sustainable;
- EU environmental legislation which aims to guarantee that European citizens may live and work in cities that provide clean air and water, avoid exposure to excessive noise, and deal properly with waste, while protecting nature and biodiversity, and promoting green infrastructure;
- the European Green Capital initiative, which allows cities to showcase their environmental performance, recognising and rewarding local efforts to improve the environment, the economy and the quality of life in cities (the German city of Essen was the winner of the 2017 award);
- the European Green Leaf initiative, which allows towns and smaller cities (of between 20 and 100 thousand inhabitants) to be recognised for their commitment to better environmental outcomes, with a particular accent on efforts that generate green growth and new jobs (the Irish city of Galway was the winner of the 2017 award).

As part of the 7th Environmental Action Programme (7EAP) — living well, within the limits of our planet, the European Parliament and Council outlined a priority objective (no 8) designed to enhance the sustainability of the EU's cities. This action seeks to ensure that a majority of cities in the EU are, by 2020, implementing policies for sustainable urban planning and design, including urban public transport and mobility, sustainable buildings, energy efficiency and biodiversity conservation.

The European Commission adopted a Clean Air Policy Package in December 2013, consisting of a new Clean Air Programme for Europe with new air quality objectives for the period up to 2030, a revised National Emission Ceilings Directive with stricter national emission ceilings for the six main pollutants, and a proposal for a new Directive to reduce pollution from medium-sized combustion installations.

The EU's cohesion policy is also used to promote sustainable urban development. A minimum of 5 % of the budget for the European Regional Development Fund (ERDF) should be invested in sustainable urban development in each of the EU Member States; city authorities decide upon the best measures for spending these funds.

Statistical analysis

Cities — in particular capitals — are motors for economic growth, often characterised by their high concentrations of economic activity, employment and wealth. Yet, there is often a paradox insofar as cities also display some of the highest levels of social exclusion, unemployment and income disparity, and cities are also confronted by issues such as crime, traffic congestion or pollution. Furthermore, within individual cities it is possible to find people who enjoy a very comfortable lifestyle living in close proximity to others who may face considerable challenges — herein lies the 'urban paradox'.

POPULATION

This section focuses on population statistics for cities. With a high share of the population living in urban areas, there are many issues which may impact upon on the sustainability of cities in the EU. Population statistics for cities refer to the population at its 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.

Largest cities by population

Across the EU there is a diverse mix of cities: at one end of the scale are the global metropolises of London and Paris, while approximately half of the cities in the EU had a relatively small urban centre of between 50and 100 thousand inhabitants. Many of the EU's largest cities (especially capital cities) attract both internal and external migrants and their population numbers therefore tend to increase at a faster pace than national averages. This often implies a process of urban sprawl, as previously rural areas in the neighbourhood of expanding urban areas are developed to accommodate the growing population.

The 20 largest functional urban areas in the EU are presented in Figure 13.1: the information presented relates to the numbers of inhabitants living in each city plus its commuting zone, while also showing the size of the city itself; the list is split equally between capital cities and non-capital cities. In 2015, six of the top 20 cities were in Germany, three each were in Italy and the United Kingdom, and two were in Spain. Budapest in Hungary and Warszawa in Poland were the only cities from 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 in the EU were recorded in London and Paris (both around 12 million inhabitants; data for Paris relate to 2013), followed — at some distance — by Madrid (6.5 million). The next largest concentration was the urban agglomeration of the Ruhrgebiet (which includes, among others, Bochum, Dortmund, Duisburg, Essen and Oberhausen) with 5.1 million inhabitants, while the functional urban area of the German capital of Berlin also had a population of 5.1 million persons. There were three functional urban areas with between 4.0 and 5.0 million inhabitants, all of which were located in the southern EU Member States, namely, Barcelona, Roma and Milano.

Main statistical findings

- **In 2015, six of the 20 largest functional urban areas (cities plus their surrounding commuting zone) were in Germany, three each in Italy and the United Kingdom, and two in Spain. Budapest (Hungary) and Warszawa (Poland) were the only cities from 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 in the EU were recorded in London (the United Kingdom) and Paris (France), followed — at some distance — by Madrid (Spain), the Ruhrgebiet, Berlin (both Germany), Barcelona (Spain), Roma and Milano (both Italy).**
- **Athina (Greece) was the only one of the larger capital cities (with a population above 2.0 million) to report a fall in its population between 2004 and 2014. The slowest annual average growth among these larger cities during this period was recorded in Berlin and Madrid; the fastest growth was recorded in London.**
- **In 2014, the majority of the cities with an old-age dependency rate of 40 % or more were located in Italy, while most of the others were located in Germany, France or the United Kingdom.**
- **When compared with rural areas and with towns and suburbs, fewer young people in EU cities were early leavers from education and training. Equally, nearly half of all persons aged 30–34 living in EU cities had a tertiary level of education, again higher than the shares recorded for those living in rural areas of towns and suburbs.**

2015

17.8 %
of the EU's total population live in a functional urban area belonging to one of the 20 largest cities

The distribution of cities across the Nordic Member States, France and the interior areas of Portugal and Spain was relatively sparse

One of the most striking aspects of the distribution of cities across parts of the EU is the close proximity of cities 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 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.

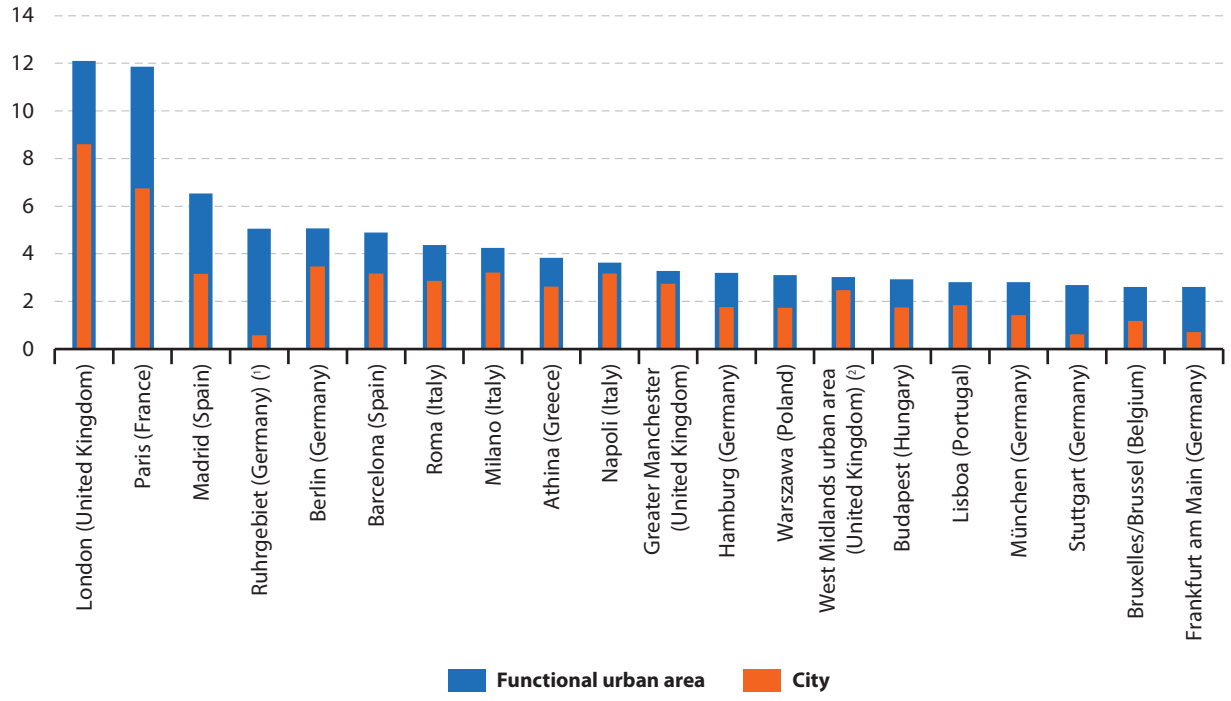
Capital cities

Almost 8.5 million inhabitants in London in 2014 …

Figure 13.2 presents the resident population as of 1 January 2014 of the 28 capital cities in the EU as well as in Norway and Switzerland: the width of each bar reflects the number of inhabitants of each city while the height reflects the annual average rate of change between 2004 and 2014. On the basis of the data presented, the most populous capital cities in the EU in 2014 were London (8.5 million inhabitants) and Paris (6.8 million inhabitants); note that these data refer to the concept of the greater city, in other words they are not limited to the administrative city limits, although they do not extend to cover surrounding functional urban areas.

The next largest capital cities in the EU were Berlin (3.4 million) and Madrid (3.2 million), followed by Roma, Athina (2013 data) and Bucuresti (Romania) as the only other capital cities with more than 2.0 million inhabitants. At the other end of the range, the smallest capital city in the EU was Luxembourg, which had 107 thousand inhabitants, slightly less than the population of Bern in Switzerland (129 thousand).

Figure 13.1: Twenty cities in the EU with the largest number of inhabitants, 2015
(millions)



Note: Athina (EL), Barcelona (ES), Paris (FR), Milano (IT), Napoli (IT), Lisboa (PT), London (UK), Manchester (UK) and West Midlands (UK): greater city. Cities in Spain, Italy, Poland, Hungary and Belgium: 2014. Cities in France and Austria: 2013. Cities in Greece: 2011. Cities in Spain, Poland and Portugal: estimates.

(1) City: Essen.
(2) The greater city is also defined in relation to the urban area, of which Birmingham forms part.

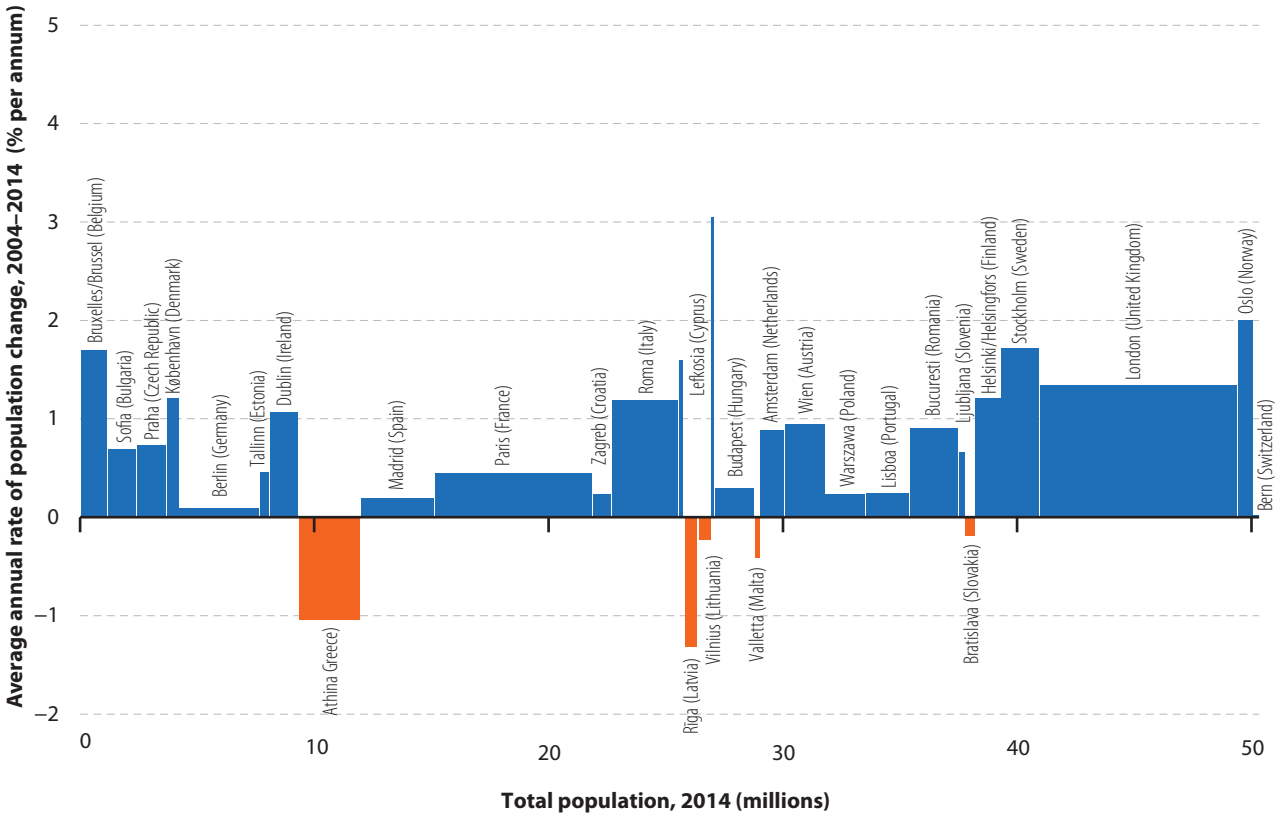
Source: Eurostat (online data codes: urb_cpop1 and urb_lpop1)

… while the fastest growth in the previous 10 years was in Luxembourg

Despite being the smallest of these capital cities, Luxembourg was the fastest growing between 2004 and 2014, with its population increasing by 3.1 % per year on average. In broad terms, Norway and the Nordic Member States reported relatively high average population growth in their capital cities during this period, at least 1.2 % per year. By contrast, the other northern Member States — namely, the three Baltic Member States — reported a falling population (-1.3 % per year in Rīga (Latvia) and -0.2 % in Vilnius (Lithuania)) or modest growth (0.5 % in Tallinn (Estonia)). The capital cities in eastern Member States generally recorded average population growth below 1.0 % per year, although the population fell by 0.2 % per annum on average in Bratislava (Slovakia). Among the western and southern Member States, the situation was more mixed: rapid population growth in Luxembourg contrasted with annual average growth of just 0.1 % per year in Berlin (as well as in Bern); annual average growth of 1.6 % in Lefkosia (Cyprus) contrasted with a falling population in Athina (-1.1 % per year) and in Valletta (Malta; -0.4 %).

Athina was the only one of the larger capital cities (with a population above 2.0 million) to report a fall in population between 2004 and 2014; note that the population of the Greek capital rose in successive years through to 2009, after which the population declined at a more rapid rate (likely reflecting the impact of the global financial and economic crisis and subsequent sovereign debt crisis). The slowest annual average growth rates among these larger cities during the period between 2004 and 2014 were recorded in Berlin (0.1 %) and Madrid (0.2 %); the fastest growth was recorded in London, where the population grew by an average of 1.4 % per year, closely followed by Roma, where growth was 1.2 % per year.

Figure 13.2: Population and population change, capital cities, 2004–2014



Note: the horizontal axis shows the cumulative total of the number of inhabitants living in capital cities in the EU, Norway and Switzerland; the vertical axis shows the average annual rate of population change for each capital city during the period 2004–2014. Dublin (IE), Athina (EL), Paris (FR), Amsterdam (NL), Lisboa (PT), Helsinki/Helsingfors (FI), Stockholm (SE) and London (UK): greater city. København (DK), Athina, Lefkosia (CY), Valletta (MT), Wien (AT), Lisboa and Oslo (NO): 2004–2013. Paris: 2006–2014. Budapest (HU): 2005–2014. Sofia (BG), Athina, Madrid (ES), Paris, Rīga (LV), Vilnius (LT), Valletta, Warszawa (PL), Lisboa and London: estimates.

Source: Eurostat (online data code: urb_cpop1)

Old-age dependency in cities

Map 13.1 provides information on the age structure of more than 850 cities in the EU, Norway and Switzerland. The size of the circle shows how large the city is in terms of its overall number of inhabitants, while the shading reflects 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 (a measure of the working age population). Across the EU-28 as a whole, the old-age dependency ratio was 28.2 % in 2014.

The existence of greater opportunities for higher education and employment offered by most large cities might lead to the assumption that they have a higher share of younger and middle-aged adults and so 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 major 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; 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 limited educational and or employment opportunities.

A majority of cities across the EU with an old-age dependency ratio of at least 40 % were in Italy

In 2014, the majority (41 from 77) of the cities with an old-age dependency rate of 40 % or more (as shown by the darkest shade in Map 13.1) were located in Italy. Many of the other cities were in Germany (15), France (10) or the United Kingdom (six), with three in Spain and one each in Belgium and Portugal.

Aside from in Germany (where the majority of these cities were in eastern Germany), those with relatively high old-age dependency ratios were often located close to a coastline — including popular retirement destinations — with particularly high concentrations on the Italian Adriatic coast and the Mediterranean coast from southern France into northern Italy.

In 2014, there were only five cities in the EU where the old-age dependency ratio exceeded 50 %. Three of these were located on the Mediterranean coast: the highest old-age dependency ratio was recorded in the French resort of Fréjus (60.3 %; data are for 2013); the other Mediterranean coastal cities were the Italian towns of Savona (51.8 %) and Sanremo (51.7 %), just over the border. The two other cities with an old-age dependency ratio above 50 % were in eastern Germany: Dessau-Roßlau (51.7 %, 2015 data) is between Leipzig and Berlin, while Görlitz (50.4 %, 2015 data) is on the border between Germany and Poland, slightly north of their borders with the Czech Republic.

However, the French and Italian Riviera was not the only coastal area that seemingly attracted retirees, as relatively high old-age dependency ratios (of at least 45 %) were recorded elsewhere on or near the coasts of Italy (Venezia and Trieste on the Adriatic coast), the United Kingdom (Waveney in Suffolk on the North Sea coast and Torbay on the coast of the English Channel), Belgium (Oostende on the North Sea coast) and Germany (Wilhelmshaven also on the North Sea coast).

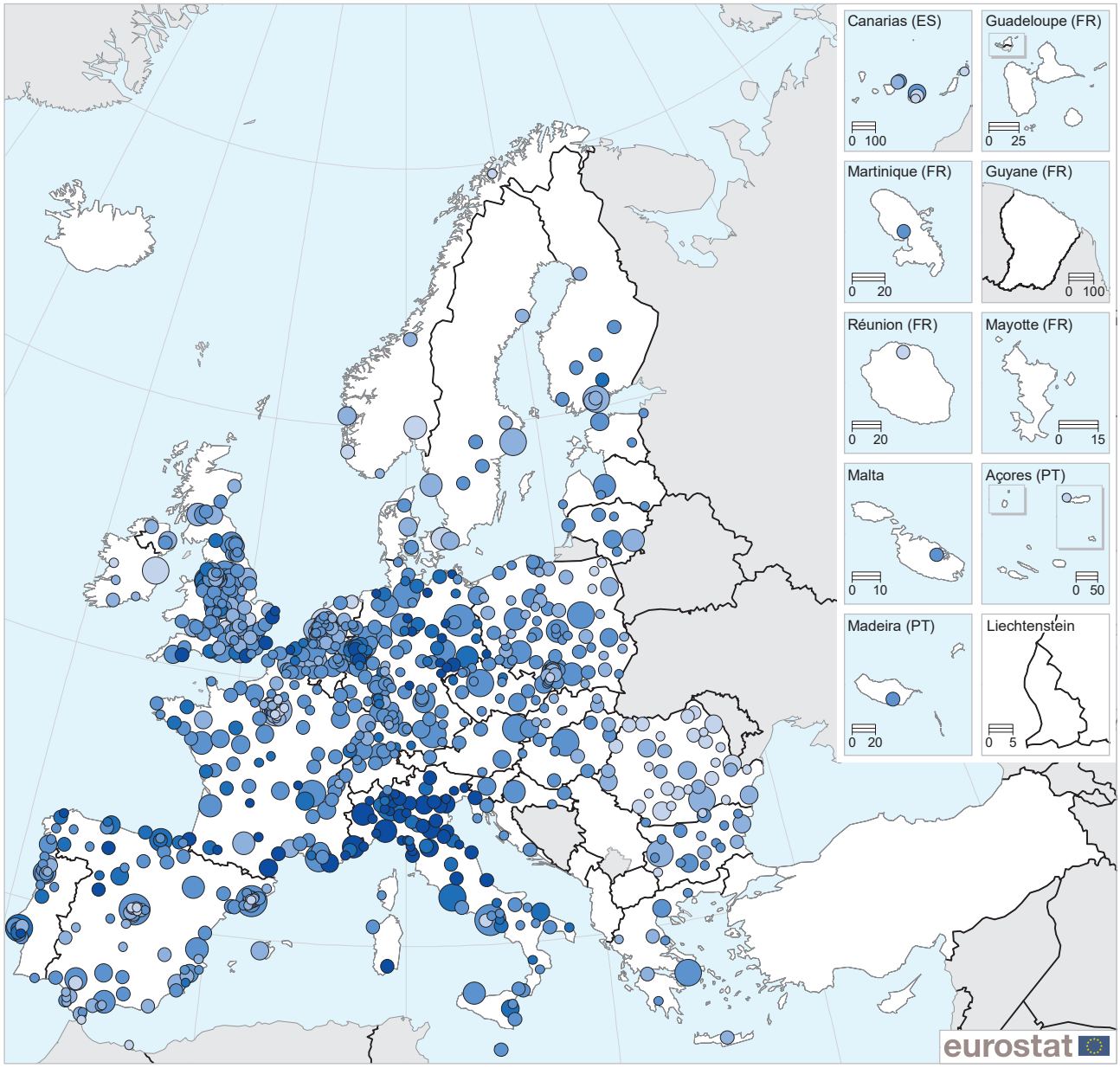
Among some of the larger cities in the EU — those with a population of at least 500 thousand inhabitants —old-age dependency ratios of at least 40 % were recorded in the Italian cities of Genova and Torino in the north-west of Italy, as well as for Nice in the south-east of France (data are for 2013).

