

## Reader's guide

### The organising framework

*Regions and Cities at a Glance 2018* provides a comprehensive assessment of how regions and cities across the OECD are progressing towards stronger economies, a higher quality of life for their citizens and more inclusive societies. The publication provides a unique comparative picture in a number of aspects connected to economic development and living standards across regions and cities in OECD and in some non-OECD countries. More specifically, the report documents trends in GDP per capita, productivity, jobs and entrepreneurship (Chapter 1). The impact of such trends on people's lives is addressed in Chapter 2, which provides an updated and extended assessment of well-being across all OECD regions using consistent indicators about several aspects that matter for people's lives, including material conditions (income, jobs and housing) and quality of life (health, education, access to services, environment, safety, civic engagement and governance).

The report also provides an assessment of the extent to which regions and cities are able to promote and maintain cohesion among different groups of people (Chapters 3 and 4). In this respect, key inclusion aspects addressed in the report include new indicators for regions and cities on the integration of migrants, on gender gaps in several well-being dimensions and on inequalities that characterise regions, metropolitan areas and their neighbourhoods. Chapter 4 has a specific focus on cities across OECD countries, where cities are defined according to the OECD-EC functional urban areas. The latter consists of urban centres with high population densities, and adjacent municipalities with high levels of commuting (travel-to-work flows) towards the densely populated municipalities. The advantage of this definition is twofold: 1) it overcomes limitations to international comparability resulting from administrative boundaries, and 2) it is based on an economic approach rather than an administrative one. The term metropolitan area refers specifically to cities with more than 500 000 inhabitants. Chapter 5 provides an assessment of expenditure and investment by subnational governments and on how their investment capacity is evolving in recent years. It also provides an analysis of the sources of subnational government revenues as well as an overview of outstanding debt at subnational level.

Throughout the publication, regional economies and societies are looked at through two lenses: the distribution of resources and the persistence of disparities across regions and cities over space and time. More precisely:

- Distribution of resources over space is assessed by looking at the proportion of a certain national variable concentrated in a limited number of regions, corresponding to 10% or 20% of the national population and the extent to which specific regions contribute to the national change of that variable. For example, regional convergence in GDP per capita, measured by the annual growth rates in the bottom and top 10% of regions, only occurred

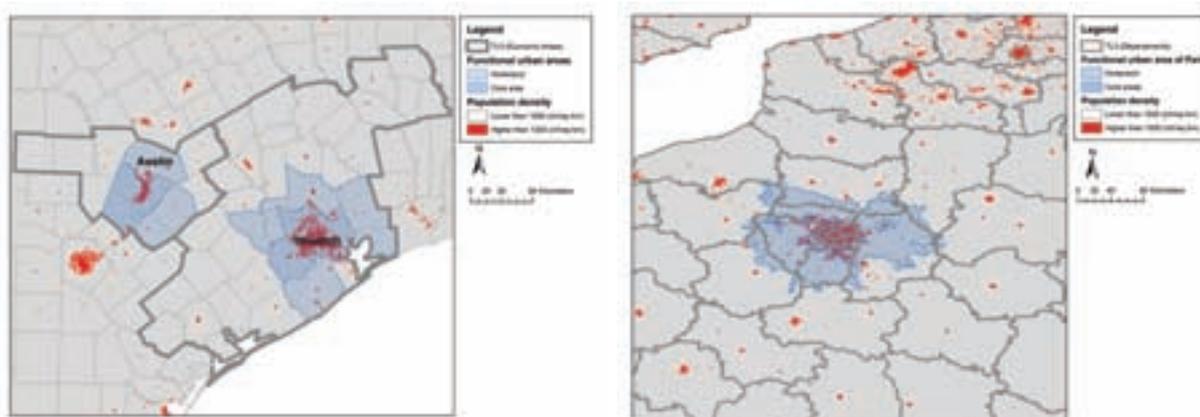
in half of OECD countries between 2011 and 2016. Metropolitan areas have contributed on average to 51% of total GDP growth since 2000.

- Regional disparities are measured by either the difference between the maximum and the minimum regional values in a country (regional range), or by the Theil general entropy index,<sup>1</sup> which reflect inequality among all regions. In Turkey, Spain and Italy, for example, the regional difference in unemployment rates was higher than 15 percentage points in 2017.

