OECD Regions at a Glance 2016

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BETTER POLICIES FOR BETTER LIVES

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Foreword

OECD Regions at a Glance *shows how regions and cities contribute to national economic growth and well-being. This edition updates more than 40 region-by-region indicators to assess disparities within countries and their evolution over the past 15 years. The report covers all OECD member countries and, where data are available, Brazil, People's Republic of China, Colombia, India, Latvia, Lithuania, Peru, the Russian Federation and South Africa.*

The report is organised into four chapters plus statistical annexes. The Reader's Guide provides a description of the way OECD subnational information has developed across a range of topics and different territorial levels, including administrative and economic regions. Chapter 1 offers, for the first time, a comprehensive picture of well-being outcomes across regions, countries, and over time. This assessment is based on a multi-dimensional framework covering 11 dimensions of well-being: income, jobs, housing, health, education, access to services, safety, environment, civic engagement and governance, life satisfaction, and community. A zoom in on how each OECD region performs on the various well-being dimensions is included with interactive graphs available at www.oecdregionalwellbeing.org. Chapter 2 illustrates the regional contribution to national growth, highlights factors driving the competitive edge of regions and shows how these factors are distributed within countries. It also provides comparative analysis of the economic competitiveness and labour market trends in the 281 OECD metropolitan areas. The analysis relies on a common definition of urban areas in OECD countries, consisting of densely populated cities and their less-populated surrounding territories linked to the cities by a high level of commuting to work. A new feature in this edition, the report offers insights on the challenges subnational governments perceive for infrastructure investment and documents how financial competencies are allocated across levels of governments. Recent trends in subnational government finances complete Chapter 3. Chapter 4 looks at regional disparities on social inclusion and environmental sustainability, providing new measures of quality of life in regions and demographic changes.

OECD Regions at a Glance 2016 *was prepared by the Territorial Analysis and Statistics Unit of the OECD Directorate for Public Governance and Territorial Development. It has greatly benefited from comments and guidance from the Delegates of the OECD Working Party on Territorial Indicators (WPTI) and colleagues of the OECD Regional Development Policy Division. This report was supervised and edited by Monica Brezzi. Rolf Alter, Luiz De Mello and Joaquim Oliveira Martins are gratefully acknowledged for their comments on drafts of various chapters. Lead authors for each of the chapters were: Justine Boulant and Paolo Veneri (Chapter 1), Eric Gonnard and Daniel Sanchez-Serra (Chapter 2), Isabelle Chatry and Dorothée Allain-Dupré (Chapter 3), Eric Gonnard and Marcos Díaz Ramirez (Chapter 4). Karen Maguire and Johannes Weber prepared the indicators on regional innovation (Chapter 2). Eric Gonnard and Daniel Sanchez-Serra are gratefully acknowledged for providing extensive statistical support throughout the publication and preparing the maps. Gemma Nellies and Pilar Philip are kindly acknowledged for editing and preparing the report for publication. Damian Garnys and Kate Lancaster provided editorial assistance.*

Table of contents

Editorial: Regions and Cities – Key actors for delivery on SDGs 7

Executive summary 9

Reader's guide 13

Chapter 1. **Well-being in regions** 21
- The geography of well-being 22
- Household income 24
- Housing conditions 26
- Jobs 28
- Education 30
- Access to services 32
- Health status 34
- Safety 36
- Environment 38
- Civic engagement and governance 40
- Subjective well-being in regions 42

Chapter 2. **Regions as drivers of national competitiveness** 45
- Population and population changes in regions 46
- How metropolitan areas contribute to population change 52
- Regional contributions to GDP growth 54
- Regional economic disparities 60
- Contribution of metropolitan areas to national economies 66
- Regional contributions to change in employment 70
- Productivity growth in regions 72
- Where productivity gains are happening 76
- Regional specialisation and productivity growth 78
- Impact of the crisis on regional economic disparities 80
- Employment and unemployment in metropolitan areas 82
- Regional concentration of innovation related resources 84
- Regions and venture capital 86
- Regional differences in highly-skilled workers 88
- Regional patterns of co-patenting 90
- Patent activity in metropolitan areas 92

Chapter 3. **Subnational government finance and investment for regional development** 95
- Subnational government spending 96
- Subnational government spending by type 98
- Subnational government spending by economic function 100
- Spending responsibilities across levels of government 102

Subnational government investment 106
Subnational government revenue 110
Subnational government debt 112
Challenges for infrastructure investment at subnational level 114

Chapter 4. **Inclusion and sustainability in regions** 119
Concentration of the elderly and children in regions 120
Demographic challenges of metropolitan areas 122
Population mobility among regions 124
Regional disparities in youth unemployment 126
Part-time employment in regions 128
Regional access to health 130
Municipal waste 132
Household income in metropolitan areas 134

Annex A. **Defining regions and functional urban areas** 137

Annex B. **Sources and data description** 146

Annex C. **Indexes and estimation techniques** 174

Annex D. **Responsibilities across levels of government** 178

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Editorial: Regions and Cities – Key actors for delivery on SDGs

The ratification of the Sustainable Development Goals (SDGs) at the UN General Assembly in September 2015, composed of 17 goals and 169 targets, set a global agenda for achieving environmental sustainability, social inclusion and economic development by 2030. They provide a set of ambitions to whose realization all countries must contribute. One of the challenges is adjusting our focus, looking beyond national approaches to the powerful role that regions and cities play. The global agenda will require local data, the engagement of many stakeholders and all levels of government, and improved government capacity to steer and manage the delivery of public policies for inclusive growth.

Regions at a Glance 2016 makes a critical contribution to advancing this global agenda, providing disaggregated data and unveiling the differences within countries that otherwise remain hidden behind national averages.

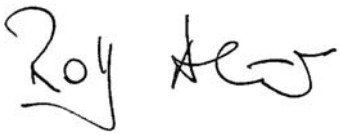
For the first time, the assessment of well-being outcomes across OECD regions includes a range of dimensions, from income and jobs to health, the environment or civic engagement. It can help countries pursue policy goals that take into account the specific conditions of regions and incorporate local solutions. These new data are revealing. For example, average life expectancy at birth in Mississippi, USA, is 75 years, 6 years less than in Hawaii. Differences within some cities are even more staggering: for example, there is a 20-year gap in life expectancy between neighbourhoods in London; this is more than twice the 8-year gap among OECD countries. Similarly, while gaps across OECD regions have narrowed over the last decade in well-being dimensions such as education and access to services, gaps have increased in income, air pollution and safety. In 2014, the difference in unemployment rates among all OECD regions was above 30 percentage points – almost 10 percentage points higher than the difference in unemployment among OECD countries.

The SDGs will not be achieved without the full engagement of a broad spectrum of stakeholders, including the people living in the world's cities. Metropolitan areas, home to about half of the OECD population, are critical to the economic prosperity of countries, contributing to 62% of GDP growth of the OECD area in the period 2000-13. Household incomes were 17% higher in metropolitan areas than elsewhere in 2013. However, metropolitan areas are also host to greater inequality than their respective countries, and these inequalities grow as cities become more populated. This is not just about income: inequality encompasses many dimensions of life. In 2014, 53% of the OECD urban population was exposed to levels of air pollution higher than those recommended by the World Health Organisation. If unchecked, these disparities will grow as urbanisation continues in OECD countries. A holistic approach is required to ensure that cities are inclusive, sustainable and safe.

The challenge going forward is to ensure that all levels of government are implicated in the implementation of the SDGs. OECD data show that regional and local governments play crucial roles in the well-being of today's and future generations. For example, 70% of subnational government (SNG) spending goes to education, health, economic affairs and social expenditures. At the same time, *Regions at a Glance* documents how spending responsibilities are shared across central and subnational governments. But aligning priorities between national and subnational governments and ensuring the capacities and resources needed for implementation remain critical challenges. New data from an OECD-EU Committee of Regions survey of European regional and local authorities show that the lack of co-ordination across sectors and levels of government, red tape, and excessive administrative procedures are the top challenges for infrastructure investment at the subnational level.

The SDGs, UN Conferences on Climate Change, and the New Urban Agenda of Habitat III offer opportunities to refocus our attention on multi-level policy actions and on local data. Within this context, *Regions at a Glance 2016* is an important contribution to creating pathways from the local level to meeting global goals.

Rolf Alter



Director, Public Governance
and Territorial Development Directorate, OECD

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Executive summary

For policy makers and citizens alike, thinking globally increasingly requires looking hard at the many different local realities within and across countries. A thorough assessment of whether life is getting better requires a wide range of measures that are able to show not only what conditions people experience, but where they experience them. OECD data show remarkably high disparities in people's living conditions across regions and cities: for example, there is a 20 percentage point difference among unemployment rates between regions within Italy, Spain and Turkey, comparable to the difference between the national unemployment rate of Greece and that of Norway. And life expectancy varies by 8 years among all OECD countries, but by 11 years across Canada's provinces and by 6 years among states in Australia and in the United States.

This report provides a comprehensive picture of the level of progress in OECD regions and metropolitan areas towards more inclusive and sustainable development. It does so through eleven well-being dimensions, those that shape people's material conditions (income, jobs and housing) and their quality of life (health, education, access to services, environment, safety, civic engagement and governance, community, and life satisfaction). These dimensions are gauged through outcomes indicators, which capture improvements in people's lives. The report also looks at what local resources are being mobilised to increase national prosperity and well-being, to better assess the contribution of regions to national performance.

Since the economic crisis of 2008, many regions are still struggling to increase the productivity of firms and people and to restore employment. Traditionally, relatively few regions have led national job creation: on average, regions that concentrated 20% of OECD employment in 2000 have created one-third of the overall employment growth in the period 2000-14 and 50% or more in the Czech Republic, Estonia, Hungary, Korea and Poland. However, since 2008 employment growth has also slowed down in the most dynamic regions in all OECD countries, with the exception of Israel, Luxembourg, Mexico and Turkey.

Regional and local governments (collectively known as "subnational governments" or SNGs) control many policy levers for promoting prosperity and well-being. SNGs were responsible for around 40% of total public expenditure and 60% of public investment in 2014 in the OECD area. Education, health, general public services, economic affairs and social expenditure represent the bulk of SNG expenditure (85%). At the same time, responsibilities for these sectors are often shared, requiring co-ordination across national and subnational levels of governments to ensure effective and coherent policy making. Indeed, lack of such co-ordination was indicated as a top challenge by three-quarters of European SNGs participating in an OECD-Committee of the Regions survey in 2015.

Key findings

Geography matters for well-being

- While gaps between regions have narrowed in education levels and access to services over the last decade, they have increased in income, air pollution and safety.
- Income is also unequally distributed within regions. Inequality in household disposable income in some regions in Israel, Spain, Turkey and the United States is much higher than inequality in each country as a whole. While households in OECD metropolitan areas are, on average, 17% richer in income than elsewhere, income inequalities are the highest in metropolitan areas, and the share of household income devoted to housing expenditure can be 15 percentage points higher in some metropolitan areas than in the rest of the country.
- Improvement in the educational attainment of the workforce in less-educated regions has narrowed the gaps with more-educated regions in the past 15 years. In France and Mexico, for example, thanks to improvements in the regions that had a relatively lower-educated workforce in 2000, regional disparities in the workforce with at least upper-secondary education have decreased by 12 and 7 percentage points, respectively.
- A new feature of this publication, estimates of subjective well-being at the subnational level reveal that life satisfaction and perceived social support also depend on where one lives. Forty percent of the explained variation of OECD residents' self-reported life satisfaction is accounted for by regional characteristics, with individual characteristics accounting for the other 60%.

Regions contribute to national growth and prosperity

- In the period 2000-14, on average, GDP growth rates were lower in predominantly rural regions than predominantly urban regions in 18 out of 24 OECD countries, while job creation was higher in rural regions than in urban ones in 12 out of 24 OECD countries.
- Productivity gains explain more than 75% of growth in GDP per capita of the fastest-growing regions in the period 2000-13. A majority of these regions include large metropolitan areas where the concentration of different industries facilitates access to skilled labour, infrastructure, innovation, entrepreneurship and trade. The regions whose GDP per capita declined in the past 15 years – mainly in Greece, Italy and Spain – performed poorly both in productivity and in workforce utilisation.
- In 22 out of 27 OECD countries, lagging regions have increased the share of tertiary educated labour force faster than advanced regions, in the period 2000-13. In contrast, the share of research and development (R&D) personnel has increased faster in the advanced regions widening regional gaps in 12 out of 19 countries in the same period.
- The elderly population in OECD countries has increased more than 5 times as much as the rest of the population in the past 15 years. In 26 out of 33 OECD countries, the elderly dependency rate was higher in rural than in urban regions in 2014. Rural regions in OECD countries lost on average 11 people per 10 000 population through migration in 2011-13. At the same time, in Belgium, Korea, Portugal, Switzerland and the United Kingdom, rural regions were net recipients of domestic migration.

Subnational governments finance and invest in regional development

- SNGs carry out 40% of total public expenditure. They have an important economic role as employers, in public procurement, and as providers of essential services in areas such as education (25% of SNG expenditure), health (17%), social protection and economic affairs (14%, for both).
- Economic affairs (mainly transport) and education are the priority investment sectors, accounting for 39% and 22% of SNG investment. SNG investment decreased by almost 4% in real terms between 2007 and 2014 in the OECD area.
- The economic crisis has led to a major deterioration of both SNG budget balance and debt in most OECD countries. In 2014, SNGs' outstanding gross debt accounted for 24% of GDP and 20% of total public debt on average in the OECD.

Reader's guide

The organising framework

Regions at a Glance 2016 addresses two questions:

- How OECD regions perform in a wide range of well-being outcomes and what progress have regions made towards more inclusive and sustainable development, compared to the past and compared with other regions?
- Which factors drive the performance of regions, and what local resources could be better mobilised to increase national prosperity and people's well-being?

The first question is addressed in Chapter 1, which reveals the variety of regional performance, within and across countries. The framework for measuring well-being at the regional level considers a combination of individual characteristics and local conditions, to get closer to what people experience in their life. It has been conceived to improve policy coherence and effectiveness by looking at eleven dimensions, those that shape people's material conditions (income, jobs and housing) and their quality of life (health, education, access to services, environment, safety, civic engagement and governance, community, and life satisfaction). These dimensions are gauged through indicators of "outcomes", which capture improvements in people's lives. For example, health is measured by the regional average life expectancy at birth, rather than public expenditure for health (input indicator) or number of doctors per population (output indicator). The well-being indicators chosen for 9 of the 11 dimensions are objective indicators that together provide a snapshot of the development of a region and, when possible, how the results are distributed among different population groups (elderly, young, women, foreign-born, etc.). For the first time in this publication two additional well-being dimensions are included, community and life satisfaction, and measured by self-reported indicators (or subjective indicators), where respondents are asked to evaluate their life or certain domains of their life.

Answering the second question can inform the design of effective strategies to improve the contribution of regions to aggregate performance and can suggest policy interventions to unlock complementarities among efficiency, equity and environmental sustainability objectives. Chapters 2, 3 and 4 – "Regions as drivers for national competitiveness", "Subnational government finance and investment for regional development", and "Inclusion and sustainability in regions" – showcase local resources, whether human capital, infrastructure, social capital, financial means, that can be mobilised to improve well-being outcomes.

Throughout the publication regional economies and societies are looked at through two lenses: the distribution of resources over space and the persistence of regional disparities over 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 20% of

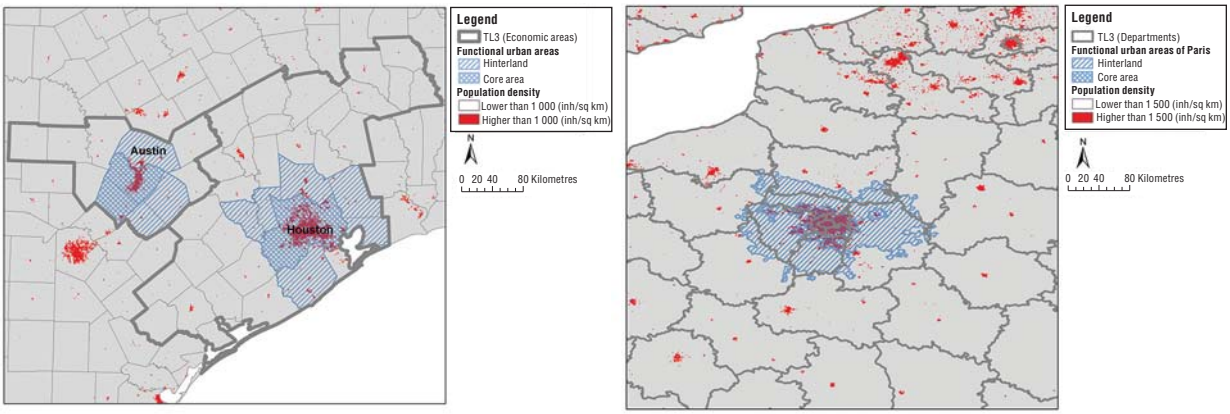
the national population and how much these regions contribute to the national change of that variable. For example, the OECD regions with the largest gross domestic product (GDP) and corresponding to 20% of the total population generated 26% of OECD GDP in 2013.

- Regional disparities are measured by the difference between the maximum and the minimum regional values in a country (regional range), by the Gini index or by the Theil general entropy index,[1] which give an indication of inequality among all regions. In Chile, Greece, Italy, Mexico, Portugal, Spain and Turkey, for example, the regional difference in the share of workforce with at least secondary education was higher than 20 percentage points in 2014.

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. They show, for example, that during the past 15 years more than 30% of growth in GDP, employment and population within the OECD is attributable to a small number of regions. 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. Regions interact through a broad set of linkages such as job mobility, production systems, or collaboration among firms. These often cross local and regional administrative boundaries. The analysis, therefore, should take into consideration, in addition to the administrative boundaries of a region, also its economic or social area of influence known as the functional region (Figure 1). The notion of functional region can better guide the way national and city governments plan infrastructure, transportation, housing, schools, and space for culture and recreation. In summary, functional regions can trigger a change in the way policies are planned and implemented, better integrating and adapting them to the local needs.

Figure 1. **Administrative and functional boundaries: Austin, Houston and Paris**



Note: These maps are for illustrative purposes and are without any prejudice to the status of or sovereignty over any territory covered by these maps.
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 both for administrative and functional regions according to international classifications, although the availability of data for the former is much more complete than for the latter.

Territorial level classification

Regions within the 34 OECD countries are classified on two territorial levels reflecting the administrative organisation of countries. The 391 OECD large (TL2) regions represent the first administrative tier of subnational government, for example, the Ontario Province in Canada. The 2 197 OECD small (TL3) regions are contained in a TL2 region. For example, the TL2 region of Aquitaine in France encompasses five TL3 regions: Dordogne, Gironde, Landes, Lot-et-Garonne and Pyrénées-Atlantiques. TL3 regions correspond to administrative regions, with the exception of Australia, Canada, Germany and the United States. 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 2010 classification – facilitates greater comparability of geographic units at the same territorial level.[2] 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, for the sake of simplicity they are labelled as non-official grids (NOGs) in this publication and compared with TL3 in the other countries. Germany has also a NOG category with the 96 Spatial Planning Regions, an intermediary level between the 16 Länders (TL2) and the 412 Kreise (TL3). The German NOG allows for a level of spatial disaggregation comparable to the other countries.

For the non-OECD countries, only TL2 regions have been identified for Brazil, China, Colombia, India, Peru, the Russian Federation and South Africa, whereas for Latvia and Lithuania, TL3 are derived from the European NUTS 3.

Definition of metropolitan areas

The OECD-EU definition of functional urban areas consists of highly densely populated urban centres 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 population. The definition is applied to 30 OECD countries (with exception of Iceland, Israel, New Zealand and Turkey), and it identifies 1 197 urban areas of different sizes (see Figure A.5, Annex A for the detailed methodology).

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.[3] 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 population above 500 000. According to this methodology, there are 281 metropolitan areas in the 29 OECD countries[4] corresponding to 49% of total population in 2014.

Regional typology

Traditionally the OECD has classified TL3 regions as predominantly urban (PU), intermediate (IN), or predominantly rural (PR) regions. This typology is based on the percentage of regional population living in rural communities, 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 Annex A for a detailed description of the criteria and the resulting classification of TL3 regions). Due to a lack of information on the road network and service areas, the extended typology has not been applied to Australia, Chile and Korea. In 2014, the European Union modified the rural-urban typology, using 1 km 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 distribution of population in more rural or urban areas. For this purpose, we use the share of the regional population living in functional urban areas of different population sizes located in the region. 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 urban if more than 70% of its population lives in a functional urban area located within the TL2 region. It should be noted that, due to lack of commuting data, functional urban areas are not identified in Iceland, Israel, New Zealand and Turkey. Therefore, the classification of *mostly urban TL2 regions* is not applied to these four countries.

Sources of data for territorial statistics

OECD Regions at a Glance 2016 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.

Most of the indicators presented in Chapters 1, 2 and 4 (TL2 and TL3 regions) come from national official sources, following internationally common 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 larger 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 be always considered, as the latter depends on the commonly available information.

The indicators for the metropolitan areas presented in Chapters 1, 2 and 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. This method has been applied, for example, to estimate air pollution (population-weighted average of $PM_{2.5}$ levels) in metropolitan areas, TL3 and TL2 regions to compensate for the lack of international standards for statistics of environmental conditions in 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 phenomenon of interest is distributed across space. With this method, GDP, employment and unemployment have been estimated in metropolitan areas, with exception of Australia and the United States that provided economic and social statistics for the metropolitan areas (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. This choice, however, has the disadvantages of lack of precision for some estimates and difficulty in obtaining comparable measures over time so as to monitor improvements induced by targeted policies and behavioural changes. Specific data products enabling comparison of data over time need to be produced, and, in addition, international standards for the production of indicators from remote sensing observation could be developed.

The data of Chapter 3 refer to subnational governments, as classified according to the General Government Data of the OECD National Accounts. Subnational governments are defined as the sum of states (relevant only for countries having a federal or quasi-federal system of government) and local (regional and local) governments.

Finally, for the first time, micro data from the Gallup World Poll were used to produce regional (TL2) estimates for three well-being indicators in Chapter 1: perception of government corruption, life satisfaction, and social support network. Survey responses over the period 2006-14 were pooled together to increase the regional sample size, and data were reweighted to better fit the age-gender cohorts in the real population.

Further resources

The interactive web-based tool *www.oecdregionalwellbeing.org/* allows users to measure well-being in each region, compare it against other OECD regions and monitor progress over time. Each region is assessed in 11 areas central to the quality of life: income, jobs, health, access to services, environment, education, safety, civic engagement and governnance, housing, social support network, and life satisfaction.

The different topics are visualised through interactive graphs and maps with a short comment. *Regional eXplorer* and *Metropolitan eXplorer* allow users to 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 February 2016. Due to the time lag of subnational statistics, the last available year is generally 2014 for demographic, labour market and subnational finance data and 2013 for regional GDP, innovation statistics and social statistics.

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.

Acronyms and abbreviations

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

OECD Country codes

AUS	Australia	ISL	Iceland
AUT	Austria	ISR	Israel
BEL	Belgium	ITA	Italy
CAN	Canada	JPN	Japan
CHE	Switzerland	KOR	Korea
CHL	Chile	LUX	Luxembourg
CZE	Czech Republic	MEX	Mexico
DEU	Germany	NLD	Netherlands
DNK	Denmark	NOR	Norway
ESP	Spain	NZL	New Zealand
EST	Estonia	POL	Poland
FIN	Finland	PRT	Portuga
FRA	France	SVK	Slovak Republic
GBR	United Kingdom	SVN	Slovenia
GRC	Greece	SWE	Sweden
HUN	Hungary	TUR	Turkey
IRL	Ireland	USA	United States

Other major economy codes

BRA	Brazil	LTU	Lithuania
CHN	China, People's Republic of	LVA	Latvia
COL	Colombia	PER	Peru
IDN	Indonesia	RUS	Russian Federation
IND	India	ZAF	South Africa

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.

Notes

1. With the α coefficient equal to 1.
2. 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.
3. 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.
4. The functional urban area of Luxembourg has a population below 500 000 inhabitants.

1. WELL-BEING IN REGIONS

The geography of well-being

Household income

Housing conditions

Jobs

Education

Access to services

Health status

Safety

Environment

Civic engagement and governance

Subjective well-being in regions

The data in this chapter refer to TL2 regions in OECD and non-OECD countries, and to metropolitan areas in OECD countries. Regions are classified on two territorial levels reflecting the administrative organisation of countries. Large (TL2) regions represent the first administrative tier of subnational government. Small (TL3) regions are contained in a TL2 region. Metropolitan areas are identified on the basis of population density and commuting journeys, independently of administrative boundaries.

The geography of well-being

Understanding how and to what extent economic growth translates into better lives for people is important to both citizens and policy makers. A crucial step in answering these questions is having the right tools to assess people's living conditions. While gross domestic product (GDP) has for a long time been the most used proxy for measuring well-being, it fails to account for the actual quality of life experienced by people. The growth of GDP per capita does not always translate into better life for people. Household income and GDP per capita in OECD regions, for example, are on average positively correlated, but the same trend is not followed everywhere.

At the regional level, well-being is measured through eleven topics covering both material conditions (income, jobs, housing) and quality of life (health, education, safety, environmental quality, civic engagement, access to services, community, and life satisfaction). For the first time subjective indicators are included in the regional framework to measure community and life satisfaction.

Shifting from GDP to well-being indicators that focus on people's outcomes makes the issue of regional disparities within countries broader for policy makers. A certain concentration of production in space can be beneficial for overall economic growth thanks, among other things, to agglomeration economies. However, the spread of benefits across all regions is an important objective for policy makers who want to ensure equal opportunities in education, access to jobs and health across regions.

Considering all OECD regions, the highest levels of regional disparities, as measured through the Theil entropy index, are observed in safety (homicide rate) and income (income per capita), with disparities that have increased in both dimensions in the past decade (Figure 1.1).

Definition

The Theil entropy index is a measure of inequality among all regions in the OECD. The index takes on values between 0 and infinity, with zero interpreted as no disparity. It can be decomposed in a "within country" and "between country" component so that the sum of the two equals the total entropy. The index assigns equal weight to each region regardless of its size; therefore differences in the values of the index among countries may be partially due to differences in the average size of regions in each country (see Annex C for details).

In Figure 1.3, mostly urban regions are defined as TL2 regions with at least 70% of their population living in a functional urban area located within the TL2 region (see Annex A for details).

Part of the observed regional disparities are due to differences between countries and part to differences among regions within a country. Around one-quarter or more of the observed disparities in safety, jobs, environment, education, community, and GDP per capita are explained by disparities within the same country (Figure 1.2).

The typology of regions, whether urban or rural, partially explains differences in well-being outcomes. For simplicity, a region is considered mostly urban if more than 70% of its population lives in a functional urban area – this is a definition that is consistent across countries and that does not rely on local administrative boundaries. People living in mostly urban regions have, on average, higher significant well-being outcomes in income, access to services, housing and education than those living in other areas. However, they experience significantly worse values for air pollution (environment) (Figure 1.3).

Source

OECD (2015), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

Reference years and territorial level

2003-14; TL2 (TL3 for Estonia).

The classification of mostly urban regions does not include Iceland, Israel, New Zealand and Turkey for lack of data on functional urban area.

Further information

OECD (2015), *How's Life? 2015: Measuring Well-being*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/how_life-2015-en*.

OECD (2014), *How's Life in Your Region?: Measuring Regional and Local Well-being for Policy Making*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264217416-en*.

Veneri, P. and F. Murtin (2016), "Where is inclusive growth happening? Mapping multi-dimensional living standards in OECD regions", *OECD Statistics Working Papers*, No. 2016/01, OECD Publishing, Paris, *http://dx.doi.org/10.1787/5jm3nptzwsxq-en*.

OECD Regional Well-Being: *www.oecdregionalwellbeing.org*.

Figure notes

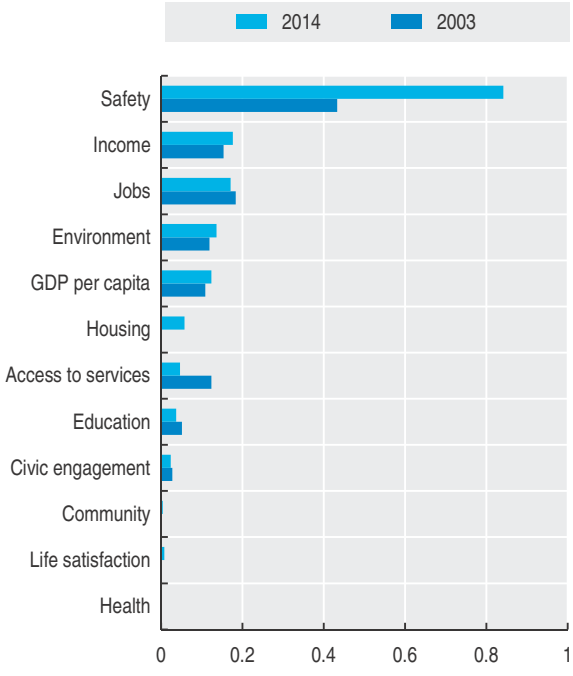
1.1-1.3: The available years may differ for the different indicators (see Annex B for details).

1.3: A value higher than 100 indicates relatively better well-being outcomes in mostly urban regions. To this end, the inverse of the indicators homicide, unemployment and air pollution was used since for such indicators a higher value represents a worse situation. The difference between urban and rural regions is statistically significant only for the dimensions GDP per capita, income, access to services, housing, education and environment.

Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

1.1. Disparities in well-being dimensions among TL2 regions in all OECD countries, 2003 and 2014

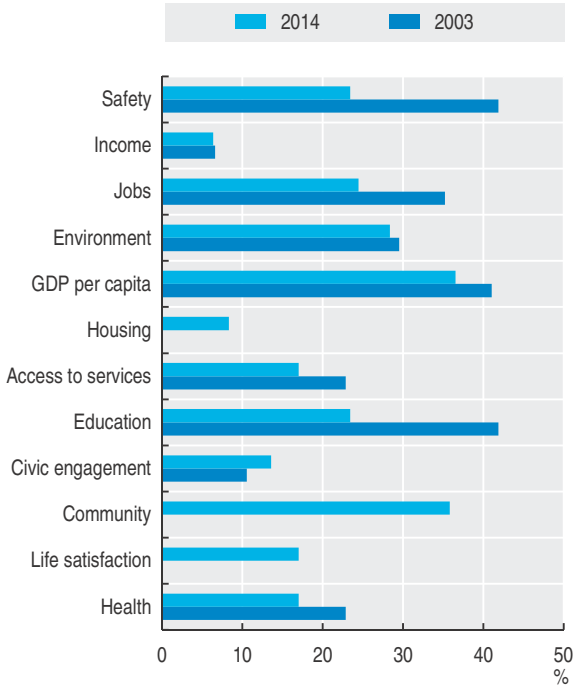
Theil index



StatLink http://dx.doi.org/10.1787/888933362858

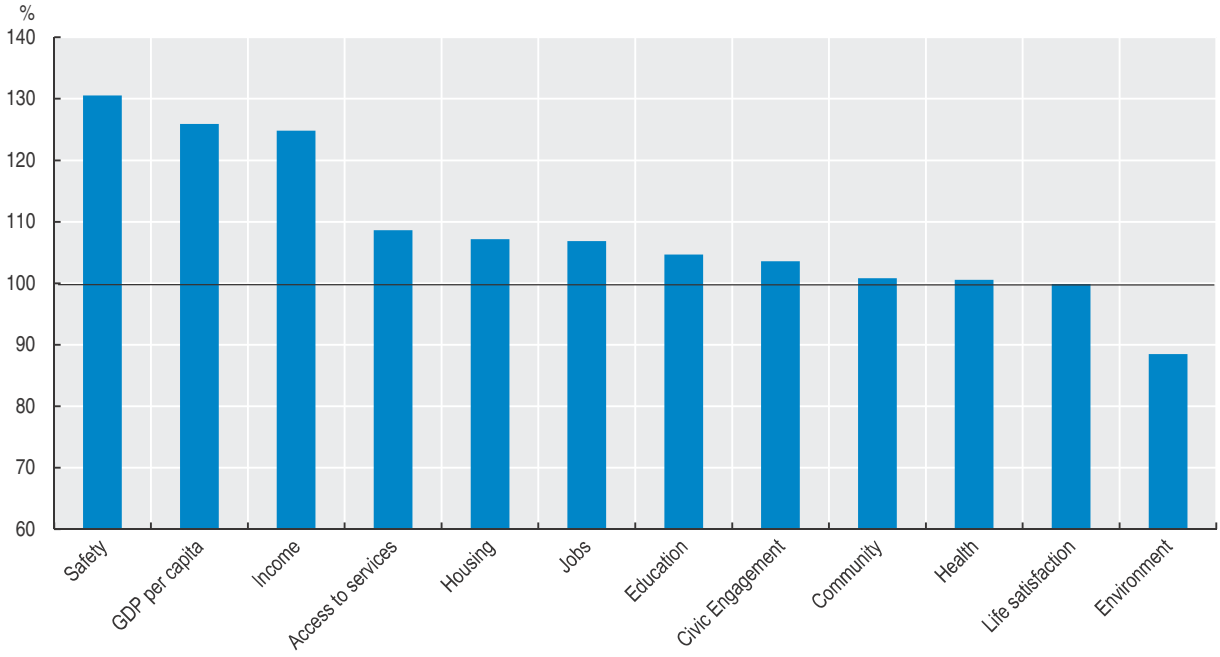
1.2. Per cent of disparities due to variation among regions within a country, 2003 and 2014

Ratio of within component and Theil index



StatLink http://dx.doi.org/10.1787/888933362869

1.3. Ratio between average outcomes in mostly urban regions and outcomes in the other regions (%), 2014



StatLink http://dx.doi.org/10.1787/888933362874

Household income

The disposable income measures the capacity of households (or individuals) to provide themselves with consumable goods or services. As such, it is a better indicator of the material well-being of citizens than gross domestic product (GDP) per inhabitant. Regions where net commuter flows are high may display a very high GDP per capita which does not translate into a correspondingly high income for their inhabitants.

Disparities in regional income per capita within countries are generally smaller than those in terms of GDP per capita, thanks to the role of public transfers. Still, in 2014 the per capita income in the Federal District (Mexico) and Ankara (Turkey) was 3.3 times higher than in Chiapas and in Eastern Anatolia, respectively. Similarly, in the Slovak Republic, Australia, United States, Israel, Greece and Chile, inhabitants in the top income region were on average more than 50% richer than the median citizen (Figure 1.4).

While the regional range measures the distance between the richest and the poorest regions in a country, the coefficient of variation of household disposable income provides a measure of disparities among all regions. According to this index, regional disparities in the levels of household disposable income have increased in the last two decades in half of the 30 OECD countries considered, meaning that people's material conditions have on average diverged. Taking into consideration the different countries, the Slovak Republic, Australia, Mexico, Israel, Estonia and Chile were the countries with the highest regional disparities in 2014. Among the countries with increasing regional disparities are the Slovak Republic, Australia, Canada and the Czech Republic, while trends towards a more spatially equal distribution of income were observed in Italy, Hungary, Germany, Finland and Slovenia (Figure 1.5).

Regional differences are not observed solely in terms of average levels of income, but also in terms of how such income is distributed across households living in the same region. New estimations on income inequality within regions show that the Gini index of household disposable income in some regions in the United States, Israel, Turkey and Spain is much higher than the one in the country as a whole (Figure 1.6).

Definition

The disposable income of private households is derived from the balance of primary income by adding all current transfers from the government, except social transfers in kind, and subtracting current transfers from the households such as income taxes, regular taxes on wealth, regular inter-household cash transfers and social contributions. The primary income of private households is defined as the income generated directly from market transactions, i.e. the purchase and sale of goods and services.

Regional disposable household income is expressed in USD purchasing power parities (PPP) at constant prices (year 2005).

The coefficient of variation is a measure of inequality among all regions of a given country (see Annex C for the formula). It is defined as the ratio between the standard deviation and the mean of a given variable. The index takes on values between 0 and infinity, with zero interpreted as no variation across regions. The index is independent of the unit in which the measurement was taken.

Source

OECD (2015), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

OECD (2016), "Detailed National Accounts, SNA 2008 (or SNA 1993): Final consumption expenditure of households", OECD National Accounts Statistics (database), *http://dx.doi.org/10.1787/data-00005-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

1995-2014; TL2.

Further information

OECD Regional Well-Being: *www.oecdregionalwellbeing.org/*.

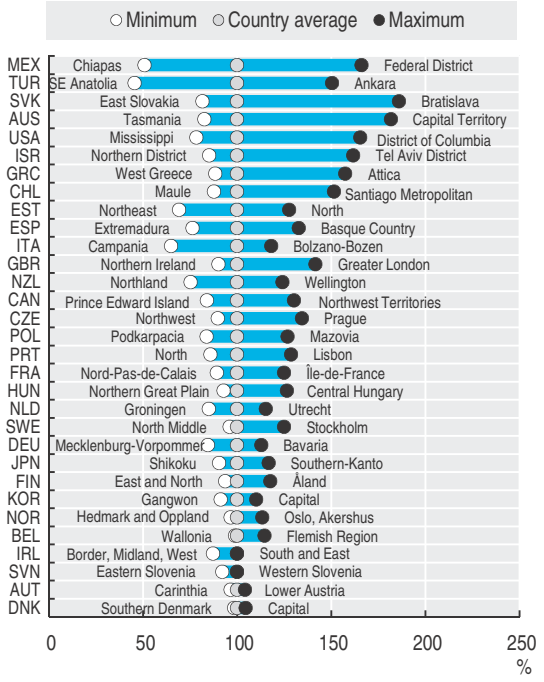
Figure notes

1.4-1.5: First available year: Chile, Ireland, Israel, and Slovak Republic 1996; United Kingdom 1997; New Zealand 1998; Slovenia 1999; Austria, Denmark, Finland, Hungary, Portugal, and Sweden 2000; Japan 2001; Estonia and Mexico 2008; Korea and Poland 2010; Norway 2011. Last available year: Mexico, Turkey and the United States 2014; Australia, Austria, Canada, Czech Republic, Denmark, Estonia, France, Greece, Korea, New Zealand, and United Kingdom 2013; Chile, Finland, Germany, Hungary, Italy, Japan, Norway, Poland, Slovak Republic and Sweden 2012; Belgium, Israel, Netherlands, Portugal and Spain 2011.

1.6: Available years: Australia, Finland , Israel, Mexico, Netherlands and Norway 2014; France, Japan, New Zealand, Slovenia, Switzerland and United Kingdom 2011.

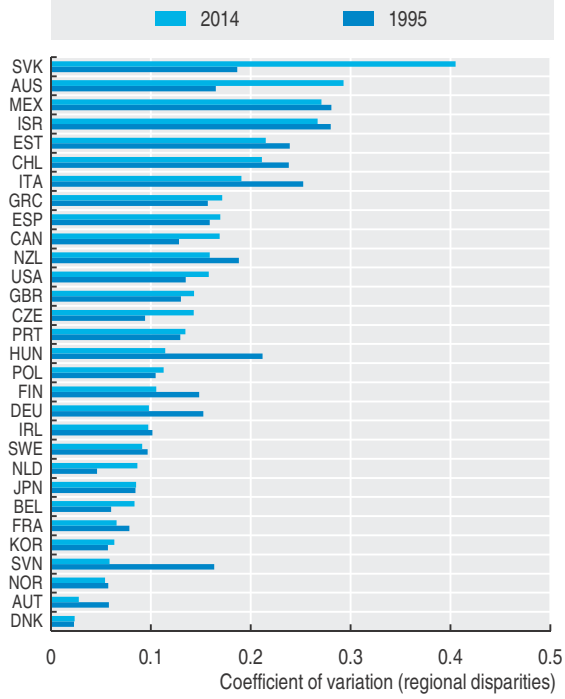
Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

1.4. Regional variation in household disposable income as a % of national average, 2014



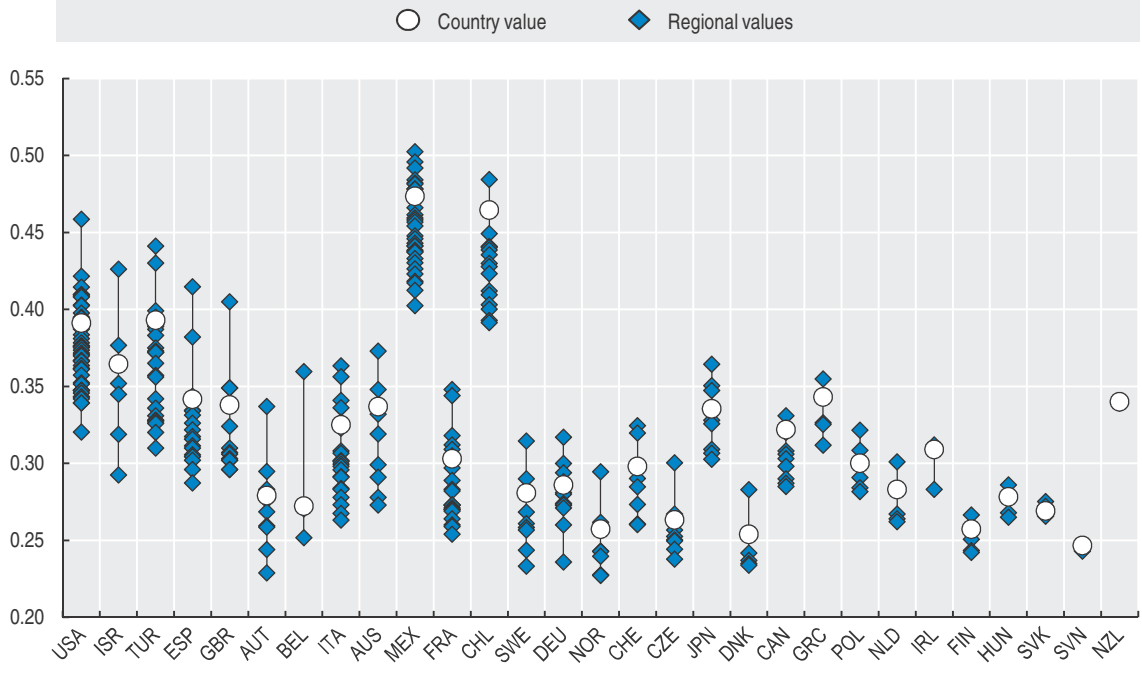
StatLink http://dx.doi.org/10.1787/888933362887

1.5. Coefficient of variation of regional disposable income, 1995 and 2014



StatLink http://dx.doi.org/10.1787/888933362897

1.6. Regional values of Gini index of disposable household income, 2013



StatLink http://dx.doi.org/10.1787/888933362906

Housing conditions

Quantity of housing and its affordability are essential for households to meet the basic need for shelter, personal space, and financial security. The number of rooms per person is a standard measure of whether people are living in crowded conditions; across OECD regions this number varies widely, from half a room in Eastern Anatolia (Turkey) to three in Vermont (United States), a difference almost twice as large as that observed across OECD countries. In 2013, regional differences in the number of rooms per person were the widest in Canada, the United States, Spain and Turkey (Figure 1.7). The indicator on the number of rooms per person has, however, some limitations, which may hamper regional and international comparisons. First, it does not take into account the possible trade-off between the number of rooms in the dwelling and its location: some households may choose to live in smaller dwellings located in better serviced areas than in larger homes in less desirable locations. Second, it does not take into account the overall size of accommodation, which is generally smaller in urban areas than in rural areas.

Definition

The number of rooms per person is a measure of whether people are living in crowded conditions. It is measured as the number of rooms in a dwelling, divided by the number of people living in the dwelling. It excludes rooms such as a kitchenette, scullery/utility room, bathroom, toilet, garage, consulting rooms, office or shop.

The share of household gross adjusted disposable income spent on housing and maintenance of the house as defined in the System of National Accounts (SNA), includes actual and imputed rentals for housing, expenditure on maintenance and repair of the dwelling (including miscellaneous services), on water supply, electricity, gas and other fuels, as well as the expenditure on furniture, furnishings, household equipment and goods and services for routine home maintenance. This measure of housing costs excludes household payments for interest and principal on housing mortgages.

On average, people in OECD countries spend just over 20% of their annual household gross adjusted disposable income on housing. Nevertheless, housing expenditure exceeds 35% of household disposable income in the capital regions of Oslo (Norway), Copenhagen (Denmark), Jerusalem (Israel) and Brussels (Belgium); whereas it is below 20% in every region of Australia and Slovak Republic (Figure 1.8).

Source

OECD (2015), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex C for data sources and country-related metadata.

Reference years and territorial level

2013; TL2.

Rooms per person: no regional data are available for Chile and Iceland.

France, Korea and Mexico, 2010; Australia, Canada, Hungary, Italy, Portugal and United Kingdom (regional values except Scotland), 2011; Belgium, Finland, Ireland, Netherlands, Norway, Poland, Spain, Sweden, Turkey, United Kingdom (national value and Scotland) and United States, 2012; and Denmark, 2014.

Housing expenditures: no regional data are available for Chile, Czech Republic, France, Germany, Greece, Iceland, Korea, Mexico, Netherlands, Slovenia, Sweden and United States.

Ireland and Switzerland, 2010; Australia, Portugal and Spain, 2011; and Belgium, Canada, Denmark, Finland, Norway, Slovak Republic and United Kingdom, 2012.

Further information

OECD Regional Well-Being: *www.oecdregionalwellbeing.org/*.

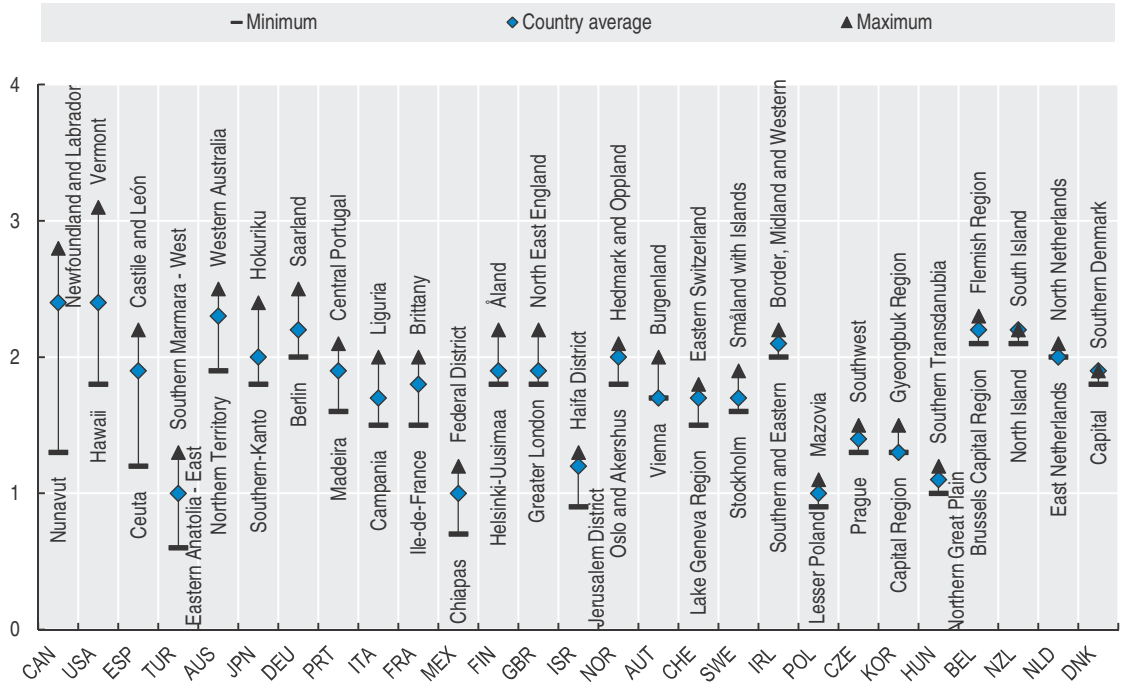
Figure notes

1.7: Greece, Slovak Republic and Slovenia are not depicted because the maximum and minimum values are equal; values for Greece correspond to NUTS 1.

1.8: Each observation (point) represents a TL2 region of the countries shown in the vertical axis, except the Netherlands and New Zealand where observations correspond to NUTS 1.

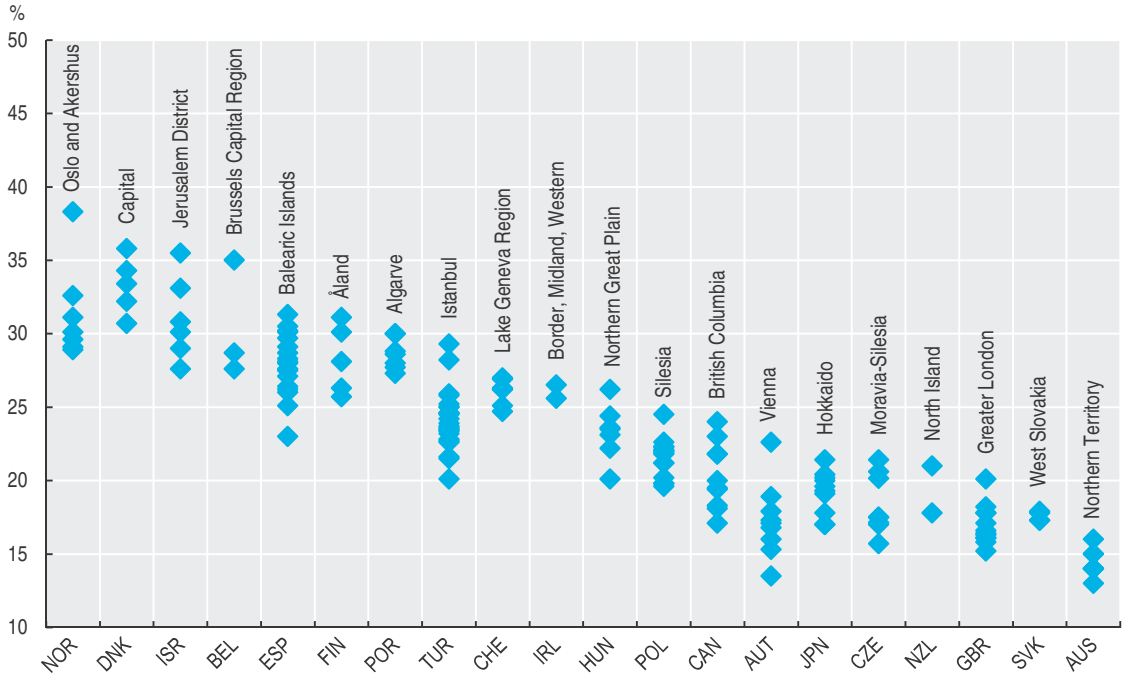
Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

1.7. Regional variation in number of rooms per person, 2013



StatLink http://dx.doi.org/10.1787/888933362912

1.8. Housing expenditure as a share of household disposable income, 2013



StatLink http://dx.doi.org/10.1787/888933362921

Jobs

Unemployment has soared in OECD countries in the years after the economic crisis and, although it partially recovered, the unemployment rate in 2014 was 7.3 in the OECD area, still 1.7 points higher than in 2007. In 2014, the difference in unemployment rates among all OECD regions was above 30 percentage points, almost 10 percentage points higher than the difference in unemployment among OECD countries. The largest regional disparities in unemployment rates were found in Turkey, Spain, Italy and Belgium (Figure 1.9).

In 13 out of the 24 OECD countries considered, on average the unemployment rate has increased more in predominantly urban regions than in predominantly rural regions, since 2008. In Greece, Slovenia, Ireland and Hungary, differences in unemployment growth by typology of regions were the largest. Only in Germany and Japan unemployment decreased on average in all types of regions between 2008 and 2014 (Figure 1.10).

Definition

Employed people are all persons who, during the reference week, worked at least one hour for pay or profit or were temporarily absent from such work. Family workers are included. The female employment rate is calculated as the ratio between female employment and the female working-age population (15-64 years).

Unemployed persons are defined as those who are without work, are available for work, and have taken active steps to find work in the last four weeks. The unemployment rate is defined as the ratio between unemployed persons and labour force, where the latter is composed of unemployed and employed persons.

The female employment rate has increased in OECD countries over the past decades, reaching 60% in 2014. However, important differences in the access to labour markets for women are still present: in 25% of OECD regions less than half of women were employed in 2014 suggesting that services to reconcile family and work life and incentives to labour market participation are quite diverse within countries. Regional disadvantages in female employment were the largest in Mexico, Turkey, Chile, the United States, Italy and Spain (Figure 1.11).

Source

OECD (2015), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex for data sources and country-related metadata.

Reference years and territorial level

Regional gender differences in employment rates: Colombia, 2012; Brazil, 2013. No regional data are available for Estonia, Iceland, Israel and Luxembourg.

Regional variation in unemployment rates (TL2): Brazil, 2013, Czech Republic and Luxembourg 2013. No regional data are available for Estonia and Luxembourg.

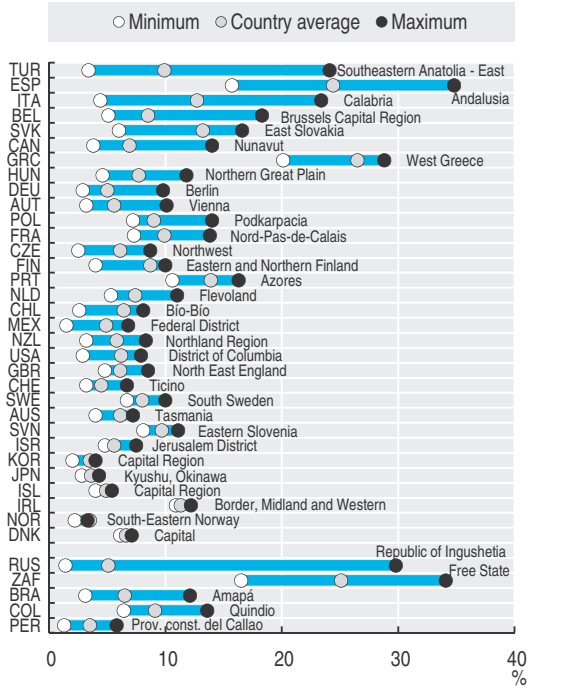
Difference in unemployment rate, by type of region 2014 and 2008 (TL3). No regional data are available for Canada, Chile, Iceland, Israel, Mexico, Norway, Switzerland and Turkey. Belgium and Portugal are excluded for lack of data on the years considered.

Further information

OECD Regional Well-Being: *www.oecdregionalwellbeing.org/*.

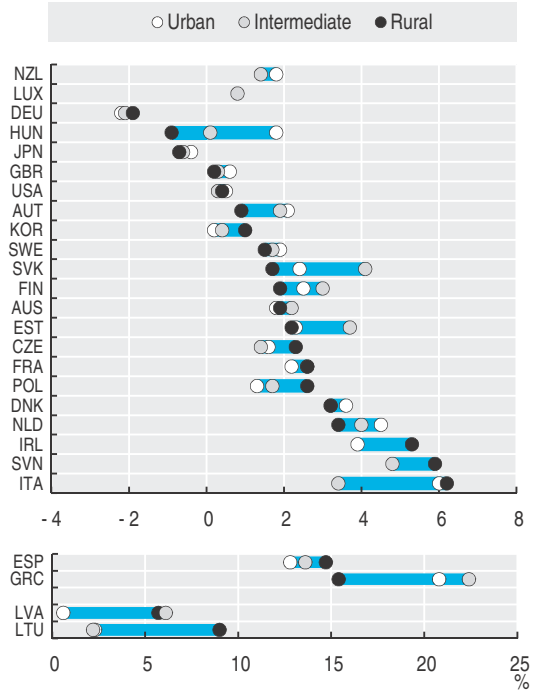
Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

1.9. Regional variation in the unemployment rate, 2014



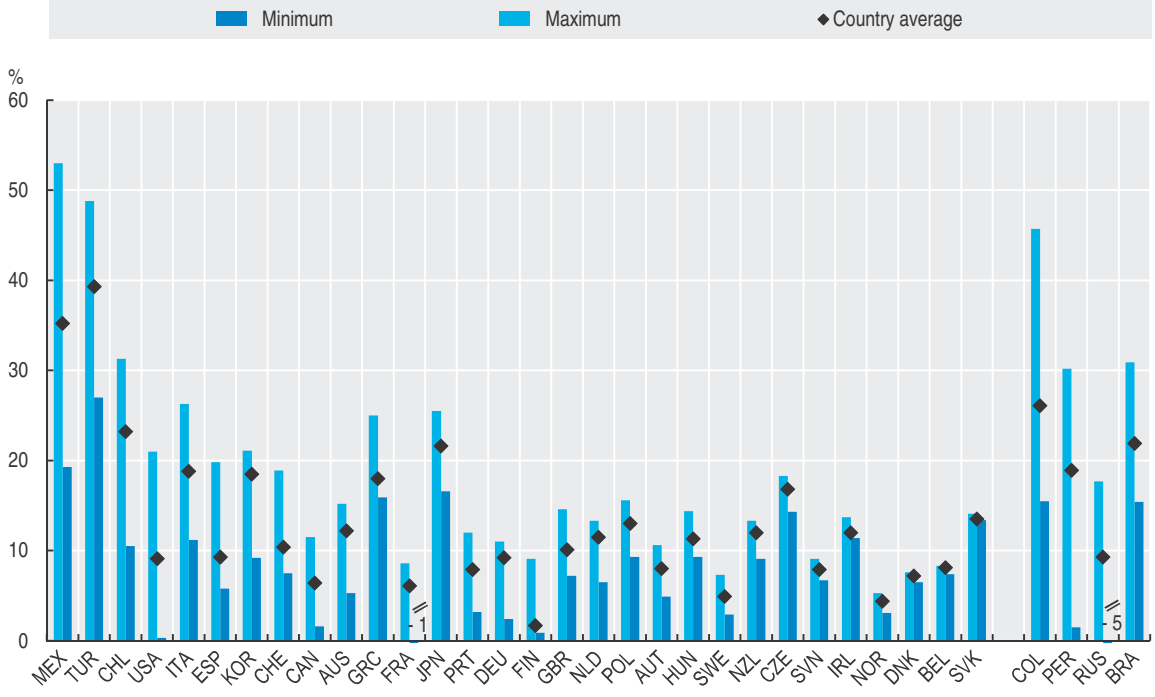
StatLink http://dx.doi.org/10.1787/888933362930

1.10. Change in unemployment rate, by type of region 2014 and 2008 (TL3)



StatLink http://dx.doi.org/10.1787/888933362946

1.11. Regional variation in gender differences of employment rate (male-female), 2014



StatLink http://dx.doi.org/10.1787/888933362954

Education

Educational outcomes are some of the most influential determinants of current and future well-being. Evidence shows that highly educated individuals are more likely to have better health and higher earnings than the less well educated. From an aggregate perspective, a well-educated workforce is also crucial for raising productivity, ensuring resiliency and adaptability to the changing needs of the labour market but also for making use of innovation. Both the capacity to generate and absorb innovation are affected by the quality of the human capital, which in turn is often enhanced by the education levels of the workforce.

Large educational variations can be observed across regions. In seven OECD countries the difference between the region with the highest value and that with the lowest value in the share of the workforce with at least upper secondary education is higher than 20 percentage points (Figure 1.12). In Turkey and Mexico, the same indicator in the two capital regions, Ankara and the Federal District, is over 30 percentage points higher than that in North-Eastern Anatolia (Turkey) and the state of Chiapas (Mexico) respectively. Among non-OECD countries, Brazil, Colombia and Russia also show large disparities in the proportion of people who have completed at least upper secondary education, ranging from 15 to 37 percentage points between the capital regions scoring at the highest and some of the provincial regions scoring at the lowest levels.

Within countries, regional differences in the educational attainment of the workforce have changed remarkably since 2000 (Figure 1.13). In most OECD countries, such difference has decreased, thanks to the improvements in the regions with relatively lower educated workforce. France and Mexico have experienced the largest decreases, respectively showing a 12 and 7 percentage points disparity across regions. However, on the other hand, other countries have witnessed an increase in regional differences. For example, in Portugal and Belgium, the differences between the highest and the lowest proportion of the workforce with at least upper secondary education increased by 11 and 4 percentage points respectively, as the better performing regions were able to continue increasing their share of highly educated individuals. Across the non-OECD countries considered, the share of the workforce with at least upper secondary education also increased everywhere. In the cases of Colombia and the Russian Federation more specifically, the lowering of regional disparities is mainly related to the high increase in educational attainment in the regions originally showing the lowest values.

Definition

Upper secondary education includes high schools, lyceums, vocational schools and preparatory school programmes (ISCED 3 and 4).

Source

OECD (2015), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

2014; TL2 (TL3 for Estonia).

Further information

OECD (2015), *Education at a Glance 2015: OECD Indicators*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/eag-2015-en*.

OECD Regional Well-Being: *www.oecdregionalwellbeing.org/*.