Relatively few old persons living in satellite cities around the Spanish and French capitals

In 2014, there were four cities across the whole of the EU with at least 500 thousand inhabitants and an old-age dependency ratio that was less than 20 % (as shown by the lightest shade in Map 13.1). Each of these was a capital city, namely København (Denmark), Amsterdam (the Netherlands), Dublin (Ireland) and London; this was also the case in Oslo, the Norwegian capital city. It should be noted that not all capital cities had a low old-age dependency ratio, as the latest available ratios reached 39.0 % in Lisboa (Portugal), 35.6 % in Roma and between 30.0 % and 35.0 % in Valletta, Madrid, Rīga, Bern, Budapest and Berlin.

In 2014, the lowest old-age dependency ratio in a city in the EU was 11.3 % in the southern Romanian city of Slatina, while two suburban areas close to Madrid — Fuenlabrada and Parla — had the second and third lowest ratios (11.7 % and 12.6 %). This pattern of relatively low old-age dependency ratios observed for suburban areas around the Spanish capital extended to Coslada, Las Rozas de Madrid and Torrejón de Ardoz (all of which reported rates of less than 20 %) and was repeated around the French capital, as the cities of Marne la Vallée, Cergy-Pontoise and Saint-Quentin en Yvelines (which are all situated within a radius of no more than 20 km from central Paris) also recorded old-age dependency ratios that were below 15 %. 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 suburbs; 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.

Map 13.1: Old-age dependency ratio in cities, 2014



Note: Dublin (IE), Athina (EL), Barcelona (ES), Bilbao (ES), Paris (FR), Milano (IT), Napoli (IT), Amsterdam (NL), Rotterdam (NL), Lisboa (PT), Porto (PT), Helsinki/Helsingfors (FI), Stockholm (SE), London (UK), West Midlands (UK), Liverpool (UK), Manchester (UK), Leicester (UK), Portsmouth (UK), Nottingham (UK), Southend-on-Sea (UK), Reading (UK), Preston (UK), Zürich (CH), Genève (CH), Basel (CH), Bern (CH), Lausanne (CH), Luzern (CH) and Lugano (CH): greater city. The Czech Republic, Germany, Croatia, Malta, Portugal, Slovakia and the United Kingdom (except Belfast, Derry and Lisburn): 2015. Belgium, Denmark, France, Cyprus, Austria and Norway: 2013. Ireland, Greece, Luxembourg and Sweden: 2011. Bulgaria, Ireland, Spain, Latvia, Lithuania, Malta, Poland, Portugal, Belfast (UK), Derry (UK) and Lisburn (UK): estimates. EU-28: provisional.

Source: Eurostat (online data codes: urb_cpopstr, urbcpop1, demo_pjan and demo_pjanind)

In the vast majority of cities the old-age dependency ratio increased over time (as it did for the EU as a whole)

In 2014 the old-age dependency ratio of the EU-28 stood at 28.2 %, 3.8 percentage points higher than it had been a decade earlier, confirming the gradual ageing of the EU's population. Indeed, during the same period the median age of the population rose from 39.2 to 42.2 years.

A closer analysis of the developments for cities in the EU (subject to data availability) reveals that of the 477 cities for which information is available for both 2004 and 2014, the vast majority (424) saw their old-age dependency ratios increase, two reported no change, leaving 51 where the ratio of older people to the working-age population fell.

There were 21 cities where the old-age dependency ratio increased by more than 10 percentage points over the period under consideration. The biggest increase — 15.6 percentage points — was recorded for the eastern German city of Dessau-Roßlau (which, as noted above, had one of the highest old-age dependency ratios in the EU). There were six more German cities as well as six Spanish cities which recorded double-digit increases in their old-age dependency ratios between 2004 and 2014, while the other cities with increases of more than 10 percentage points included two from Bulgaria and Italy, as well as single cities from each of the Czech Republic, Lithuania, Poland and Portugal (note that the data for Porto concern the period 2004–2013).

At the other end of the range, a majority (31) of the 51 cities that reported a falling old-age dependency ratio between 2004 and 2014 were situated in the United Kingdom. The remaining 20 cities included seven from Germany, five from Belgium (data are for 2004–2013), three from Italy (all of which were in the region of Emilia-Romagna), two from the Netherlands, and single cities from each of Denmark (the capital city of København; data are for 2004–2013) and Spain.

The largest reductions in old-age dependency ratios — -5.0 percentage points — were recorded in the Belgian city of Antwerpen (2004–2013) and in two cities from the United Kingdom, Bournemouth and Manchester. The old-age dependency ratio fell by 4.6 points in the Belgian capital city of Bruxelles/Brussel (data are for 2004–2013), while there were five cities where this ratio fell by 3.0–3.6 points, namely, Brighton and Hove, Glasgow and Slough (all in the United Kingdom), the Belgian city of Liège (2004–2013) and the German city of Trier.

EUROPE 2020: EDUCATION AND EMPLOYMENT BY DEGREE OF URBANISATION

Europe 2020 is the EU's growth and jobs strategy for the current decade, aiming for a smart, sustainable and inclusive future. The strategy envisages measures to address the structural weaknesses in the European economic model and to deliver high levels of employment, productivity and social cohesion in the EU Member States, while reducing the impact of economic activity on the natural environment. To reach its objective, the EU has adopted eight targets in the areas of employment, research and development (R & D), climate change and energy, education and poverty reduction, to be reached by 2020. These have been translated into national targets to reflect the situation and possibilities of each Member State to contribute to the common goal. A set of nine headline indicators and additional sub-indicators gives an overview of how far the EU is to reaching its overall targets.

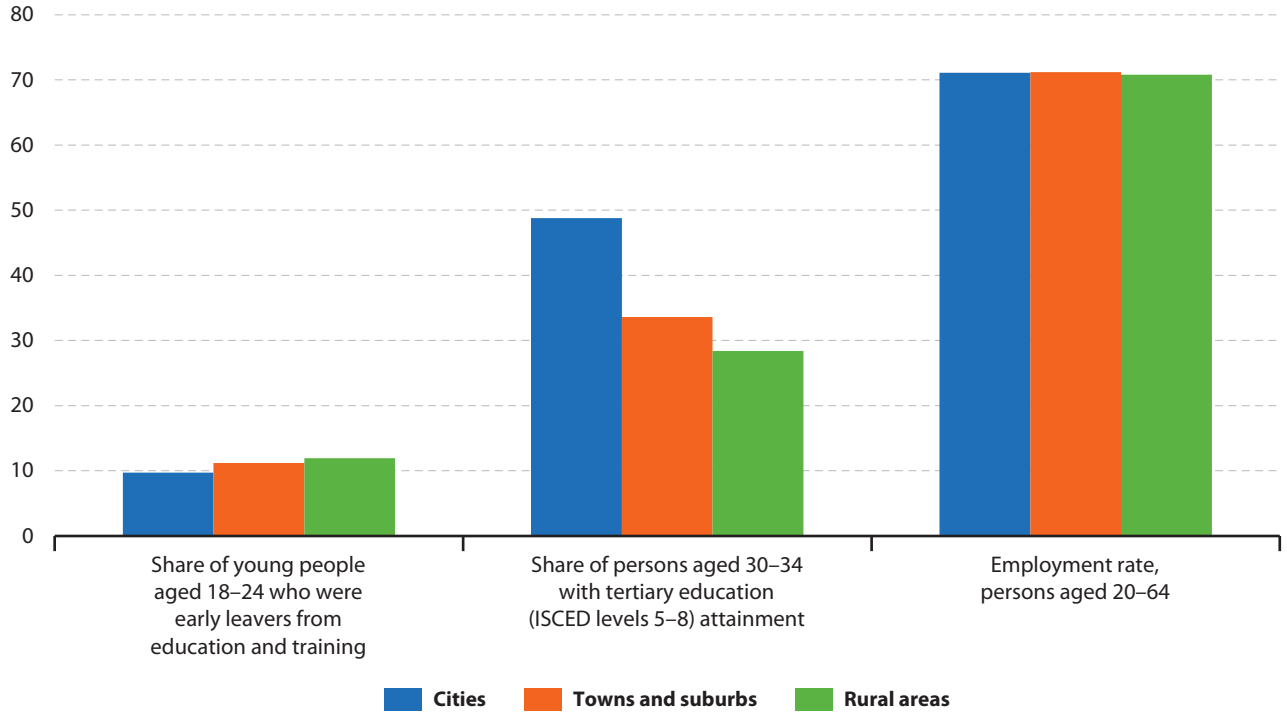
The classification of areas by degree of urbanisation identifies cities (or densely populated areas), towns and suburbs (or intermediate density areas) and rural areas (or thinly populated areas). In Figure 13.3 three of the Europe 2020 indicators are presented with an analysis by degree of urbanisation, focusing on education and employment.

The share of early leavers from education and training, defined as the share of 18 to 24 year olds with at most lower secondary education and not in further education and training, has consistently decreased since 2008, for both men and women. In 2016, the share was 10.7 % in the EU-28, compared with 14.7 % in 2008. Thus, the EU is steadily approaching its headline target for 2020, which envisages reducing the rate of early leavers from education and training to less than 10 %.

When compared with rural areas and with towns and suburbs, fewer young people in cities had left school with at most lower secondary education and were not in further education or training. In 2016, 9.7 % of young people in cities were early leavers, below the Europe 2020 headline target of 10 % and below the 10.7 % average for all areas. For this indicator there was not a great difference between the shares recorded for towns and suburbs (11.2 %) and for rural areas (11.9 %).

The Europe 2020 strategy lays down a headline target of increasing the share of the population aged 30 to 34 years having completed tertiary or equivalent education to at least 40 % by 2020. This target is related to some extent to the research and development and innovation target, namely to increase expenditure on R & D to 3 % of GDP, which in turn is likely to raise the demand for highly skilled workers. Between 2002 and 2016, there was uninterrupted annual growth in the

Figure 13.3: Selected Europe 2020 indicators, by degree of urbanisation, EU-28, 2016
(%)



Source: Eurostat (online data codes: edat_lfse_30, edat_lfs_9913 and lfst_r_ergau)

share of 30 to 34 year-olds having completed tertiary education, rising from 23.6 % to 39.1 %. Growth was considerably faster among women, who in 2016 were already clearly above the Europe 2020 target at 43.9 %. By contrast, among 30 to 34 year-old men the share was 34.4 % in 2016.

Concerning the prevalence of tertiary education and training among people aged 30 to 34 years there was also a clear distinction between cities and the two other types of areas. This can largely be explained by two factors, namely that most tertiary education establishments (such as universities) are located in cities and secondly large cities tend to have a large and broad labour market often requiring specialised personnel which attracts graduates. In cities, 48.8 % of persons aged 30 to 34 years had a tertiary education in 2016, again above the Europe 2020 target for the EU which is 40 % and the average for all areas which was 39.1 %. By contrast, the share was 33.6 % in towns and suburbs and 28.4 % in rural areas.

The employment rate shows what proportion of the population is employed. The indicator used for the Europe 2020 headline targets is for people aged 20 to 64 years and therefore generally excludes people of an age that they are likely to be in compulsory education and that they are retired. In 2008, employment in the EU-28 for the age group 20 to 64 peaked at 70.3 % of the population in the same age range. In the following years the pattern of development for the employment rate reversed as a result of the impact of the global financial and economic crisis on the EU's labour market; by 2013, the EU-28 employment rate had fallen to 68.4 %. In 2014, the employment rate started increasing again and by 2016 reached 71.0 %, the first time it had risen above its 2008 level. As a result, in 2016 the employment rate in the EU-28 remained 4.0 percentage points below the 75 % Europe 2020 headline target.

There was very little difference in the employment rates between the three different degrees of urbanisation in 2016, ranging from 70.8 % in rural areas to 71.2 % in towns and suburbs; the 71.1 % rate in cities was the slightly above the average for all areas. This apparent similarity between the three types of areas results from quite diverse situations among the EU Member States.

For more information:
http://ec.europa.eu/eurostat/statistics-explained/index.php/Degree_of_urbanisation_classification_-_2011_revision

TRANSPORT

The daily flow of commuters into many of Europe's largest cities suggests that opportunities abound in these hubs of education, production, distribution and consumption, many of which act as focal points within their regional and national economies. However, as noted above, the impact of large numbers of people living together in and around cities can have a considerable impact on the environment and the sustainability of cities in the EU. Indeed, commuter inflows combined with the internal flow of residents can lead to congestion, resulting in wasted time and associated economic and environmental costs (for individuals and enterprises alike). In an effort to encourage commuters to use public transport services, a few cities have experimented with the introduction of congestion charges and/or restrictions on polluting vehicles; these are primarily designed to discourage the use of roads at peak periods, for example: Milano, Valletta, Stockholm (Sweden) and central London. By freeing-up road space, policymakers hope to be able to reduce emissions, run more efficient public transport services, encourage sustainable modes of transport, and increase the safety of cycling/walking.

Public transport for commuting in cities

The share of people who use public transport to get to work is generally much higher in the EU's largest cities and in its capital cities, where integrated transport networks are based on rail, underground/metro, bus/tram services. At the start of 2013, Tallinn became the first capital in the EU to provide free public transport services to all of its local inhabitants. By contrast, in provincial cities the use of private motor vehicles tends to be the principal mode of transport for getting to work, with public transport systems sometimes relatively underdeveloped.

2015

49 %
of people use public transport for getting to work in the larger cities of the EU

Map 13.2 shows the share of people using public transport as their principal means of getting to work in 2015 across 75 cities in the EU, Norway and Switzerland, with the size of the circles reflecting each city's overall population size. The average share of people using public transport as their principal means of getting to work in the 72 EU cities was 49.3 %. In the Austrian, Swiss, French and Czech capital cities, at least two thirds (67 % or higher) of people used public transport as their principal means of getting to work. Shares of 60 % or more were also reported for Barcelona and the capital cities of Hungary, Sweden, Bulgaria, Spain, Finland and Poland.

Less than 30 % of people used public transport as their principal means of getting to work in 16 of the 75 cities, including the capital cities of Cyprus — which had the lowest share (5 %) of all cities — and Malta. The largest cities (among the 75 surveyed) where less than 30 % of people used public transport as their principal means of getting to work were Greater Manchester (the United Kingdom), Palermo (Italy) and Antwerpen (Belgium).

Means of transport for commute in capital cities

Public transport was the most common form of transport for commuting to work in some of the EU's largest cities

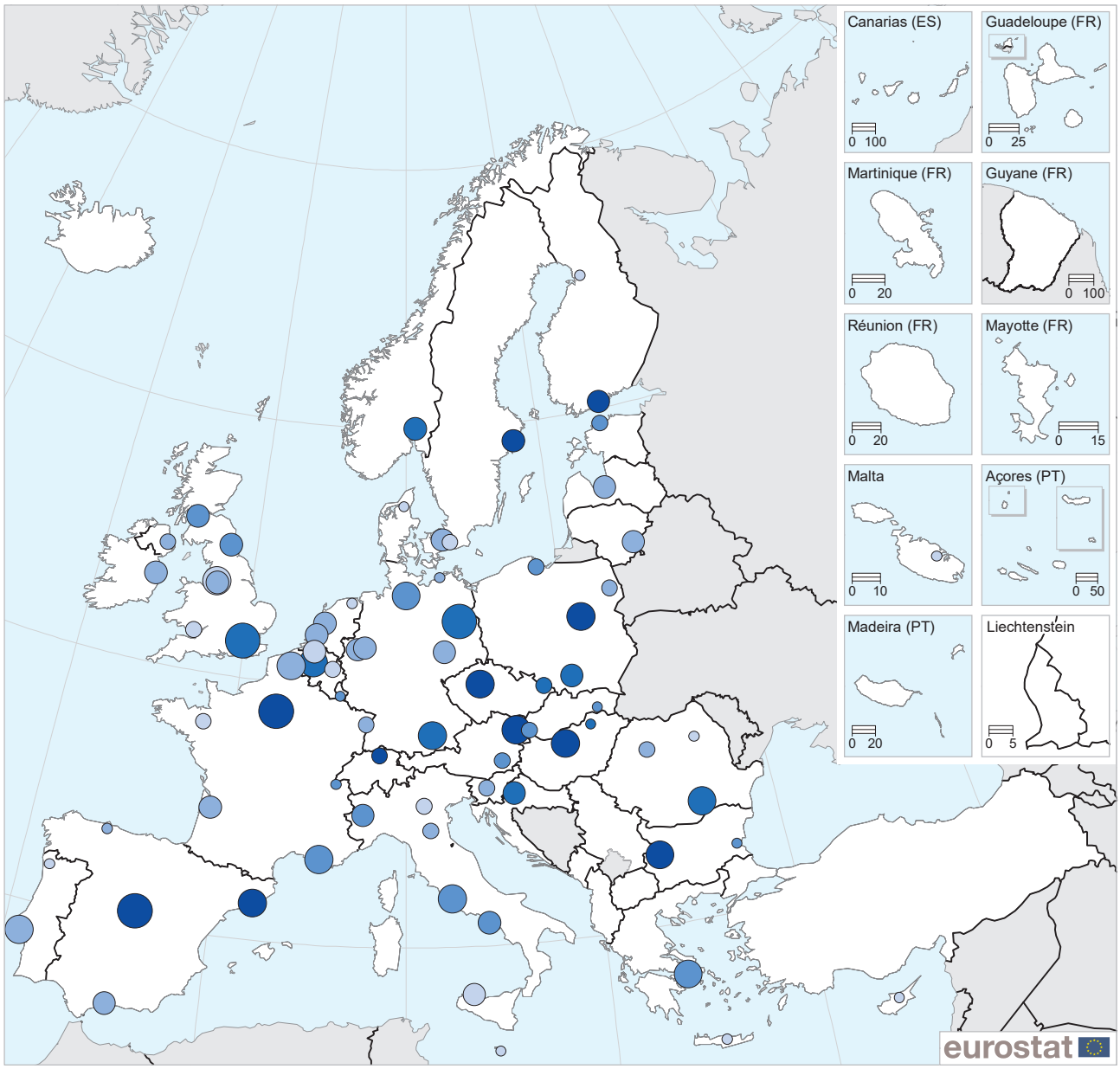
A broader analysis of a variety of modes of transport used for going to work in 2015 is presented in Figure 13.4 for capital cities in the EU, Iceland, Norway and Turkey. Four modes are presented, including private cars, public transport, cycling and walking: note that the sum of the shares exceeds 100 % as respondents were given the opportunity to mention more than one means of transport for making their journey to work.