## Geographic areas utilised

Traditionally, regional policy analysis has used data collected for administrative regions, that is, the regional boundaries within a country as organised by governments. Such data can provide sound evidence on the contribution of regions to national performance as well as on the persistence of disparities within a country. Data on administrative regions has also the advantage to refer to areas that are often under the responsibility of a certain subnational government or to the scale targeted by a specific policy implemented at national or subnational level. At the same time, the places where people live, work and socialise may have little formal relationship to the administrative boundaries around them. For example, a person may inhabit one city or region but go to work in another and, on the weekends, practice a sport in a third. A broad set of linkages, such as job mobility, production systems, or collaboration among firms, determines the interactions occurring between regions. These often cross local and regional administrative boundaries. The analysis, therefore, should take into consideration, in addition to the administrative boundaries of a region, its economic or social area of influence known as the **functional area** (Figure below). Especially in the case of large urban areas, the notion of functional urban area can better guide the way national and city governments plan infrastructure, transportation, housing, schools, and space for culture and recreation. In summary, functional urban areas can trigger a change in the way policies are planned and implemented, better integrating and adapting them to local needs.

### Administrative and functional boundaries: Austin, Houston and Paris



Source: OECD calculations based on population density as disaggregated with Corine Land Cover, Joint Research Centre for the European Environmental Agency.

This publication features data for both administrative regions and functional urban areas according to international classifications, although the availability of data for the former is much more complete than for the latter.

### **Definition of metropolitan areas**

The OECD-EU definition of functional urban areas consists of urban centres that are densely populated (at least 1 500 inhabitants per square kilometre) and adjacent municipalities with high levels of commuting (travel-to-work flows) towards the densely populated municipalities. This definition overcomes previous limitations for international comparability linked to administrative boundaries. A minimum threshold for the population size of the functional urban areas is set at 50 000. The definition is applied to 34 OECD countries and it identifies 1 124 urban areas of different sizes (see Figure A.2 in Annex A for the detailed methodology). It should be noted that, due to lack of commuting data, functional urban areas are not identified in Israel, New Zealand or Turkey.

The aim of this approach to functional urban areas is to create a methodology that can be applied across the whole OECD, thus increasing comparability across countries, unlike definitions and methodologies created within individual countries, which have been internally focused.<sup>2</sup> In order to establish this cross-country methodology, common thresholds and similar geographical units across countries were defined. These units and thresholds may not correspond to the ones chosen in the national definitions. Therefore, the resulting functional urban areas may differ from the ones derived from national definitions and in addition the OECD functional urban delimitation may not capture all the local factors and dynamics in the same way as national definitions.

This publication includes data on metropolitan areas, which are defined as the functional urban areas with a population of greater than 500 000. According to this methodology, there are 329 metropolitan areas in the 31 OECD countries corresponding, in 2015, to 55% of the total population of these countries.

### **Territorial level classification**

Regions within the 35 OECD countries are classified on two territorial levels reflecting the administrative organisation of countries. The 389 OECD large (TL2) regions represent the first administrative tier of subnational government, for example, the Ontario Province in Canada. The 2 251 OECD small (TL3) regions are contained in a TL2 region. For example, the TL2 region of Aragon in Spain encompasses three TL3 regions: Huesca, Teruel and Zaragoza. TL3 regions correspond to administrative regions, with the exception of Australia, Canada, Germany and the United States.<sup>3</sup> All the regions are defined within national borders (See Annex A for the regional classification of each country).

This classification – which, for European countries, is largely consistent with the Eurostat NUTS 2013 classification – facilitates greater comparability of geographic units at the same territorial level.<sup>4</sup> Indeed, these two levels, which are officially established and relatively stable in all member countries, are used as a framework for implementing regional policies in most countries.

Due to limited data availability, labour market indicators in Canada are presented for groups of TL3 regions. Since these groups are not part of the OECD official territorial grids, they are labelled – for the sake of simplicity – as non-official grids (NOGs) in this publication and compared with TL3 in the other countries. Germany also has a NOG category with the 96 Spatial Planning Regions, an intermediate level between the 16 Länder (TL2) and the

402 Kreise (TL3). The German NOGs allow for a level of spatial disaggregation comparable to the other countries.

For the non-OECD countries in this report, only TL2 regions have been identified for Brazil, People's Republic of China, Colombia, India, Peru, the Russian Federation and South Africa, whereas for Lithuania, TL3 are derived from the European NUTS 3.

### **Regional typology**

Traditionally the OECD has classified TL3 regions as predominantly urban (PU), intermediate (IN), or predominantly rural (PR) regions. This typology is mainly based on population density in each local unit, combined with the existence of urban centres where at least one-quarter of the regional population reside. An extended regional typology has been adopted to distinguish between rural regions that are located close to larger urban centres and those that are not. The result is a four-fold classification of TL3 regions: predominantly urban (PU), intermediate regions (IN), predominantly rural regions close to a city (PRC) and predominantly rural remote regions (PRR). The distance from urban centres is measured by the driving time necessary for a certain share of the regional population to reach an urban centre with at least 50 000 people (see Figure A.1 in Annex A for a detailed description of the criteria and the resulting classification of TL3 regions). Due to a lack of data, the extended typology has not been applied yet to Australia, Chile or Korea. In 2014, the European Union modified the rural-urban typology, using 1 kilometre population grids as building blocks to identify rural or urban communities, with the aim of improving international comparability; for the OECD-EU countries this rural-urban typology is presented in the publication.