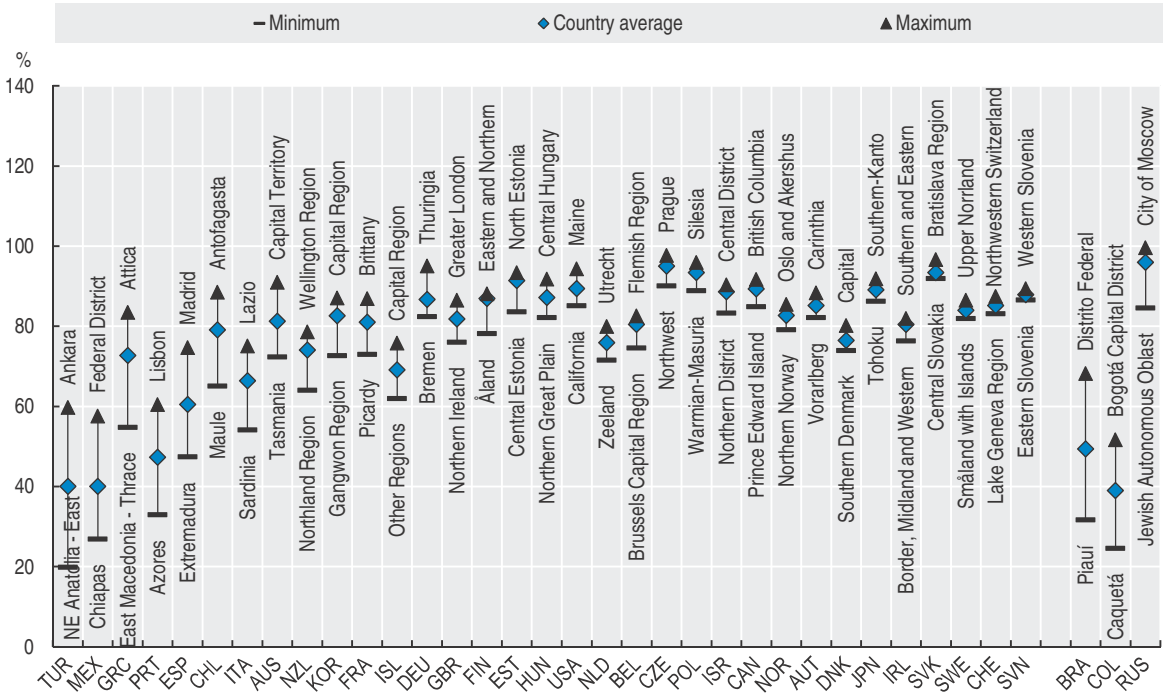
Figure notes

1.12: Available years: Brazil, Canada, Estonia, Israel and United States 2013; Iceland and New Zealand 2012; Japan and Mexico 2010; for all the other countries the last year available is 2014.

1.13: First year available: Slovenia and Switzerland 2001; Iceland 2003; Brazil 2004; Colombia and Finland 2005; Turkey 2006; Denmark 2007; Australia and Chile 2010; for all the other countries the first year available is 2000. Last year available: Brazil, Canada, Estonia, Israel and United States 2013; Iceland and New Zealand 2012; Japan and Mexico 2010.

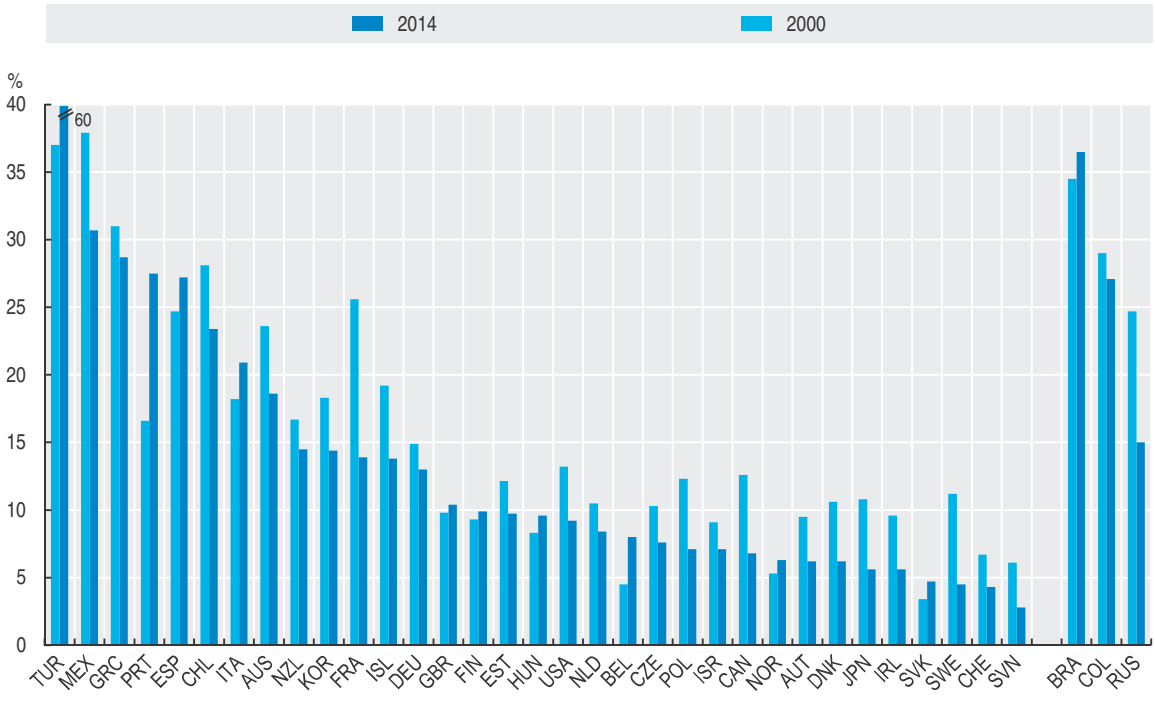
Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

1.12. Regional variation in the workforce with at least secondary education, 2014



StatLink http://dx.doi.org/10.1787/888933362966

1.13. Regional difference between the highest and lowest % of the workforce with at least secondary education, 2000 and 2014



StatLink http://dx.doi.org/10.1787/888933362979

Access to services

Access to services affects how people obtain what is necessary to satisfy their needs and wants. The first indicator used to measure access to services is the share of households with a broadband connection, which is available for all OECD regions. A broadband connection is an important requirement for having access to information and to other services that shape people's quality of life and affect their opportunities to prosper.

The largest regional disparities in broadband connection are observed in the countries where the average national level of access to services is relatively low, such as in Turkey, Mexico and Chile. In these three countries, the value in the region with the highest proportion of households with broadband connection is more than three times higher than the lowest value. An urban-rural divide might partly explain these regional differences. Mostly urban regions, where more than half of the population live in a functional urban area, show, on average, a significantly higher share of broadband connection than the other less urbanised regions (on average, 72% and 64%, respectively). Korea and the Netherlands are the two countries with the highest average proportion of households with broadband connection and very low differences across regions (Figure 1.14).

Another indicator relates to access to healthcare, measured with self-reporied unmet medical needs. Strong regional variation can be observed, although this indicator is currently available only for a sub-set of OECD countries at the TL2 regional level. The highest regional disparities are observed in Chile, Mexico and Italy. In Magallanes y Antartica (Chile), the share of people with unmet medical needs is comparable to that of Austria, the country with the best performance in this area. On the other hand, the region of Arica Y Parinacota (Chile) has a value (21%) close to that of Mexico, the country with the second highest proportion of individuals with unmet medical needs (Figure 1.15).

Definitions

The broad dimension of "access to services" can be broken down into several domains, such as the ease of access to the place where a specific service is provided (physical accessibility), its affordability (economic accessibility) and the extent to which the access is favoured or constrained by norms, values and laws (institutional accessibility).

The proportion of the population who experienced unmet medical needs is defined as the individuals who report one or more occasions in which they were in need of medical treatments or examination, but failed to receive either.

Source

OECD (2015), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

Broadband access: 2014; TL2.

The classification of mostly urban regions does not include Israel, New Zealand and Turkey for lack of data on functional urban area. A t-test was performed to assess the statistical significance of the difference in the mean average access to broadband by type of region.

Unmet medical needs: 2013, except for New Zealand (2012); TL2. Regional data were available for Austria, Chile, Czech Republic, Estonia, Finland, France, Greece, Italy, Mexico, New Zealand, Spain and the United Kingdom.

Further information

Brezzi, M. and P. Luongo, "Regional Disparities In Access To Health Care: A Multilevel Analysis In Selected OECD Countries", *OECD Regional Development Working Papers*, No. 2016/04, OECD Publishing, Paris, *http://dx.doi.org/10.1787/5jm0tn1s035c-en*.

OECD (2015), *Health at a Glance 2015: OECD Indicators*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/health_glance-2015-en*.

OECD (2014), *How's Life in Your Region?: Measuring Regional and Local Well-being for Policy Making*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264217416-en*.

OECD Regional Well-Being: *www.oecdregionalwellbeing.org/*.

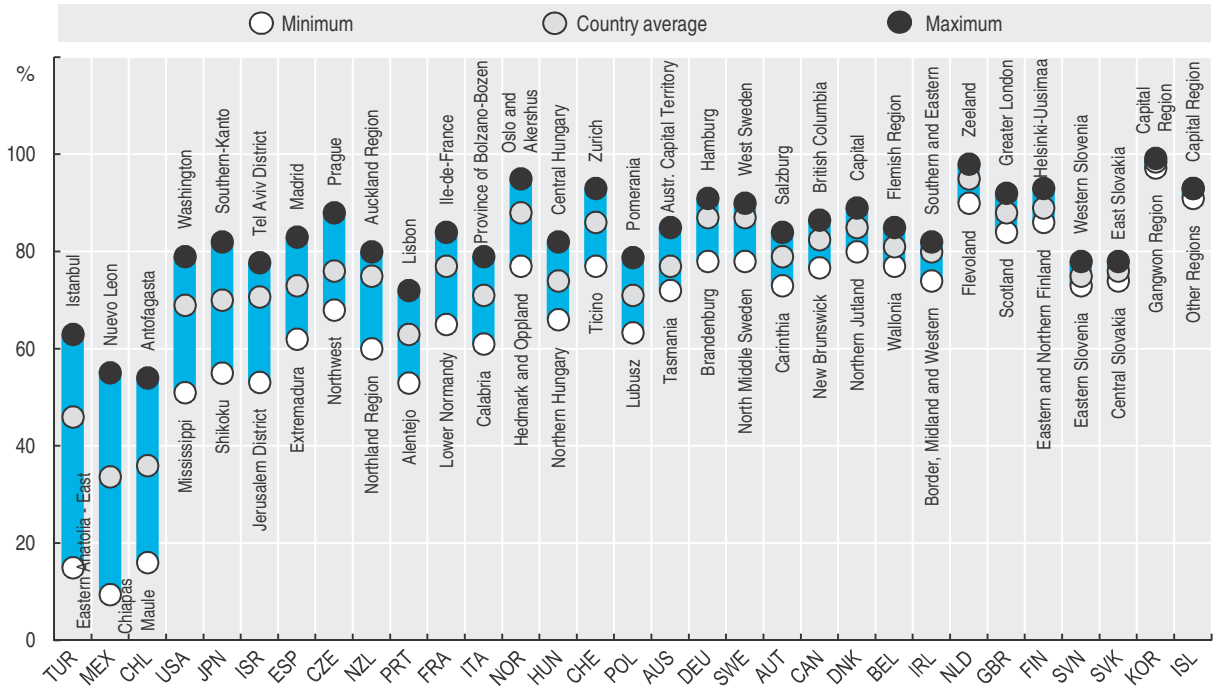
Figure notes

1.14: Available years: Australia, Israel and Turkey 2013; Canada, Chile, Iceland and New Zealand 2012; Japan and the United States 2011.

1.14-1.15: Each observation (dot) represents a TL2 region.

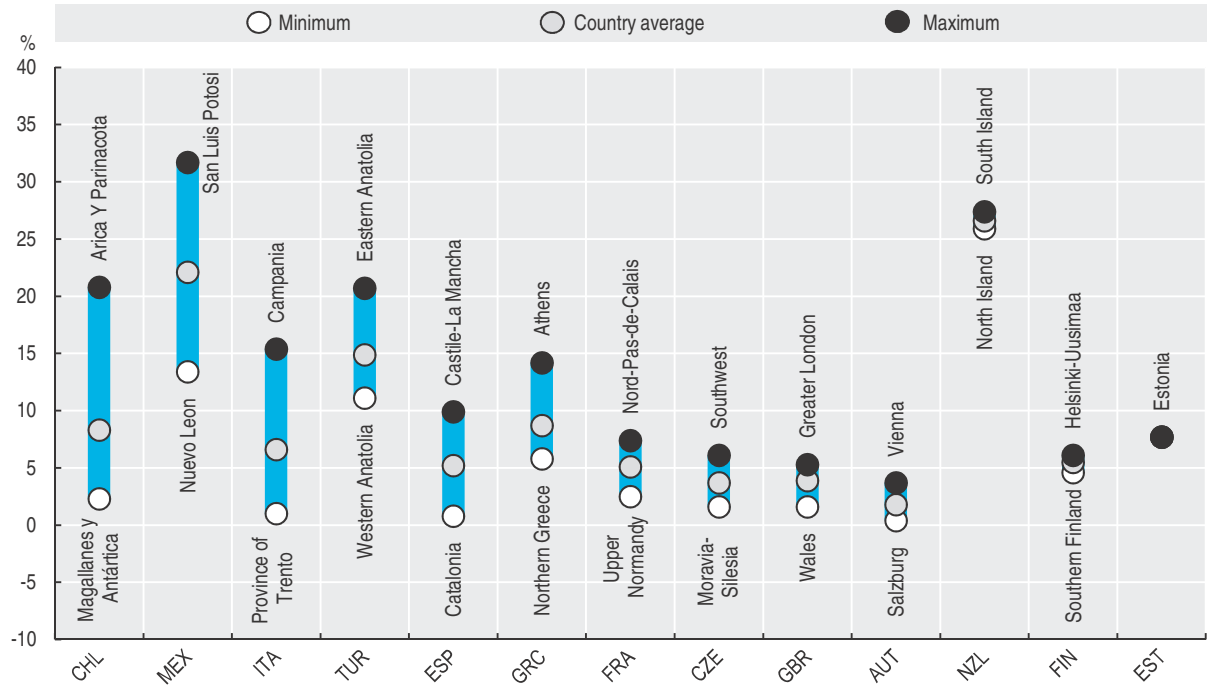
Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

1.14. Regional variation in the % of households with broadband connection, 2014



StatLink http://dx.doi.org/10.1787/888933362982

1.15. Regional variation in the % of population with unmet medical needs, 2013



StatLink http://dx.doi.org/10.1787/888933362995

Health status

Being in good health is an important determinant of quality of life and also contributes to other well-being dimensions, such as being able to pursue education, have a job, and participate in the activities that people value. In 55% of OECD regions life expectancy at birth, a common measure of health outcomes, now exceeds 80 years. The lowest levels of life expectancy, below 75 years, are found in 30 regions. The difference in life expectancy among OECD countries is 8 years (between Japan and Mexico). Within countries, it is 11 years between British Columbia and Nunavut in Canada, and 6 years between the Capital Territory and the Northern Territory in Australia, or Hawaii and Mississipi in the United States (Figure 1.16).

On average, women live longer than men in every OECD region; a woman can expect to live almost six years longer than a man. These differences are the largest in Aysén (Chile), Lodzkie (Poland) and Chihuahua (Mexico). In non-OECD regions like Nenets Okrug (Russia) and Group Amazon (Colombia), women live for more than 15 and 10 additional years, respectively (Figure 1.17).

Definition

Life expectancy at birth measures the number of years a new born can expect to live, if death rates in each age group stay the same during her or his lifetime.

Age-adjusted mortality rates eliminate the difference in mortality rates due to a population's age profile and are comparable across countries and regions. Age-adjusted mortality rates are calculated by applying the age-specific death rates of one region to the age distribution of a standard population. In this case the standard population is the population grouped into five year age brackets, averaged over all OECD regions.

The mortality rate is also a common indicator of a population's health status. When comparing values across countries and regions, mortality rates are adjusted for age to remove differences solely due to a population's age profile. Regional differences in age-adjusted mortality rates within countries were the widest in New Zealand, Canada, United States, Portugal and Australia (Figure 1.18). In 2013, the age-adjusted mortality rate in Gisborne (New Zealand), Nunavut (Canada), Mississippi (United States), Azores (Portugal) and the Northern Territory (Australia) was at least 40% higher than their country averages.

Source

OECD (2015), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata. United States: Life Expectancy, Measure of America 2010-2011, *www.measureofamerica.org*.

Reference years and territorial level

2013; TL2. Estonia TL3.

Life expectancy: no regional data are available for Iceland.

Japan and United States, 2010; Canada, 2011; Chile, 2012.

Mortality rates: Australia, Chile and Mexico, 2012.

Further information

OECD Regional Well-Being: *www.oecdregionalwellbeing.org/*.

Figure notes

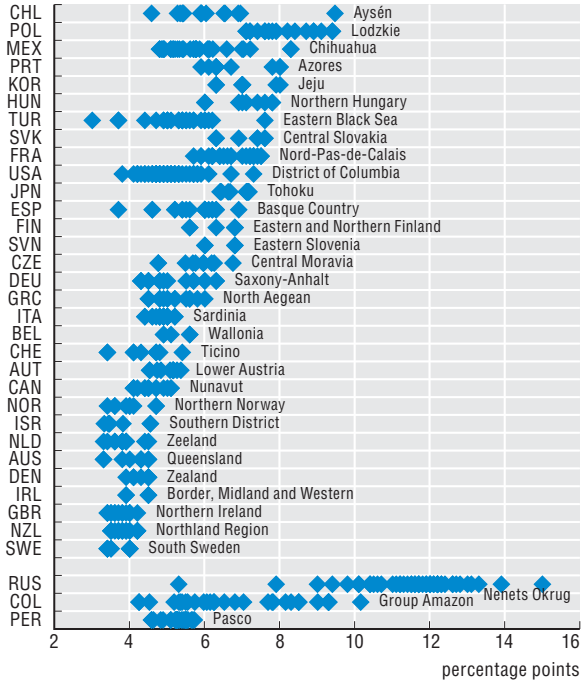
1.17: Each observation (point) represents a TL2 region of the countries shown in the vertical axis, TL3 region in Estonia and Latvia.

Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

1.16. Difference in life expectancy at birth among regions and country life expectancy (years), 2013

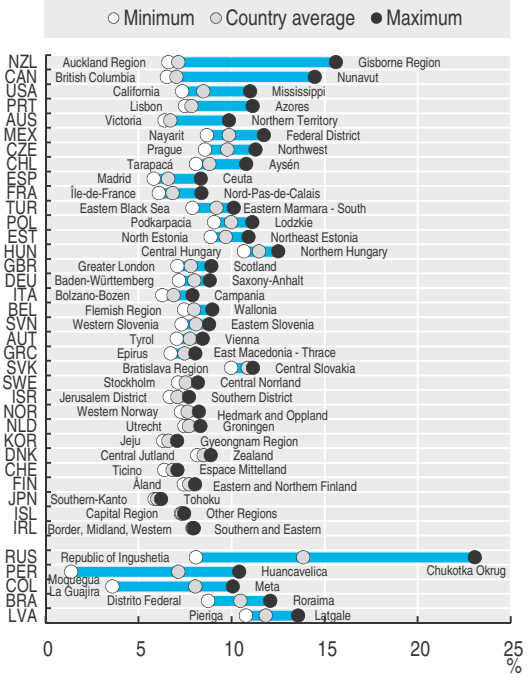
StatLink http://dx.doi.org/10.1787/888933363005

1.17. Regional gender differences in life expectancy at birth (female-male), 2013



StatLink http://dx.doi.org/10.1787/888933363015

1.18. Regional variation in age-adjusted mortality rates, 2013



StatLink http://dx.doi.org/10.1787/888933363027

Safety

Personal safety is a critical dimension of regional well-being. Crime in fact has not only a direct impact on the victims and their families, but also on those who are not victims but live in the same community, as shown by the increasing feelings of insecurity and low trust in the capacity of national and local institutions to handle the safety issue (OECD, 2015). Safety is often connected with other well-being outcomes such as education, health and jobs. Consequently, policies pursuing better safety often build on the complementarities with the other dimensions (OECD, 2014).

Mexico has the highest homicide rate as well as the highest regional variation among OECD countries. In 2013, the state of Guerrero (Mexico) had almost 65 homicides per 100 000 inhabitants, while in Yucatan (Mexico) there were 2.4 homicides per 100 000 inhabitants (Figure 1.19). Large regional differences in homicides rates are also observed in the United States and Canada, the regional difference is around 15 homicides per 100 000 inhabitants, due to the high incidence of homicides compared to the rest of the country in the District of Columbia and Nunavut, respectively. Among the countries with the lowest homicide rates are Austria (0.6), Iceland (0.3) and Spain (0.6), where differences between top and bottom regions are on average also relatively low.

The theft of private property has a negative effect on people's well-being. It reduces household wealth, increases the costs associated with robbery prevention, and increases people's perception of insecurity. Moreover, high levels of private property theft might be an indirect measure of low social cohesion in a region. Finally, since this type of crime is commonly reported for insurances claims, it also overcomes common issues of bias of statistics on property crimes due to different regional propensity to report the crime.

In 2014, the OECD countries showing the largest regional disparities for car thefts were Mexico, New Zealand, Italy and France (Figure 1.20). In Baja California (Mexico), Ceuta (Spain) and Bratislava (Slovak Republic), the rate of car theft was at least three times higher than the national average. Among the non-OECD countries, in the region Ucayali (Peru) the rate of car theft was eight times higher than for the country as a whole, and in Sakhalin Oblast (Russian Federation) almost four times higher (Figure 1.20).

Definition

Homicide is the unlawful killing of a human being with malice aforethought, more explicitly intentional murder. Reported homicides are the number of homicides reported to the police. The homicide rate is the number of reported homicides per 100 000 inhabitants.

Motor vehicle theft is defined as the theft or attempted theft of a motor vehicle. A motor vehicle is a self-propelled vehicle that runs on land surfaces and not on rails.

Source

OECD (2015), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

2014; TL2.

Homicides: No regional data are available for Luxembourg.

Car thefts: No regional data are available for Estonia, Germany, Greece, Iceland, Korea, Luxembourg, the Netherlands, Norway and the United Kingdom.

Further information

OECD (2015), *Measuring Well-being in Mexican States*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264246072-en*.

OECD (2014), *How's Life in Your Region?: Measuring Regional and Local Well-being for Policy Making*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264217416-en*.

OECD Regional Well-Being: *www.oecdregionalwellbeing.org/*.

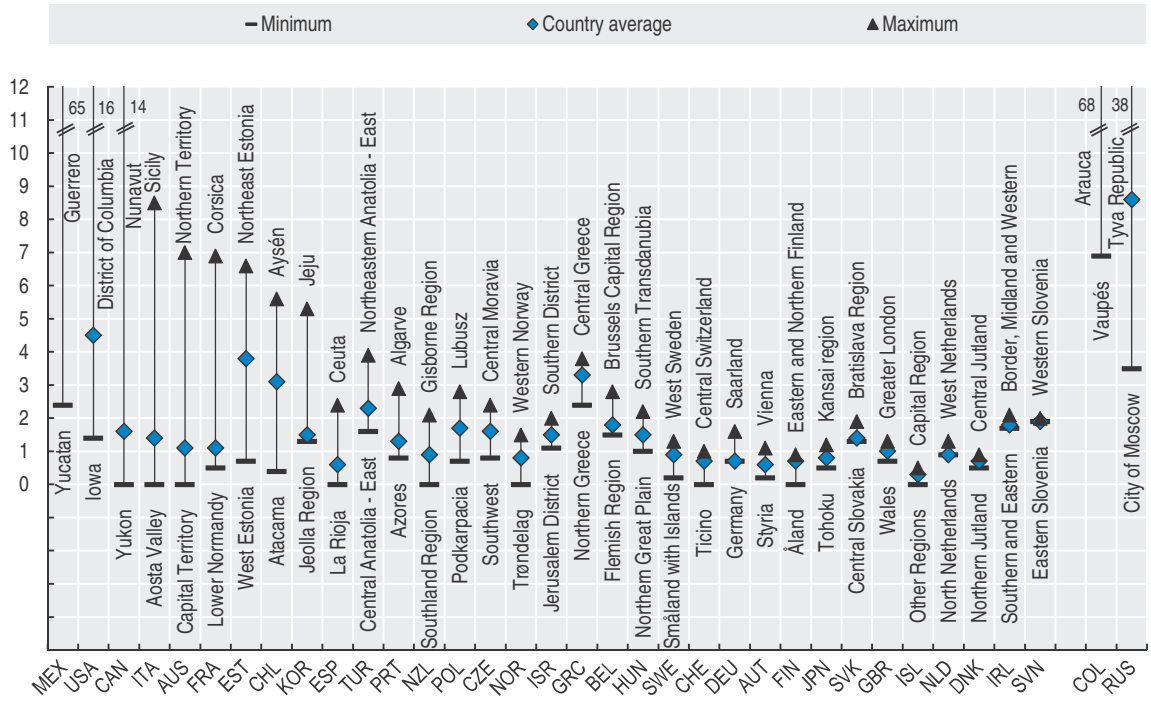
Figure notes

1.19: 2014 data for Mexico, 2012 data for Canada, Chile, France, Iceland, Netherlands and Slovenia; 2011 data for Poland; 2010 data for Germany.

1.20: Japan, New Zealand and Sweden 2014; France and Slovenia 2012; Canada, Ireland, Mexico and Poland 2011. Each observation (point) represents a TL2 region of the countries shown in the horizontal axis.

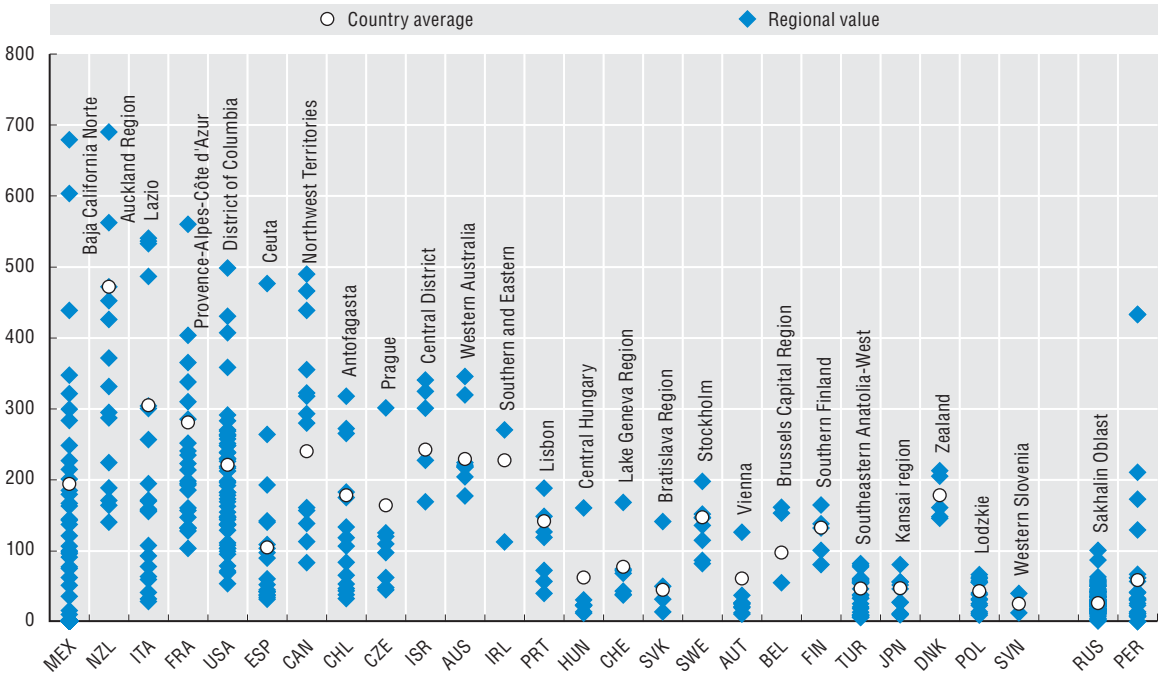
Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

1.19. Regional variation in homicides per 100 000 inhabitants, 2013



StatLink http://dx.doi.org/10.1787/888933363032

1.20. Regional range in reported car thefts per 10 000 inhabitants, 2013



StatLink http://dx.doi.org/10.1787/888933363043

Environment

Air pollution at the national and local level is an important determinant of the individual well-being in regions and cities in particular due to its negative impact on health and the economy.

Fine particulate matters ($PM_{2.5}$) are generally emitted from the combustion of liquid and solid fuels for industrial and housing energy production, vehicles and biomass burning in agriculture. The exposure to air pollution in regions and cities is greatly associated with the industry located in the territory, its level of urbanisation and the transportation system developed in the territory.

In 2014, in 52% of the OECD regions people were on average exposed to levels of air pollution higher than those recommended by the World Health Organisation (pollution concentration level of 10 $\mu g/m^3$). In the regions of Lombardy (Italy) and the Capital Region (Korea) pollution levels were above 25 $\mu g/m^3$ of $PM_{2.5}$ per person, the highest levels among OECD regions (Figure 1.21). People in all regions in Canada, Sweden, Portugal, Finland, Norway, Austria, New Zealand, Iceland, Ireland and Estonia were exposed to low levels of air pollution (below 10 $\mu g/m^3$).

Air pollution levels varied greatly from region to region. The largest differences are observed in Mexico, Italy and Chile. On the contrary, countries such as New Zealand, Iceland and Ireland present the smallest differences across regions (Figure 1.21).

Air pollution is often an issue in metropolitan areas. In 2014, 53% of the urban population was exposed to levels of air pollution higher than 10 $\mu g/m^3$. In the Netherlands, Poland, Germany, Belgium, Slovenia, Austria, Czech Republic, Hungary, Korea and the Slovak Republic more than 90% of the urban population was exposed to high pollution concentration levels. On the other hand, all urban population in countries such as Australia, Estonia, Ireland and Norway are exposed to pollution levels well within the recommended safe levels (Figure 1.22).

Definition

Particulate matter (PM), refers to a complex mixture of sulphates, nitrates, ammonia, sodium chloride, carbon, mineral dust and water suspended in the air. Particles can be classified27 in two categories according to their origin (WHO, 2013). On the one hand, primary PM is emitted from the combustion of liquid and solid fuels for industrial and housing energy production as well as from the erosion of the pavement of the roads. On the other hand, secondary PM are the result of chemical reactions between gaseous pollutants.

Death rates due to diseases of the respiratory system describes mortality rates in relation to the total population due to lung diseases.

Deaths due to diseases associated to respiratory problems are frequent in some regions in southern European countries such as Portugal, Spain and Greece, but also in Poland and Germany (above 100 deaths per 100 000 people). On the other hand, regions in Sweden, Slovenia and Finland accounted for less than 60 deaths per 100 000 people due to respiratory diseases (Figure 1.23).

Source

Eurostat (2015), Deaths from diseases of the respiratory system, Eurostat Statistics Explained, *http://ec.europa.eu/eurostat/statistics-explained/index.php/*.

OECD (2015), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

OECD (2015), "Metropolitan areas", *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/data-00531-en*.

See Annex B and C for data sources, methodology and country-related metadata.

Reference years and territorial level

2014 (three year average 2012-14); TL2.

Functional urban areas (FUAs) have not been identified in Iceland, Israel, New Zealand and Turkey. The FUA of Luxembourg does not appear in the figures since it has a population below 500 000.

Further information

Brezzi, M. and D. Sanchez-Serra (2014), "Breathing the Same Air? Measuring Air Pollution in Cities and Regions", *OECD Regional Development Working Papers*, No. 2014/11, OECD Publishing, Paris, *http://dx.doi.org/10.1787/5jxrb7rkxf21-en*.

OECD (2015), *Environment at a Glance 2015: OECD Indicators*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264235199-en*.

OECD Regional Well-Being: *www.oecdregionalwellbeing.org*.