Car use is quite low in some capital cities: in 17 of the 31 capital cities shown in Figure 13.4, less than half of the respondents used cars as their principal means of getting to work in 2015. In most of the remaining capital cities the share using cars did not greatly exceed two thirds except in two of the smallest capital cities, Reykjavik (Iceland) and Lefkosia. Two of the factors restricting car usage in many big cities are congestion and the limited availability (and high cost) of parking.

Another factor that may explain, at least in part, the relatively low share of car usage in some capital cities is the wide range of public transport services generally on offer; these provide an alternative that is to a greater or lesser extent affordable and efficient. In 16 of these 31 capital cities, a majority of people used public transport as their principal means of getting to work in 2015. This share peaked at 73 % in Wien (Austria). Unsurprisingly, given the high car use in Lefkosia and Reykjavik, the use of public transport in these cities was particularly low.

Given the considerable distances that may be involved, it is often problematic for commuters living in the biggest cities to go to work by bicycle or foot. However, in smaller cities that have relatively compact centres, it is increasingly common to find a relatively high proportion of journeys to work being made on foot or by bicycle. It is likely that many people who use a car or public transport to travel to work also walk as part of their journey, between their place of work and either a car park or a stop/station (for example for a bus, tram, trolley-bus, underground/metro or train). Walking to work was generally the third most common mode of transport in capital cities (behind cars and public transport), although it was more common than public transport in Reykjavik and Lefkosia and more common than cars in Athina, Paris, Budapest, Wien, Helsinki/Helsingfors (Finland) and Stockholm. Only in Paris, did a majority (51 %) of respondents say that they walked to work. At least one in five respondents walked to work in the majority (20 out of 31) of the capital cities shown in Figure 13.4; the lowest shares of people working to walk were reported in København (14 %) and Valletta (13 %).

Map 13.2: Share of people using public transport as their principal means of going to work, cities, 2015



Note: Athina (EL), Paris (FR), Lisboa (PT) and London (UK): greater city. In many cases, an earlier reference year was used for the number of inhabitants. EU-28, Bulgarian, Spanish, Polish and Portuguese cities, Dublin (IE), Athina (EL), Rīga (LV), Vilnius (LT), Valletta (MT) and Belfast (UK): estimates for population.

Source: Eurostat (online data codes: urb_percep, urbcpop1 and demo_pjan)

Big data project — Belgian mobile phone data

Big data refers to large and very detailed digital trails left by people in their use of IT systems or detailed digital information that is captured by sensors. Examples include the information recorded while people browse the internet or connect to a mobile telecommunications network, or sensors that may be found along the side of main roads (which may be used to detect, for example, traffic volumes or carbon dioxide emission levels). These data can be used to identify patterns and analyse human behaviour.

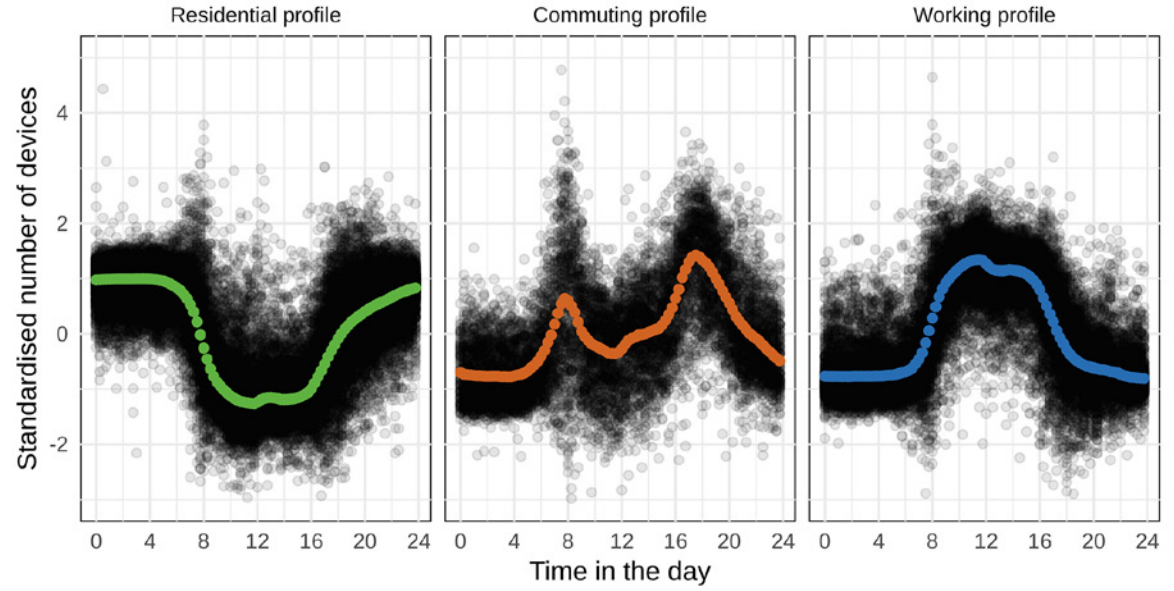
Mobile phone networks are based on a cellular system with each cell served by a base station with a communications tower and a set of antennas. Statistics Belgium and Eurostat have worked with Proximus (a Belgian mobile network operator) to investigate the potential of data from mobile networks that are stored as part of an operator's telecommunications system, for example, data on when and where people connect to a network through a mobile device.

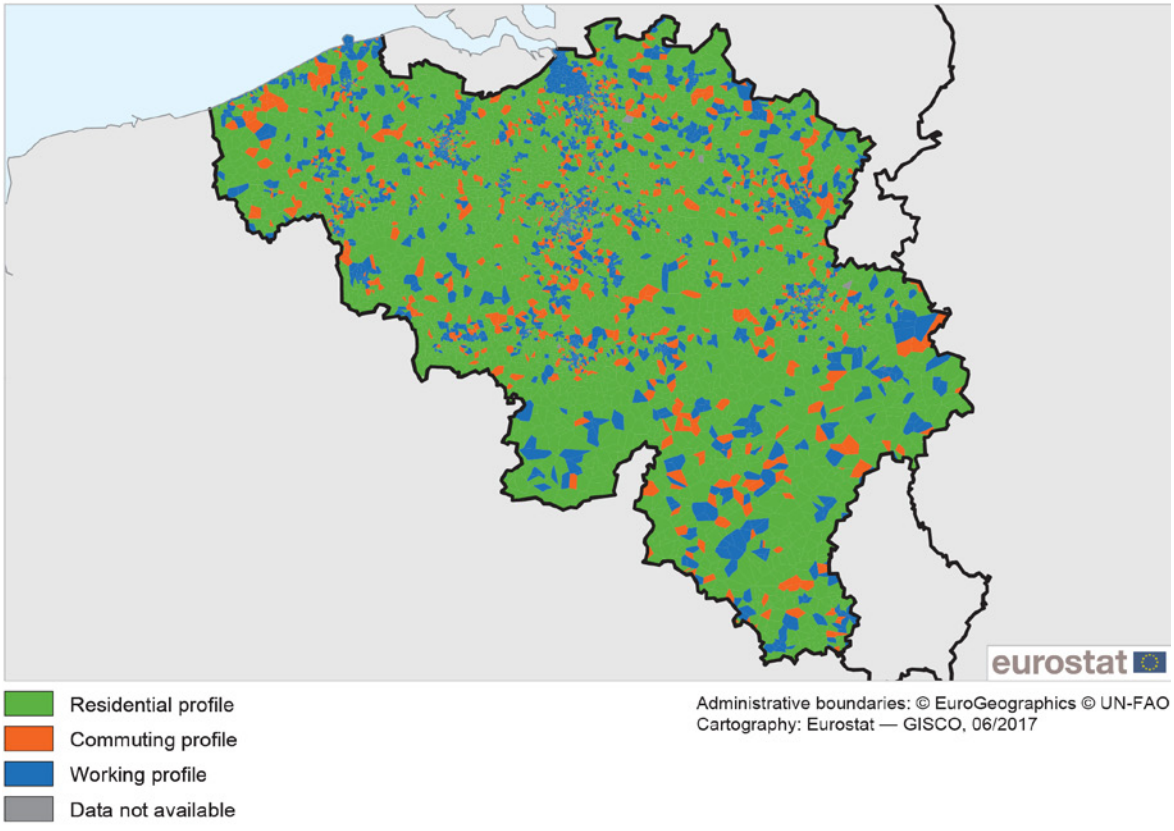
The work started with the development of a map of spatial areas approximating the mobile network cells, independent of the telecommunications technology (for example, 2G, 3G or 4G). An analysis was conducted based on the number of devices connected to the base station of each cell at different times of the day during two week days. Each area was classified into one of three profiles: a residential profile where the number of connections was above average at night and below average during the day; a working profile where the reverse situation was observed; and a commuting profile where there were two peaks (around 08.00 h and 18.00 h). The resulting maps showed a coherent picture, with most of the country made up of residential zones interspersed with a few working zones and commuting zones usually bridging these.

For more information on Eurostat's experimental statistics, refer to: http://ec.europa.eu/eurostat/web/experimental-statistics/introduction.

Big data project — Belgian mobile phone data (continued)

Classification of the territory based on the presence of people throughout the day, by type of profile, Belgium, 8-10 March 2016

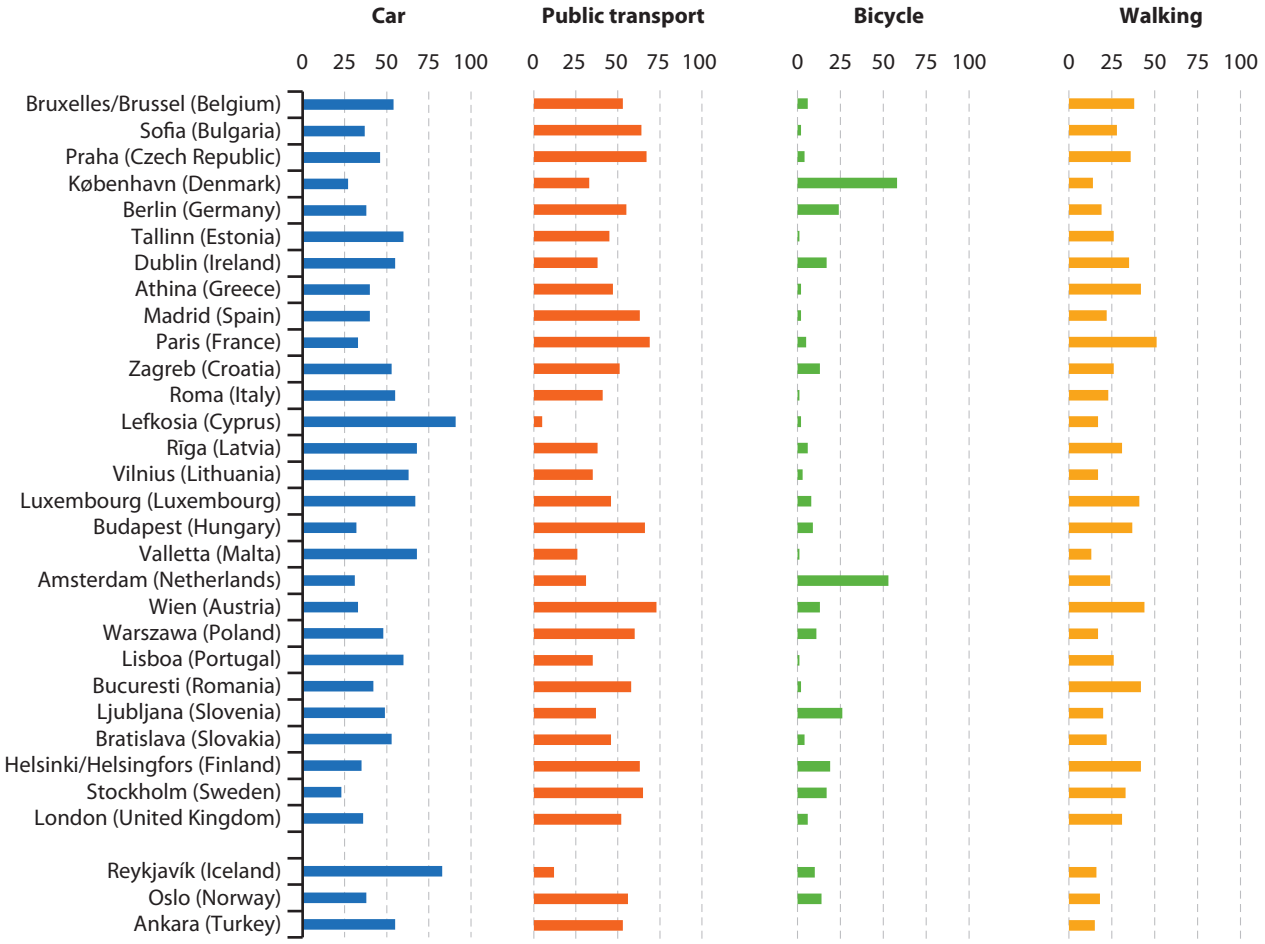




Note: experimental statistics based on a joint Eurostat, Statistics belgium and Proximus project.

Source: Eurostat

Figure 13.4: Distribution of the principal means of going to work, capital cities, 2015
(%)



Note: respondents were given the option to mention more than one means of transport for going to work (as such, the shares may rise to over 100 %). Athina (EL), Paris (FR), Lisboa (PT) and London (UK): greater city.

Source: Eurostat (online data code: urb_percep)

As well as the overall size of a city, one factor influencing the use of a bicycle for travelling to work is the extent of cycle path networks. Among the capital cities shown in Figure 13.4, the highest shares of journeys to work by bicycle in 2015 were recorded in København and Amsterdam, where more than half of the respondents indicated that they cycled to work; in these two cities a higher proportion of people cycled to work compared with those using a car or those using public transport. The next highest shares were in Ljubljana (Slovenia) and Berlin where about one in four people cycled to work. Elsewhere — in the remaining 27 capital cities — the proportion of people using a bicycle as their principal means for going to work was below one in five, dropping below 1 in 10 in 19 cities and below 1 in 20 in 13 cities; in Ankara (Turkey) the share was less than 1 %.

ENVIRONMENT

Cities are characterised by their high numbers of inhabitants, considerable commuter flows and concentrated areas of economic activity. As such, many cities in the EU are exposed to a range of environmental issues that may impact upon their sustainability and the quality of life of those individuals who live and/or work in them. This section looks in more detail at two specific environmental issues affecting cities, namely, those of air quality and the generation of municipal waste.

Maps 13.3 and 13.4 both relate to air quality in cities, focusing on emissions of nitrogen dioxide (NO_2) and particulate matter. Exposure to nitrogen dioxide and/or particulate pollution may result in adverse health effects, notably concerning respiratory diseases. A reaction with sunlight can lead to the production of ozone from nitrogen dioxide, which in turn poses serious health risks. The most prominent source of nitrogen dioxide is burning fossil fuels, for example in motor vehicles or in fossil fuel burning ovens and heaters. There are many sources of particulate matter, one common one being soot, again typically from the combustion of fossil fuels. However there are many other sources of organic or inorganic particles. These may originate in man-made activities such as mining, quarrying, construction or manufacturing processes, or come from natural events, such as volcanic eruptions, dust and sand storms, or pollen. The concentration of particulate matter can also be affected by atmospheric/climatic conditions, with pollution levels rising as a result of sunshine and higher temperatures.

European air quality standards are set in a Directive (2008/50/EC) on ambient air quality and cleaner air for Europe, with a limit of 40 µg/m^3 for the annual mean concentration of nitrogen dioxide and a limit of 200 µg/m^3 not to be exceeded for more than 18 hours in a year. Map 13.3 shows the number of hours that nitrogen dioxide concentrations exceeded 200 µg/m^3 in 2013. As road transport (particularly diesel engines) is the principal emitter of nitrogen oxide/dioxide and given the congestion in many cities, it is not surprising that the highest concentrations of these emissions are recorded next to roads in major agglomerations.

The longest peaks of nitrogen dioxide concentrations were recorded in Bucuresti

The highest number of hours that nitrogen dioxide concentrations exceeded 200 µg/m^3 in 2013 (among those cities in the EU, Norway and Switzerland for which data are available) was recorded in Bucuresti, at 19.0 hours. Bucuresti was the only city shown in Map 13.3 where the limit of 18 hours was exceeded, as the next highest levels were 13.5 hours in Amadora (Portugal), 9.0 hours in Dublin and 5.0 hours in Majadahonda (Spain). Of the 501 cities shown in the map, the 200 µg/m^3 limit was only breached in 2013 in 28 of them (including the four mentioned above), with most located in Spain and Romania (six each), France (four), Italy (three) and Greece (two), with one city each in Belgium, Bulgaria, Slovakia, Finland, the United Kingdom and Norway. Among these 24 cities where nitrogen dioxide concentrations did exceed 200 µg/m^3 at least once, nine were capital cities and two others (Milano and Palermo in Italy) were cities with over 500 thousand inhabitants. Four cities with populations below 100 thousand inhabitants also experienced concentrations above 200 µg/m^3 at least once: Talavera de la Reina, Guadalajara and Majadahonda in Spain and Slatina in Romania.