While the rural-urban typology is calculated only for the lower territorial level (TL3) we are also interested in characterising TL2 regions according to the extent to which their population live in urban agglomerations or in low density areas. To this purpose, the share of the regional population living in functional urban areas is used to distinguish TL2 regions which are mostly agglomerated versus those that are mostly non-agglomerated. This classification has the advantage of overcoming the urban-rural split and better capturing the contiguity of urban and rural life. In this publication, a TL2 region is classified as mostly agglomerated if more than half of its population lives in a functional urban area located within the TL2 region. The classification of *mostly agglomerated TL2 regions* is not applied to Israel, New Zealand or Turkey as data on functional urban areas are not available for these countries.

### **Sources of data for territorial statistics**

OECD *Regions and Cities at a Glance 2018* includes a selection of indicators from the OECD Regional Database, the OECD Regional Well-Being Database, the OECD Metropolitan Areas Database and the OECD Subnational Government Finance Database. For the first time this edition of the publication presents comparable indicators on the creation and destruction of firms in regions and on the jobs generated by those dynamics. The report also presents new indicators on the integration of migrants across OECD regions, based on labour force survey data in OECD countries. Finally, the report presents indicators on functional urban areas based on a different set of data sources specified in the Annexes of the publication and heavily relying on GIS estimation-based raster data organised in regular grids. Unless specified differently, indicators refer to functional urban areas as identified with updated boundaries in 2018, based on the most recent population and commuting data.

Most of the indicators presented in Chapters 1, 2 and 3 are referred to TL2 and TL3 regions and come from official national sources, following internationally-consistent methods for cross-country comparability. At the same time, regional and local data are increasingly available from a variety of sources: surveys, geo-coded data, administrative records, big data, and data produced by users. While countries have started to make use of the various sources to produce and analyse data at different geographic levels, significant methodological constraints still exist, making it a challenge to produce sound, internationally comparable statistics linked to a location. These constraints include both the varying availability of public data across OECD countries and the different standards used by national statistical offices in defining certain variables. Such constraints are even more daunting in non-OECD countries, where the production and usability of geo-coded information could be one solution to improve statistical evidence for different policy uses, such as the monitoring of Sustainable Development Goals. The trade-off between sound methodological estimations and international comparability should always be considered, as the latter depends on information that is universally available.

The indicators for the metropolitan areas presented in Chapter 4 are derived by integrating different sources of data, making use of GIS and adjusting existing regional data to non-administrative boundaries. Two types of methods to obtain estimates at the desired geographical level are applied, both requiring the use of GIS tools to disaggregate socio-economic data. The first method makes use of satellite datasets (global layers) at different resolutions, which are always smaller than the considered regions. The statistics for one region are obtained by superimposing the source data onto regional boundaries. In these cases, the regional value is either the sum or a weighted average of the values observed in the source data within the (approximated) area delimited by the regional boundaries. Because international standards for official statistics on environmental conditions in regions and cities do not exist, this method has been applied to estimate air pollution (population-weighted average of PM<sub>2.5</sub> levels) in metropolitan areas, TL3 and TL2 regions.

The second method makes use of GIS tools to adjust or downscale data, available only for larger geographic areas, to regularly spaced “grids” by using additional data inputs that capture how the relevant phenomenon is distributed across space. With this method, GDP, employment and unemployment have been estimated in metropolitan areas, when those statistics were not already provided by official sources (see Annex C for details on the methods to estimate indicators for metropolitan areas).

GIS-based methodologies were used to estimate not only environmental, but also socio-economic indicators (GDP and labour market), because these methods are less dependent on the type of information available in the different countries and, therefore, they enable good comparability of results among metropolitan areas in different countries. However, GIS-based methodologies lack of precision for some estimates and it is difficult to assess change over time for a number of variables.

The data of Chapter 5 refer to subnational governments, as classified according to the General Government Data of the OECD National Accounts. Subnational governments are defined as the set of states (relevant only for countries with a federal or quasi-federal system of government) and of local (regional and local) governments.

## Further resources

The interactive web-based tool [www.oecdregionalwellbeing.org/](http://www.oecdregionalwellbeing.org/) allows users to measure well-being in each region, compare it against 398 other OECD regions and monitor progress over time. Each region is assessed in eleven areas central to quality of life: income, jobs, health, access to services, environment, education, safety, civic engagement, housing, social support network, and life satisfaction.

The different topics are visualised through interactive graphs and maps with a short comment. Users can also find the *Regional eXplorer* and the *Metropolitan eXplorer* at this website, where they can select from among all the indicators included in the OECD Regional and Metropolitan Areas databases and display them in different linked dynamic views such as maps, time trends, histograms, pie charts and scatter plots. The website also provides access to the data underlying the indicators and to the OECD publications on regional and local statistics.