WHO (2013), Health Effects of Particulate Matter: Policy implications for countries in Eastern Europe, Caucasus and Central Asia, *www.euro.who.int/__data/assets/pdf_file/0006/189051/Health-effects-of-particulate-matter-final-Eng.pdf*.

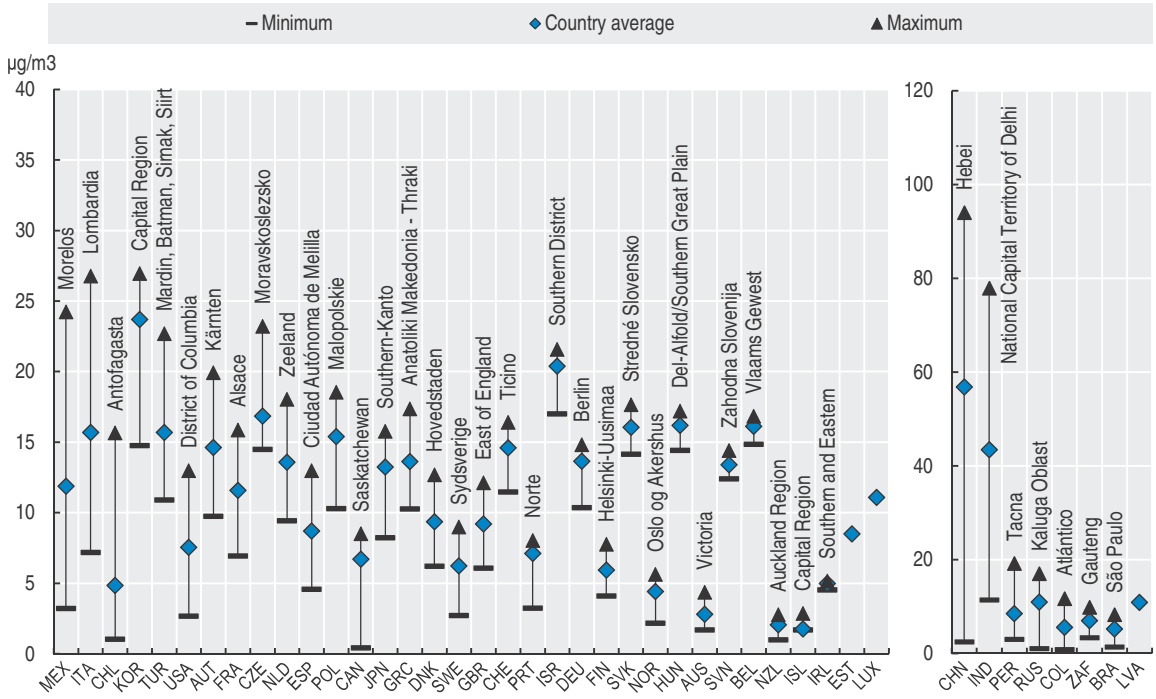
Figure notes

1.21: Population-weighted exposure to $PM_{2.5}$ concentration, micrograms per cubic metre, averaged 2012-14.

1.22: Percentage of the population, mean annual exposure, 2012-14.

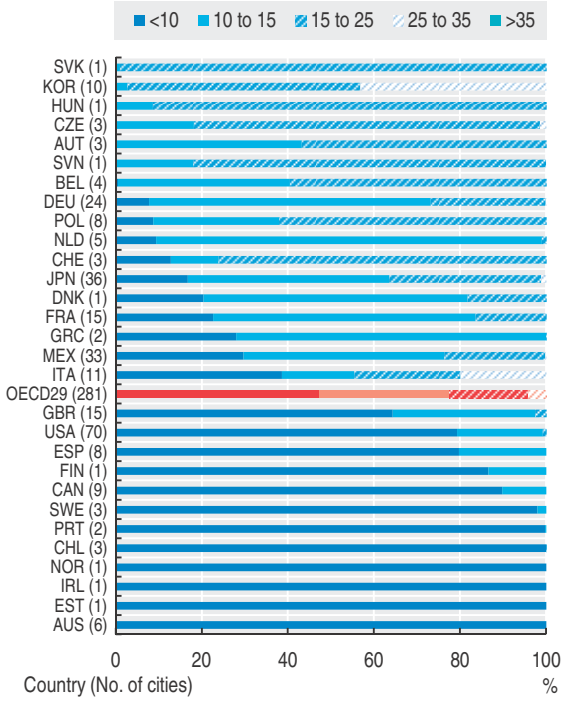
Information on data for Israel: http://dx.doi.org/10.1787/888932315602.

1.21. Regional variation of annual exposure to air pollution, 2014



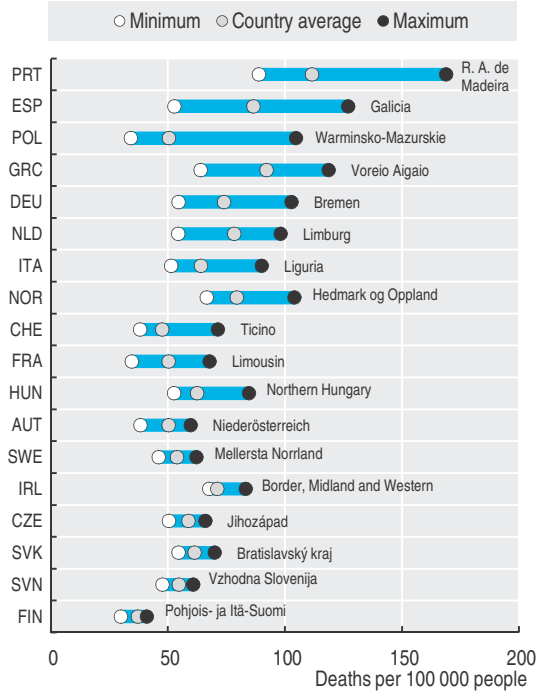
StatLink http://dx.doi.org/10.1787/888933363059

1.22. Levels of air pollution for metropolitan populations, 2014



StatLink http://dx.doi.org/10.1787/888933363062

1.23. Regional variation in death rate due to diseases of the respiratory system, 2010



StatLink http://dx.doi.org/10.1787/888933363075

Civic engagement and governance

Well-functioning democracies require people to engage and participate in the different aspects and activities of public life. Through engagement and participation individuals influence and determine the political choices that impact everyone's lives and well-being. Civic engagement and participation are necessary conditions for effective governance, while, at the same time, good quality of governance, through different institutional settings, can enhance citizens' participation.

Across OECD regions, people living in regions with higher voter turnout in national elections often have a lower perception of government corruption (Figure 1.24). In more participative democracies it might be more difficult for elected officials to commit acts of corruption; on the other hand, less corrupt and more efficient public institutions might motivate people's participation and trust in institutions' capacity to generate positive change.

The largest regional disparities in electoral participation to national elections are presented in the United States, Canada, Spain, Mexico, Chile and Portugal (above 20 percentage points) (Figure 1.25).

Denmark, Finland, New Zealand, Norway, Sweden and Switzerland present relatively low levels of perceived corruption (below 30%) and small regional variations; the Czech Republic, Greece, Israel, Italy and Portugal show very high levels of perceived corruption (above 80%) with average regional gaps. Finally, the largest regional disparities in perceived corruption are found in Canada, Chile, Mexico, Turkey and the United States (above 30 percentage points) (Figure 1.26).

Definition

Voter turnout refers to the extent of electoral participation in national elections. It is defined as the percentage of individuals who cast a ballot in a national election with respect to the population registered to vote. Data on voter turnout are gathered by National Statistical Offices and National Electoral Management Bodies.

Perception of corruption, which is intended to capture elements of the quality of the government, is calculated as the percentage of people that responded "Yes" to the question "Is corruption widespread throughout the government in (this country), or not?". The indicator on perception of corruption was calculated using microdata from the Gallup World Poll (see Brezzi and Díaz Ramírez, 2016).

Source

Gallup World Poll (2015), *www.gallup.com/services/170945/world-poll.aspx*.

OECD (2015), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

Reference years and territorial level

Voter turnout: 2006-14; TL2 (Greece, the Netherlands and New Zealand, NUTS 1).

Perception of corruption: 2006-14; TL2 (New Zealand, NUTS 1; Estonia TL3).

Further information

OECD Regional Well-Being: *www.oecdregionalwellbeing.org/*.

Boarini, R. and M. Díaz Ramírez (2015), "Cast a Ballot or Protest in the Street - Did our Grandparents Do More of Both?: An Age-Period-Cohort Analysis in Political Participation", *OECD Statistics Working Papers*, No. 2015/02, OECD Publishing, Paris, *http://dx.doi.org/10.1787/5js636gn50jb-en*.

Brezzi, M. and M. Díaz Ramirez (2016), "Building subjective well-being indicators at the subnational level: A preliminary assessment in OECD regions", *OECD Regional Development Working Papers*, No. 2016/03, OECD Publishing, Paris, *http://dx.doi.org/10.1787/5jm2hhcjftvh-en*.

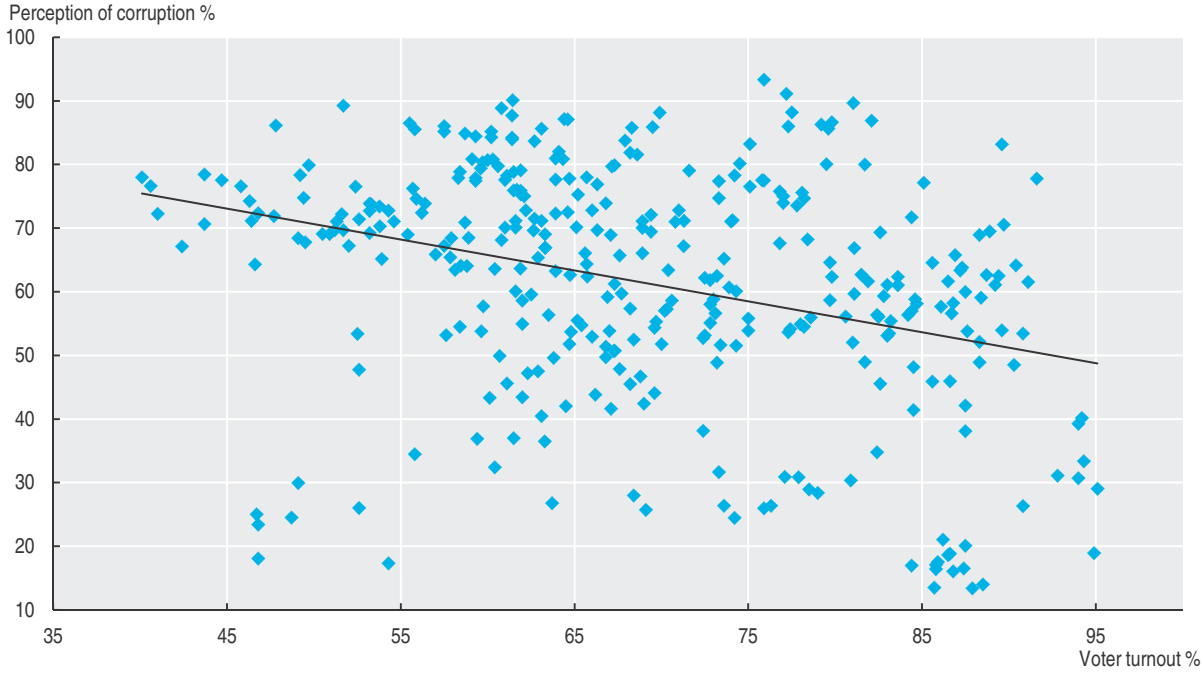
Figure notes

1.24: Each dot represents a TL2 region in the OECD countries. Greece and the Netherlands are not included.

1.25: Latest available years: Canada, Denmark, Estonia, Poland, Portugal, Spain, Switzerland and United Kingdom 2015. Australia, Austria, Chile, Czech Republic, Germany, Iceland, Israel, Italy, Luxembourg and Norway 2013. Finland, France, Greece, Korea, Mexico and United States 2012. Ireland, Netherlands and New Zealand 2011.

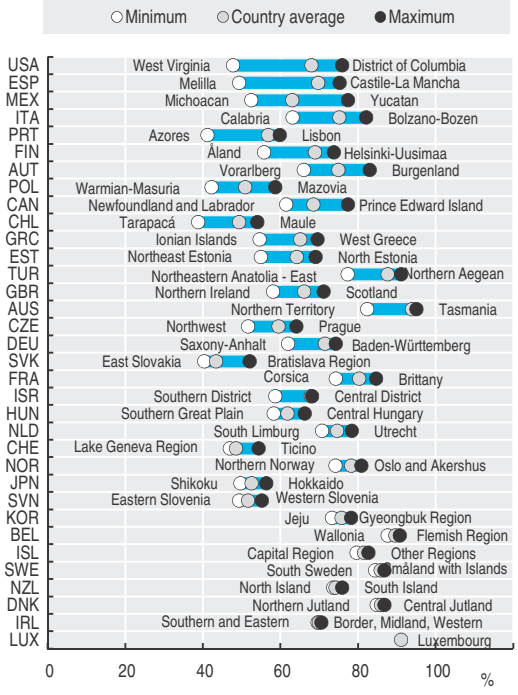
Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

1.24. Regional voter turnout in national elections and perception of corruption; average 2006-14



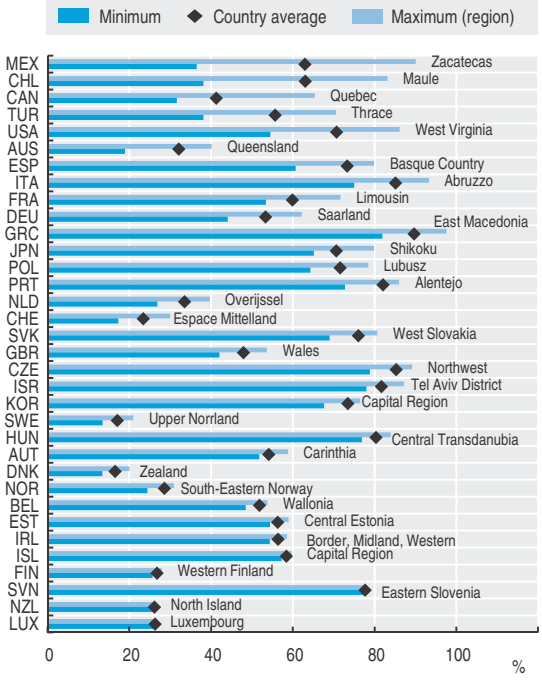
StatLink http://dx.doi.org/10.1787/888933363089

1.25. Regional variation in national elections voter turnout, 2014



StatLink http://dx.doi.org/10.1787/888933363098

1.26. Per cent of people who believe the government is corrupt, average 2006-14



StatLink http://dx.doi.org/10.1787/888933363109

Subjective well-being in regions

Subjective well-being reflects the notion of measuring how people experience and evaluate their lives. It includes evaluation of life as a whole (generally referred as "life satisfaction"), evaluations of particular domains of life (for example, "satisfaction with time available for leisure"), feelings and emotions, as well as measures of "meaningfulness" or "purpose" in life. People's evaluations of different domains and their expectations are useful information to guide policy making.

While in many OECD countries data on life satisfaction are now available from official sources, only in a few cases these data are representative at the subnational level. The data shown here are estimates derived by a unique data source, the Gallup World Poll, reweighted to improve regional representativeness. These data represent an innovation in the OECD Regional Well-Being Database that previously included only well-being dimensions measured by objective indicators.

The average values of life satisfaction by country vary from 4.9 in Hungary to 7.6 in Denmark and Switzerland. The regional values, instead, range from 4.4 in the Mediterranean Region East (Turkey) to 8.6 in Campeche (Mexico). Mexico, Chile and Turkey display the largest regional differences in life satisfaction, more than 2 points on a 0-10 point scale (Figure 1.27).

Good interpersonal relations, social network supports and general trust in others and institutions are considered important sources of individual well-being and social cohesion. Not only do they represent additional resources to the material and cultural ones, but they can also improve performance of institutions and reduce transaction costs.

In most OECD regions, at least 80% of people report having someone to rely on in case of need. The exceptions are Korea where the values range between 73% to 79%, and Mexico, Chile, Turkey and Greece where regional differences are very large with some regions below 75% (Figure 1.28).

Definition

Life satisfaction is expressed as the mean score on an 11-point scale (based on the Cantril ladder measure). It is measured using a survey question in which respondents are asked "Please imagine a ladder, with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?".

Perceived social network support is based on the survey question: "If you were in trouble, do you have relatives or friends you can count on to help you whenever you need them, or not?". The data shown here reflect the percentage of the regional sample responding "Yes".

The indicators on life satisfaction and social network in regions were calculated using microdata from the Gallup World Poll (see Brezzi and Díaz Ramírez, 2016).

Source

Gallup World Poll (2015), *www.gallup.com/services/170945/world-poll.aspx*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

Average 2006-14; TL2 (Estonia, TL3).

Further information

OECD Regional Well-Being: *www.oecdregionalwellbeing.org/*.

Brezzi, M. and M. Díaz Ramírez (2016), "Building subjective well-being indicators at the subnational level: A preliminary assessment in OECD regions", *OECD Regional Development Working Papers*, No. 2016/03, OECD Publishing, Paris, *http://dx.doi.org/10.1787/5jm2hhcjftvh-en*.

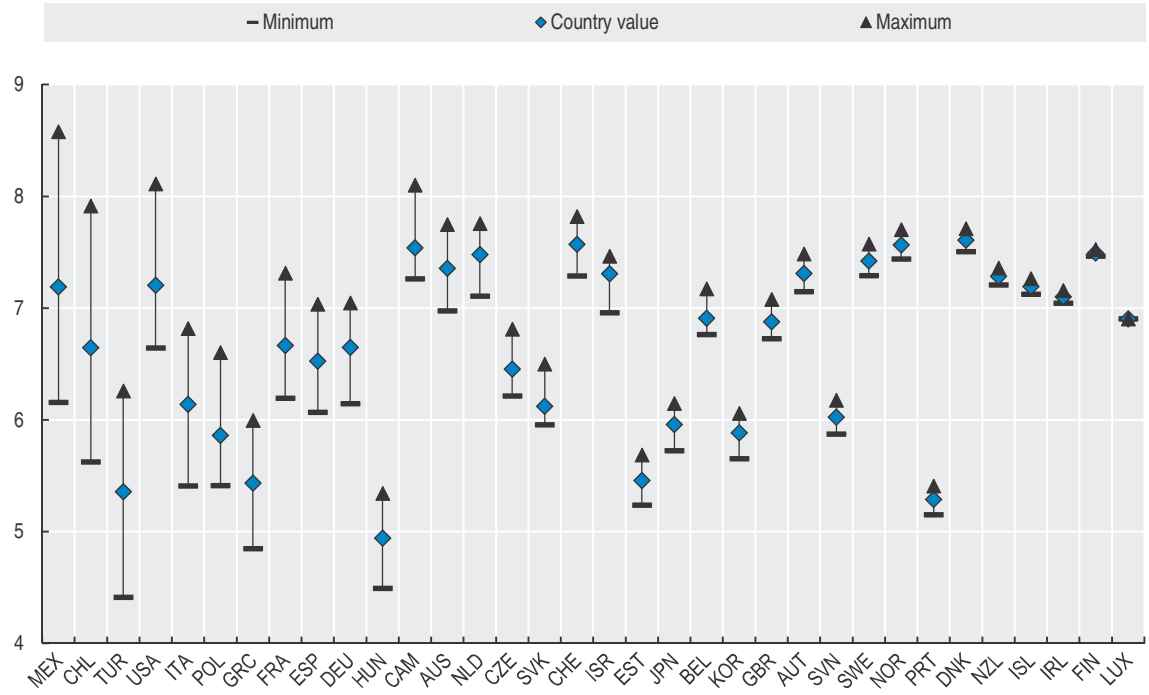
OECD (2013), *OECD Guidelines on Measuring Subjective Well-being*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264191655-en*.

Figure note

Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

1.27. Estimated regional variation in life satisfaction

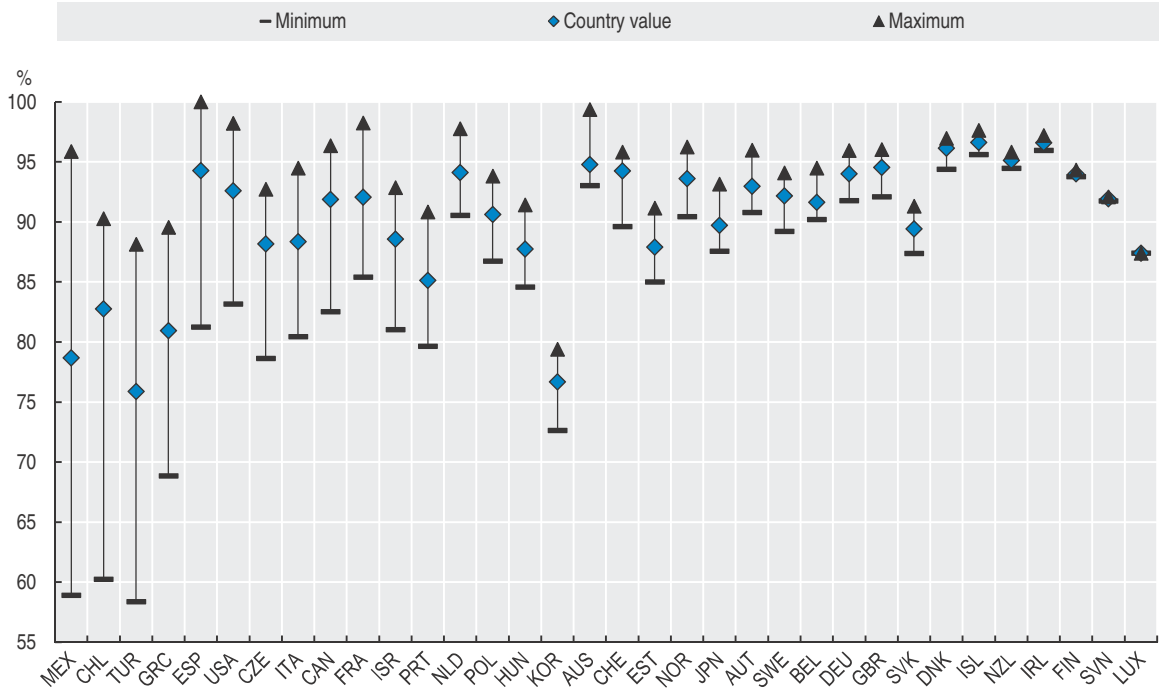
Mean satisfaction with life; 0-10 points scale; average 2006-14



StatLink http://dx.doi.org/10.1787/888933363115

1.28. Estimated regional variation in perceived social network support

Percentage of people who report having relatives or friends they can count on, average 2006-14



StatLink http://dx.doi.org/10.1787/888933363124

2. REGIONS AS DRIVERS OF NATIONAL COMPETITIVENESS

Population and population changes in regions

How metropolitan areas contribute to population change

Regional contributions to GDP growth

Regional economic disparities

Contribution of metropolitan areas to national economies

Regional contributions to change in employment

Productivity growth in regions

Where productivity gains are happening

Regional specialisation and productivity growth

Impact of the crisis on regional economic disparities

Employment and unemployment in metropolitan areas

Regional concentration of innovation related resources

Regions and venture capital

Regional differences in highly-skilled workers

Regional patterns of co-patenting

Patent activity in metropolitan areas

The data in this chapter refer to regions in OECD and non-OECD countries, and to metropolitan areas in OECD countries. Regions are classified on two territorial levels reflecting the administrative organisation of countries. Large (TL2) regions represent the first administrative tier of subnational government. Small (TL3) regions are contained in a TL2 region. Metropolitan areas are identified on the basis of population density and commuting journeys, independently of administrative boundaries.

Population and population changes in regions

Climatic and environmental conditions together with economic opportunities and availability of services explain the geographic distribution of population within countries. In 2014, almost half of the population of the OECD (46%) lived in predominantly urban regions, which accounted for 6% of the total area. More than 70% of the population lived in predominantly urban regions in the United Kingdom, the Netherlands, and Australia (Figure 2.1).

Predominantly rural regions accounted for more than one-quarter of the population and more than 80% of land area. In Ireland, the Slovak Republic, Hungary, Estonia, Austria, Slovenia and Greece, the share of the national population in rural regions was more than twice as high as the OECD average (Figure 2.1).

Rural regions in North America, Europe and Japan have been further classified as either close to a large urban centre or remote. Among the 26 OECD countries with rural regions, only in Sweden, Portugal, Greece, Denmark, and Canada does more than half of the rural population live in remote rural regions (Figure 2.1).

In 22 out of the 30 OECD countries considered, the share of population in predominantly urban regions has increased in the past 15 years, and significantly in Estonia, Canada, Finland, Japan, Austria, Turkey and Sweden (more than 2 percentage points). In almost all countries, predominantly rural regions have seen a decrease in population, with the exception of Ireland, the United States, Chile, Switzerland and Belgium (Figure 2.2).

Definition

OECD has established a regional typology to take into account geographical differences and enable meaningful comparisons between regions belonging to the same type. All regions in a country have been classified as predominantly rural, intermediate and predominantly urban. This typology has been refined by introducing a criterion of distance (driving time) to large urban centres. Thus a predominantly rural region is classified as predominantly rural remote (PRR) if at least 50% of the regional population needs more than one hour to reach a large urban centre; otherwise, the rural region is classified as predominantly rural close to a city (PRC). The extended typology has been applied to North America, Europe and Japan (see Annex A for the detailed methodology).

In all countries, with the exception of Ireland, predominantly rural remote regions displayed on average a decrease in population for the years 2000-14. On the other hand, populations grew in predominantly rural regions close to a city in the United States, Ireland, Switzerland and Mexico, while in the remaining countries, predominantly rural regions close to a city lost population (Figure 2.3).

On average, OECD population grew at an annual rate of 0.7% in the period 2000-14. The ten regions with the highest population growth rate are found in Mexico, Canada and Spain, with an annual population growth rate above 3.7%. Switzerland, Australia, Chile and the United Kingdom displayed positive population growth rates in almost all their regions (above 90%) between 2000 and 2014, while in Poland, Germany, Estonia, Japan and Hungary, the population decreased in more than 60% of the regions during the same period (Figures 2.4-2.7).

Source

OECD (2015), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data, source and country-related metadata.

Reference years and territorial level

2000-14; TL3.

TL2 regions in Brazil, China, Colombia, India, Peru, Russian Federation and South Africa.

The extended OECD typology is applied only to North America, Europe and Japan.

Further information

Brezzi, M., L. Dijkstra and V. Ruiz (2011), "OECD Extended Regional Typology: The Economic Performance of Remote Rural Regions", *OECD Regional Development Working Papers*, 2011/06, OECD Publishing. *http://dx.doi.org/10.1787/5kg6z83tw7f4-en*.

Eurostat (2013), *Urban-Rural typology*, *http://ec.europa.eu/eurostat/web/rural-development/methodology*.

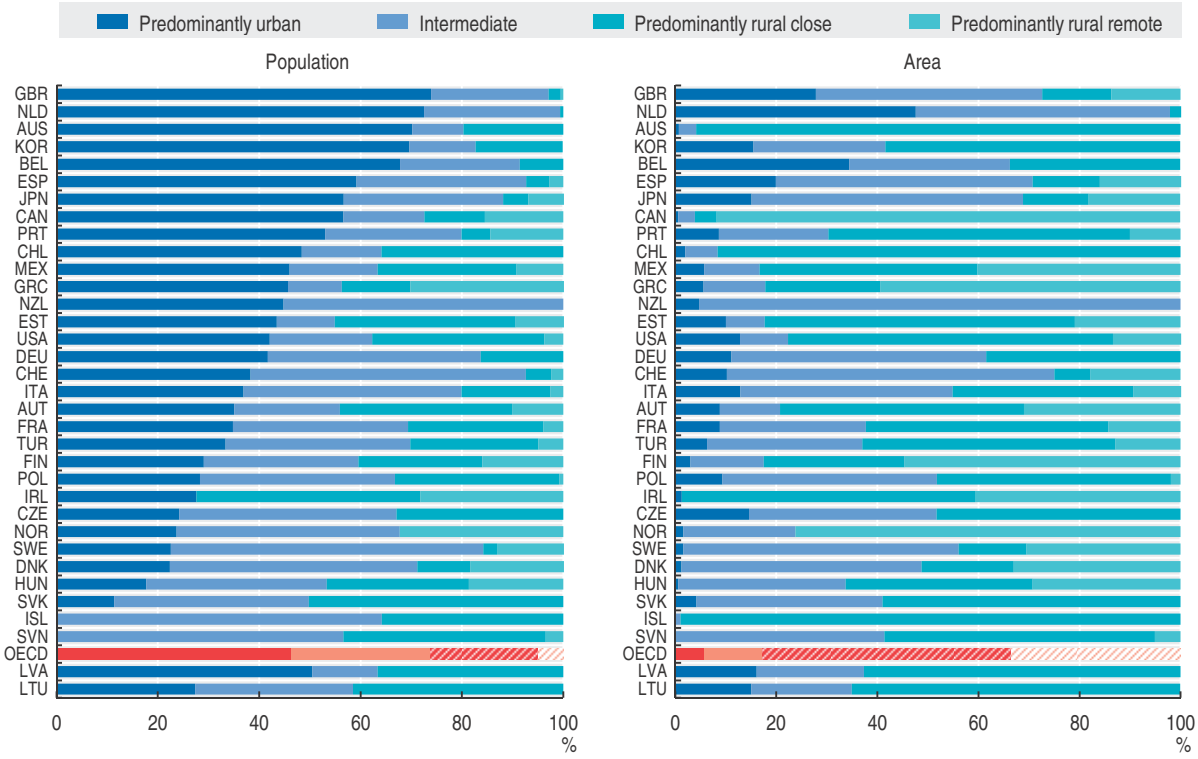
Figure notes

2.1-2.3: Latest available year 2010 for Mexico.

2.2-2.3: First available year 2001 for Australia, Greece, Japan, Korea, Turkey; 2003 for the Netherlands. Denmark is not included for lack of Denmark is not included for lack of regional data on comparable years.