The highest concentrations of particulate matter were recorded in eastern and southern EU Member States, particularly in Poland and Italy

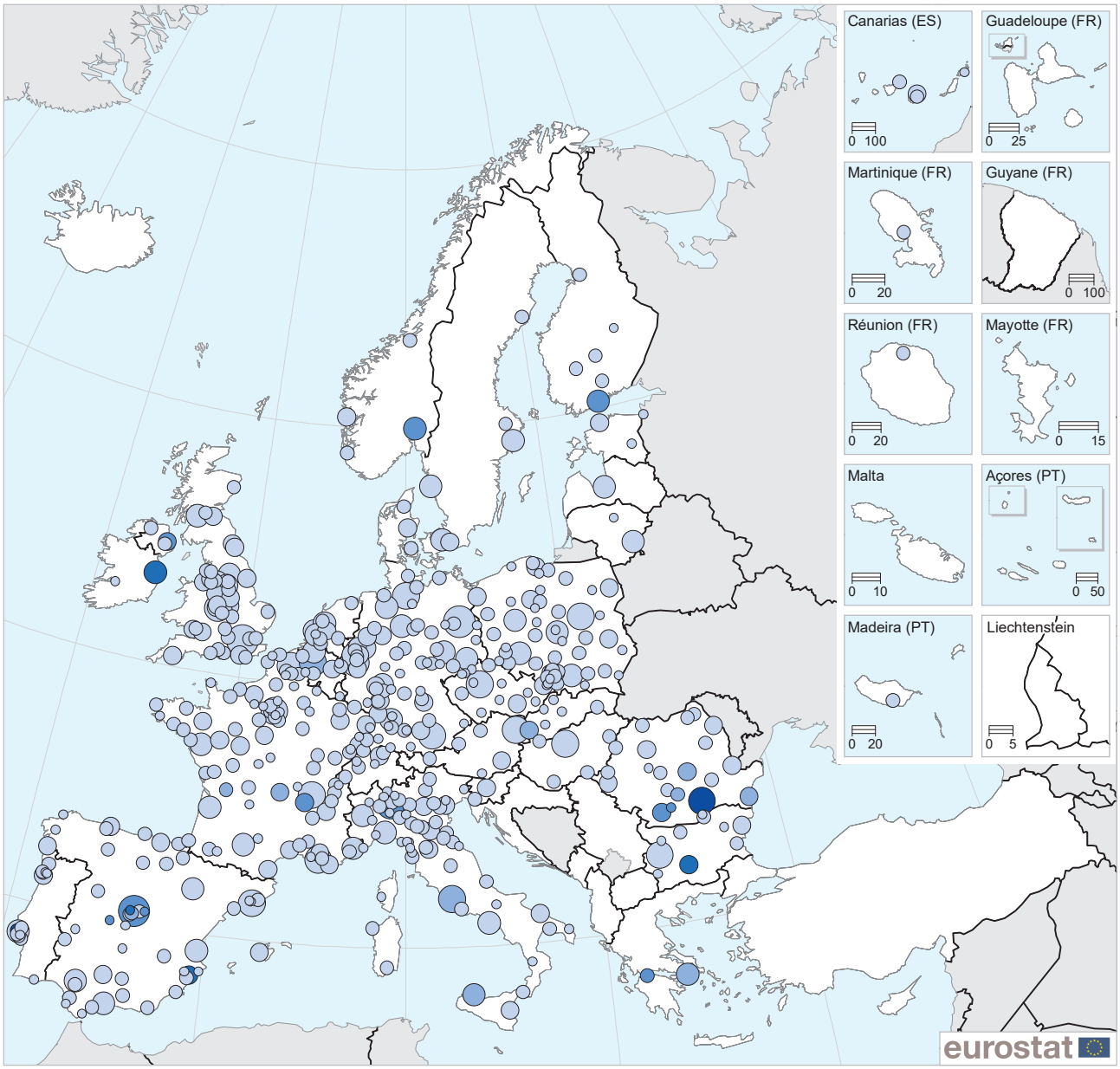
There are short and long-term air quality limits for particulate matter. The data presented in Map 13.4 concern particles with a diameter of more than 2.5 µm to at most 10 µm, referred to as PM10. The short-term limit is set at not more than 35 days per year with a daily average concentration exceeding 50 µg/m^3, while the long-term limit is a mean annual concentration that does not exceed 40 µg/m^3.

Among the cities for which data are available in Map 13.4, the highest number of days of concentrations of PM10 exceeding 50 µg/m^3 in 2013 was 172 in Plovdiv (Bulgaria), in other words this concentration was reached nearly every second day. The PM10 threshold was exceeded on at least 100 days in 2013 in 12 cities (shown with the darkest shade in Map 13.4), mainly in southern Poland where coal mining and industry dominate the economy, but with three (including Plovdiv) in Bulgaria and one in the Czech Republic. A further 83 cities also reported that concentrations of PM10 exceeded 50 µg/m^3 on 35 days or more (but less than 100 days) in 2013, with these concentrated in Poland (34 cities) and Italy (21 cities). Douai in France was the only city in western Europe to report 35 days or more of PM10 concentrations exceeding 50 µg/m^3 in 2013, while none of the cities in northern Europe passed this threshold.

The 23 cities in Map 13.4 that did not report concentrations of PM10 exceeding 50 µg/m^3 on any day in 2013 were also often located in southern Europe — mainly in Spain (12 cities) and Italy (five) — although there was also a group of three Finnish cities and one Estonian one in northern Europe; Bacău (Romania) and Saint Denis (France) were the only cities in the eastern and western Member States where concentrations of PM10 did not exceed 50 µg/m^3 on any day in 2013.

Figure 13.5 provides information concerning satisfaction with air quality in cities from a perception survey on the quality of life in 79 European cities that was conducted during May and June 2015. Data have been summarised for all cities within each EU Member State (as well as

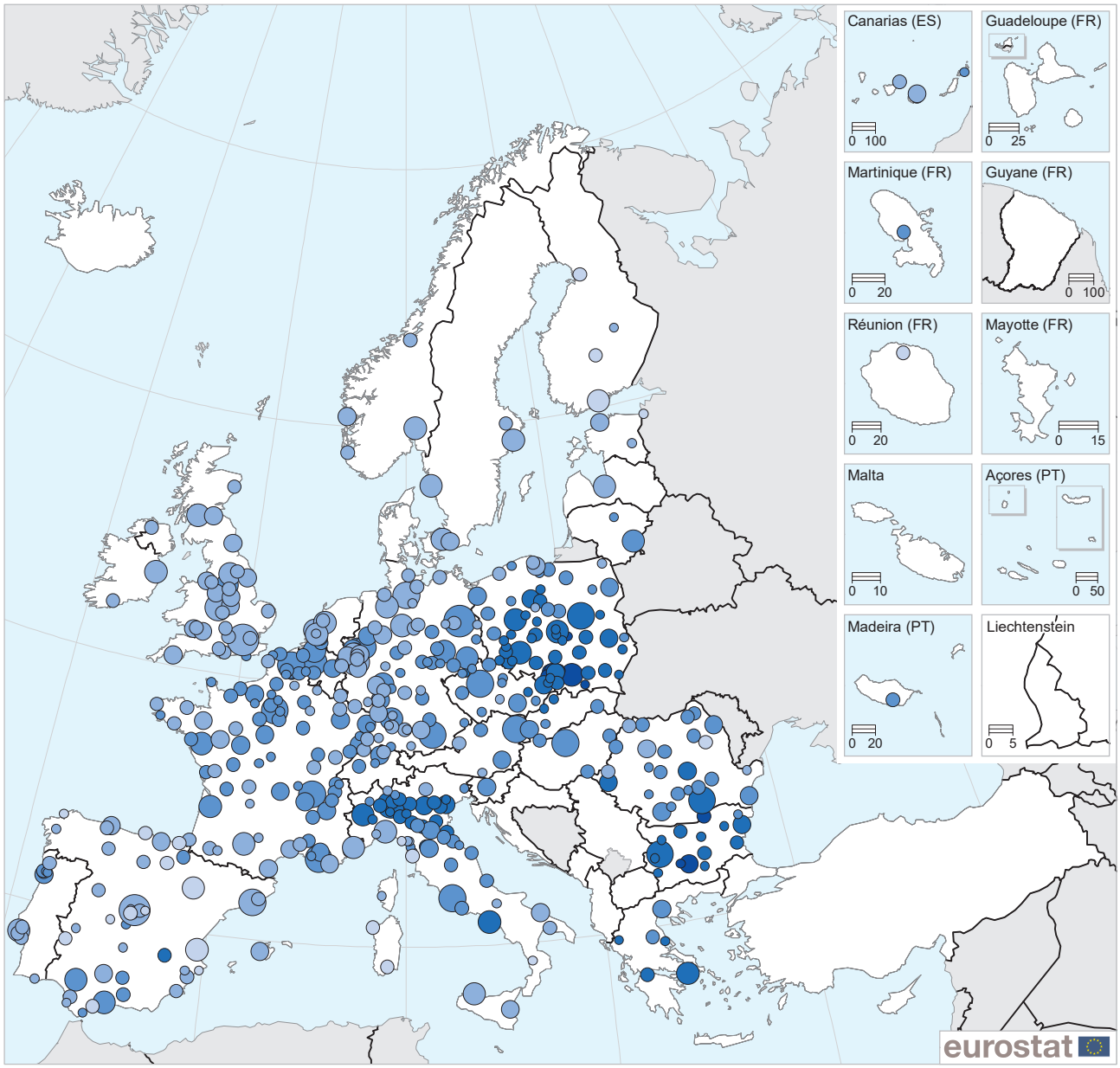
Map 13.3: Number of hours that nitrogen dioxide concentrations exceeded 200 µg/m³ in cities, 2013



Note: London (UK): greater city. In several cases, an earlier reference year was used. Bulgarian, Irish, Spanish, Polish, Portuguese and United Kingdom cities, Rīga (LV) and Vilnius (LT): estimates for population.

Source: Eurostat (online data codes: urb_cenv, urbcpop1 and demo_pjan)

Map 13.4: Number of days PM10 concentrations exceed 50 µg/m³ in cities, 2013



Note: London (UK): greater city. In several cases, an earlier reference year was used. Bulgarian, Irish, Spanish, Polish, Portuguese and United Kingdom cities, Rīga (LV) and Vilnius (LT): estimates for population.

Source: Eurostat (online data codes: urb_cenv, urbcpop1 and demo_pjan)

four non-member countries); it should be noted that in several of the smaller Member States as well as Iceland and Norway only one city was surveyed.

In 2015, the highest proportion of people reporting that they were very satisfied with the quality of air in their city was 59 % in Rostock (Germany); equally, a majority (51 %) were very satisfied with the air quality in the Danish city of Aalborg. By contrast, in Italy, Slovakia and Bulgaria there were no cities where at least 10 % of the population were very satisfied with the air quality, with just 1 % of people in Burgas (Bulgaria) very satisfied with their city's air quality.

The proportion of people who were not at all satisfied with air quality in their city in 2015 peaked at 47 % in Kraków (Poland), followed by 41 % in Ostrava (the Czech Republic). Other cities where the level of dissatisfaction was high included Bucuresti, Valletta, Madrid, Sofia (Bulgaria) and Burgas.

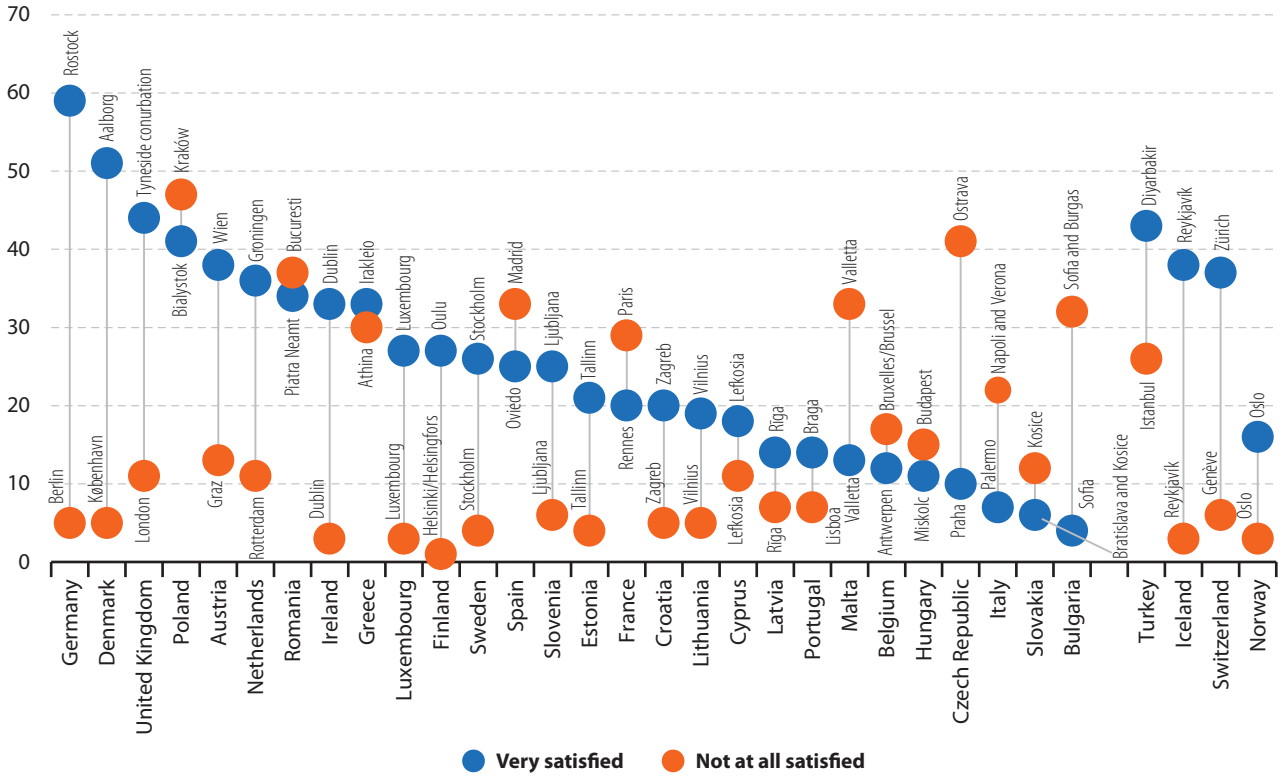
Municipal waste generated per inhabitant was highest in cities on the Costa del Sol

Across the whole of the EU-28, an average of 478 kg of municipal waste was generated per inhabitant in 2014. Map 13.5 shows, for 685 cities in the EU, Norway and Switzerland, the average level of municipal waste generated per inhabitant. In three cities, Fuengirola and Marbella on the Costa del Sol in Spain (2010 data) and Sénart en Essonne, near Paris in France (2013 data) the level was over 1 000 kg per inhabitant and therefore more than double the EU-28 average. It is likely that these figures are inflated, to some degree, by the associated waste streams from visitors to hotels and other forms of accommodation/lodging, particularly for the two Spanish cities; such high levels of waste may raise concerns over the sustainable nature of tourism. An analysis for the 10 cities in the EU-28 with the highest levels of municipal waste per inhabitant shows that aside from the two coastal cities of Fuengirola and Marbella (mentioned above), six of the remaining eight cities were also located on or close to the Mediterranean or Adriatic coastline in France or Italy. The top 10 was completed by two cities within the French capital city region: Sénart en Essonne (mentioned above) and Saint Denis.

In Malta, Slovenia and Finland, every city (among those for which data are available) recorded a level of municipal waste generation per inhabitant that was above the EU-28 average, while in the Czech Republic, the Baltic Member States and Poland, every city recorded a level of municipal waste generation per inhabitant that was below the EU-28 average.

Figure 13.5: Share of people who were very satisfied and who were not at all satisfied with the quality of the air in their city, selected cities, 2015

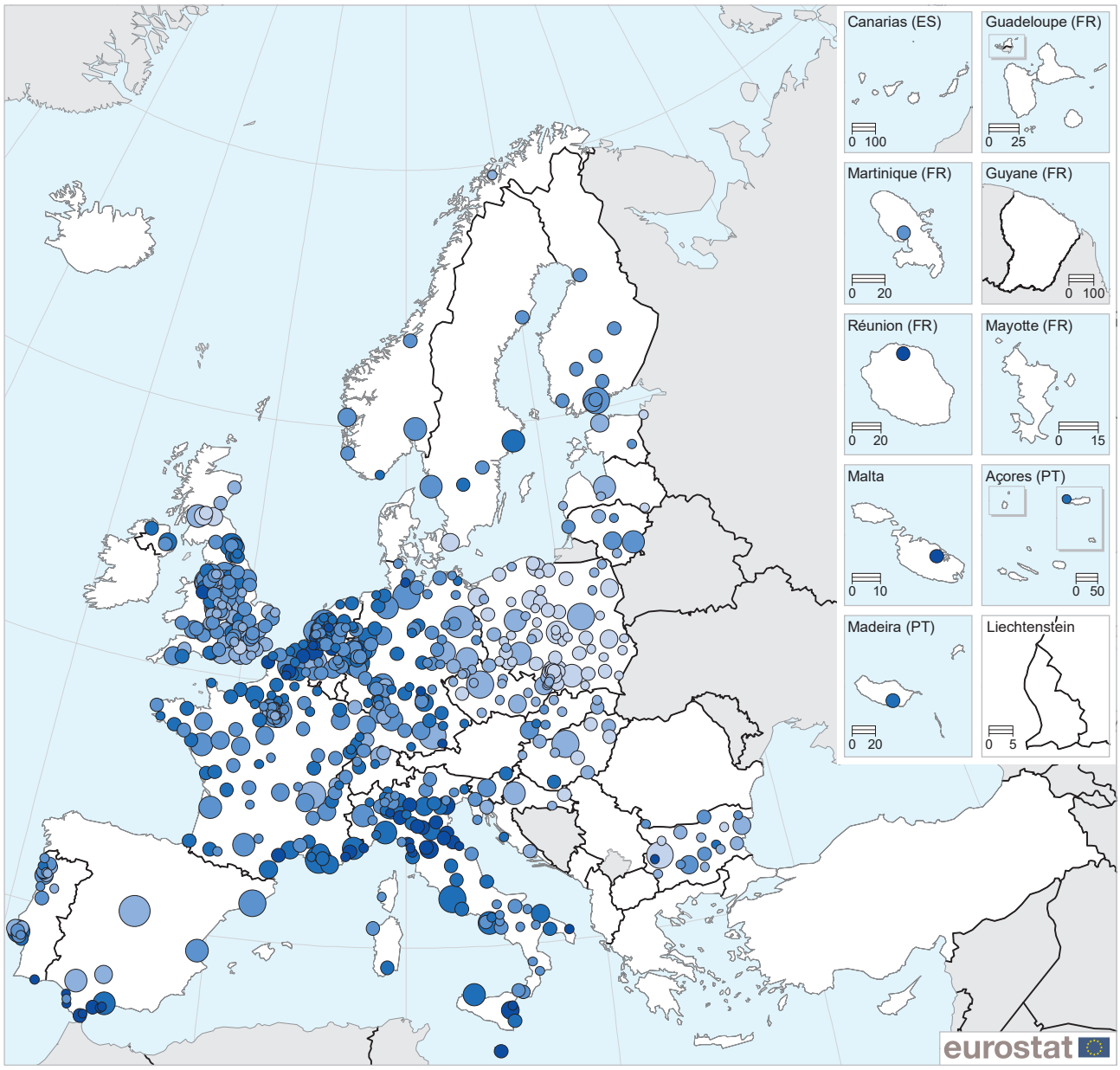
(%)



Note: the figure shows, for each country, the city with the highest share of very satisfied people and the city with the highest share of people who were not at all satisfied; ranked on the share of very satisfied. Athina (EL), Paris (FR), Lisboa (PT) and London (UK): greater city. Estonia, Ireland, Cyprus, Latvia, Lithuania, Luxembourg, Malta, Slovenia and Norway: only one city was surveyed.

Source: Eurostat (online data code: urb_percep)

Map 13.5: Municipal waste generated per inhabitant in cities, 2014



EU-28 = 478

Municipal waste generated per inhabitant (kg)

- < 300
- 300 – < 400
- 400 – < 500
- 500 – < 600
- >= 600

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, 07/2017

0 200 400 600 800 km

Note: Paris (FR), Amsterdam (NL), Rotterdam (NL), Helsinki/Helsingfors (FI), London (UK), West Midlands (UK), Liverpool (UK), Manchester (UK), Leicester (UK), Portsmouth (UK), Nottingham (UK), Southend-on-Sea (UK), Reading (UK) and Preston (UK): greater city. In many cases, an earlier reference year was used. EU-28 and many of the cities: estimates.

Source: Eurostat (online data codes: urb_cenv, urbcpop1, env_wasmun and demo_pjan)

Data sources and availability

Eurostat's data collection on cities (formerly known as the Urban Audit) is undertaken by national statistical authorities, the Directorate-General for Regional and Urban Policy (DG REGIO) and Eurostat. It provides statistics on a wide range of socioeconomic indicators that cover most aspects relating to the quality of life in more than 900 cities, each with a population of at least 50 thousand inhabitants in their urban centre.

The collection of data covers all of the EU Member States, Norway, Switzerland and Turkey; note that there may be considerable differences in relation to the latest reference period available for each city. The information presented in this chapter relates to three concepts: the majority of the data presented refers to cities (one or more local administrative unit (LAUs) where the majority of the population lives in an urban centre of at least 50 thousand inhabitants), although the concepts of the greater city (an approximation of the urban centre when this stretches beyond the administrative city boundaries) and the functional urban area (a city plus its surrounding commuting zone) are also employed. The information presented has been adapted to reflect the most appropriate definitions, whereby information on greater cities is preferred when reflecting cases where a relatively high share of the population lives outside of the administrative boundaries of the urban centre (for example, the Greek capital of Athina).