The cut-off date for data included in this publication was May 2018. Due to the time lag of subnational statistics, the last available year is generally 2017 for demographic and labour market, 2016 for subnational finance data and 2015 for entrepreneurship, innovation statistics and social statistics in metropolitan areas.

## Acronyms and abbreviations

	Description
<b>Australia (TL2)</b>	TL2 regions of Australia
<b>Australia (TL3)</b>	TL3 regions of Australia
<b>COFOG</b>	Classification of the Functions of Government
<b>GDP</b>	Gross domestic product
<b>FUA</b>	Functional urban areas
<b>IN</b>	Intermediate (region)
<b>LFS</b>	Labour force survey
<b>MA</b>	Metropolitan area (functional urban area with a population of more than 500 000)
<b>NEET</b>	Adults neither employed nor in education or in training
<b>NOG</b>	Non-official grid
<b>OECD#</b>	The sum of all the OECD regions where regional data are available (# number of countries included in the sum)
<b>OECD# average</b>	The weighted mean of the OECD regional values (# number of countries included in the average)
<b>OECD#UWA</b>	The unweighted mean of the country values (# number of countries included in the average)
<b>PCT</b>	Patent Co-operation Treaty
<b>PM<sub>2.5</sub></b>	Particulate matter (concentration of fine particles in the air)
<b>PPP</b>	Purchasing power parity
<b>PR</b>	Predominantly rural (region)
<b>PRC</b>	Predominantly rural (region) close to a city
<b>PRR</b>	Predominantly rural remote (region)
<b>PU</b>	Predominantly urban (region)
<b>R&amp;D</b>	Research and development
<b>SNG</b>	Subnational government
<b>TL2</b>	Territorial level 2
<b>TL3</b>	Territorial level 3
<b>Total # countries</b>	The sum of all regions where regional data are available, including OECD and non-OECD countries

## OECD Country codes

Code	Country
AUS	Australia
AUT	Austria
BEL	Belgium
CAN	Canada
CHE	Switzerland
CHL	Chile
CZE	Czech Republic
DEU	Germany
DNK	Denmark
ESP	Spain
EST	Estonia
FIN	Finland
FRA	France
GBR	United Kingdom
GRC	Greece
HUN	Hungary
IRL	Ireland
ISL	Iceland

Code	Country
ISR	Israel
ITA	Italy
JPN	Japan
KOR	Korea
LUX	Luxembourg
LVA	Latvia
LTU	Lithuania
MEX	Mexico
NLD	Netherlands
NOR	Norway
NZL	New Zealand
POL	Poland
PRT	Portugal
SVK	Slovak Republic
SVN	Slovenia
SWE	Sweden
TUR	Turkey
USA	United States

## Other countries ISO codes

Code	Country
BRA	Brazil
BGR	Bulgaria
CHN	China, People's Republic of
COL	Colombia
IND	India

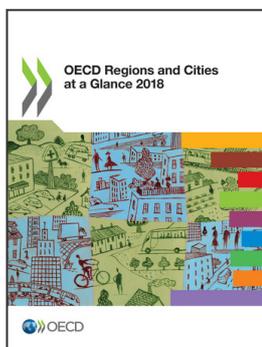
Code	Country
PER	Peru
ROU	Romania
RUS	Russian Federation
TUN	Tunisia
ZAF	South Africa

**Note on Israel:** The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

**Note on Colombia:** On 25 May 2018, the OECD Council invited Colombia to become a Member. At the time of publication the deposit of Colombia's instrument of accession to the OECD Convention was pending and therefore Colombia does not appear in the list of OECD Members and is not included in the OECD zone aggregates.

### Notes

1. With the  $\alpha$  coefficient equal to 1.
2. Some OECD countries have adopted a definition for their own metropolitan areas or urban systems that looks beyond the administrative approach. For example, Australia (Australian Bureau of Statistics, 2012), Canada (Statistics Canada, 2002) and United States (U.S. Office of Management and Budget, 2000) use a functional approach similar to the one adopted here, to identify metropolitan areas. Several independent research institutions and National Statistical Offices have identified metropolitan regions in Italy, Spain, Mexico and United Kingdom based on the functional approach.
3. The U.S. TL3 regions are based on the Bureau of Economic Analysis' Economic Areas. For the latest information on the methodology, please refer to: <https://www.bea.gov/scb/pdf/2004/11November/1104Econ-Areas.pdf>
4. For European countries, the Eurostat NUTS 2 and 3 classifications correspond to the OECD TL2 and 3, with the exception of Belgium, Germany and the United Kingdom where the NUTS 1 level corresponds to the OECD TL2.



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