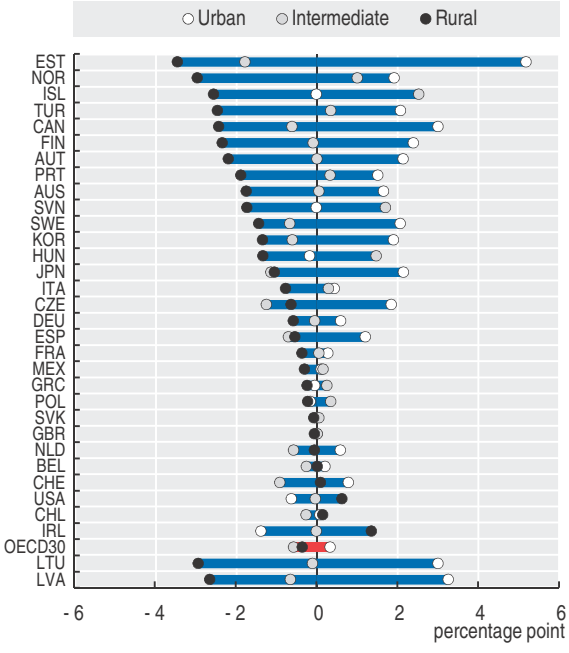
Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

2.1. Distribution of population and area by type of region, 2014



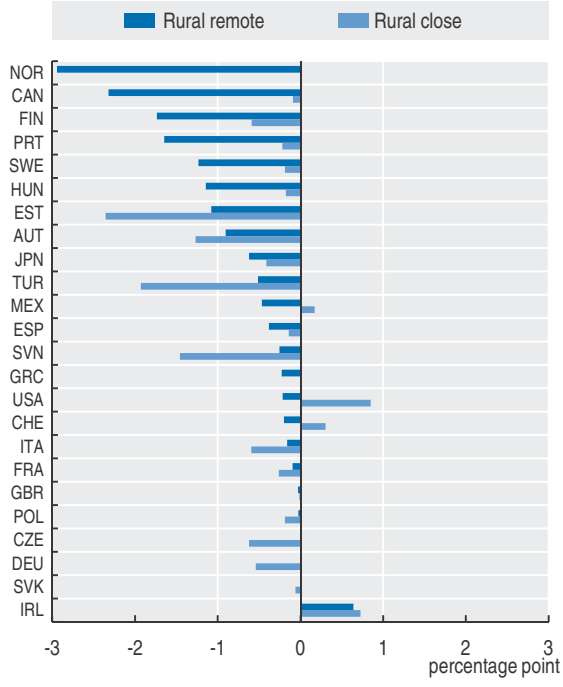
StatLink http://dx.doi.org/10.1787/888933363136

2.2. Change in the share of population by type of region, 2000-14



StatLink http://dx.doi.org/10.1787/888933363149

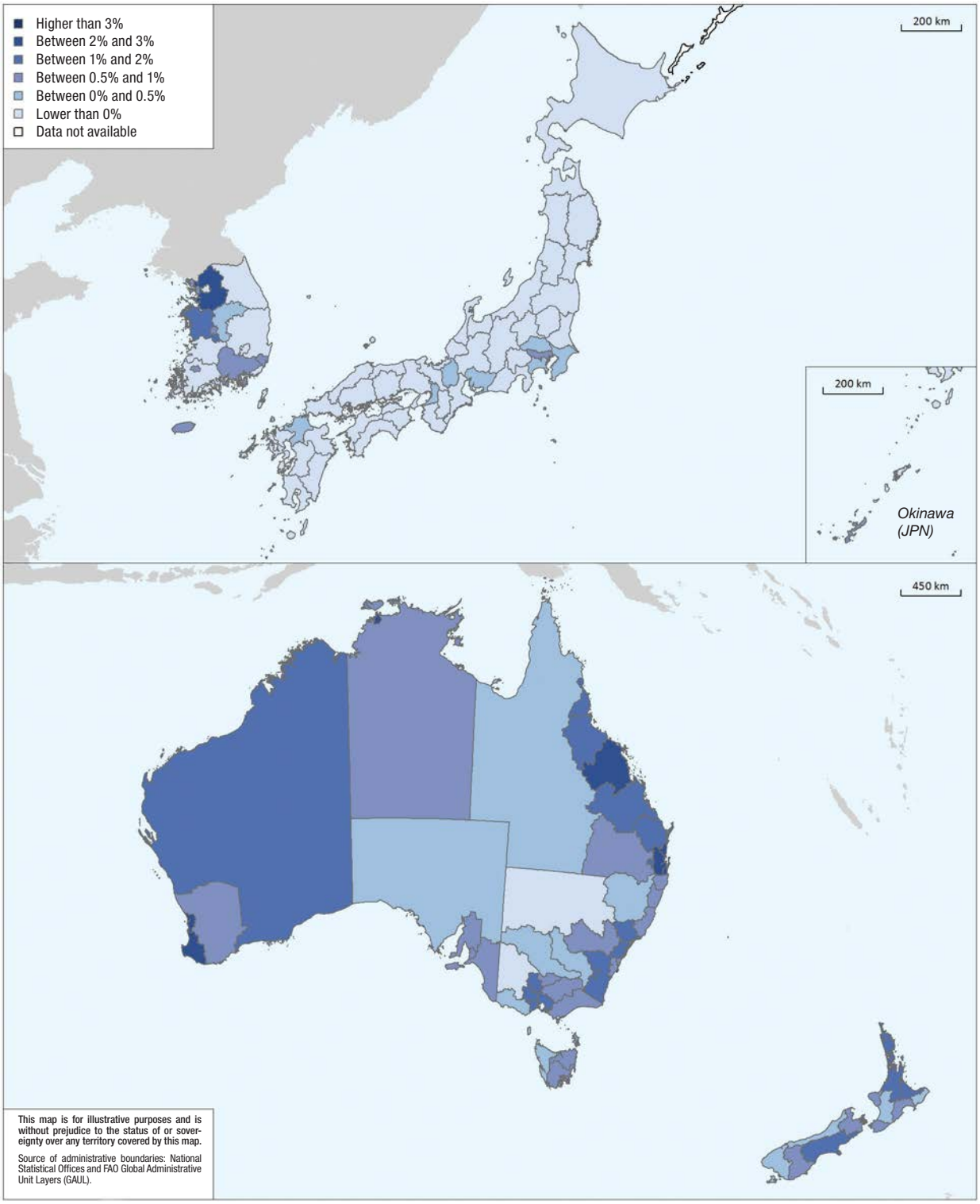
2.3. Change in the share of population living in rural regions, 2000-14



StatLink http://dx.doi.org/10.1787/888933363159

2.4. Regional population growth: Asia and Oceania, 2000-14

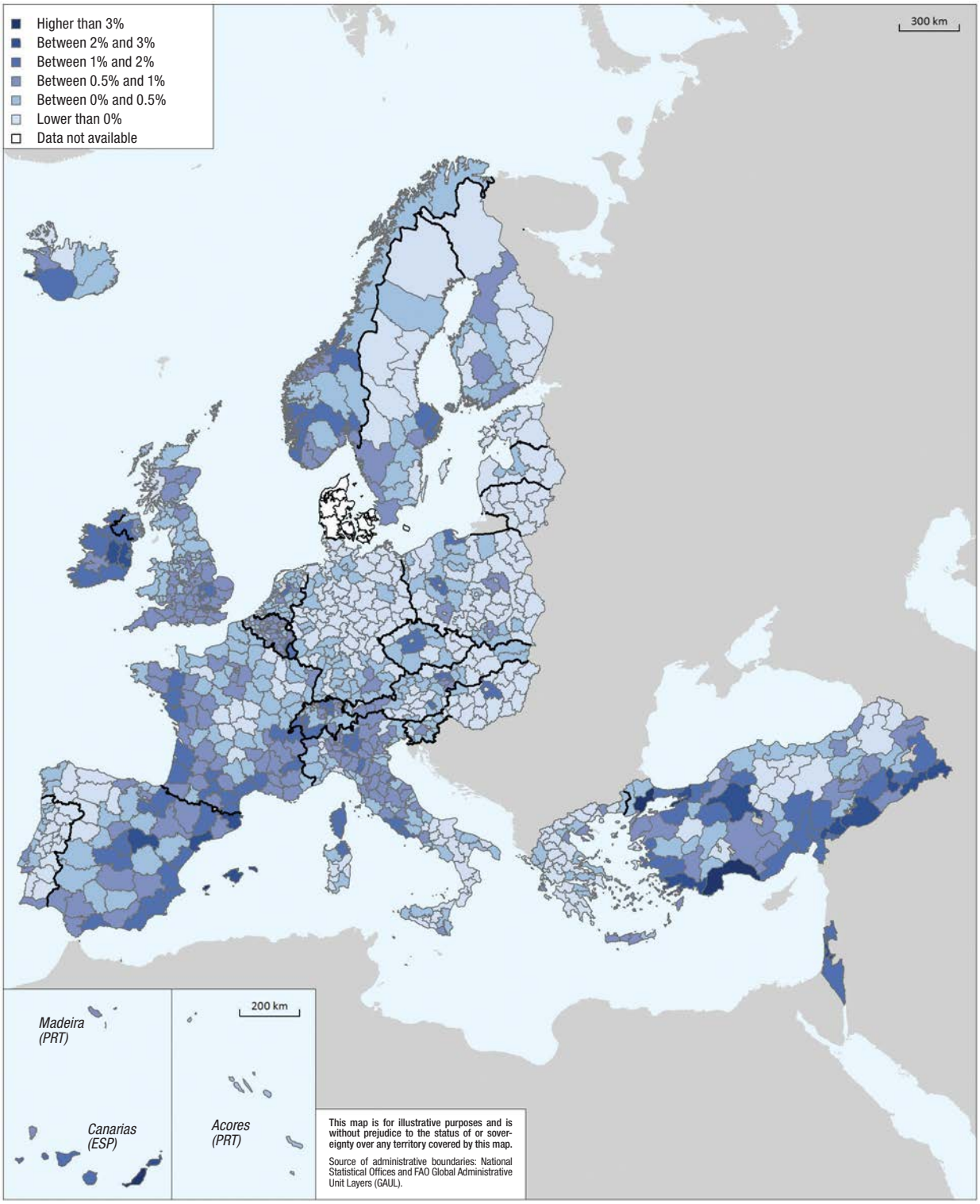
Average annual growth rate, TL3 regions



StatLink http://dx.doi.org/10.1787/888933363169

2.5. Regional population growth: Europe, 2000-14

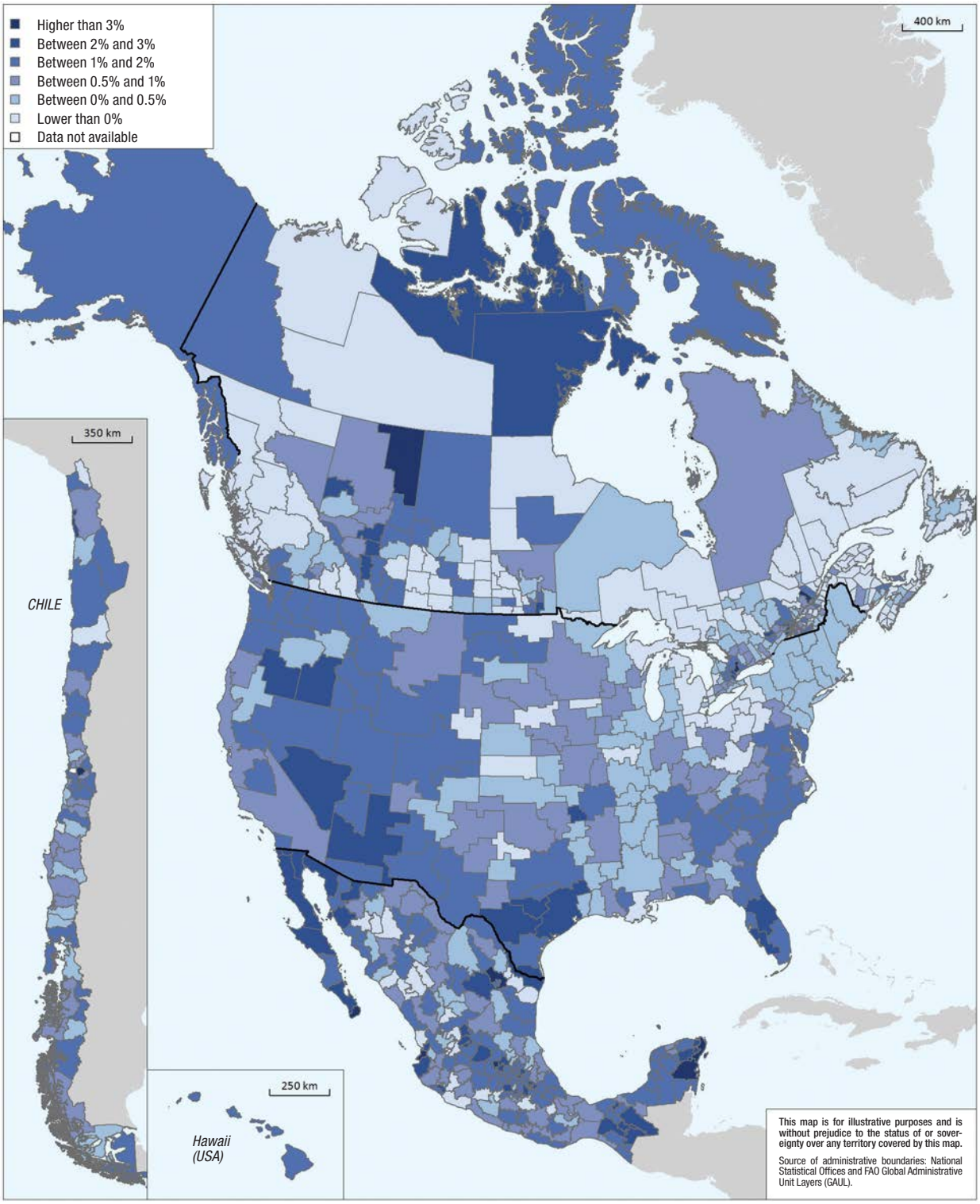
Average annual growth rate, TL3 regions



StatLink http://dx.doi.org/10.1787/888933364081

2.6. Regional population growth: Americas, 2000-14

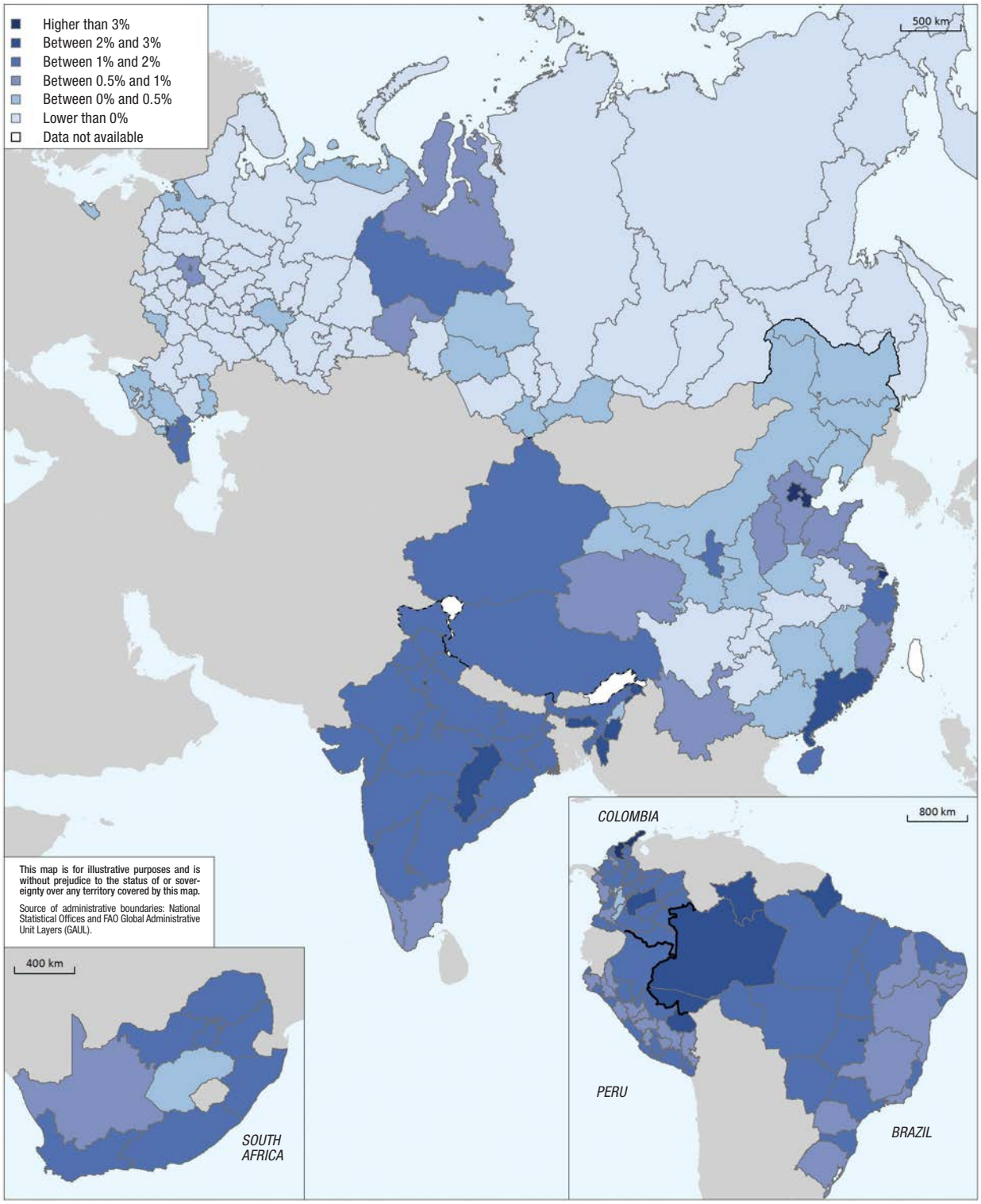
Average annual growth rate, TL3 regions



StatLink http://dx.doi.org/10.1787/888933364093

2.7. Regional population growth: Emerging economies, 2000-14

Average annual growth rate, TL2 regions



StatLink http://dx.doi.org/10.1787/888933364107

How metropolitan areas contribute to population change

Today, half of the OECD population live in metropolitan areas – cities with more than 500 000 people.

Administrative boundaries do not always match up with where people live, work and spend leisure time. Therefore, metropolitan areas are here defined as functional urban areas (FUA) – densely populated cities and commuting zones with high levels of commuting towards the city. There are 1 197 functional urban areas in the 30 OECD countries considered, and 281 of them are classified as metropolitan areas, having a population larger than 500 000 people.

In the last 15 years, the population in metropolitan areas has been growing at a faster rate in the commuting zones rather than in the city centres. The sub-urbanisation is particularly strong in the commuting zones of large metropolitan areas (with more than 1.5 million people). In these areas population grew at a rate of 1.6% while the city centre grew at a rate below 1% (Figure 2.8). In contrast, in small metropolitan areas (with a population between 500 000 and 1.5 million) in Australia, Japan, and Korea the urban population grew at a faster rate in the city centre than in the commuting zone, particularly evident in Japanese cities.

The number of local governments per 100 000 people – a measure of administrative fragmentation of the metropolitan area – varies from around 24 in the Czech Republic to less than 0.5 in Mexico, the United Kingdom, Ireland and Korea (Figure 2.9). On average, municipalities in OECD metropolitan areas concentrate more than 300 000 people.

Definition

281 Metropolitan areas have been identified in 30 OECD countries according to the OECD-EU methodology that identifies metropolitan areas on the basis of densely populated cities and their commuting zones (travel to work journeys) to reflect the economic geography of the population's daily commuting patterns (see Annex A for details).

Source

OECD (2015), "Metropolitan areas", *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/data-00531-en*.

Reference years and territorial level

For lack of comparable data on commuting, the FUAs have not been identified in Iceland, Israel, New Zealand and Turkey. The FUA of Luxembourg does not appear in the figures since it has a population below 500 000 inhabitants.

Further information

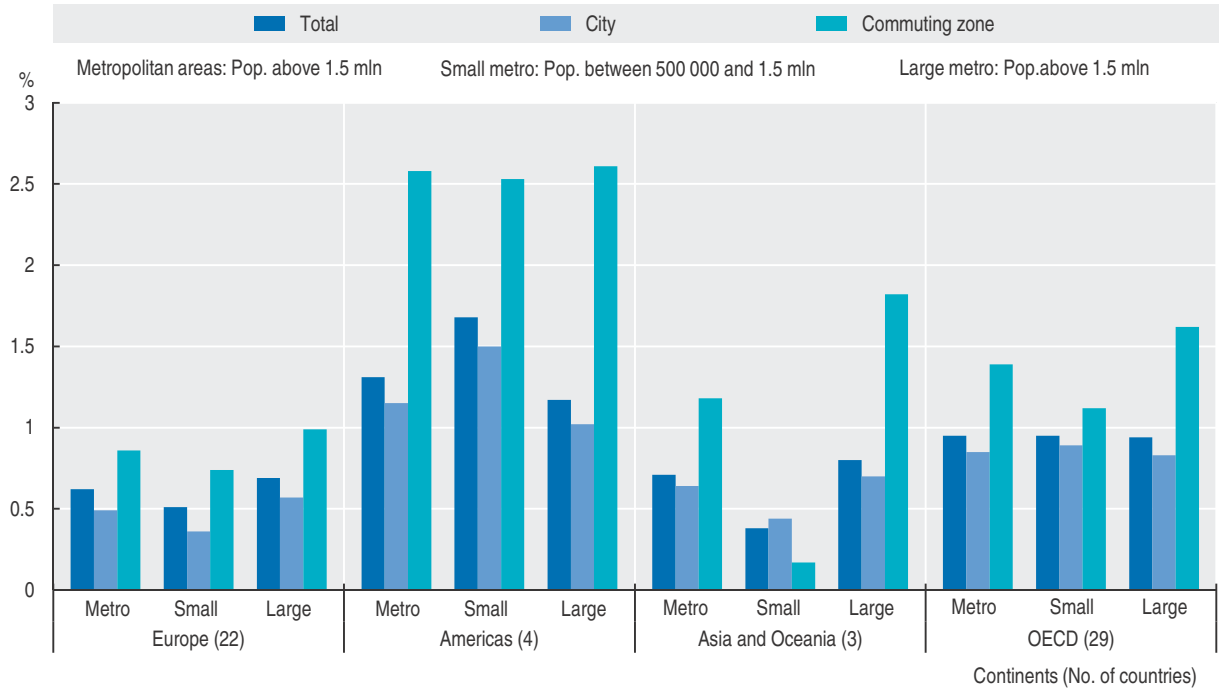
OECD (2012), *Redefining "Urban": A New Way to Measure Metropolitan Areas*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264174108-en*.

Figure notes

2.8-2.9: Metropolitan population figures are estimates based on municipal figures for the last two census available for each country.

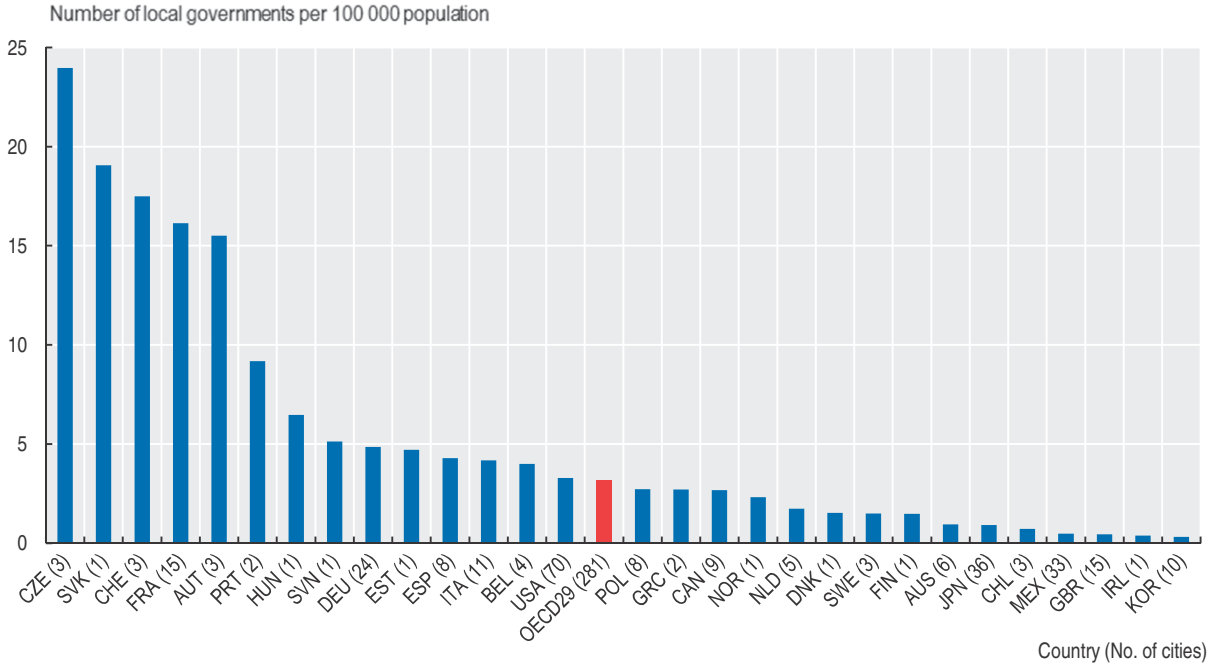
Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

2.8. Yearly population growth of metropolitan areas in city and commuting area, 2000-14



StatLink http://dx.doi.org/10.1787/888933363175

2.9. Administrative fragmentation of metropolitan areas, 2014



StatLink http://dx.doi.org/10.1787/888933363185

Regional contributions to GDP growth

Some regions generate larger gross domestic product (GDP) than others. In 2013, the OECD regions with largest GDP, representing 20% of total population, generated 26% of OECD GDP. In Hungary, Poland, the Slovak Republic, and the United Kingdom, regions with the highest economic output and totalling 20% of the population, contributed to at least one-third of the national GDP.

GDP growth was even more regionally concentrated than GDP production in many OECD countries. On average, 20% of OECD population in the regions with the fastest GDP growth contributed to 36% of the OECD GDP growth in 2000-13 (Figure 2.10). At country level, the regional contribution to growth was very concentrated in Portugal, Italy, Denmark, Greece and Canada where the 20% of the most dynamic regions in terms of GDP growth rates were responsible for 50% or more of the national growth in 2000-13 (Figure 2.10).

Predominantly urban regions attract the largest share of economic activity. In 2013, 55% of total GDP in OECD countries was produced in urban regions (where 47% of OECD active population live), and reached 75% or more of national GDP in the United Kingdom, the Netherlands, and Belgium (Figure 2.11). The GDP share of predominantly urban regions was particularly pronounced in Hungary, Estonia and the Slovak Republic, above 15 percentage points of the population share. Predominantly rural areas generated 15% of total GDP, with more than 40% in Ireland and the Slovak Republic.

During the period 2000-13, the average value of the yearly GDP growth rate was 1.4% among OECD regions, 1.5% and 1.3% in predominantly urban and predominantly rural regions, respectively. Differences in regional GDP annual growth rates between urban and rural regions were larger than 1 percentage point per year in Hungary, Estonia, Sweden, Denmark, Greece, Norway and France. On average, GDP growth rates were lower in rural regions than urban regions in 18 out of 24 countries, while in Austria, Korea, Switzerland, the Netherlands, Germany and Belgium predominantly rural regions on average performed better than predominantly urban ones (Figure 2.12).

Wide differences in regional growth do not seem to be associated with faster national growth; Estonia and the Slovak Republic displayed a national growth rate higher than double the OECD average and limited regional differences (Figures 2.13-2.16).

Definition

GDP is the standard measure of the value of the production activity (goods and services) of resident producer units. Regional GDP is measured according to the definition of the System of National Accounts (SNA 2008). To make comparisons over time and across countries, it is expressed at constant prices (year 2010), using the OECD deflator and then it is converted into USD purchasing power parities (PPPs) to express each country's GDP in a common currency.

The top 20% fastest growing regions are defined as those with the highest GDP growth rate until the equivalent of 20% of the national population is reached.

OECD has established a regional typology to take into account geographical differences and enable meaningful comparisons between regions belonging to the same type. All regions in a country have been classified as predominantly rural, intermediate and predominantly urban. (see Annex A for the detailed methodology).

Source

OECD (2015), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

Reference years and territorial level

2000-13; TL3.

Australia, Brazil, Canada, Chile, China, India, Indonesia, Mexico, Russian Federation, South Africa, Turkey and United States, TL2 regions.

Regional GDP is not available for Iceland and Israel.

Figure notes

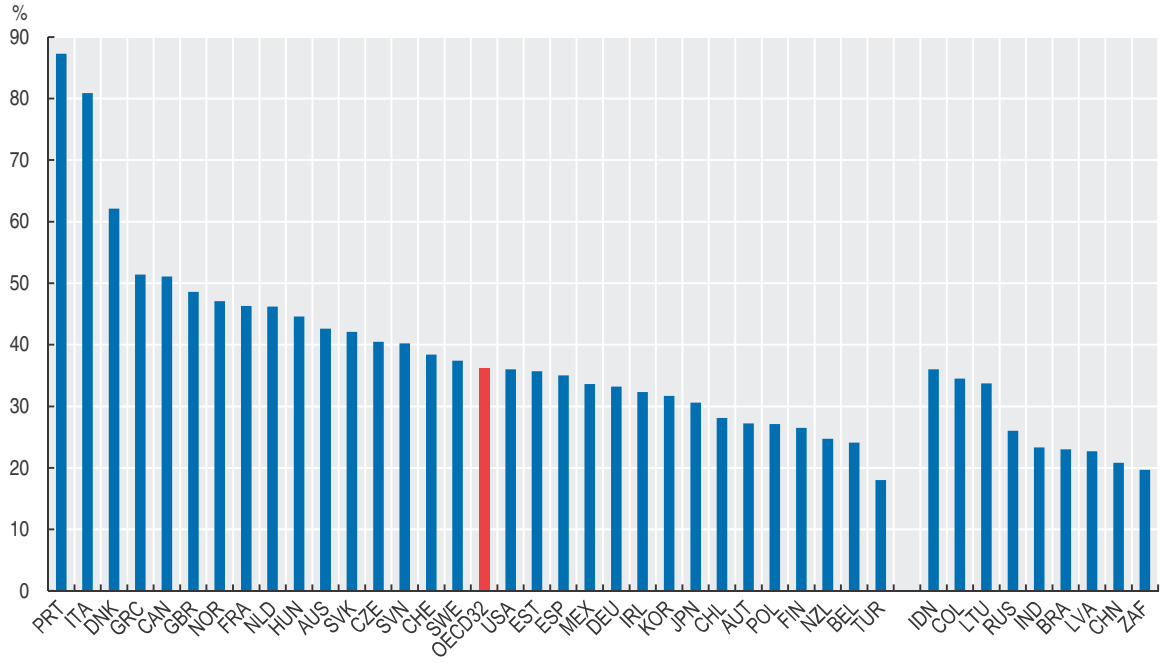
2.10-2.12: Available years: Austria, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Poland, Spain, Sweden, Colombia, Russian Federation and Latvia 2000-12; Japan 2001-12; Mexico 2003-13; Portugal 2000-14; Turkey GVA data 2004-11; China and Indonesia 2004-12; India 2001-13; Lithuania 2005-12. Norway and Switzerland are excluded from the figures due to lack of data over the period.

2.11: Only countries where GDP is available for TL3 regions.

2.10 and 2.12: Germany non-official grid regions.