The Directorate-General for Regional and Urban Policy conducts a perception survey every three years across a range of cities in the EU Member States, Iceland, Norway, Switzerland and Turkey; the latest survey was conducted in June 2015. These surveys cover a range of issues, including: employment, the environment, housing, transport, culture, city services and immigration.

INDICATOR DEFINITIONS

Glossary entries on Statistics Explained (see: http://ec.europa.eu/eurostat/statistics-explained/index.php/Category:Regions_and_cities_glossary) are available for a wide range of concepts relating to cities, while glossary entries for indicators may be found under the relevant thematic heading (see: http://ec.europa.eu/eurostat/statistics-explained/index.php/Thematic_glossaries).

For more information:
http://ec.europa.eu/eurostat/web/cities/overview
Methodological manual on city statistics, Eurostat (2017)

14 Focus on rural areas

2015

28.0 %
of the EU's population live in a rural area

This chapter assesses differences between people living in rural areas and those living in urban areas, based on an analysis by degree of urbanisation and covers the following subjects: poverty and social exclusion, housing, health, education, the labour market and the digital divide.

The previous chapter focused on the growing share of the European Union (EU's) population that lives and works in and around cities and concentrated on sustainability issues linked to these developments. That said, there are a number of real and perceived advantages which may attract people to live in (some) rural areas: lower housing and living costs, more space, a better social fabric, less pollution, closer proximity to nature, or a less stressful lifestyle. These advantages can be juxtaposed against a range of (potential) drawbacks, for example: fewer local education or job opportunities/choices; difficulties in accessing public services or transport services; or a lack of cultural/social venues for leisure activities requiring infrastructure.

The EU's rural areas are diverse in nature, characterised by their specific natural environments and endowments. They provide among others, food and environmental resources that are crucial to the prosperity of both rural and urban areas, while their quality of life attributes are increasingly valued.

Main statistical findings

- **Lithuania was the only EU Member State where a majority (56.2 %) of the population in 2015 was living in a rural area (see Figure 14.1); in Luxembourg, Slovenia, Latvia and Hungary a relatively high share of the total number of inhabitants also lived in rural areas.**
- **At least half of the rural population in Bulgaria, Romania and Malta was at risk of poverty or social exclusion in 2015; most of the Member States that joined the EU in 2004 or more recently recorded a higher risk of poverty or social exclusion among their rural populations than in cities or in towns or suburbs.**
- **In 2015, almost one quarter (22.8 %) of the EU-28 population was living in a house in a rural area; for comparison, a slightly higher share (24.7 %) of the EU-28 population was living in a flat in a city.**
- **Among people aged 30 to 34, just over one quarter (27.9 %) of the EU-28 population that was living in a rural area had a tertiary level of educational attainment in 2015; this share rose to one third (33.4 %) for people living in towns or suburbs, and peaked at almost half (48.1 %) among those living in cities.**
- **The EU-28 unemployment rate in rural areas was 9.1 % in 2015, which was somewhat lower than the rate in cities (10.0 %); rural areas in Austria, Germany and the United Kingdom were characterised by very low unemployment rates (less than 4.0 %).**

In recent years, there has been particular policy interest in analysing the interaction between adjacent rural and urban areas, as rural areas in close proximity to urban areas are often dynamic local economies. By contrast, more remote, sparsely populated rural areas are generally characterised by weaker economic growth.

RURAL DEVELOPMENT 2014–2020

The EU's rural development policy is designed to help rural areas meet a wide range of economic, environmental and social challenges, sharing a number of objectives with other European structural and investment funds (ESIF). Rural development policy complements the system of direct payments to farmers, which is outlined in the EU's common agricultural policy (CAP).

Regulation (EU) No 1305/2013 details the reform of the EU's rural development policy post-2013; it is the latest in a series of developments. Three long-term strategic objectives have been identified for the period 2014–2020, in line with Europe 2020 and CAP objectives: improving the competitiveness of agriculture; safeguarding the sustainable management of natural resources and climate action; and ensuring that the territorial development of rural areas is balanced.

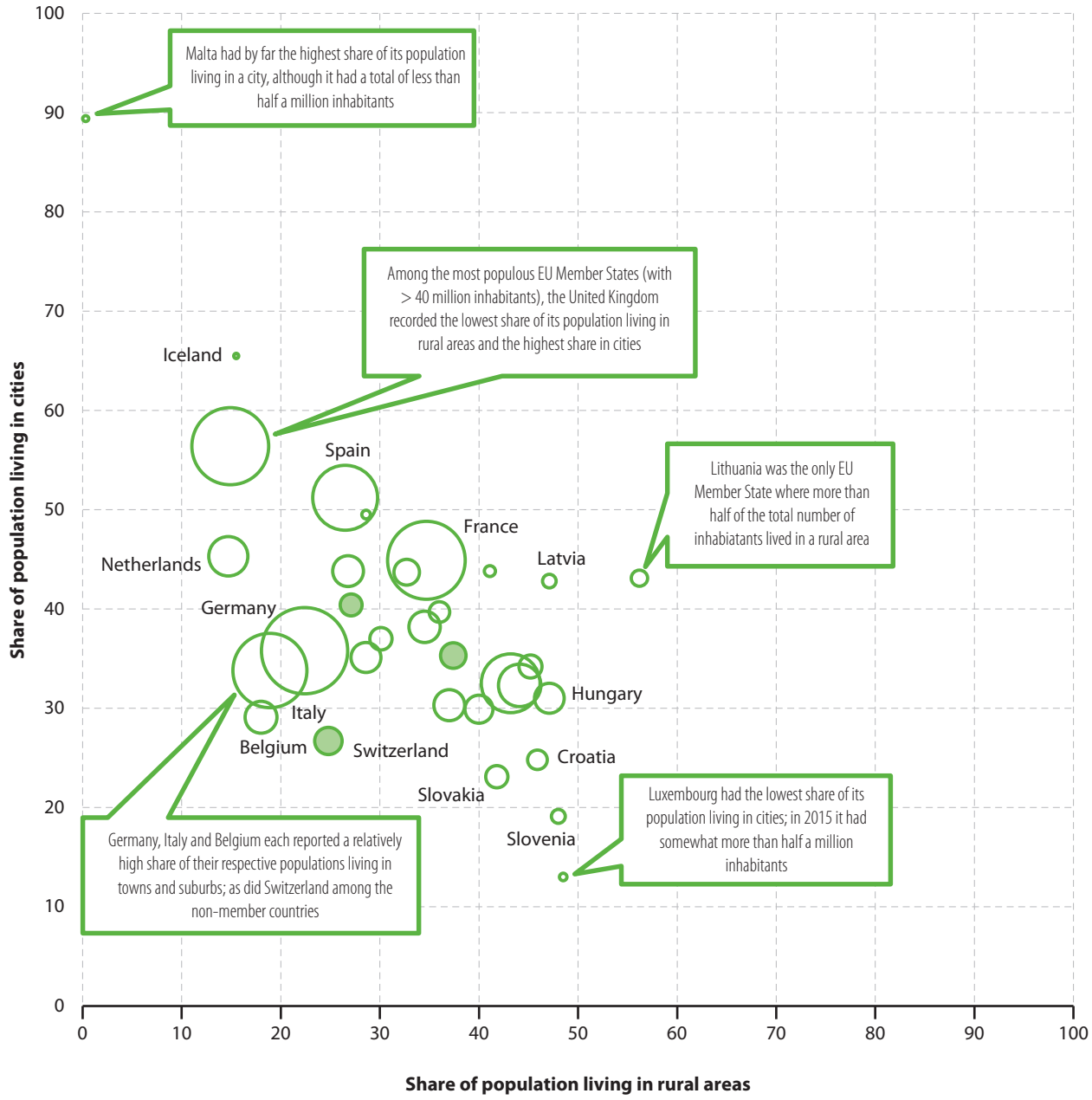
In keeping with other structural and investment funds, EU Member States and their regions draw up coordinated rural development programmes (RDPs), which follow a set of common priorities including 'promoting social inclusion, poverty reduction and economic development in rural areas'. These RDPs are constructed so as to: strengthen the content of rural development measures; simplify rules and/or reduce related administrative burdens; and link rural development policy more closely to other funds. They are financed through the European Agricultural Fund for Rural Development (EAFRD) which has a budget of EUR 100 billion for the period 2014–2020. Aside from the EAFRD, several other EU funds provide support to rural areas, namely: the European Regional Development Fund (ERDF), the European Social Fund (ESF), the Cohesion Fund and the European Maritime and Fisheries Fund.

Statistical analysis

POPULATION DISTRIBUTION BY DEGREE OF URBANISATION

Just over one quarter (28.0 %) of the EU-28 population lived in a rural area in 2015, with a somewhat higher share living in towns and suburbs (31.6 %), while the biggest share of the EU-28 population lived in cities (40.4 %). During the five-year period from 2010 to 2015, there was a gradual increase in the number of people living in rural areas across the EU-28, their

Figure 14.1: Distribution of the population, by degree of urbanisation, 2015
(%)



Note: the area of each circle is proportional to its average population in 2015; the shaded circles denote non-member countries (Iceland, Norway, Switzerland and Serbia).

Source: Eurostat (online data codes: ilc_lvho01 and demo_gind)

relative share of the total number of inhabitants rising by 1.7 percentage points; the increase in the share of the population living in towns and suburbs was even greater (rising by 4.7 points), while the share of people living in cities declined at a relatively rapid pace; these patterns possibly reflect Europeans leaving inner city areas in search of more (affordable) space, in suburbia, towns, or the countryside.

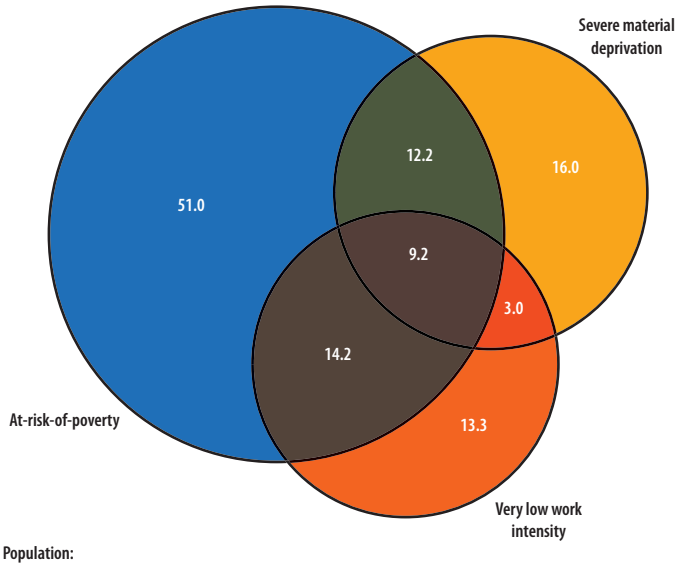
Lithuania was the only EU Member State where a majority of the population lived in rural areas

There were considerable differences between the EU Member States concerning the relative size of their rural populations: Lithuania was the only country where a majority (56.2 %) of the population lived in a rural area (see Figure 14.1), while 45–49 % of the total number of inhabitants lived in a rural area in Denmark, Croatia, Latvia, Hungary, Slovenia and Luxembourg. By

contrast, a relatively low share of the total population lived in rural areas in several of the most populous Member States, including Germany (22.4 %), Italy (18.9 %), Belgium (18.0 %), the United Kingdom (14.9 %) and the Netherlands (14.7 %). Malta recorded a much lower share (0.3 %) of its population living in rural areas, with the vast majority of its inhabitants living in the metropolitan area in and around the capital city of Valletta. Indeed, almost 9 out of every 10 inhabitants in Malta lived in a city; the United Kingdom and Spain were the only other Member States where a majority of the population lived in cities. It is useful to consider these distributions by degree of urbanisation when analysing the remainder of the results presented in this chapter; most notably, little weight should be accorded to the results for rural areas in Malta, given they represent just 0.3 % of the Maltese population.

A more detailed picture of population distributions by degree of urbanisation is provided in the introductory chapter (see Map 1), which presents information for local administrative units level 2 (LAU2). This confirms the patterns noted above, insofar as most of the eastern territorial regions of the EU and the Baltic Member States were characterised by relatively large rural populations, whereas population density was more pronounced in Belgium, the Netherlands, North Rhine-Westphalia (Germany), Malta, coastal Italy and Portugal, as well as southern Spain, central and southern parts of the United Kingdom.

Figure 14.2: Number of persons at-risk-of-poverty or social exclusion analysed by type of risks, EU-28, 2015
(million)



Note: the sum of the data for the seven groups at-risk-of-poverty or social exclusion differs slightly from the total (published elsewhere) due to rounding.

Source: Eurostat (online data code: ilc_pees01)

RISK OF POVERTY AND SOCIAL EXCLUSION

The number of people at risk of poverty or social exclusion is one of five headline targets for monitoring the Europe 2020 strategy, which set the goal for the EU to become a 'smart, sustainable and inclusive economy', among others by reducing the number of people at risk of poverty or social exclusion by at least 20 million. The same indicator is also used to within the sustainable development goals (SDGs) and furthermore forms 1 of the 14 headline indicators used in Eurostat's scoreboard 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.

Those people who are at risk of poverty or social exclusion are in at least one of the following three situations: at risk of (monetary) poverty; severely materially deprived; living in a household with very low work intensity. Figure 14.2 presents an overview for the number of people at risk of poverty or social exclusion in the EU-28. In 2015, there were 118.8 million Europeans classified as being exposed to at least one of the three types of risk, with 9.2 million facing all three of these risks.

The risk of (monetary) poverty was the most commonly faced risk within the EU-28 population as it affected a total of 86.6 million inhabitants — either in isolation or in combination with one or both of the other risks. In this context, the rate of people at-risk-of- poverty is defined as a relative concept, based on the share of the population living below the poverty threshold (itself defined as 60 % of the median equivalised disposable income, after social transfers; a measure which takes account of the age of each household member). The poverty threshold is set independently in each of the EU Member States and it is important to note that the risk of poverty reflects the distribution of wealth, whether or not incomes are shared equitably/uniformly across society, irrespective of average income levels.

Almost one in four (23.7 %) of the EU-28 population was at risk of poverty or social exclusion

A higher proportion of the EU-28 population living in rural areas (compared with urban areas) faced the risk of poverty or social exclusion. In 2015, just over one quarter (25.5 %) of the rural population was at risk of poverty or social exclusion, while lower shares were recorded for people living in cities (24.0 %) and especially those living in towns and suburbs (22.1 %), perhaps explaining, at least in part, the movement towards towns and suburbs.

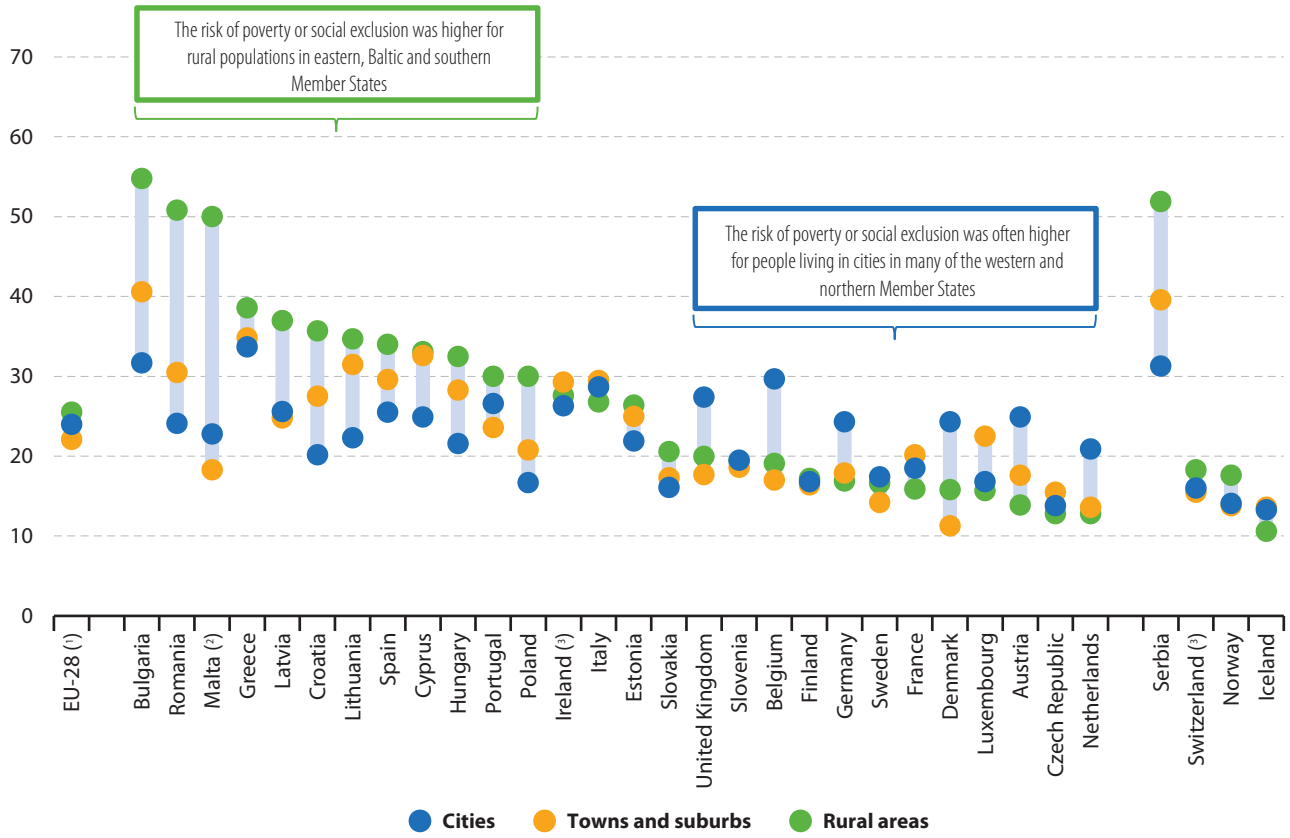
The risk of poverty or social exclusion was highest in the rural areas of several eastern and southern EU Member States

A closer examination reveals that in a small majority (15) of the EU Member States, the highest proportion of people at risk of poverty or social exclusion was recorded in rural areas (see Figure 14.3). This was particularly the case in Bulgaria, Romania and Malta, where at least half of the rural population was at risk of poverty or social exclusion in 2015. There were nine additional Member States where the share of the rural population at risk of poverty or social exclusion was higher than the share recorded for the urban population and was also situated within the range of 30.0–40.0 %; six of these were Member States that joined the EU in 2004 or more recently (Latvia, Croatia, Lithuania, Cyprus, Hungary and Poland), while the other three were located in southern Europe (Greece, Spain and Portugal).

In Romania (and Malta), people living in rural areas were at least twice as likely as those living in cities to face the risk of poverty or social exclusion, with somewhat less pronounced differences recorded in Croatia, Poland and Bulgaria. By contrast, the rural populations of Austria, the Netherlands, Belgium, Denmark, Germany and the United Kingdom were much less likely to be at risk of poverty or social exclusion than those living in urban areas (particularly those living in cities). It is also interesting to note that there was a fairly uniform distribution across the territories of Finland, Slovenia, the Czech Republic, Italy, Ireland (2014 data) and Sweden, insofar as they each recorded a narrow range when analysing the share of people who were at risk of poverty or social exclusion by degree of urbanisation.

There was a marked geographical split when analysing information by EU Member State: on the one hand, the highest risk of poverty or social exclusion for many of the eastern, southern and Baltic Member States was usually recorded within rural populations; by contrast, the highest risk of poverty or social exclusion in most of the western and northern Member States was usually recorded for people living in cities. Indeed, while cities in the eastern part of the EU were often characterised by recent economic growth and lower risks of poverty or social exclusion, in western Europe they often displayed an urban paradox insofar as they had higher levels of wealth creation, but at the same time relatively high shares of their populations were living with the risk of poverty or social exclusion, suggesting they were characterised by relatively high degrees of income inequality.

Figure 14.3: Share of people at risk of poverty or social exclusion, by degree of urbanisation, 2015
(%)



Note: ranked on rural areas.

(1) Rural areas: estimate.
(2) Rural areas: low reliability.
(3) 2014.

Source: Eurostat (online data code: ilc_peps13)

Almost one in five of the EU's rural population was living at risk of poverty

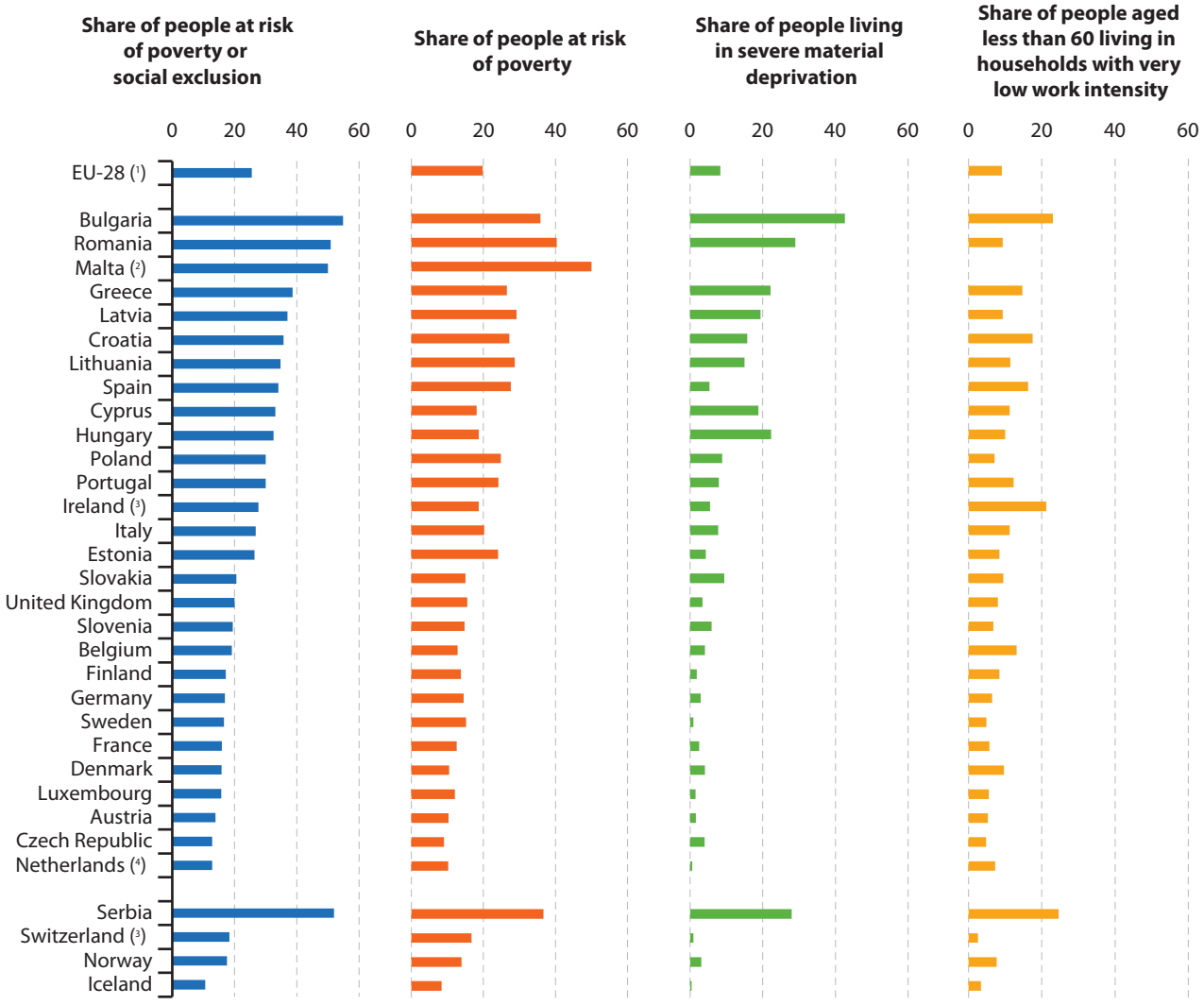
Figure 14.4 analyses the information relating to the risk of poverty and social exclusion in more detail and focuses exclusively on rural areas. In 2015, almost one in five (19.8 %) inhabitants living in EU-28 rural areas was at risk of (monetary) poverty, compared with 9.1 % of the rural population that was aged less than 60 and living in a household with very low work intensity, and 8.3 % of the rural population that was living in severe material deprivation.

Across the EU Member States, the risk of monetary poverty among those living in rural areas peaked in 2015 at half (50.0 %) of the very small rural population in Malta. Apart from this particular case, relatively high shares of the rural populations in Romania (40.4 %) and Bulgaria (35.8 %) also faced the risk of monetary poverty. At the other end of the range, the risk was considerably lower for the rural population of the Czech Republic (9.1 %) and was also relatively low (in the range of 10–11 %) for the rural populations of the Netherlands, Austria and Denmark.

Less than 10 % of the EU's rural population was living in a household with very low work intensity

Work intensity is defined as the ratio of the total number of months that all working-age (18–59 years) household members have worked during the income reference year and the total number of months the same household members theoretically could have worked in the same period. Very low work intensity is defined as a ratio of less than 0.2, in other words, households where working-age adults worked less than one fifth of their potential labour input during the reference period.

Figure 14.4: Share of people living in rural areas who are at risk of poverty or social exclusion, by type of risk, 2015 (%)



Note: ranked on the overall share of people at risk of poverty or social exclusion.

(1) Estimates.
(2) Low reliability. Very low work intensity: not available.
(3) 2014.
(4) Share of people at risk of poverty: provisional.

Source: Eurostat (online data codes: ilc_peps13, ilc_li43, ilc_mddd23 and ilc_lvhl23)

The share of people living in households with very low work intensity peaked at 23.0 % for the rural population of Bulgaria, while more than one in five persons (21.2 %; 2014 data) who were living in the rural areas of Ireland also faced this risk. By contrast, less than 5.0 % of the rural population in the Czech Republic and in Sweden lived in households with very low work intensity. These figures may reflect, among others, the incidence of small-scale subsistence farms, labour market conditions, social security systems and the composition of households — for example, single person households (especially those with dependent children) are more likely to be characterised by very low work intensity than households composed of two or more adults.

One twelfth of the EU's rural population faced severe material deprivation

Severe material deprivation is an absolute (rather than relative) measure of poverty: it refers to the enforced inability (rather than choice not to do so) to pay for at least four of the following items: unexpected expenses; rent, mortgage or utility bills; a one week annual holiday; a meal with meat or fish every second day; adequate heating to keep the home warm; a washing machine; a colour television; a telephone; or a car.

The distribution of severe material deprivation across rural areas was skewed, as only 10 of the EU Member States recorded a share that was above the EU-28 average. Deprivation was concentrated in the rural areas of the south-eastern part of the EU, as the share of the population living in severe material deprivation peaked at 42.6 % in Bulgaria and 29.0 % in Romania, while Hungary and Greece were the only other EU Member States to report that more than one fifth of their rural populations were living in severe material deprivation. By contrast, the severe material deprivation rate for rural areas was less than half the EU-28 average in 12 of the Member States, with rates falling to below 2.0 % in Finland, Austria, Luxembourg, Sweden, the Netherlands and Malta.

HOUSING

In recent years there has been a growing share of the EU labour force working from home, as the introduction of new technologies has made it relatively easy to carry out some occupations remotely; these changes have resulted in more choice/flexibility for some people as to where they live (and work).

Relatively high house prices in some city centre locations, coupled with improvements in transport and communication infrastructures have encouraged some people to consider moving to suburban or rural areas. Such moves usually involve a trade-off, for example, individuals have to decide whether they can accept a lengthy/congested commute to work in return for being able to buy a larger property or being able to live in an area that has a lower level of crime or a wide choice of green spaces within close proximity.

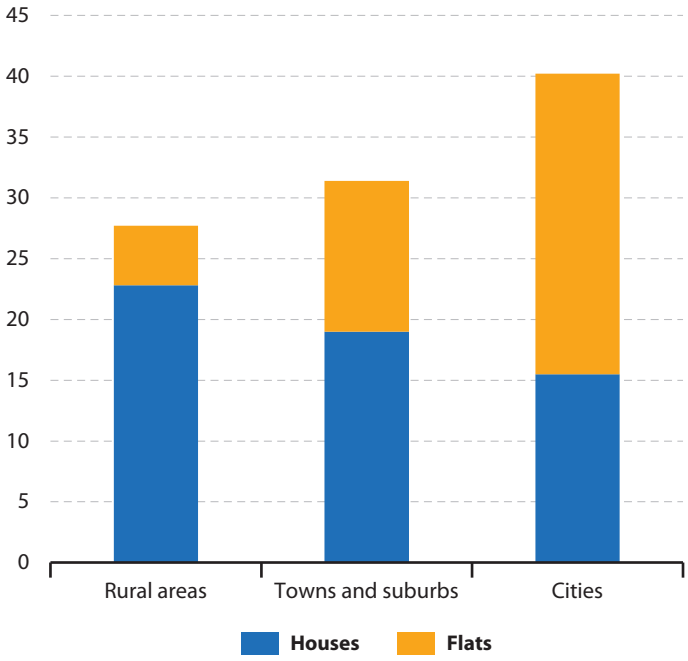
More than 80 % of the EU's rural population lived in a house

Unsurprisingly the relative abundance of space in rural areas (compared with urban areas) is reflected when analysing types of dwelling by degree of urbanisation. In 2015, almost one quarter (22.8 %) of the EU-28 population was living in a rural area and in a house, while an additional 4.9 % of the population was living in a rural area and in a flat; as such, more than four out of every five people in the rural population lived in a house.

A majority of people living in towns and suburbs also lived in houses (19.0 % of the total number of EU-28 inhabitants), while the proportion of the population that were city-dwellers and living in a house was lower (15.5 % of the EU-28 population) than the share living in a flat (24.7 %); as such, just over three fifths of the population living in cities occupied a flat.

These distributions reflect not only the lack of space for building houses in cities, but also the demand for property and demographics, insofar as young people (often living alone) are pulled to cities by educational, career, cultural and other opportunities, whereas (expanding) families tend to move towards the suburbs, towns and rural areas in search of more space and other benefits that may impact on their overall quality of life.

Figure 14.5: Distribution of the population, by type of dwelling and degree of urbanisation, EU-28, 2015
(% of total population)



Note: the information presented excludes the residual category of others (those living in dwellings other than houses or flats).

Source: Eurostat (online data code: ilc_lvho01)

2015

9.1 %
of the EU's rural population are overburdened by housing costs

The share of people overburdened by housing costs was lower in rural areas of the EU

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. 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. House/flat prices and rents vary considerably, not just between and within EU Member States, but also at a more local/regional level.

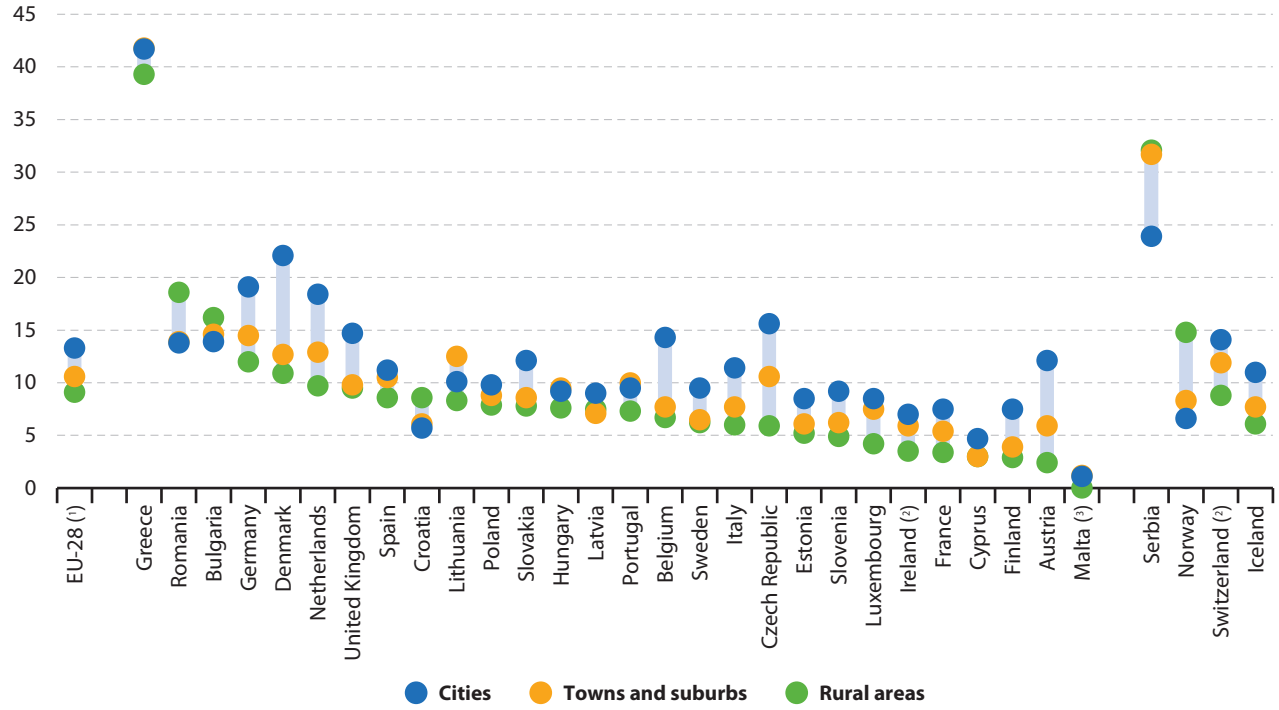
The data presented below on housing cost reflect a wide range of factors, including: affordability, income distributions, or the supply and demand for housing. For example, people living in cities are often prepared to pay more for less space in order to live centrally or in a fashionable borough/district. This has led to the gentrification (displacement of lower-income families as a result of rising property prices) of some inner cities and considerable changes in their demographic and social make-up, with young, upwardly mobile professionals moving into regenerated housing stock, often crowding out the indigenous population. In a similar vein, popular rural locations can also see their property prices rise at a rapid pace, especially when supply is constrained by local planning authorities seeking to maintain the original charm of an area by prohibiting new developments.

Across the EU-28, the housing cost overburden rate in 2015 was lowest in rural areas (9.1 %), with a slightly higher rate recorded for people living in towns and suburbs (10.6 %) and a peak among those living in cities (13.3 %).

The distribution of the housing cost overburden rate across the rural areas of the EU Member States was relatively uniform, whereas there was far greater variation for cities (see Figure 14.6). In 2015, less than 5.0 % of the rural population in Slovenia, Luxembourg, Ireland (2014 data), France, Cyprus, Finland, Austria and Malta was overburdened by the cost of housing, whereas Cyprus and Malta were the only EU Member States where less than 5.0 % of city-dwellers faced such a burden. The share of the rural population overburdened by the cost of housing was situated within the range of 5.0–12.0 % for the majority of Member States, as only Bulgaria, Romania and Greece reported higher shares. By contrast, there were 11 Member States where the share of the population living in cities that was overburdened by housing costs rose above 12.0 %; these included the three Member States that recorded the highest shares for rural areas — Bulgaria, Romania and Greece — as well as Denmark, Germany, the Netherlands, the Czech Republic, the United Kingdom, Belgium, Slovakia and Austria.

In Greece, approximately 4 out of every 10 inhabitants were overburdened by the cost of housing, irrespective of the degree of urbanisation; these shares were

Figure 14.6: Housing cost overburden rate, by degree of urbanisation, 2015
(%)



Note: ranked on rural areas.

(1) Rural areas: estimate.
(2) 2014.
(3) Rural areas: low reliability.

Source: Eurostat (online data code: ilc_lvho07d)

considerably higher than in any of the other EU Member States. Romania, Croatia and Bulgaria were the only EU Member States where the housing cost overburden rate was higher for the population living in rural areas than it was for people living in cities; these figures may reflect, among others, the prevalence of subsistence farming activities, few alternative employment opportunities, low employment rates for women, and relatively large family units in rural communities. As such, some eastern parts of the EU were characterised by relatively high degrees of risk of poverty or social exclusion which probably impacted upon the burden faced in relation to housing costs.

HEALTH

One of the main concerns for many Europeans is their health. Figure 14.7 presents information on the share of people (aged 16 and over) who reported unmet needs for health care due to expense, distance to travel, or the length of waiting lists. The ability to pay for/expense of medical services is clearly linked to the distribution of income, while people living in rural areas are more likely to be deterred from seeking health care services as a result of travelling long distances (medical services tend to be concentrated in towns and cities), and the length of waiting lists reflects the supply of and the demand for services (which may vary according to the treatment, therapy or intervention required).

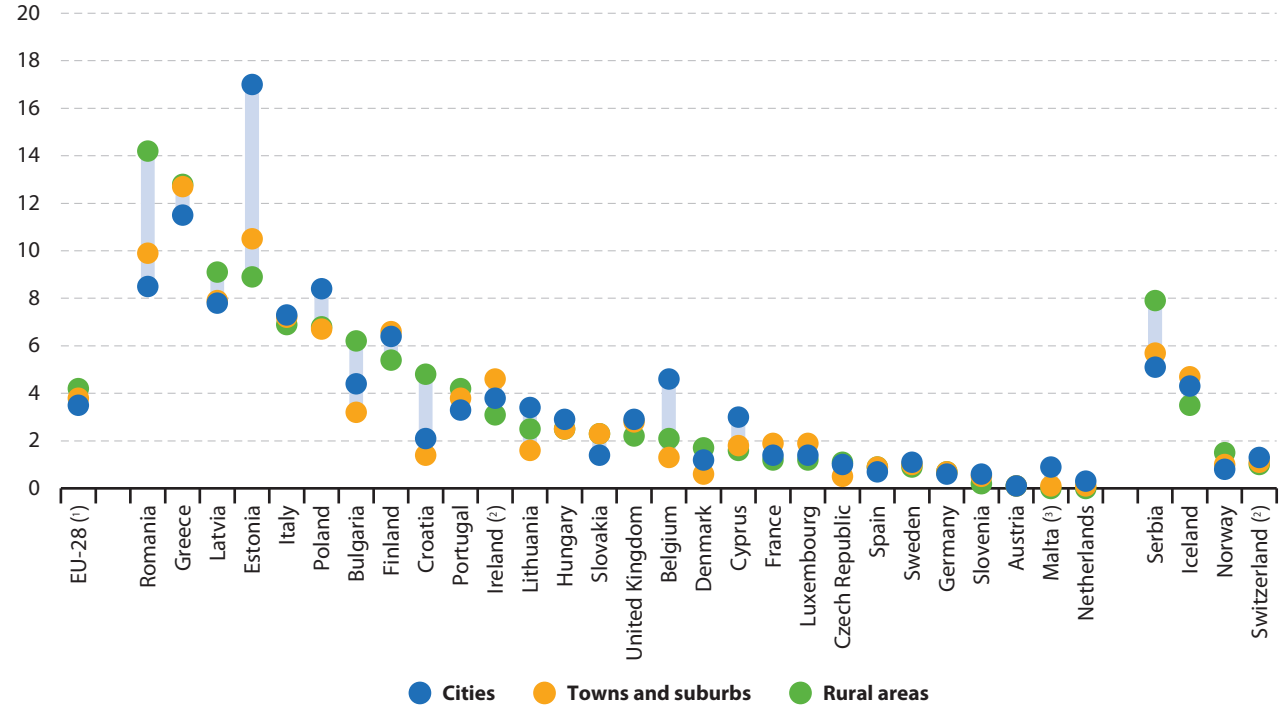
Rural populations in the EU were more likely to have unmet needs for health care

In 2015, some 4.2 % of the EU-28 population living in rural areas reported unmet needs for health care during the 12 months prior to the survey. This share was somewhat higher than the corresponding figures recorded for towns and suburbs (3.8 %) or for cities (3.5 %).