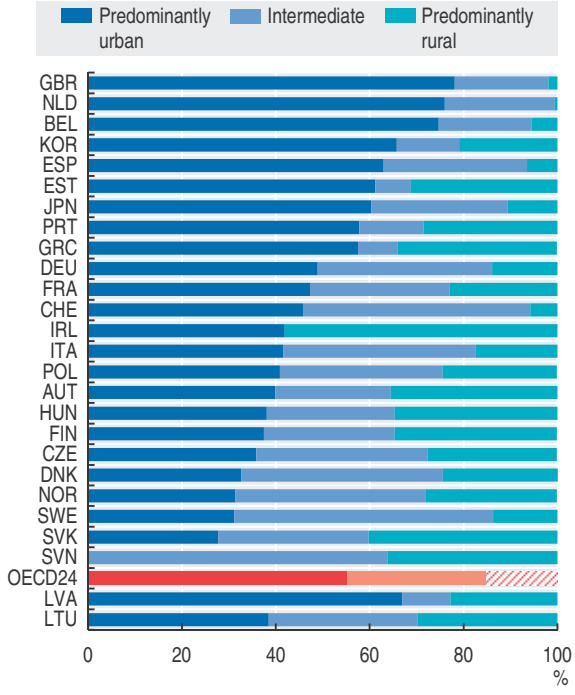
Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

2.10. Contribution to national GDP growth by top 20% fastest growing TL3 regions, 2000-13



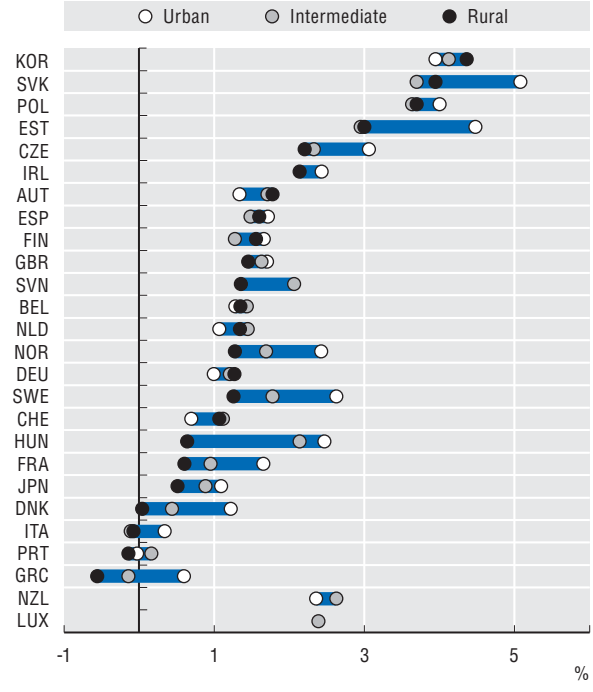
StatLink http://dx.doi.org/10.1787/888933363194

2.11. Distribution of GDP by type of TL3 regions, 2013



StatLink http://dx.doi.org/10.1787/888933363200

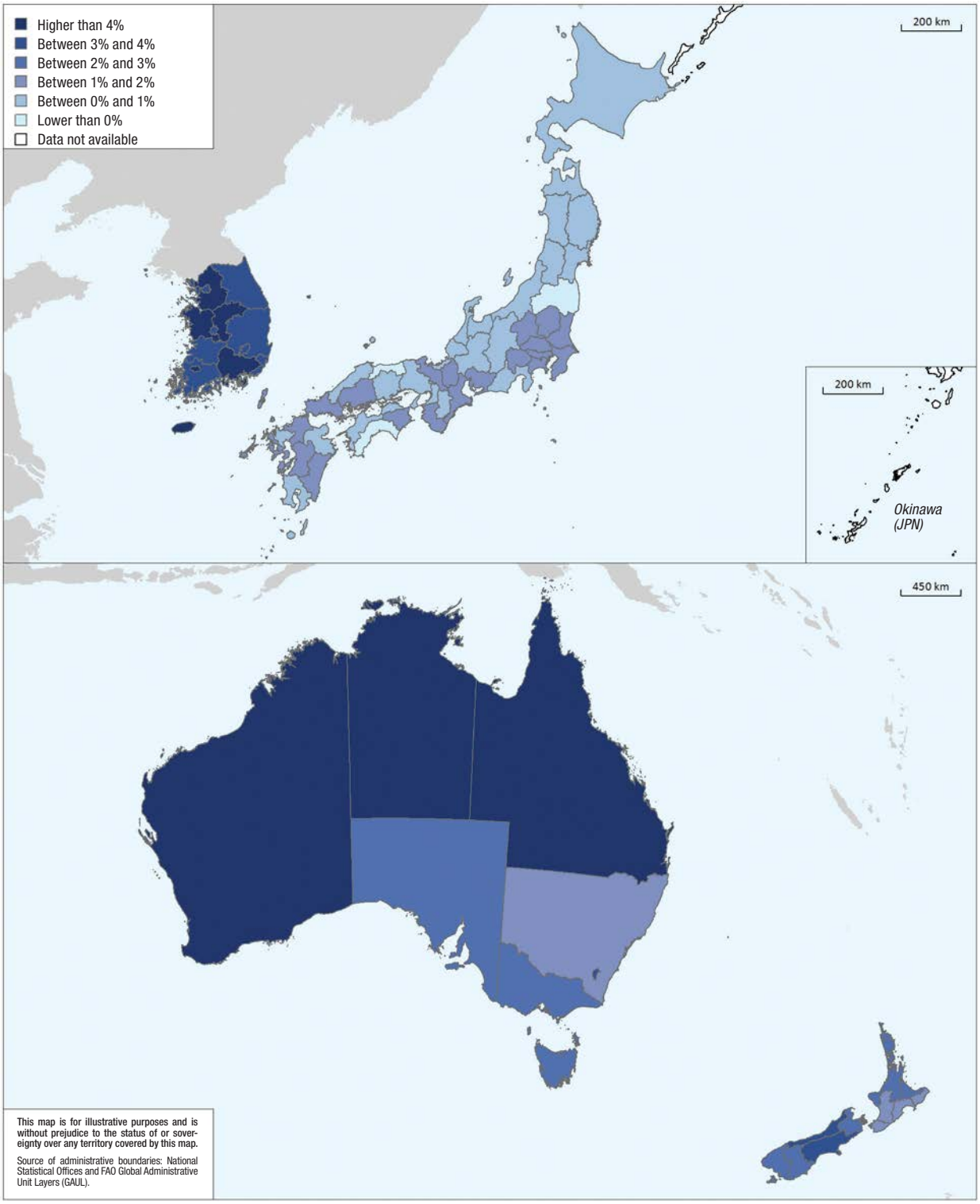
2.12. GDP annual growth rate by type of TL3 regions, 2000-13



StatLink http://dx.doi.org/10.1787/888933363216

2.13. Regional GDP growth: Asia and Oceania, 2000-13

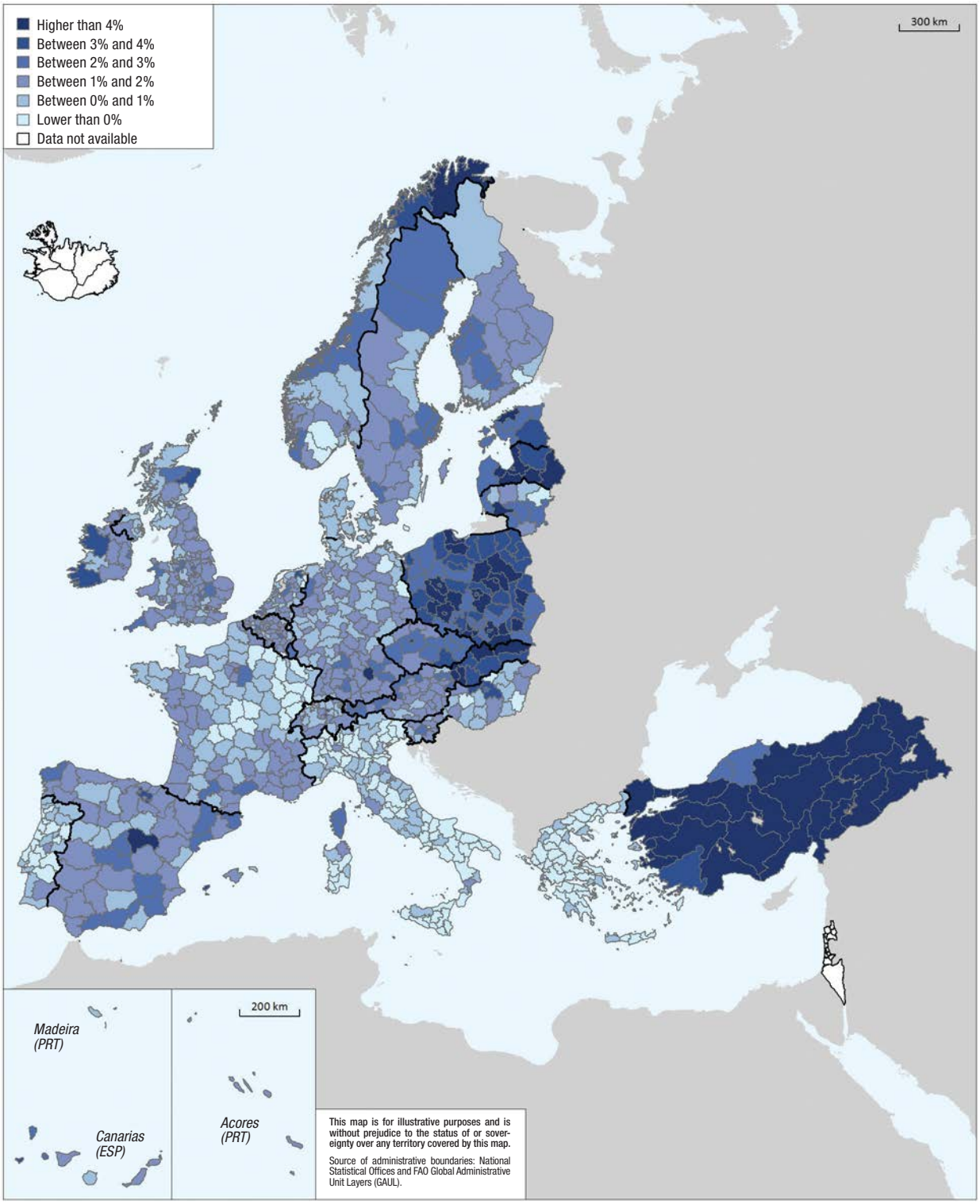
Average annual growth rate (constant 2010 USD PPP), TL3 regions



StatLink http://dx.doi.org/10.1787/888933364110

2.14. Regional GDP growth: Europe, 2000-13

Average annual growth rate (constant 2010 USD PPP), TL3 regions

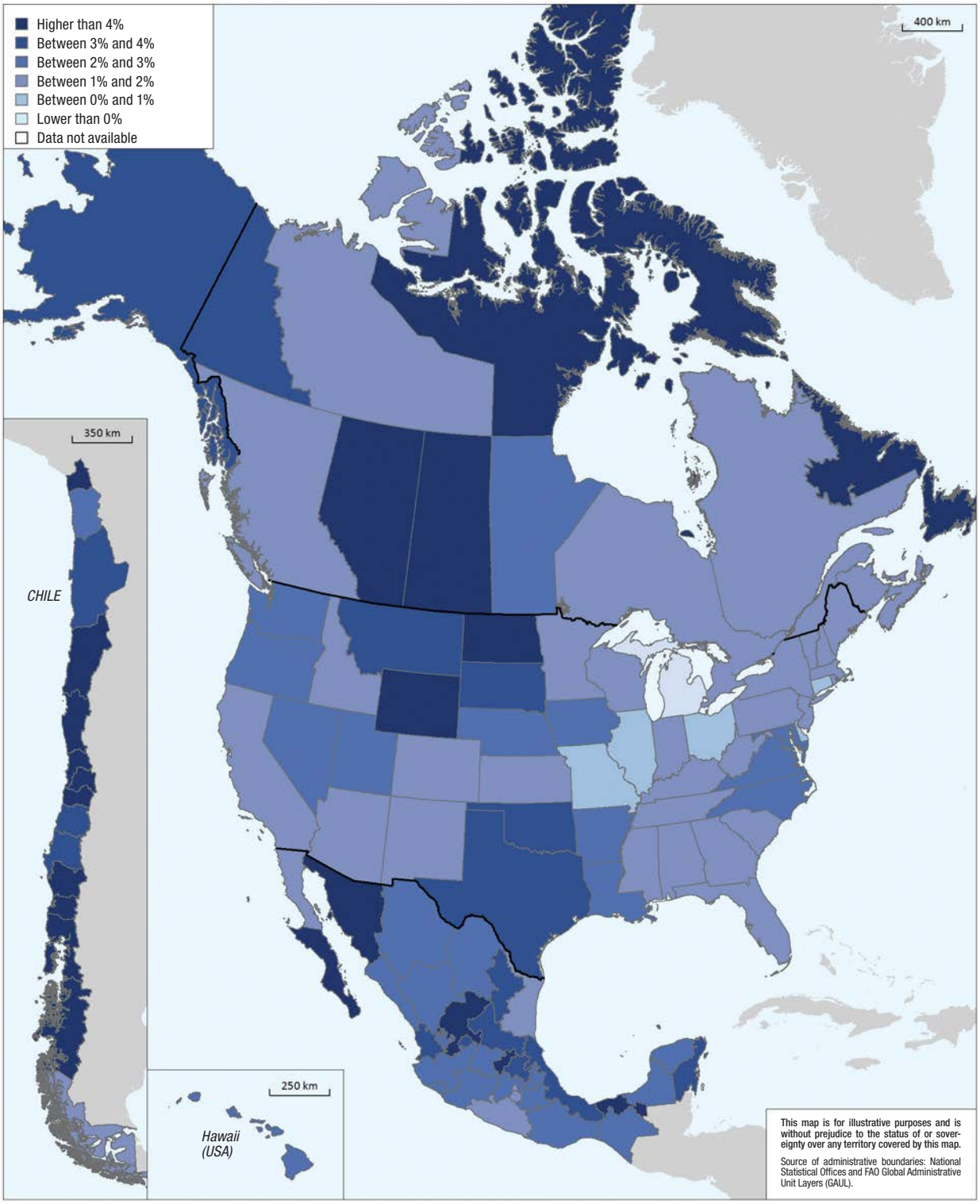


Germany non-official grid (NOG) regions; Turkey TL2.

StatLink http://dx.doi.org/10.1787/888933364128

2.15. Regional GDP growth: Americas, 2000-13

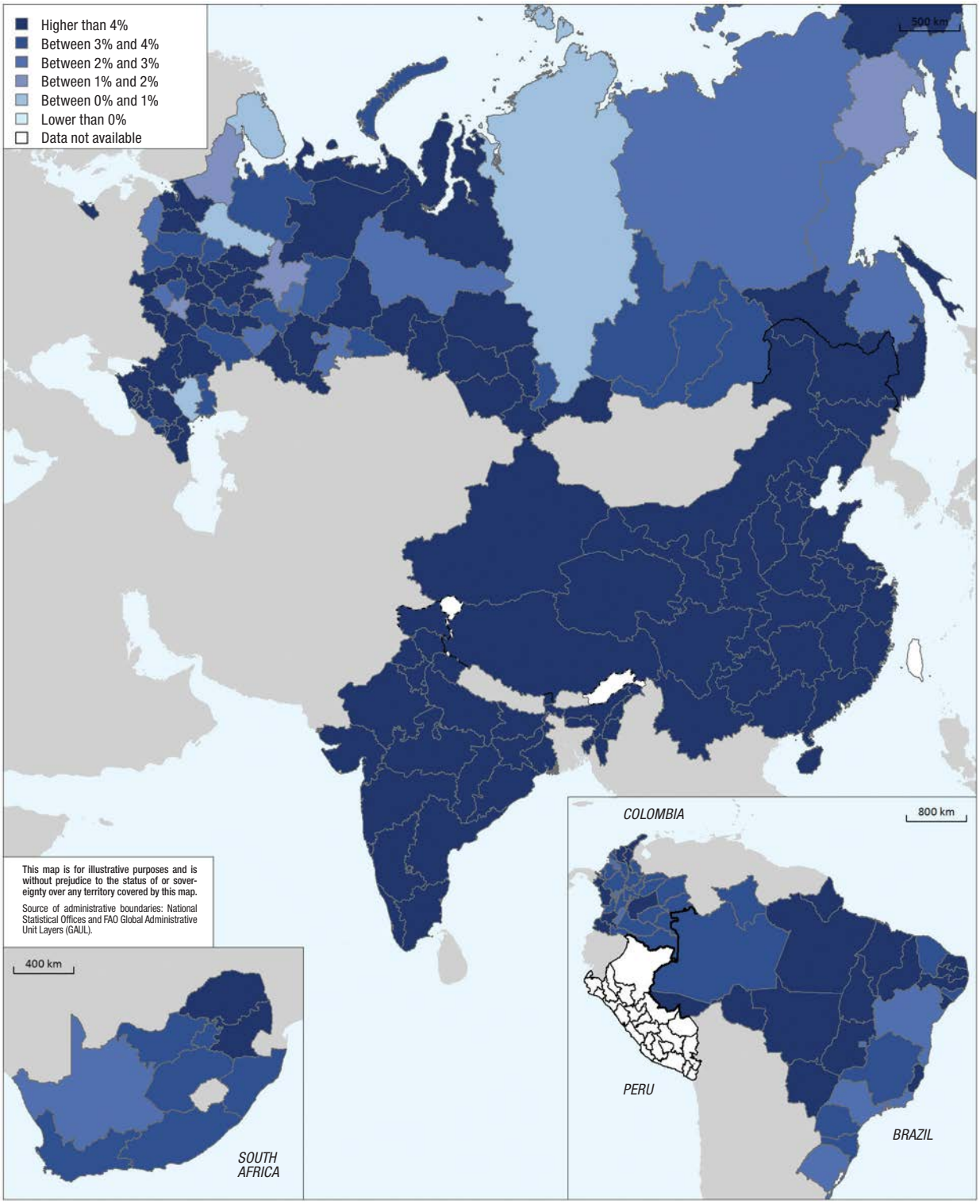
Average annual growth rate (constant 2010 USD PPP), TL2 regions



StatLink http://dx.doi.org/10.1787/888933364135

2.16. Regional GDP growth: Emerging economies, 2000-13

Average annual growth rate (constant 2010 USD PPP), TL2 regions



StatLink http://dx.doi.org/10.1787/888933364145

Regional economic disparities

Regional differences in gross domestic product (GDP) per capita within non-OECD countries are often substantial and larger than among OECD countries. According to the Gini index, the emerging economies – Indonesia, Colombia and the Russian Federation – displayed the greatest disparity in GDP per capita in 2013, with Chile, Mexico, the Slovak Republic and Ireland showing greatest disparity among the OECD countries (Figure 2.17).

During 2000-13 regional disparities increased in 18 out of the 32 countries considered. Significant increases can be found in Ireland, Australia, the Slovak Republic and France (Figure 2.17).

Regional differences in GDP per capita, measured by the range between the region with the highest and the lowest GDP per capita, were markedly high in Mexico, Chile and the United States where some regions were at least three times richer than the national average, and other regions had values lower than half of the national average (Figure 2.18).

Definition

GDP is the standard measure of the value of the production activity (goods and services) of resident producer units. Regional GDP is measured according to the definition of the System of National Accounts (SNA 2008). To make comparisons over time and across countries, it is expressed at constant prices (year 2010), using the OECD deflator and then it is converted into USD purchasing power parities (PPPs) to express each country's GDP in a common currency.

GDP per capita is calculated by dividing the GDP of a country or a region by its population.

The Gini index is a measure of inequality among all regions of a given country. The index takes on values between 0 and 1, with zero interpreted as no disparity. It assigns equal weight to each region regardless of its size; therefore differences in the values of the index among countries may be partially due to differences in the average size of regions in each country.

The poverty rate is the ratio of the number of people who fall below the poverty line and the total population; the poverty line is here taken as half the median household income.

While the Gini index provides a measure of the overall inter-regional disparities in a country, the poverty rates measure the share of people living in the bottom part of the income distribution and can provide an indication of the different economic implications of disparities within a country. Regional disparities as measured by the Gini index in GDP per capita are of the same magnitude in the United States and in the Czech Republic, for example, while the percentage of the national population in poverty in the former is more than three times higher than in the latter (Figure 2.19).

Source

OECD (2015), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

OECD (2015), "Deflator and purchasing power parities", *OECD National Accounts* (database), *http://dx.doi.org/10.1787/na-data-en*.

OECD (2015), "Income distribution", OECD Social and Welfare Statistics (database), *http://dx.doi.org/10.1787/socwel-data-en*.

Reference years and territorial level

2000-13; TL3.

Australia, Canada, Chile, Mexico, Turkey and the United States TL2 regions. Germany non-official grid regions.

Brazil, China, Colombia, Indonesia, Russian Federation and South Africa TL2 regions.

Regional GVA for Turkey. Regional GDP is not available for Iceland and Israel.

Figure notes

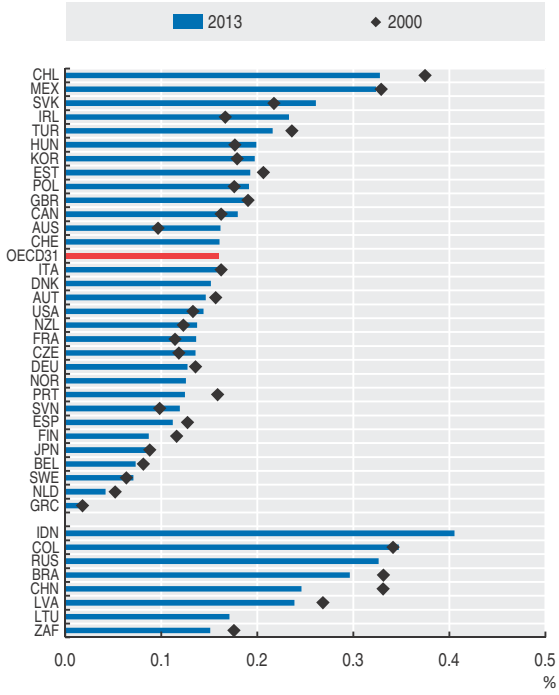
2.17: First available years: Japan and India 2001; Mexico 2003; China 2004.

2.17-2.19: Last available year: Austria, Brazil, China, Colombia, Estonia, Finland, France, Germany, Hungary, Indonesia, Ireland, Italy, Japan, Latvia, Lithuania, Norway, Poland, Russian Federation, Spain, Sweden and Switzerland 2012.

2.19: Poverty rate, all countries 2012, Canada 2011.

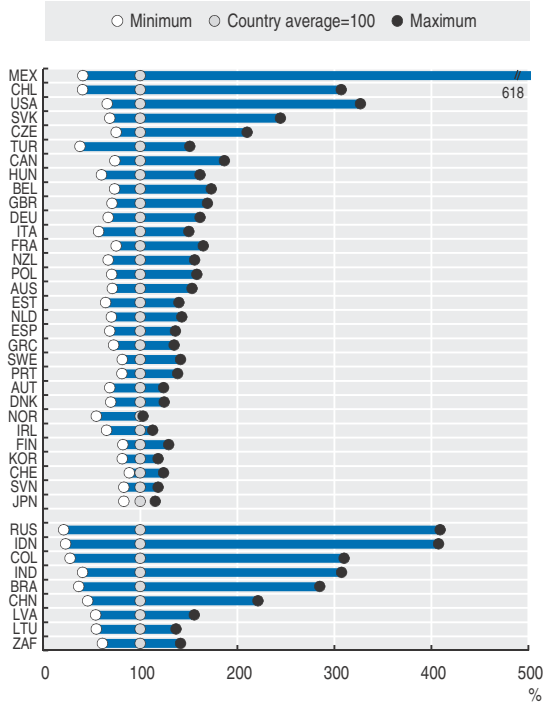
Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

2.17. Gini index of inequality of GDP per capita across TL3 regions, 2000 and 2013



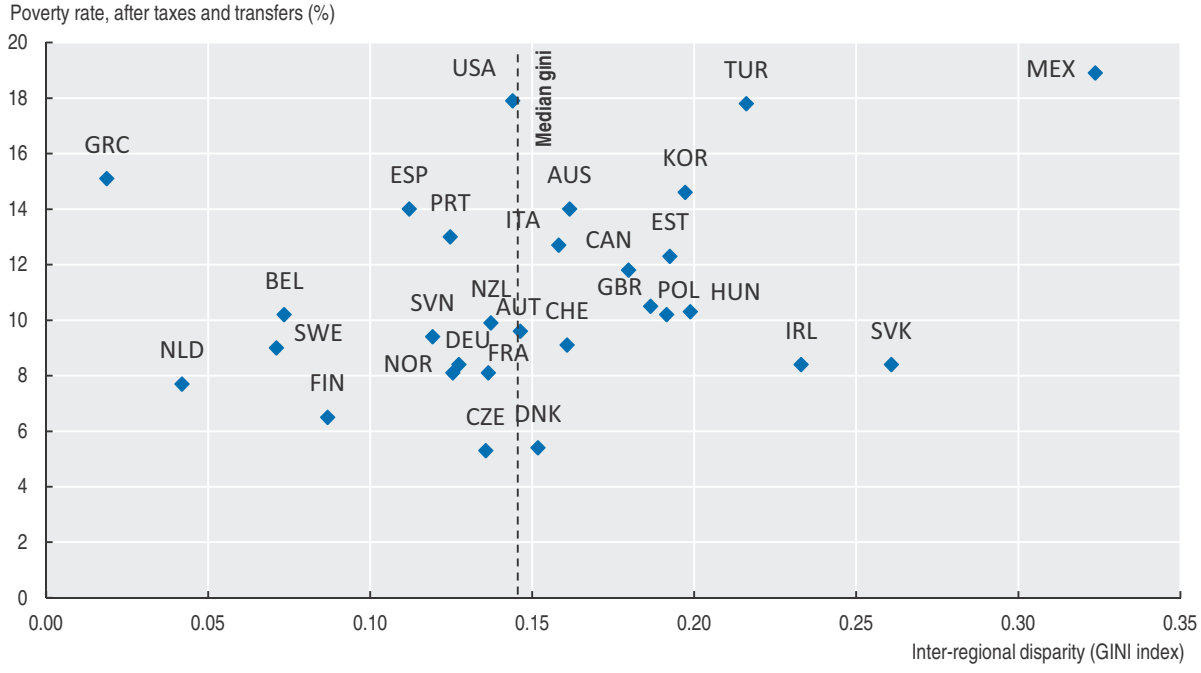
StatLink http://dx.doi.org/10.1787/888933363221

2.18. Regional variation in GDP per capita (as a % of national average), 2013 (TL2)



StatLink http://dx.doi.org/10.1787/888933363233

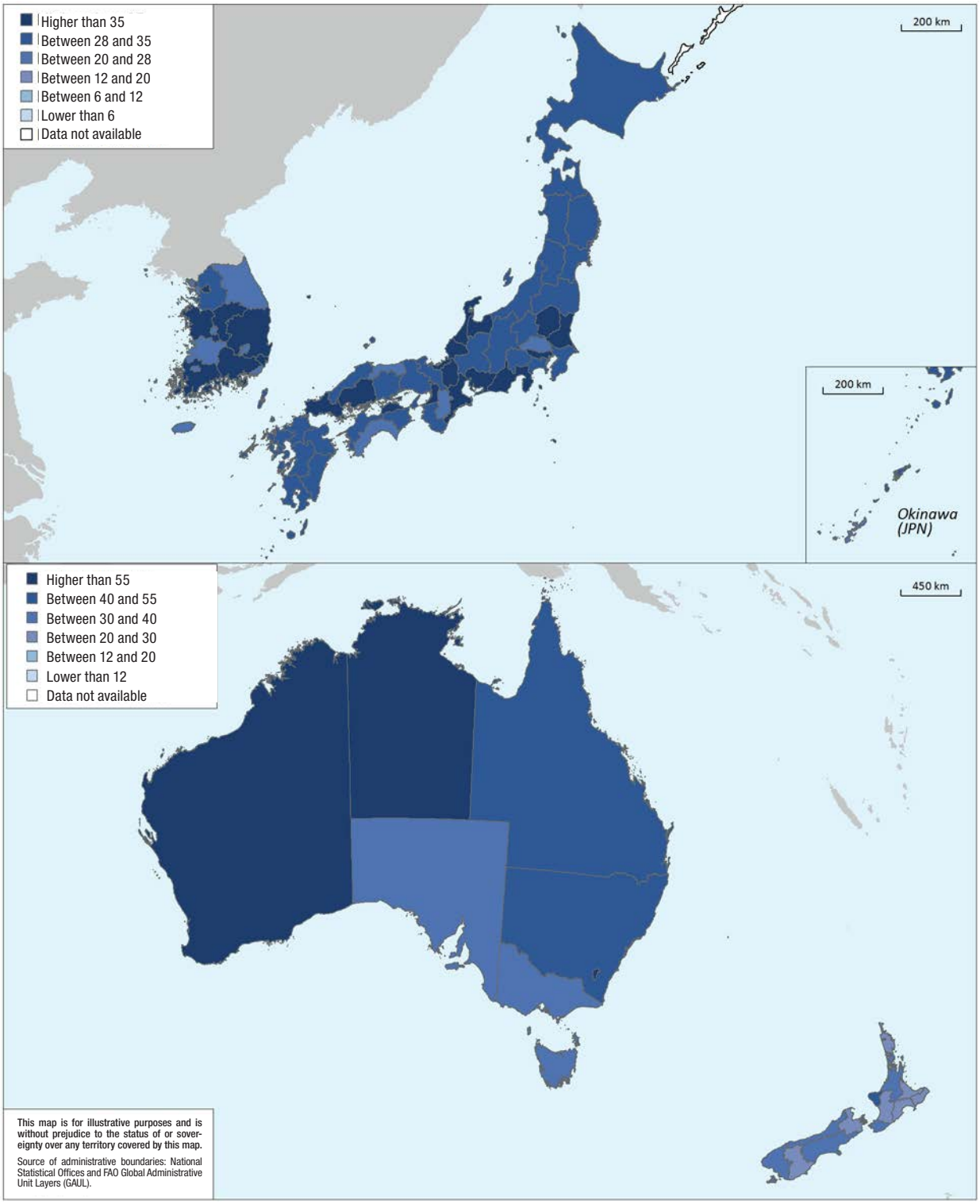
2.19. Gini index of inequality of GDP per capita across TL3 regions and poverty rate after taxes and transfers (%), 2013