In most of the western EU Member States there was almost no difference in the share of the population that reported unmet needs for health care when analysing by degree of urbanisation, whereas there was a wider variation particularly apparent for several of the Member States that joined the EU in 2004 or more recently. Looking more closely, just over half (15) of the Member States reported very small differences (defined here by a range of less than 1.0 percentage point between the highest and lowest shares). Relatively wide variations were recorded in Romania, Croatia and Bulgaria, where the share of the rural population with unmet needs for health care was at least 3.0 percentage points higher than the lowest share (recorded for city-dwellers in Romania, and for people living in towns and suburbs in Croatia and Bulgaria). Similar variations were recorded in Estonia and Belgium, although the highest shares of their populations with unmet needs for health care were recorded in cities.

Figure 14.7: Share of people aged 16 and over who reported unmet needs for health care in the previous 12 months due to expense, distance to travel or length of waiting list, by degree of urbanisation, 2015

(%)



Note: ranked on rural areas.

(1) Estimates.
(2) 2014.
(3) Rural areas: low reliability.

Source: Eurostat (online data code: hlth_silc_21)

EDUCATION

Education (like health) can play an important role in determining life chances and raising the quality of life of an individual. Education also has social returns, insofar as raising overall educational standards will likely result in a more productive workforce which, in turn, may drive economic growth.

People living in rural areas are generally more inclined to leave education or training early

A lack of educational skills and qualifications is likely to restrict access to a variety of jobs/careers. In 2015, the EU-28 early leavers' rate from education and training (defined for people aged 18 to 24 years) peaked at 12.2 % in rural areas, compared with 11.5 % in towns and suburbs, and 9.8 % in cities. There were however considerable differences between the EU Member States: on one hand, particularly high early leavers' rates were recorded in the rural areas of a number of principally eastern and southern Member States, for example, Slovakia, Spain, Greece, Hungary, Estonia, Romania and Bulgaria (where the gap between rates in rural areas and in cities ranged from 7.3 to 25.8 percentage points). By contrast, there were four western Member States — France, Germany, Belgium and Austria — as well as Malta, where the early leavers' rate from education and training was higher among city-dwellers.

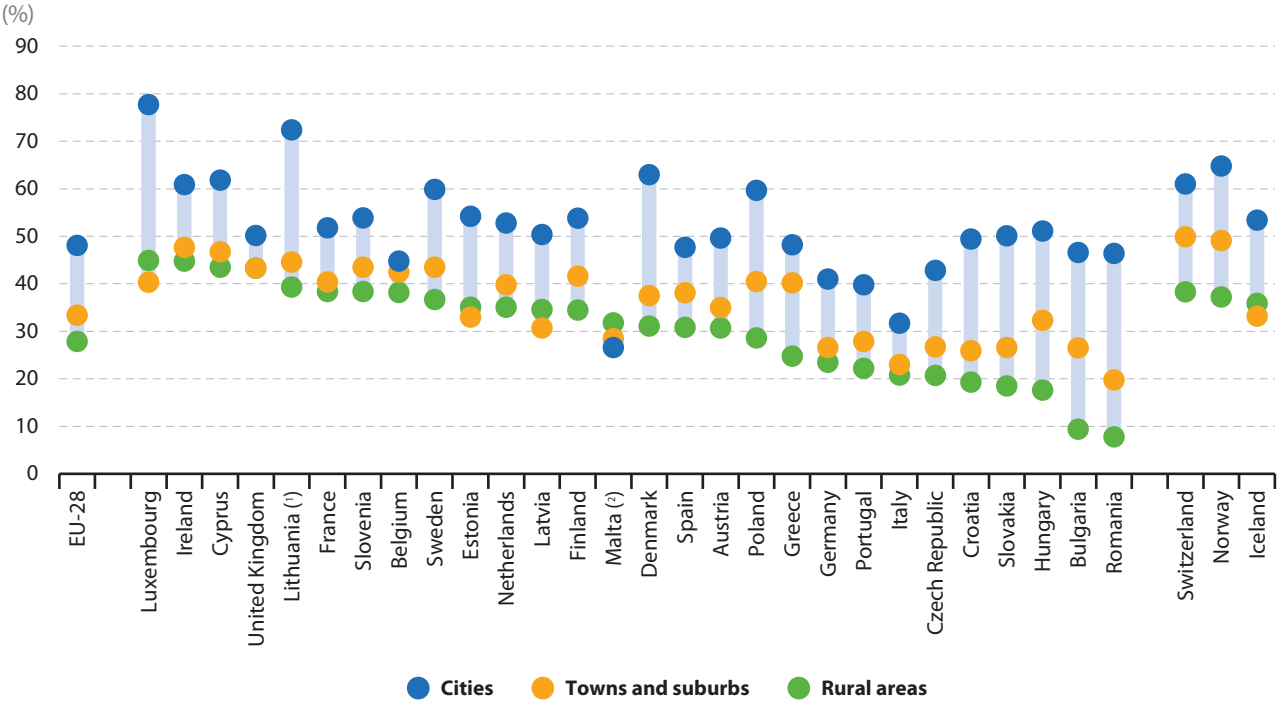
Just over one quarter of the EU's rural population (aged 30 to 34) had a tertiary level of educational attainment

Turning to the other end of the educational attainment ladder, in 2015 just over one quarter (27.9 %) of the EU-28's rural population (aged 30 to 34 years) had a tertiary level (ISCED 2011 levels 5–8) of educational attainment; this figure could be compared with a share of one third (33.4 %) for people living in towns and suburbs and almost a half (48.1 %) among city-dwellers (see Figure 14.8).

An analysis over time reveals that the rural areas consistently recorded the lowest level of tertiary educational attainment, while the gap between rural areas and cities grew. In 2004, just over one fifth (21.0 %) of the EU-28 rural population (aged 30 to 34 years) had a tertiary level of educational attainment, while the corresponding share for city-dwellers was just over one third (34.4 %), a difference of 13.4 percentage points; by 2014, this gap had widened to 20.5 percentage points, falling marginally the year after to 20.2 points in 2015.

Looking at the individual EU Member States, the share of the rural population (aged 30 to 34 years) in 2015 with a tertiary level of educational attainment ranged from a high of 44.9 % in Luxembourg (compared with 77.7 % in cities) down to less than 10.0 % in Bulgaria (46.6 % in cities) and Romania (46.4 % in cities). Tertiary levels of educational attainment were consistently lower in rural areas than they

Figure 14.8: Share of people aged 30–34 with tertiary education (ISCED levels 5–8) attainment, by degree of urbanisation, 2015



Note: ranked on rural areas.

(1) Towns and suburbs: low reliability.
(2) Rural areas: low reliability.

Source: Eurostat (online data code: edat_lfs_9913)

were in cities, across all of the Member States, except Malta (for which the data are of low reliability).

This situation of more highly-educated people in cities may reflect a number of factors. For example, most universities and other tertiary educational establishments are based in cities, while cities tend to have more dynamic and specialised labour markets, which may be particularly attractive to graduates.

The share of young people (aged 18 to24) living in rural areas of the EU who were neither in employment nor in further education or training was 3.7 percentage points higher than in cities

Figure 14.9 presents information for the share of young people (aged 18 to 24 years) neither in employment nor in further education or training (abbreviated as the NEETs). For the first of these two criteria — not in employment — the respondent may be unemployed or economically inactive; for the second of these criteria — nor in further education or training — the respondent should not have received any form of education or training during the four weeks preceding the survey. The denominator for the NEETs rate is the total population of the same age group, excluding those persons who failed to answer the question concerning participation in regular (formal) education and training.

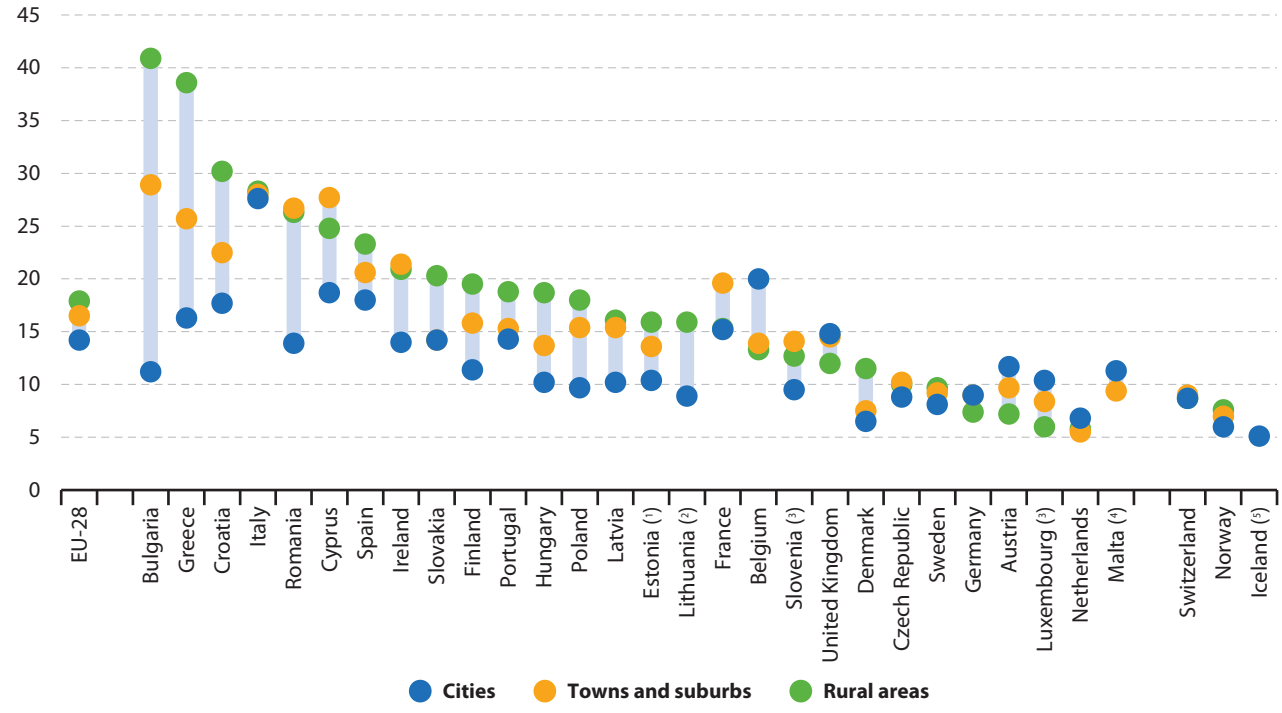
In 2015, the share of young people (aged 18 to 24 years) in the EU-28 neither in employment nor in education or training stood at 15.8 %. An analysis by degree of urbanisation reveals that the NEETs rate for rural areas (17.9 %) was higher than that recorded for towns and suburbs (16.5 %) or for cities (14.2 %). An analysis over time (2004–2014) indicates that the EU-28 rate for rural areas was consistently higher than the rate for cities, with some of the widest gaps recorded during the latest three-year period for which data are available (2013–2015).

In 2015, there were 13 EU Member States where the NEETs rate for rural areas was higher than the EU-28 average; for towns and suburbs and for cities the distributions were fairly skewed insofar as in both cases only nine Member States recorded rates that were higher than the EU-28 average. The highest NEETs rate for rural areas was recorded in Bulgaria (40.9 %), while Greece and Croatia both also recorded rates above 30.0 %. As well as recording the highest NEETs rates in rural areas in 2015, these three Member States also recorded the biggest gaps when comparing NEETs rates for rural areas with those for cities, with the widest gap — 29.7 percentage points — recorded in Bulgaria.

There were six EU Member States (no data for Malta) where the NEETs rate for rural areas was equal to or less than 10.0 %. In four of these — the Netherlands,

Figure 14.9: Share of young people aged 18–24 neither in employment nor in education or training (NEETs), by degree of urbanisation, 2015

(%)



Note: ranked on rural areas.

(1) Towns and suburbs: low reliability.
(2) Towns and suburbs: not available.
(3) Cities: low reliability.
(4) Rural areas: not available.
(5) Towns and suburbs and rural areas: not available.

Source: Eurostat (online data code: edat_lfse_29)

Germany, Luxembourg and Austria — the rate for rural areas was lower than that recorded in cities. Only two other Member States recorded a similar pattern, the United Kingdom and Belgium (where the largest gap between the rates for cities and rural areas was registered, at 6.9 percentage points).

As such, in keeping with the results for several other indicators, there was a marked geographical split when analysing information for education. Rural areas tended to record high NEETs rate in most of the eastern and southern EU Member States, where the difference between NEETs rates for rural areas and cities was usually quite wide. By contrast, NEETs rates were generally at a lower level in most of the western Member States, with a narrower range between the degrees of urbanisation and with rates in cities often higher than those for rural areas.

The EU-28 NEETs rate for young men was 15.4 % in 2015, compared with a rate of 16.3 % for young women. An analysis over time confirms the existence of a persistent gender gap, although this narrowed somewhat in recent years. The largest gender gap by degree of urbanisation was systematically recorded for rural areas. In 2015, the NEETs rate for young women living in rural areas (18.8 %) was 1.8 percentage points higher than the corresponding rate for young men (17.0 %).

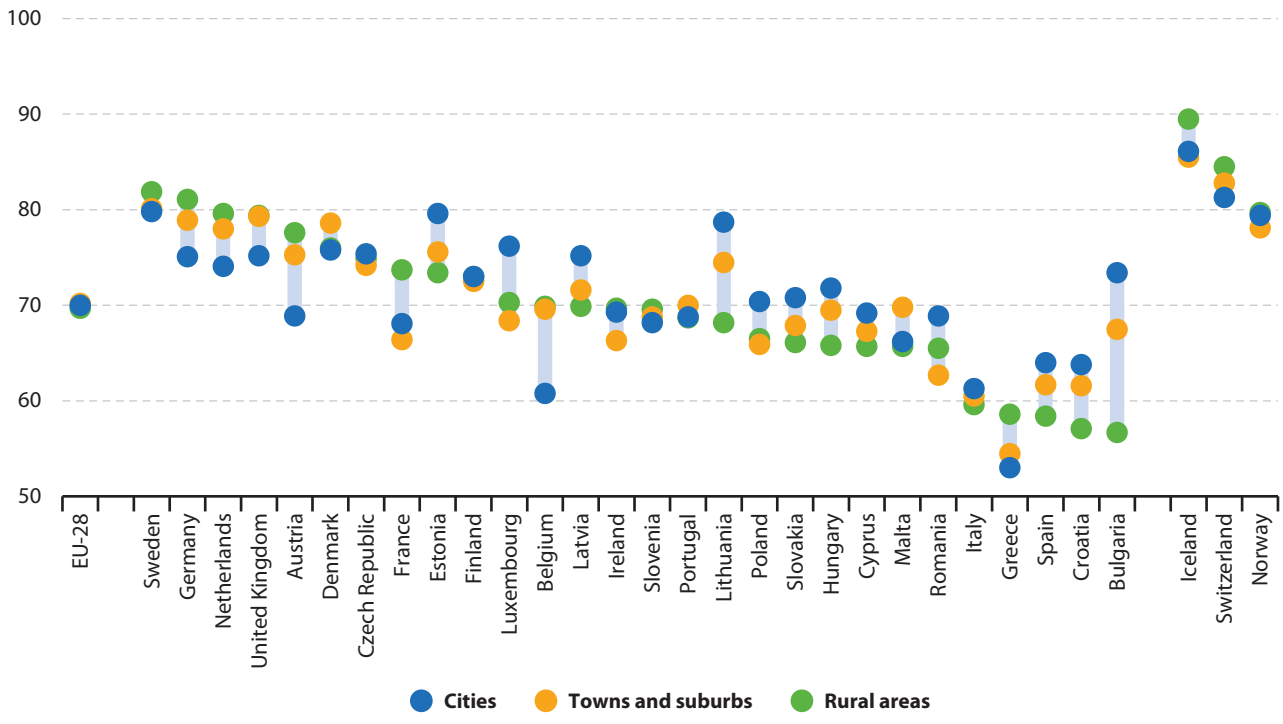
LABOUR MARKET

Employment conditions and opportunities to find or change work can play a considerable role in determining an individual's material living conditions. Work is considered important for wellbeing not only because it generates income but also because it occupies a significant part of each working day and has the potential to develop skills, a sense of achievement, satisfaction or worth.

The employment rate is the percentage of employed persons in relation to the total population; comparisons are usually based on the population of working-age, defined here as those aged 20 to 64. There was almost no difference (0.5 percentage points) between EU-28 employment rates for the three different degrees of urbanisation (see Figure 14.10): in 2015, the lowest employment rate was recorded among people living in rural areas (69.7 %), while the rates for cities (70.0 %) and for towns and suburbs (70.2 %) were only marginally higher.

Employment rates are highly influenced by gender differences and in particular by different levels of female participation in the labour force. The EU-28 gender gap for employment rates (again among those aged 20 to 64) stood at 17.3 percentage points in 2002 (the first reference year for which data are available). While the EU-28 employment rate for men was 75.8 % in 2002 and again in 2015, there was a gradual increase in the employment rate for women, which rose to 64.2 % by 2015; as a result, the gender gap narrowed to 11.6 percentage points. An

Figure 14.10: Employment rate, persons aged 20–64, by degree of urbanisation, 2015
(%)



Note: the y-axis has been cut; ranked on rural areas.
Source: Eurostat (online data code: lfst_r_ergau)

analysis for rural areas reveals a similar pattern, with a slightly wider gender gap for employment rates in rural areas (13.1 percentage points in 2015) and a slightly lower female employment rate (63.1 % in 2015): as such, the impact of female participation was even greater in rural areas than in urban areas.

Several northern and western Member States were characterised by higher employment rates in rural areas …

In 2015, employment rates for rural areas in Bulgaria and Lithuania were 16.7 and 10.5 percentage points lower than those recorded for cities; this pattern was repeated (although to a lesser degree) in eight other Member States, including Italy. By contrast, in Belgium and Austria, employment rates for rural areas were 9.1 and 8.7 percentage points higher than those recorded in cities; this pattern was repeated in six other Member States, including Germany and the United Kingdom.

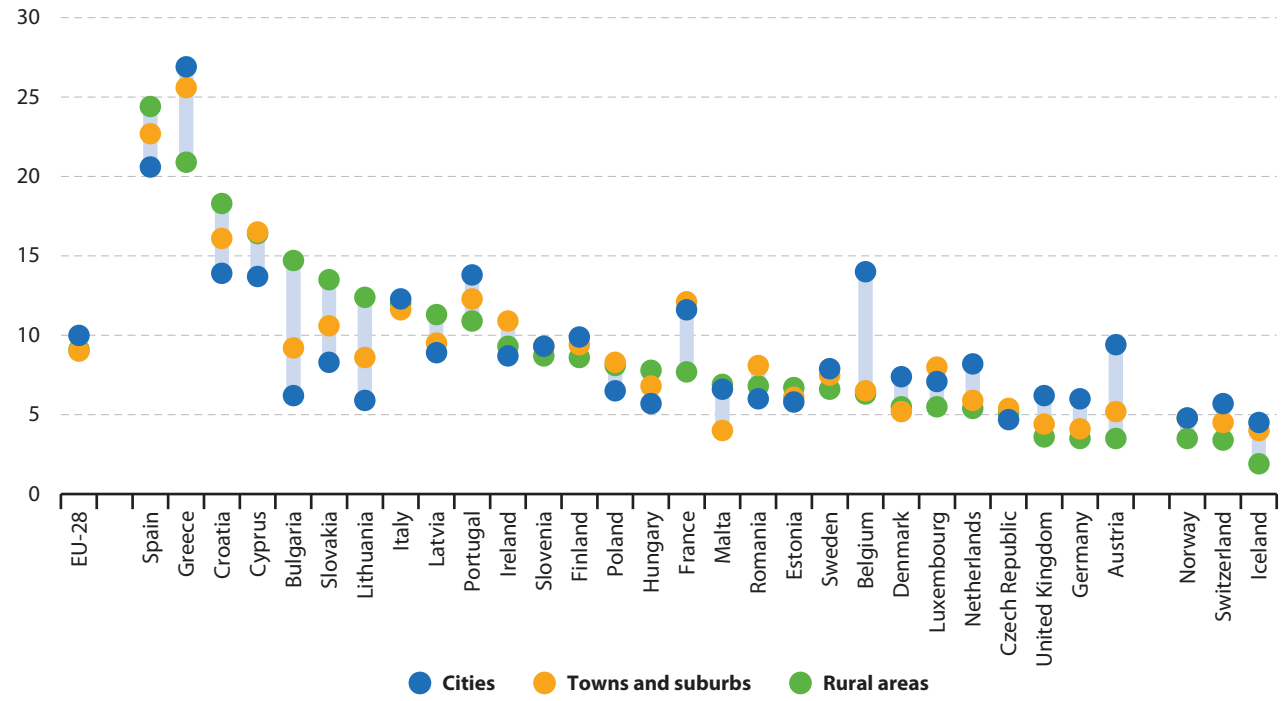
In 2015, the highest employment rates in rural areas were recorded in northern and western EU Member States, with rates rising above 80.0 % in Sweden and Germany, while the Netherlands and the United Kingdom were just below this level. By contrast, the lowest employment rates for rural areas — less than 60.0 % — were recorded in Italy, Greece, Spain, Croatia and Bulgaria; a more detailed analysis by sex reveals relatively low female employment rates and consequently a relatively large gender gap for each of these Member States, for example, female employment rates were more than 20.0 percentage points below male rates in the rural areas of Greece and Italy. These figures confirm the relatively strong link between female employment rates and overall employment rates in particular in the southern Member States. Such differences may be attributed, at least in part, to the role of women within families.

… whereas unemployment rates for rural areas were usually higher than those for cities in most eastern Member States

People who struggle to find work, or people who work in precarious jobs, unsocial hours or long hours for low pay are more likely to have low levels of job satisfaction which may impact on their overall quality of life. Figure 14.11 provides information pertaining to one of these measures, namely the unemployment rate (for people aged 15 to 74 years). In 2015, the EU-28 unemployment rate was 9.4 %: an analysis by degree of urbanisation reveals that the lowest unemployment rates were recorded in towns and suburbs (9.0 %) and rural areas (9.1 %), while the rate in cities was somewhat higher (10.0 %).

In 2015, there were nine EU Member States that recorded their highest unemployment rate, by degree of urbanisation, in rural areas; they were located in the Baltic Member States, eastern and southern Europe. By contrast, there were 12 Member States where the highest unemployment rates were recorded in cities; these were generally not in the eastern parts of the EU, although Slovenia was an exception.

Figure 14.11: Unemployment rate, persons aged 15–74, by degree of urbanisation, 2015
(%)



Note: ranked on rural areas.

Source: Eurostat (online data code: lfst_r_urgau)

Much higher unemployment rates were recorded for rural areas (compared with cities) in Bulgaria, Lithuania and Slovakia in 2015. In these Member States, the difference was more than 5.0 percentage points, with unemployment rates in rural areas systematically higher than the EU-28 average, while unemployment rates in cities were systematically below the EU-28 average. By contrast, the unemployment rates recorded in rural areas of Belgium, Greece and Austria were considerably lower than those recorded in cities, with differences of more than 5.0 percentage points. Very low unemployment rates (less than 4.0 %) were recorded in the rural areas of Austria, Germany and the United Kingdom.

DIGITAL DIVIDE

Digital technologies play an important role in the everyday lives of most Europeans; the internet has made it possible for people, businesses and governments to transform the ways in which they communicate and engage with one another. Yet some parts of the population are excluded (sometimes out of choice) and there is a danger that the so-called digital divide becomes wider with the introduction of new technologies.

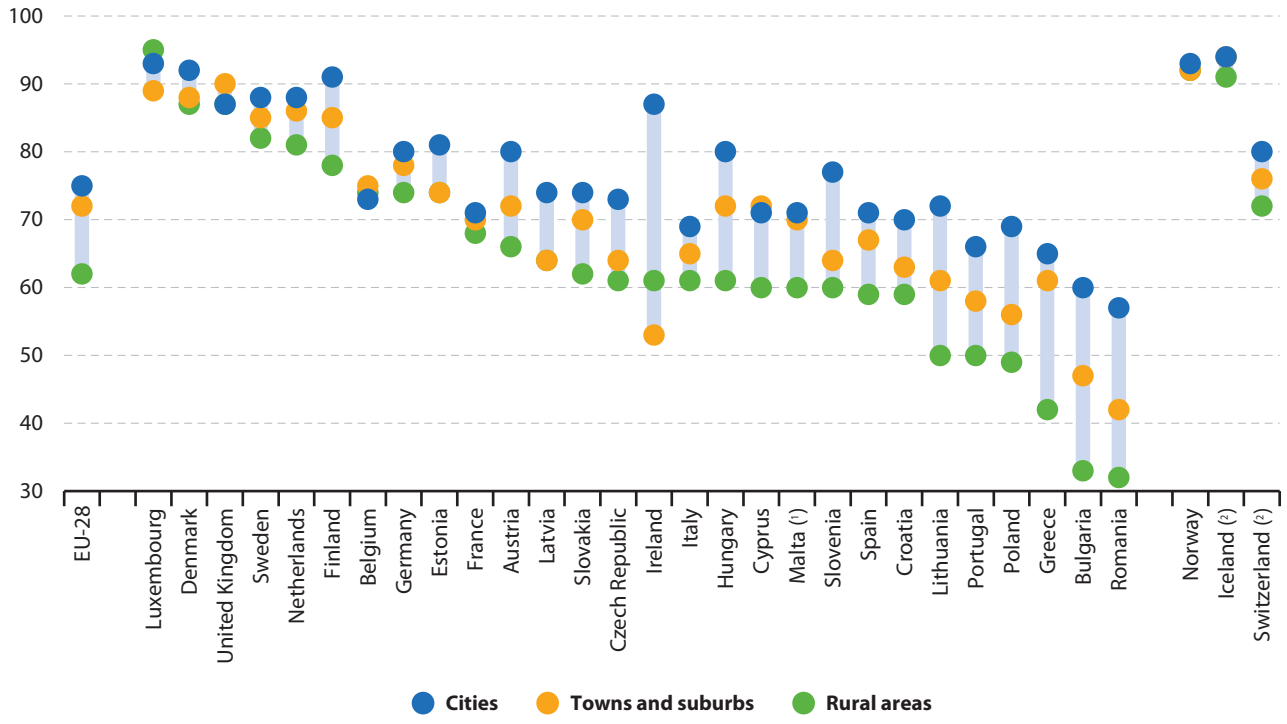
Less than two thirds (62 %) of the EU-28 population living in rural areas accessed the internet on a daily basis in 2016; this share rose to 72 % for people living in towns and suburbs and peaked at three quarters (75 %) of the population among city-dwellers.

The most popular types of broadband access to the internet are via a digital subscriber line (DSL) or cable (fibre): the first of these is almost universally available across the EU, whereas (high-speed) cable services are less widespread and are sometimes restricted to more densely populated areas — perhaps explaining, at least in part, why the use of the internet is lower in rural areas. To promote additional public funding in rural areas, the European Commission revised its guidelines for the application of EU State aid rules to the broadband sector in January 2013 and published a new broadband investment guide in September 2014 to encourage the expansion of fast and ultra-fast broadband services to rural areas.

For all but three of the EU Member States, the lowest proportion of people making use of the internet on a daily basis was recorded in rural areas

Looking in more detail at individuals' daily use of the internet, there were widespread disparities between the EU Member States. These differences are often along geographical lines with northern and western EU Member States generally recording higher levels of internet use than those Member States located in

Figure 14.12: Individuals accessing the internet on a daily basis, by degree of urbanisation, 2016
(% of all individuals)



Note: the y-axis has been cut; ranked on rural areas; the reference period refers to the first quarter of the year.

(1) Rural areas: low reliability.
(2) 2014.

Source: Eurostat (online data code: isoc_ci_ifp_fu)

the south or east. The highest daily use of the internet in 2016 was recorded in Luxembourg, Denmark, the United Kingdom, the Netherlands, Finland and Sweden. By contrast, the lowest daily use of the internet was recorded in Greece, Poland, Bulgaria and Romania.

A closer analysis by degree of urbanisation (see Figure 14.12) reveals that people living in rural areas usually recorded the lowest share of individuals accessing the internet on a daily basis; this was the case in 25 out of the 28 EU Member States in 2016. Belgium, Ireland and Luxembourg were the only EU Member States where people living in rural areas did not record the lowest daily use of the internet.

In Lithuania, Portugal and Poland, a relatively low proportion — close to half — of the rural population made use of the internet on a daily basis in 2016, with this share falling to 42 % in Greece, and close to one third of the rural population in Bulgaria and Romania. Some of these differences in the daily use of the internet may be attributed to a lack of infrastructure in rural areas, which restricts access to and the availability of digital technologies. There may be a number of other factors that also play a role, including: general levels of literacy, education, computer skills and language skills (in particular English) or cultural factors.

Data sources and availability

Eurostat's data on rural areas forms part of a data collection exercise undertaken for statistics classified by degree of urbanisation. In 2011, the European Commission Directorates-General for Regional and Urban Policy (DG REGIO) and Agriculture and Rural Development (DG AGRI), Eurostat and the Joint Research Centre (JRC), together with the OECD revised the degree of urbanisation classification based on a common methodological approach.

The latest version of this classification is based upon the 2011 population grid and 2014 boundaries for local administrative units (LAUs). Grid cells of 1 km^2 are classified according to a combination of criteria linked to geographical contiguity and the share of the local population living in urban centres and in urban clusters to assign LAU level 2 (LAU2), generally municipalities, into three types of area:

- cities (densely populated areas), where at least 50 % of the population lives in urban centres;
- towns and suburbs (intermediate density areas), where at least 50 % of the population lives in urban clusters and less than 50 % of the population lives in urban centres;
- rural areas (thinly populated areas), where at least 50 % of the population lives in rural grid cells.

Note that the introductory chapter provides further background information pertaining to the degree of urbanisation, including a table detailing the spatial concepts involved; a map showing the distribution of LAU2s according to the degree of urbanisation; and a figure detailing the share of the total population by degree of urbanisation for each EU Member State.

For more information:
http://ec.europa.eu/regional_policy/sources/docgener/work/2014_01_new_urban.pdf
http://ec.europa.eu/eurostat/ramon/miscellaneous/index.cfm?TargetUrl=DSP_DEGURBA

INDICATOR DEFINITIONS

Glossary entries on Statistics Explained (see: http://ec.europa.eu/eurostat/statistics-explained/index.php/Category:Regions_and_cities_glossary) are available for a wide range of concepts relating to rural areas, while additional glossary entries for specific indicators may be found under the relevant thematic headings.

For more information:
http://ec.europa.eu/eurostat/web/degree-of-urbanisation/overview

Annex 1 — Classification of territorial units for statistics, 2013 version

European Union: NUTS 2 regions (capital region is shown in bold)

BELGIUM

BE10 Région de Bruxelles-Capitale / Brussels Hoofdstedelijk Gewest
BE21 Prov. Antwerpen
BE22 Prov. Limburg (BE)
BE23 Prov. Oost-Vlaanderen
BE24 Prov. Vlaams-Brabant
BE25 Prov. West-Vlaanderen
BE31 Prov. Brabant Wallon
BE32 Prov. Hainaut
BE33 Prov. Liège
BE34 Prov. Luxembourg (BE)
BE35 Prov. Namur

BULGARIA

BG31 Северозападен/Severozapaden
BG32 Северен централен/Severen tsentralen
BG33 Североизточен/Severoiztochen
BG34 Югоизточен/Yugoiztochen
BG41 Югозападен/Yugozapaden
BG42 Южен централен/Yuzhen tsentralen

CZECH REPUBLIC

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

IE01 Border, Midland and Western
IE02 Southern and Eastern

GREECE

EL30 Αττική/Attiki
EL41 Βόρειο Αιγαίο/Voreio Aigaio
EL42 Νότιο Αιγαίο/Notio Aigaio
EL43 Κρήτη/Kriti
EL51 Ανατολική Μακεδονία, Θράκη/Anatoliki Makedonia, Thraki
EL52 Κεντρική Μακεδονία/Kentriki Makedonia

EL53	Δυτική Μακεδονία/Dytiki Makedonia
EL54	Ήπειρος/Ipeiros
EL61	Θεσσαλία/Thessalia
EL62	Ιόνια Νησιά/Ionia Nisia
EL63	Δυτική Ελλάδα/Dytiki Ellada
EL64	Στερεά Ελλάδα/Sterea Ellada
EL65	Πελοπόννησος/Peloponnisos

SPAIN

ES11	Galicia
ES12	Principado de Asturias
ES13	Cantabria
ES21	País Vasco
ES22	Comunidad Foral de Navarra
ES23	La Rioja
ES24	Aragón
ES30	**Comunidad de Madrid**
ES41	Castilla y León
ES42	Castilla-La Mancha
ES43	Extremadura
ES51	Cataluña
ES52	Comunidad Valenciana
ES53	Illes Balears
ES61	Andalucía
ES62	Región de Murcia
ES63	Ciudad Autónoma de Ceuta
ES64	Ciudad Autónoma de Melilla
ES70	Canarias

FRANCE

FR10	**Île de France**
FR21	Champagne-Ardenne
FR22	Picardie
FR23	Haute-Normandie
FR24	Centre
FR25	Basse-Normandie
FR26	Bourgogne
FR30	Nord - Pas-de-Calais
FR41	Lorraine
FR42	Alsace
FR43	Franche-Comté
FR51	Pays de la Loire
FR52	Bretagne
FR53	Poitou-Charentes
FR61	Aquitaine
FR62	Midi-Pyrénées
FR63	Limousin
FR71	Rhône-Alpes
FR72	Auvergne
FR81	Languedoc-Roussillon
FR82	Provence-Alpes-Côte d'Azur
FR83	Corse
FRA1	Guadeloupe
FRA2	Martinique
FRA3	Guyane
FRA4	La Réunion
FRA5	Mayotte

CROATIA

HR03	Jadranska Hrvatska
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

LT00	**Lietuva**

LUXEMBOURG

LU00	**Luxembourg**

HUNGARY

HU10	**Közép-Magyarország**
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

PL11	Łódzkie
PL12	**Mazowieckie**
PL21	Małopolskie
PL22	Śląskie
PL31	Lubelskie
PL32	Podkarpackie
PL33	Świętokrzyskie
PL34	Podlaskie
PL41	Wielkopolskie
PL42	Zachodniopomorskie
PL43	Lubuskie
PL51	Dolnośląskie
PL52	Opolskie
PL61	Kujawsko-pomorskie
PL62	Warmińsko-mazurskie
PL63	Pomorskie

PORTUGAL

PT11	Norte
PT15	Algarve
PT16	Centro (PT)
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	**Bucureşti - 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
UKM2	Eastern Scotland
UKM3	South Western Scotland
UKM5	North Eastern Scotland
UKM6	Highlands and Islands
UKN0	Northern Ireland

EFTA countries: statistical regions at level 2 (capital region is shown in bold)

ICELAND

IS00	**Ísland**

LIECHTENSTEIN

LI00	**Liechtenstein**

NORWAY

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**

THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA

MK00 (1)	**Поранешна југословенска Република Македонија/Poranešna jugoslovenska Republika Makedonija**

SERBIA

RS	**Република Србија/Republika Srbija**

ALBANIA

AL01	North
AL02	**Centre**
AL03	South

TURKEY

TR10	İstanbul
TR21	Tekirdağ, Edirne, Kırklareli
TR22	Balıkesir, Çanakkale
TR31	İzmir
TR32	Aydın, Denizli, Muğla
TR33	Manisa, Afyonkarahisar, Kütahya, Uşak
TR41	Bursa, Eskişehir, Bilecik
TR42	Kocaeli, Sakarya, Düzce, Bolu, Yalova
TR51	**Ankara**
TR52	Konya, Karaman
TR61	Antalya, Isparta, Burdur
TR62	Adana, Mersin
TR63	Hatay, Kahramanmaraş, Osmaniye
TR71	Kırıkkale, Aksaray, Niğde, Nevşehir, Kırşehir
TR72	Kayseri, Sivas, Yozgat
TR81	Zonguldak, Karabük, Bartın
TR82	Kastamonu, Çankırı, Sinop
TR83	Samsun, Tokat, Çorum, Amasya
TR90	Trabzon, Ordu, Giresun, Rize, Artvin, Gümüşhane
TRA1	Erzurum, Erzincan, Bayburt
TRA2	Ağrı, Kars, Iğdır, Ardahan
TRB1	Malatya, Elazığ, Bingöl, Tunceli
TRB2	Van, Muş, Bitlis, Hakkari
TRC1	Gaziantep, Adıyaman, Kilis
TRC2	Şanlıurfa, Diyarbakır
TRC3	Mardin, Batman, Şırnak, Siirt

(1) Provisional code which does not prejudge in any way the definitive nomenclature for the former Yugoslav Republic of Macedonia, which will be agreed following the conclusion of negotiations currently taking place on this subject at the United Nations.

Annex 2 — Other classifications used in this publication

City statistics data collection (previously called Urban Audit):

See: http://ec.europa.eu/eurostat/web/cities/overview and http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:City_data_collection

Degree of urbanisation classification

See: http://ec.europa.eu/eurostat/web/degree-of-urbanisation/overview and http://ec.europa.eu/eurostat/ramon/miscellaneous/index.cfm?TargetUrl=DSP_DEGURBA

International statistical classification of diseases and related health problems: ICD 2010

See: http://apps.who.int/classifications/icd10/browse/2010/en

International standard classification of education: ISCED 2011

See: http://www.uis.unesco.org/Education/Documents/isced-2011-en.pdf

Statistical classification of economic activities in the European Community: NACE Rev. 2

See: http://ec.europa.eu/eurostat/web/nace-rev2

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Eurostat regional yearbook 2017

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 2017* 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 and figures, accompanied by a description of the policy context, main findings and data sources. These regional indicators are presented for the following 12 subjects: regional policies and European Commission priorities, population, health, education and training, the labour market, the economy, structural business statistics, research and innovation, the digital economy and society, tourism, transport, and agriculture. In addition, two special chapters are included in this edition: a focus on European cities and a focus on rural areas.

For more information
http://ec.europa.eu/eurostat/

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