StatLink http://dx.doi.org/10.1787/888933363243

2.20. Regional GDP per capita: Asia and Oceania, 2013

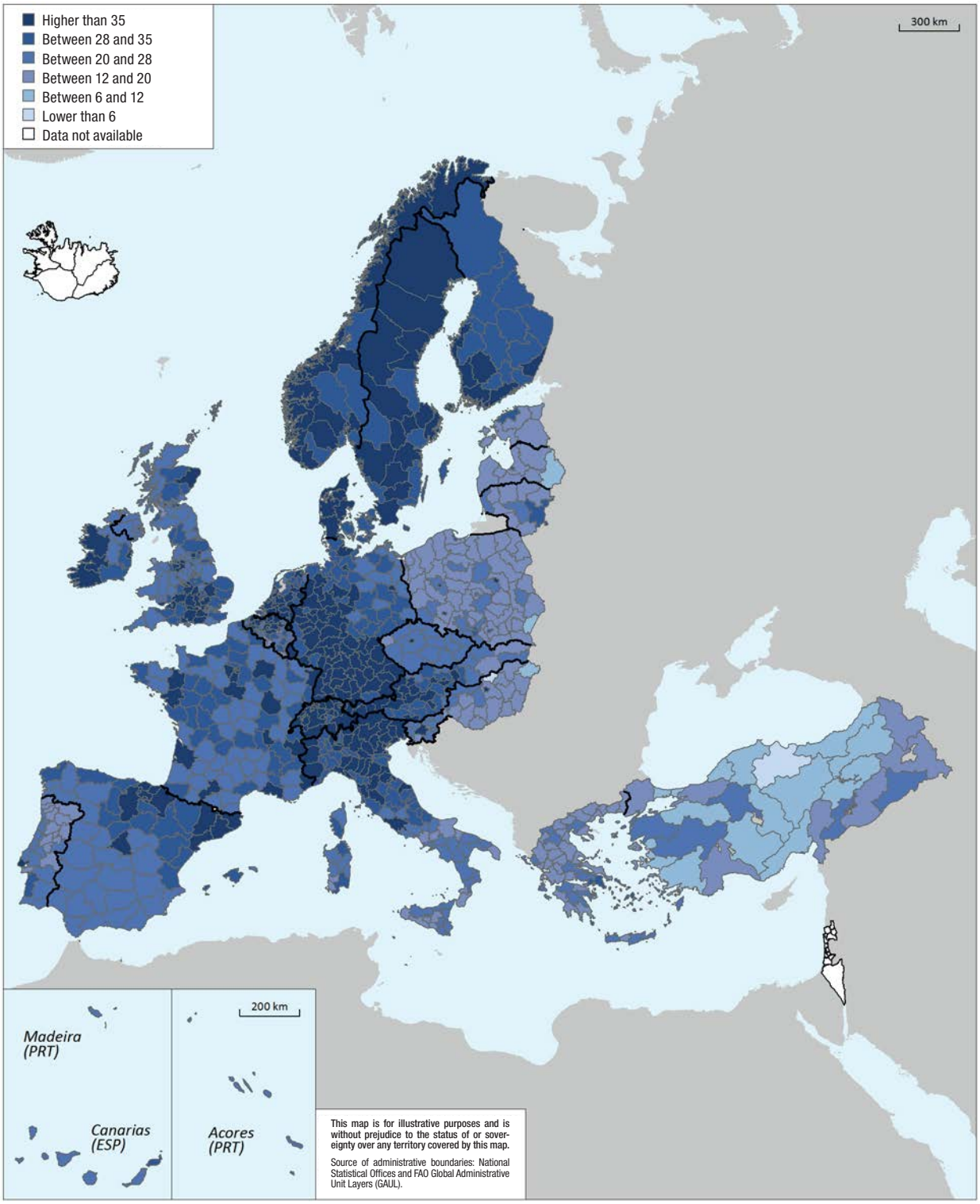
(Constant 2010 USD PPP in thousands), TL3 regions



StatLink http://dx.doi.org/10.1787/888933364154

2.21. Regional GDP per capita: Europe, 2013

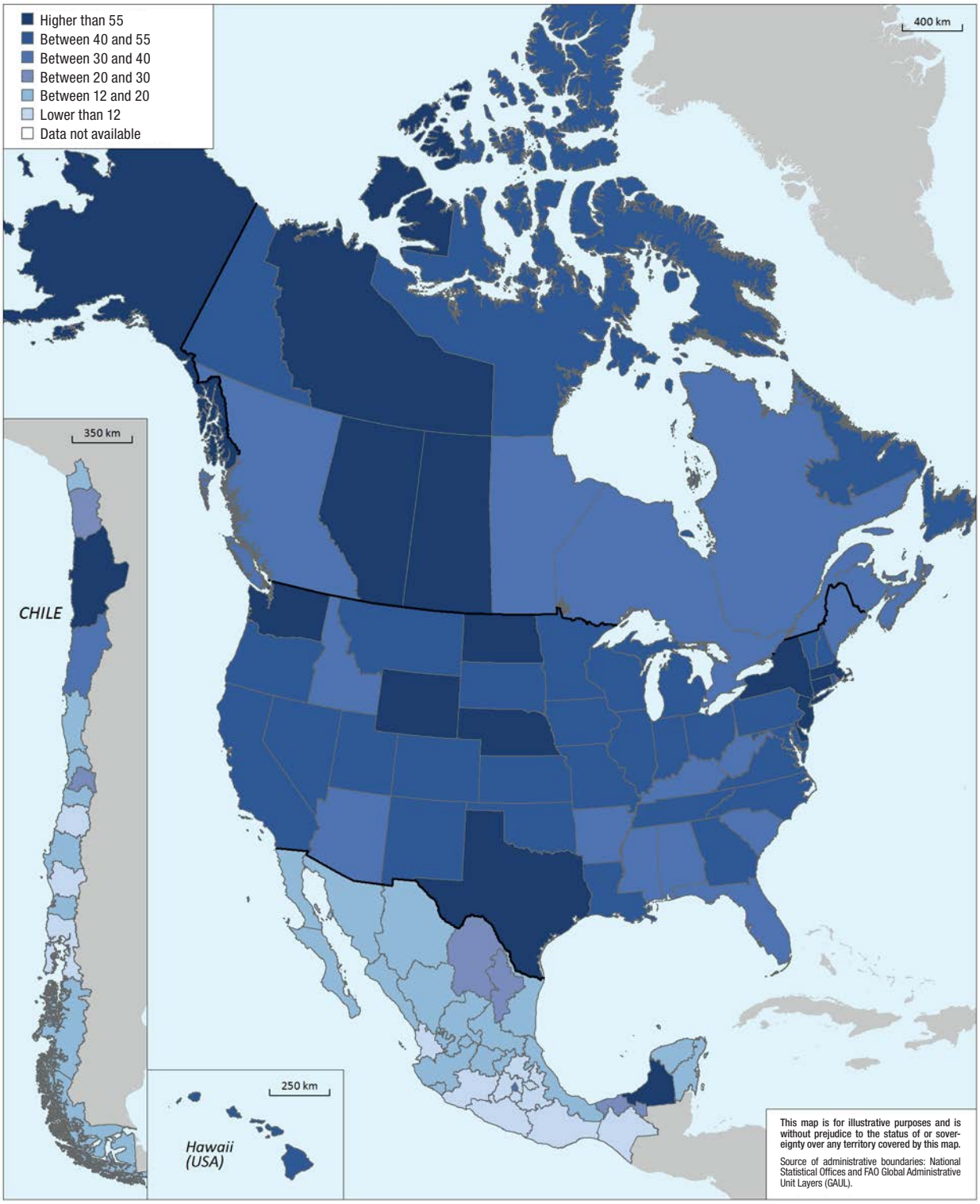
(Constant 2010 USD PPP in thousands), TL3 regions



StatLink http://dx.doi.org/10.1787/888933364166

2.22. Regional GDP per capita: Americas, 2013

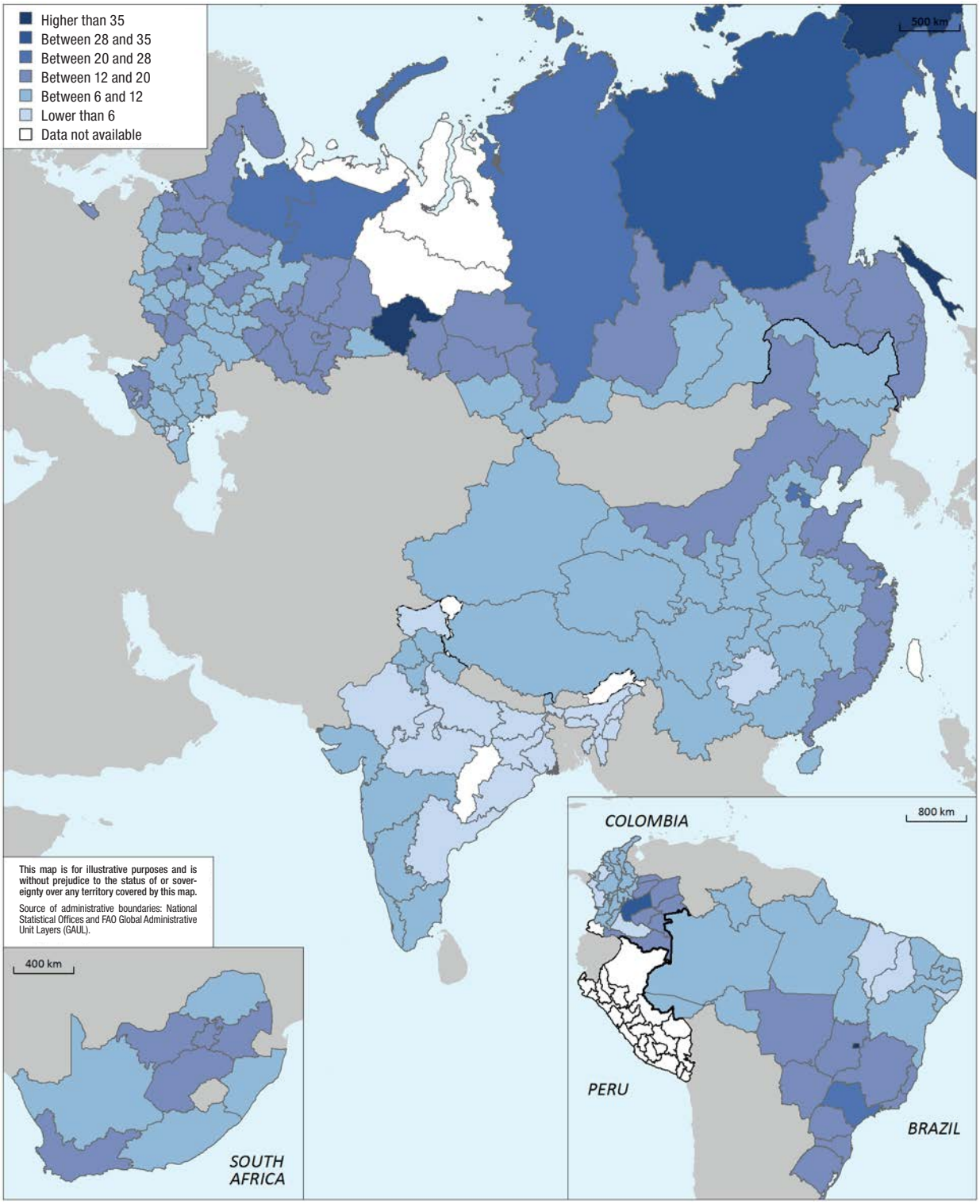
(Constant 2010 USD PPP in thousands), TL2 regions



StatLink http://dx.doi.org/10.1787/888933364179

2.23. Regional GDP per capita: Emerging economies, 2013

(Constant 2010 USD PPP in thousands), TL2 regions



StatLink http://dx.doi.org/10.1787/888933364183

Contribution of metropolitan areas to national economies

In 2013, 281 metropolitan areas, where 49% of the OECD population lived, generated 57% of gross domestic product (GDP) and 51% of employment in the OECD area (Figure 2.24).

Nationally, the concentration of GDP ranges from 71% in Japan to less than 30% in Norway. Employment and population tend to be less concentrated than GDP, with the exception of Australia and Korea (Figure 2.24).

The contribution of metropolitan areas to national GDP growth can be quite different across OECD countries. Metropolitan areas in Norway, Japan and Denmark accounted for more than 75% of the national growth in the period 2000-13. In contrast, in Switzerland and the Netherlands, metropolitan areas accounted for less than 30% of the national growth (Figure 2.25). In general terms, capital cities in countries with one metropolitan area such as in Norway, Denmark and Hungary, accounted for more than 70% of the GDP national growth (Figure 2.25).

While the overall economic performance of metropolitan areas was strong in the period 2000-13, some areas are growing fast while others are stagnant or shrinking (Figures 2.27 and 2.28). Indeed, while metropolitan areas such as Centro (Mexico) and Perth (Australia) grew at an annual average growth rate above 6% between the period 2000-12, Catania (Italy), Detroit (United States) and Rotterdam (Netherlands) experienced the larger decreases in terms of GDP over the same period (above -0.5%).

Metropolitan areas tend to be more productive than the rest of the economy. The productivity gap, measured as the difference in terms of GDP per worker between the metropolitan areas and the rest of the economy, in the OECD area was around 30% in 2013. Such a gap is higher in the Americas and in Europe than in Asia and Oceania (Figure 2.26). Overall, GDP per worker is on average higher in large metropolitan areas (with population above 1.5 million) (Figure 2.26).

Definition

281 Metropolitan areas have been identified in 30 OECD countries according to the OECD-EU methodology that identifies metropolitan areas on the basis of densely populated cities and their commuting zones (travel to work journeys) to reflect the economic geography of the population's daily commuting patterns (see Annex A for details).

The metropolitan population in a country is given by the national population residing in metropolitan areas.

Source

OECD (2015), "Metropolitan areas", *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/data-00531-en*.

Reference years and territorial level

The OECD-EU definition of functional urban areas (FUA) has not been applied to Iceland, Israel, New Zealand and Turkey. The FUA of Luxembourg does not appear in the figures since it has a population below 500 000 inhabitants.

Further information

OECD (2012), Redefining "Urban": A New Way to Measure Metropolitan Areas, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264174108-en*.

OECD (2015), *The Metropolitan Century. Understanding Urbanisation and its Consequences*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264228733-en*.

Figure notes

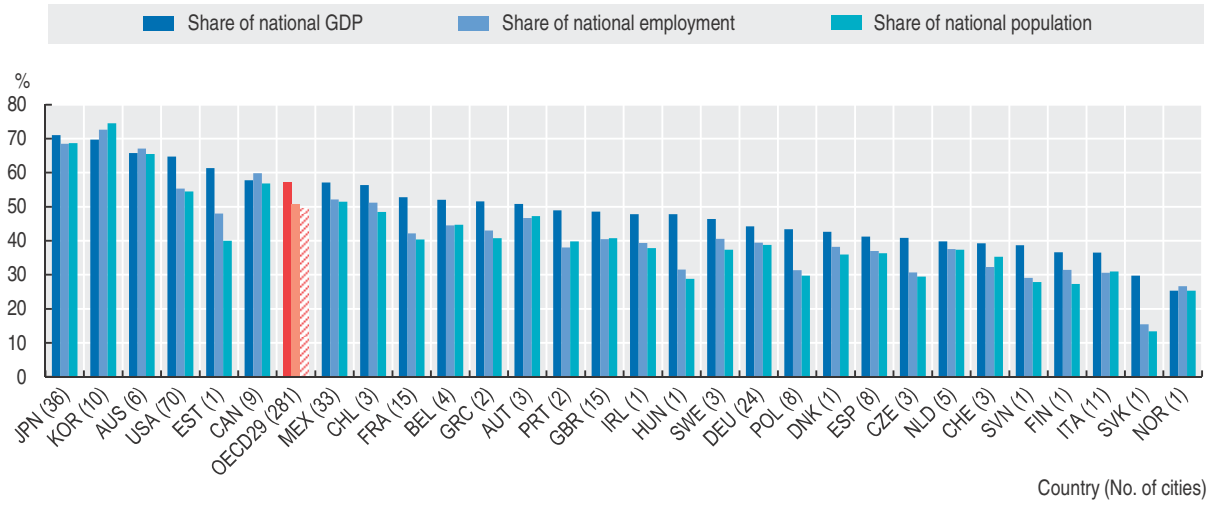
2.24 and 2.26: Last available year: Austria, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Japan, Norway, Poland, Spain, Sweden and Switzerland 2012; Slovenia 2011. Metropolitan employment figures are estimates based on employment data at TL3 level except for Chile, Mexico, Poland and Portugal were TL2 are used and NOG for Canada. Australian and the United States figures are provided by the Australian Bureau of Statistics and U.S. Bureau of Labour Statistics respectively. For all countries, metropolitan population is estimated on municipal population for the last two available Population Census.

2.25 and 2.27-2.28: Available years: Austria, Germany, Estonia, Spain, Finland, France, Hungary, Ireland, Italy, Poland, Sweden 2000-12; Switzerland and Norway 2008-12; Japan 2001-12, Mexico 2003-13 and the United States 2001-13. Italy, Greece and Portugal are excluded from the figure due to lack of data on comparable years.

2.24-2.28: Metropolitan GDP figures are estimates based on GDP data at TL3 level except for Australia, Canada, Chile and Mexico were TL2 are used. United States figures are provided by the U.S. Bureau of Economic Analysis.

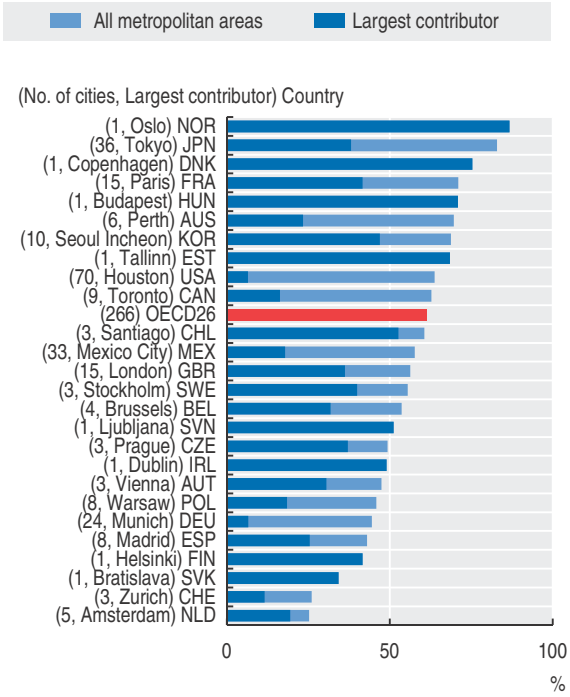
Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

2.24. Per cent of population, GDP and employment in OECD metropolitan areas, 2013



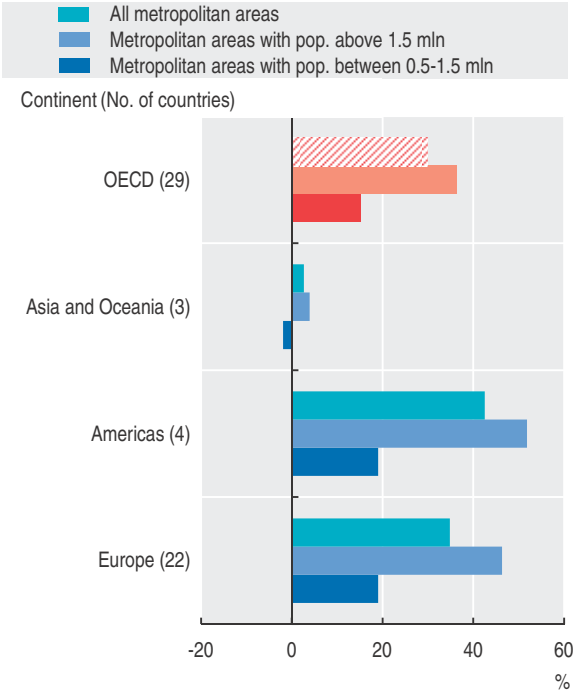
StatLink http://dx.doi.org/10.1787/888933363257

2.25. Per cent of national GDP growth contributed by the metropolitan areas 2000-13



StatLink http://dx.doi.org/10.1787/888933363261

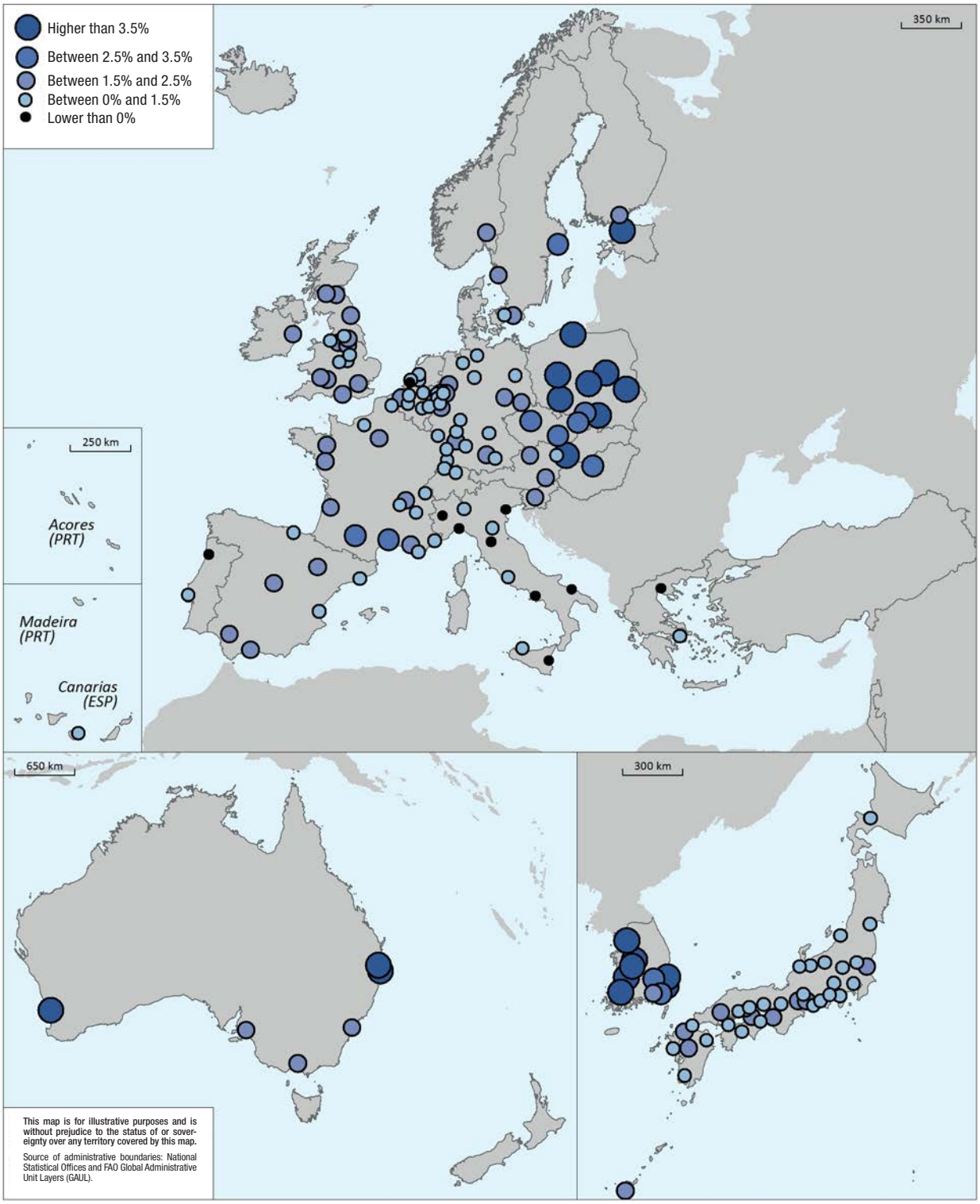
2.26. Ratio between labour productivity in metropolitan areas and the rest of the economy, 2013



StatLink http://dx.doi.org/10.1787/888933363270

2.27. Metropolitan GDP growth: Asia, Europe and Oceania, 2000-13

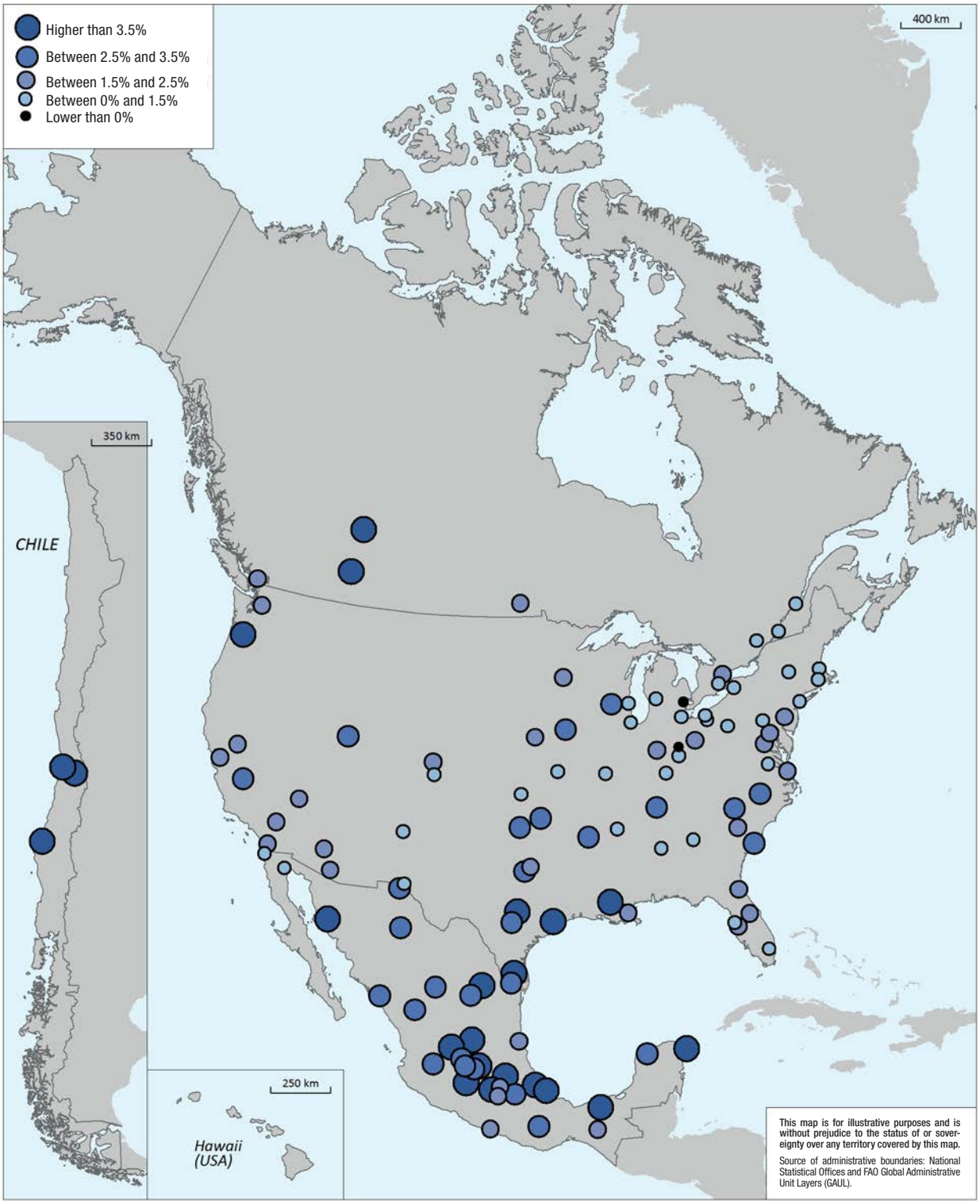
Average annual growth rate (constant 2010 USD PPP), metropolitan areas



StatLink http://dx.doi.org/10.1787/888933364190

2.28. Metropolitan GDP growth: Americas, 2000-13

Average annual growth rate (constant 2010 USD PPP), metropolitan areas



StatLink http://dx.doi.org/10.1787/888933364207

Regional contributions to change in employment

Between 2000 and 2014, differences in annual growth of employment rates across OECD countries were as large as 2.3 percentage points, ranging from -0.6% in Portugal and Greece to 1.7% in Israel (Figure 2.29).

Over the same period, differences in growth of regional employment rates across regions were above 2 percentage points in 13 out of 31 countries. The widest regional differences are found in Austria, Poland, Italy and the United States among the OECD countries, and Colombia and the Russian Federation among the emerging economies (Figure 2.29).

In 12 out of 24 countries considered, employment creation was higher in predominantly rural than in predominantly urban regions in the period 2000-14 (Figure 2.30).

Relatively few regions led national employment creation: on average, the regions accounting for 20% of OECD employment contributed to one-third of the overall employment growth in the OECD area between 2000 and 2014. The regional contribution to national employment creation was particularly pronounced in certain countries. In Poland, the Czech Republic, Estonia, Hungary and Korea, the regions accounting for 20% of employment, created 50% or more of national employment between 2000 and 2014 (Figure 2.31, panel A).

The economic crisis has slowed down the creation of employment also in the most dynamic regions in all OECD countries, with the exception of Turkey, Luxembourg, Israel and Mexico. On average in the period 2008-14, the annual employment growth rate of the regions accounting for 20% of employment was negative in eight OECD countries and lower than in the period 2000-07 in 22 countries; in Spain, for example, the regions accounting for 20% of national employment had an annual employment growth rate of 0.9% in the period 2000-07 and -0.3% in 2008-14. In Korea, the annual employment growth rate in the period 2008-14 of the top 20% regions was less than half of that in 2000-07 (Figure 2.31, panel B).

Definition

Employed persons are all persons who during the reference week worked at least one hour for pay or profit, or were temporarily absent from such work. Family workers are included.

The employment rate is defined as the ratio between total employment (measured at the place of residence) and population in the class age 15-64.

The contribution to employment growth by the top 20% regions is defined as the regional share in employment creation of the regions with highest employment growth and corresponding to 20% of the national employment.

Source

OECD (2015), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

Reference years and territorial level

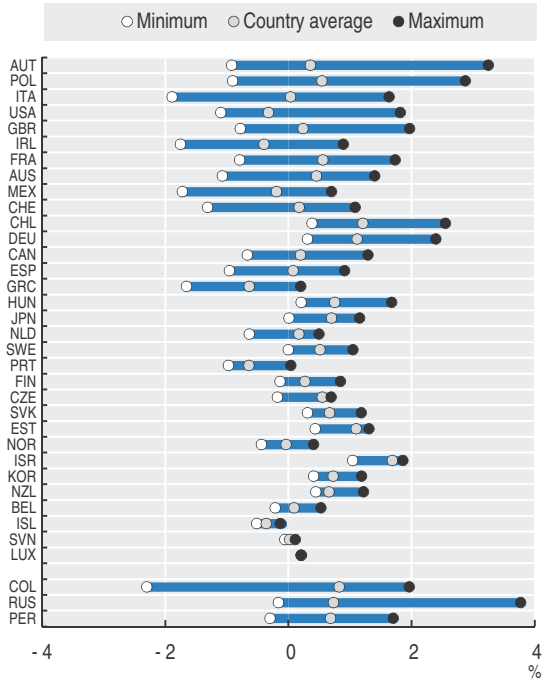
2000-14; TL3.

Figure notes

2.29-2.31: TL2 regions for Belgium, Chile, Colombia, Greece, Iceland, Israel, Mexico, Netherlands, Poland, Portugal, Peru, Russian Federation and Slovenia. Canada and Germany Non Official Grids. First available year: Australia, Canada, Colombia, Germany, Japan, Peru and Slovenia 2001. Last available year: Austria, Czech Republic, Luxembourg and Switzerland 2013; Colombia 2012. Denmark and Turkey are excluded for lack of data on comparable years.

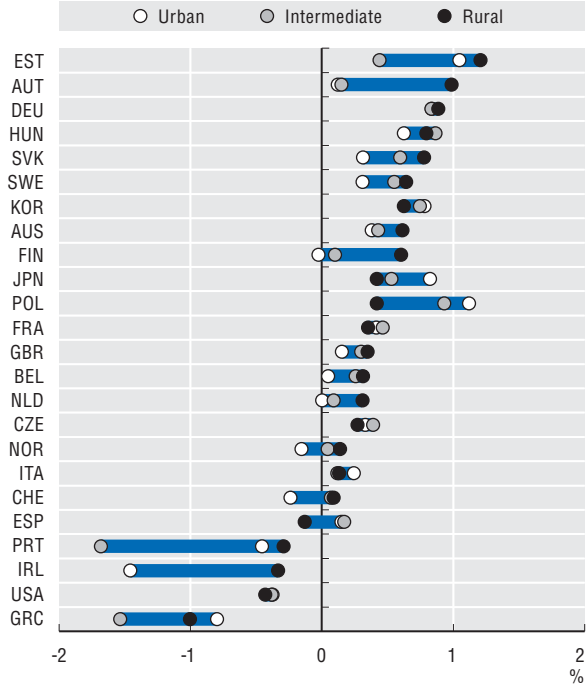
Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

2.29. Regional variation in employment annual growth rate, 2000-14



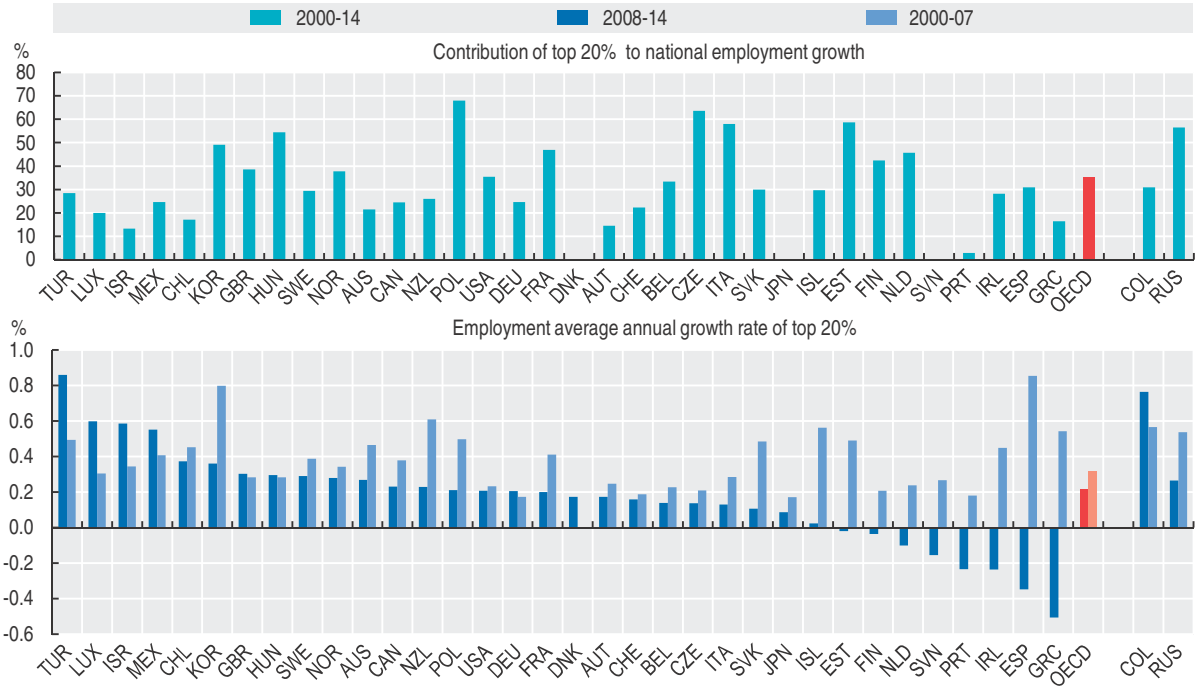
StatLink http://dx.doi.org/10.1787/888933363284

2.30. Employment average annual growth, by type of region, 2000-14



StatLink http://dx.doi.org/10.1787/888933363297

2.31. Contribution to national employment growth and annual employment growth rates by top 20% regions



StatLink http://dx.doi.org/10.1787/888933363307

Productivity growth in regions

Labour productivity growth is considered a key indicator to assess regional competitiveness and an essential driver of change in living standards. Regional living conditions are raised by continued gains in labour productivity, along with an increase in labour utilisation. In fact, only economies that manage to simultaneously sustain employment and productivity growth will increase their gross domestic product (GDP) per capita and maintain it in the long run.

Growth in regional GDP per capita is broken down into the contribution of labour productivity growth (here measured as GDP per worker) and changes in labour utilisation (measured as the ratio between employment at the place of work and population).

Among the 40 OECD regions with the highest GDP per capita growth rate during 2000-13, labour productivity growth is a major determinant compared to changes in labour utilisation (Figure 2.32). In 32 of the 40 regions, labour productivity growth accounted for 75% or more of the rise in GDP per capita.

Definition

GDP is the standard measure of the value of the production activity (goods and services) of resident producer units. Regional GDP is measured according to the definition of the System of National Accounts (SNA 2008). To make comparisons over time and across countries, it is expressed at constant prices (year 2010), using the OECD deflator and then it is converted into USD purchasing power parities (PPPs) to express each country's GDP in a common currency.

Regional labour productivity is measured as the ratio of constant GDP in 2010 prices, to total employment, where the latter is measured at place of work. This means that productivity and GDP per capita trends may diverge in regions if there is commuting on a substantial scale.

Labour utilisation is here measured as the ratio between the total employment at place of work and regional population.

In the decomposition of change in regional GDP per capita, changes in labour utilisation may partially depend on labour mobility if there is commuting on a substantial scale in the region.

Both poor performances in labour productivity and in labour utilisation are causes of the regional decline in GDP per capita (Figure 2.33). The 40 regions with the highest decline in GDP per capita rate during 2000-13 were essentially concentrated in 3 countries: Greece, Spain and Italy (Figure 2.33). In the Spanish regions (Melilla, Balearic and Canary Islands) and some of the Greek regions (Central Macedonia and Crete), the growth in labour productivity was offset by the sharp decline in labour utilisation. On the other hand, the 18 Italian regions have seen a decrease in their productivity while labour utilisation stagnated (Figure 2.33).

Differences in labour productivity growth among regions are invariably the result of multiple national and local factors, including labour market policies and institutions as well as innovation and the adoption of new technologies. As such, differences in labour productivity growth among OECD regions are larger than among OECD countries (Figures 2.34 and 2.35).

Source

OECD (2015), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

2000-13; TL2.

Denmark, Finland, Mexico, Spain, Switzerland and Turkey are not included for lack of regional data on comparable years.

Regional GDP is not available for Iceland and Israel.

Further information

OECD (2013), *Economic Policy Reforms 2013: Going for Growth*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/growth-2013-en*.

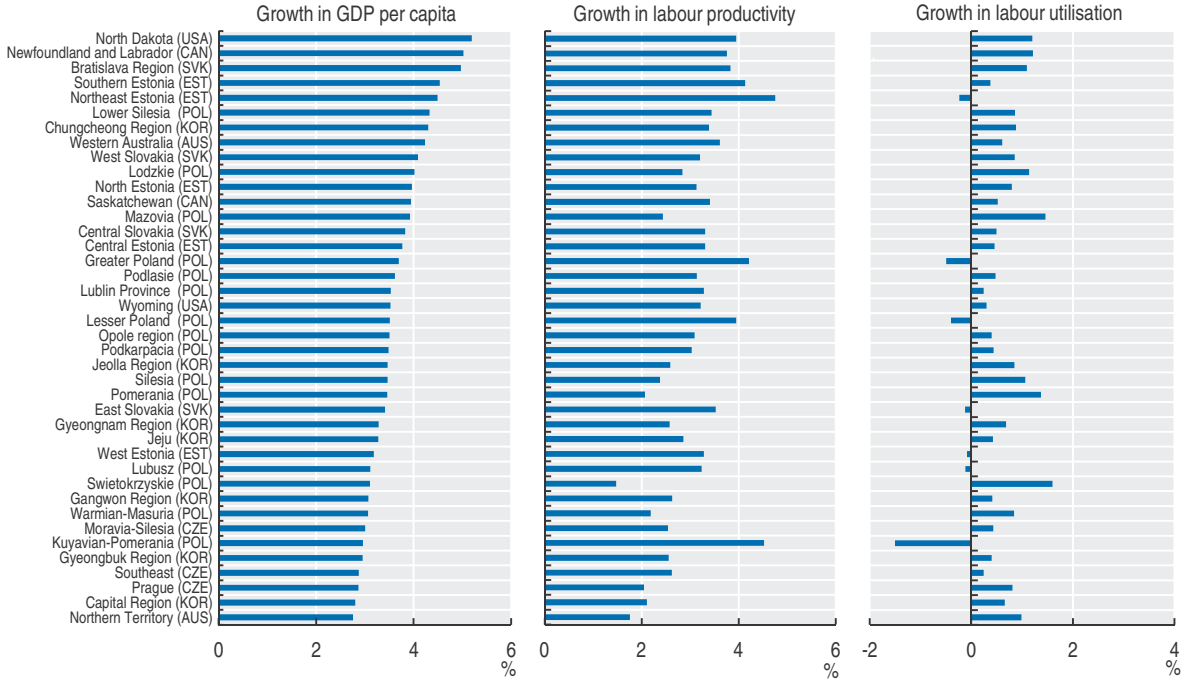
OECD (2015), *Productivity Statistics*, *www.oecd.org/std/productivity-stats/*.

Figure notes

2.32-2.34: First available year: Korea 2004.

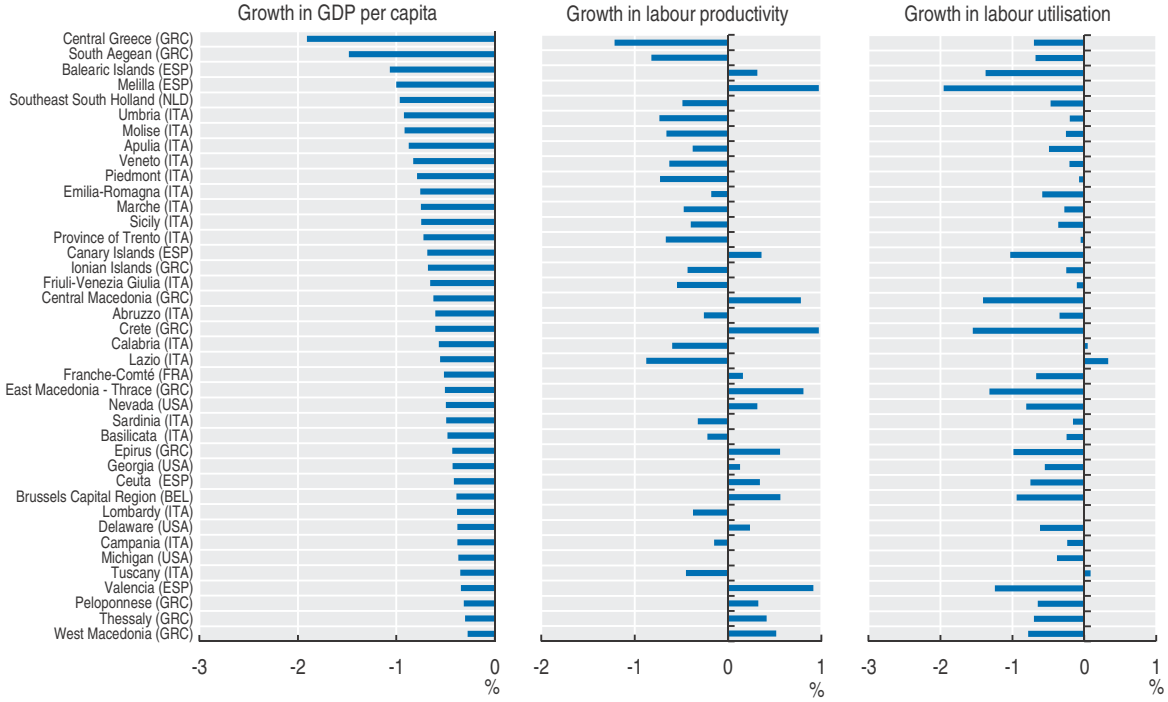
Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

2.32. Contribution of labour productivity and labour utilisation to GDP per capita: Top 40 TL2 regions, ranked by GDP per capita growth rate, 2000-13



StatLink http://dx.doi.org/10.1787/888933363314

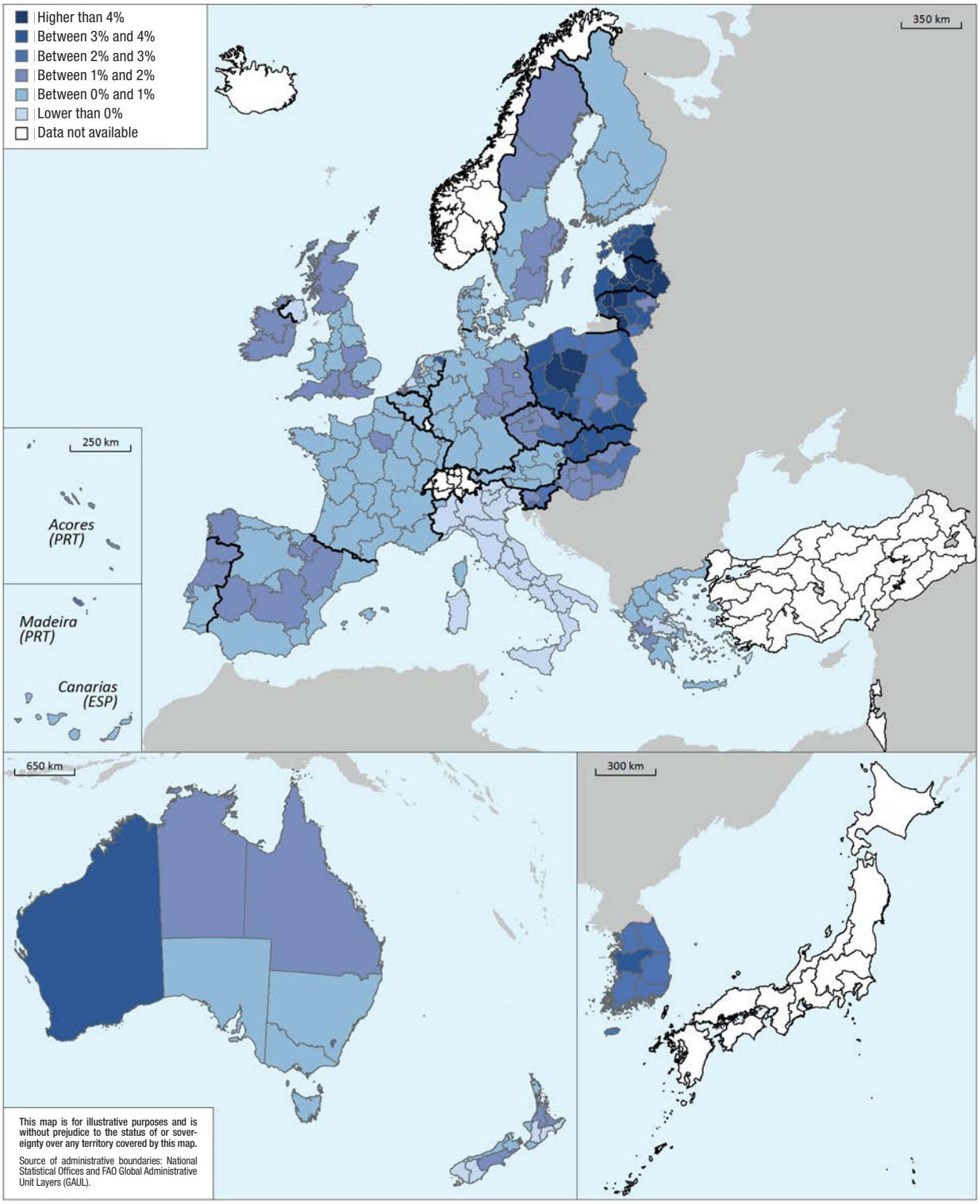
2.33. Contribution of labour productivity and labour utilisation to GDP per capita: Bottom 40 regions, ranked by GDP per capita growth rate, 2000-13



StatLink http://dx.doi.org/10.1787/888933363323

2.34. Annual growth of regional productivity: Asia, Europe and Oceania, 2000-13

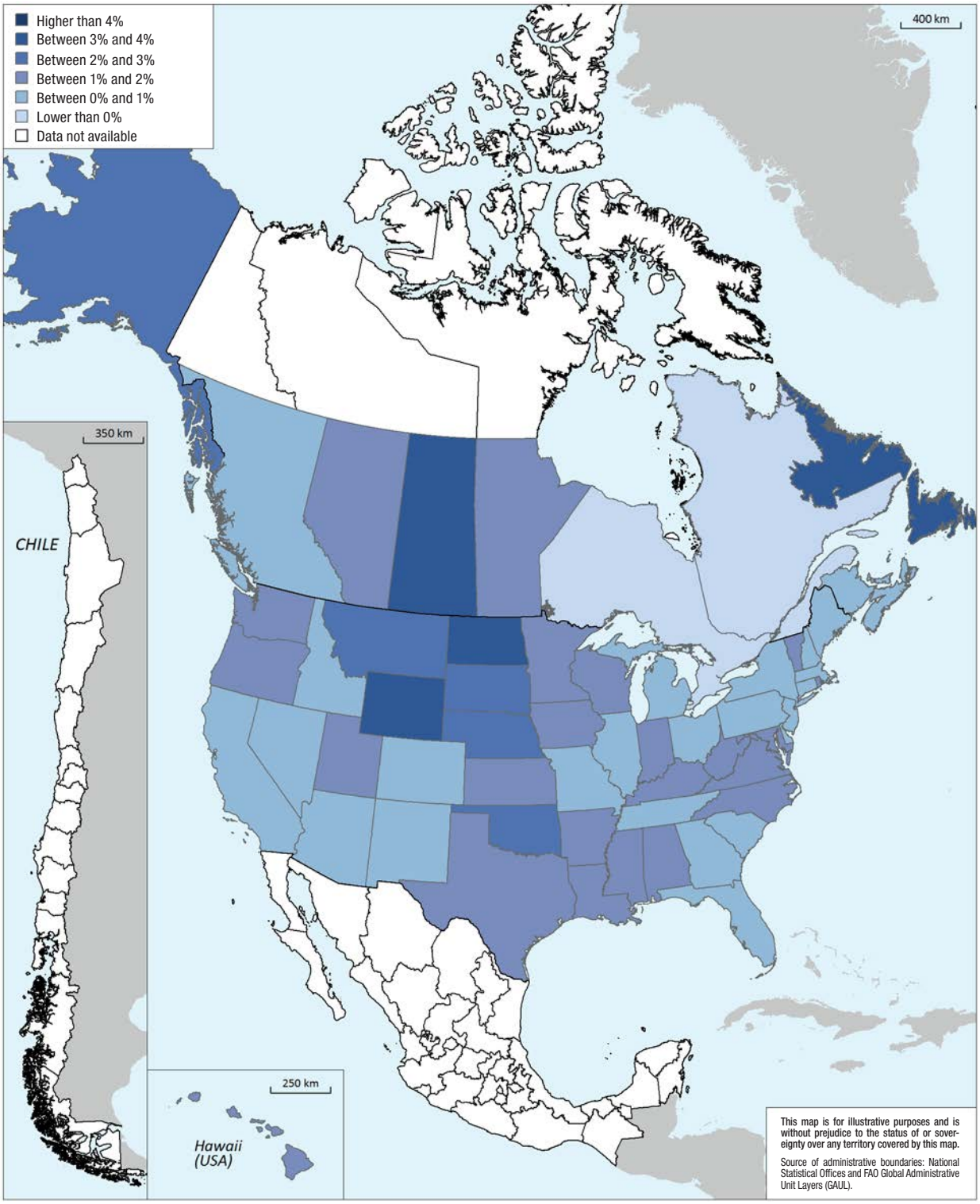
Average annual growth in regional GDP per worker (constant 2010 USD PPP), TL2 regions



StatLink http://dx.doi.org/10.1787/888933364210

2.35. Annual growth of regional productivity: Americas, 2000-13

Average annual growth in regional GDP per worker (constant 2010 USD PPP), TL2 regions



StatLink http://dx.doi.org/10.1787/888933364228

Where productivity gains are happening

Regions with the highest productivity in the country (known as 'frontier regions') play a central role in productivity growth and in the process of diffusing productivity gains within the country. A better understanding of the profiles of lagging regions and of how they can catch up is key to achieving inclusive growth. Between 1995 and 2013, the labour productivity in frontier regions increased by a yearly average of 1.6% compared to 1.3% for the lagging regions, widening the regional productivity gap by around 50%, from USD 21 000 to USD 31 000. This suggests that lagging regions benefit only partially from the growth of frontier regions. After the economic crisis of 2008, the gap stabilised, mainly due to the slowdown of productivity growth in the frontier regions (Figure 2.36).

Definition

Labour productivity is measured by GDP per employee, with the employment defined by the place of work. Regional GDP is measured according to the definition of the System of National Accounts (SNA 2008). To make comparisons over time and across countries, it is expressed at constant prices (year 2010), using the OECD deflator and then it is converted into USD purchasing power parities (PPPs) to express each country's GDP in a common currency.

Frontier and lagging regions are the top and bottom 10% of regions in GDP per employee which are defined as those with the highest/lowest GDP per employee until the equivalent of 10% of national employment is reached.

A TL2 region is considered mostly rural if less than half of its population lives in a functional urban area and mostly urban if the more than 70% of its population lives in a functional urban area.

The Malmquist index allows the decomposition of the productivity growth of a region between two effects, the frontier shift effect which is the change of regional productivity related to the gain of productivity of the frontier, and the catch-up effect which is the acceleration of the productivity of the region towards the frontier (see Annex C for details).

Frontier and lagging regions have a clear differentiation in terms of typology: regions that are mostly urban dominate the composition of the frontier with a share of 70%, whereas 60% of mostly rural regions are among the lagging regions, due in particular to the low dynamism of remote rural regions (Figure 2.37). The gap in productivity can be mainly explained by economies of agglomeration which benefit large cities. At the same time, some mostly urban regions containing large cities are lagging in productivity, like Florida (United States) and Gyeongbuk region (Korea).

When labour productivity growth is split into an effect related to the gains in the frontier regions and an effect specific to the productivity gains of the region towards its national frontier (catching-up effect), regions show a high connection between these two effects. In general, among the 20 regions with highest productivity growth, a dynamic frontier effect in the country fosters the regional catching-up (Figure 2.38). Exceptions are found in North Dakota and Wyoming (United States) or Groningen (Netherlands) where the productivity gains are mostly due to the catching-up effect.

On the other hand, among the regions with negative productivity, which are not catching-up with the rest of the country, the country-specific frontier shift effect is negative or weak; thus these regions have not benefitted from productivity gains at the frontier (Figure 2.39).

Source

OECD (2015), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

Reference years and territorial level

2.36: 1995-2013; TL2.

2.37-2.39: 2000-13; TL2.

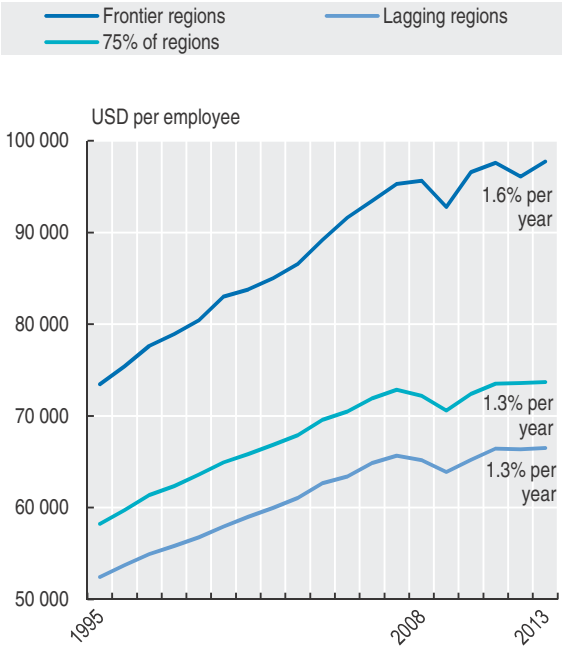
Regional GDP is not available for Iceland, Israel and Turkey.

Figure notes

2.36-2.37: Averages of frontier and lagging regions of 19 OECD countries for which regional data are available over the period. For EU countries, labour productivity data as from 1995 has been estimated by linking SNA1993 and SNA2008 data.

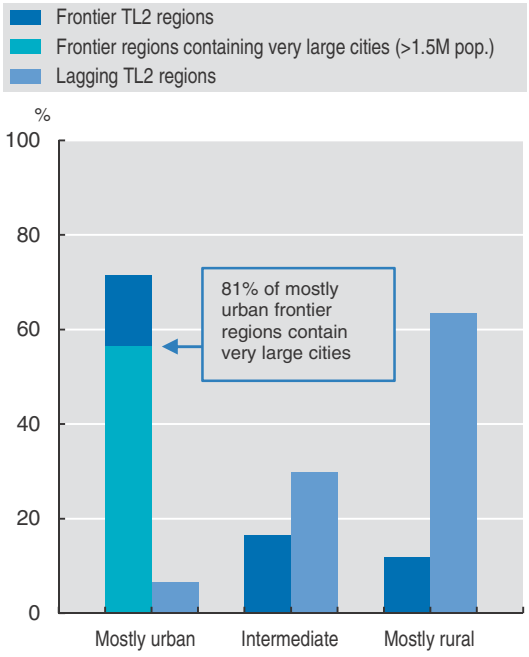
Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

2.36. Productivity growth gap between frontier and lagging regions, 1995-2013 (TL2)



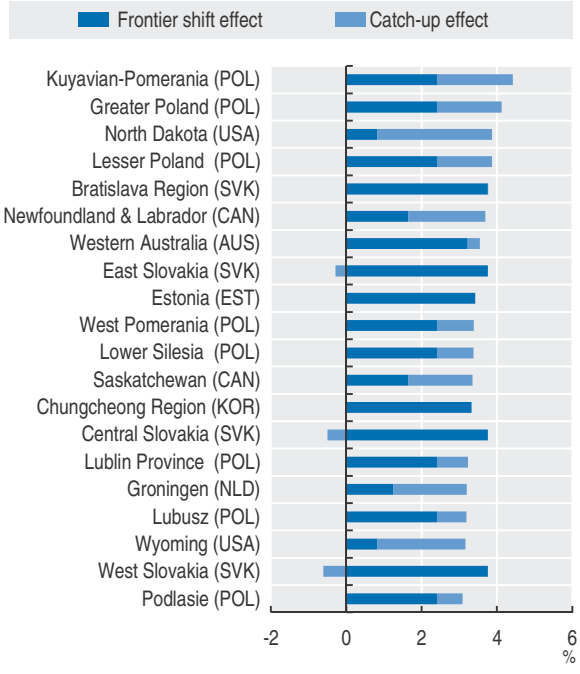
StatLink http://dx.doi.org/10.1787/888933363332

2.37. Share of regions belonging to frontier and lagging regions by typology, 2013 (TL2)



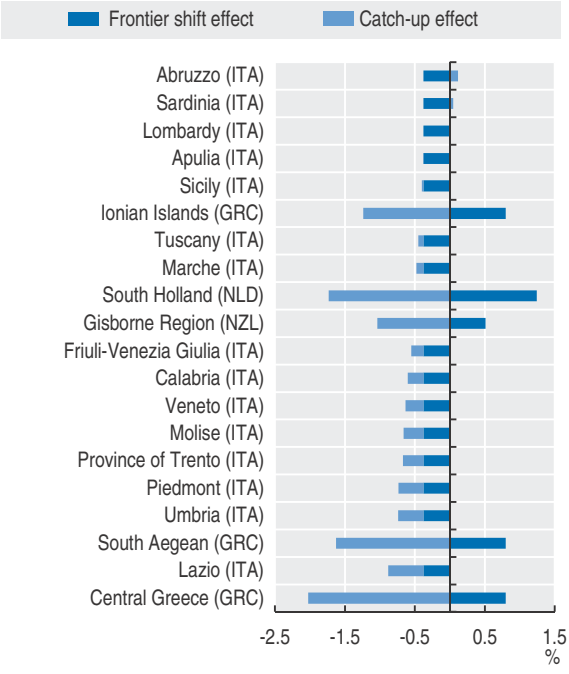
StatLink http://dx.doi.org/10.1787/888933363348

2.38. Decomposition of productivity growth between frontier shift and catch-up effect, top 20 regions, 2000-13



StatLink http://dx.doi.org/10.1787/888933363353

2.39. Decomposition of productivity growth between frontier shift and catch-up effect, bottom 20 regions, 2000-13



StatLink http://dx.doi.org/10.1787/888933363365

Regional specialisation and productivity growth

While deeply rooted in local history, geography, institutions and social capital, the production structure of regions keeps evolving over time as a result of both macroeconomic changes and economic policies at the national or subnational level.

The primary sector (agriculture, fishing and forestry) is still an important employer in many regions in Turkey, Mexico, Poland, Greece and Portugal. All these countries display a large inter-regional variation in agricultural employment, with a few regions still highly specialised in primary activities. One such highly specialised region is Northeastern Anatolia in Turkey where 60% of the labour force is employed in the primary sector (Figure 2.40). Most countries have large differences in the shares of employment in mining, manufacturing and utilities (electricity, gas and water). Seven countries in Eastern Europe – the Czech Republic, the Slovak Republic, Hungary, Slovenia, Estonia, Portugal and Poland – had markedly higher shares of employment in this sector in 2013. The region of Central Transdanubia in Hungary has a high specialisation in this industry with more than 35% of the employment, as well as the Thrace in Turkey and Central Moravia in the Czech Republic (Figure 2.40). The sector of construction shows regional "outliers" where the share of service jobs is much above the national average, like Corsica in France and Aosta Valley in Italy.

Differences in productivity changes have also been marked within countries, contributing largely to regional convergence or divergence. In the period 2000-13, productivity gains in agriculture and manufacturing were similar between lagging regions (those with GDP per capita below the national average in 2000) and advanced regions (GDP per capita above national average in 2000) (Figure 2.41). Lagging regions in Canada, Finland, Japan and the Slovak Republic performed significantly better than advanced regions in agriculture; while in Ireland and the United States the same was evident in manufacturing. The lower dynamism is apparent in the construction sector, where labour productivity decreased in 12 out of 21 countries, both in advanced and lagging regions. Only in Japan was the productivity growth in lagging regions significantly higher than in advanced regions (Figure 2.41).

Definition

Industries are defined according to the International Standard Industrial Classification (ISIC) Rev.4. Industry size is defined by the share of employment in that industry. Regional data on gross value added (GVA) and employment are available aggregated in ten sectors.

Regional productivity by sector is defined as the GVA in the sector divided by the number of employees in the sector. It is expressed in average yearly growth rates over available years.

Advanced/lagging regions are defined as those with GDP per capita in 2000 above/below national average GDP per capita.

Source

OECD (2015), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

2000-13; TL2 OECD countries.

Branch accounts are not available for Iceland and Israel.

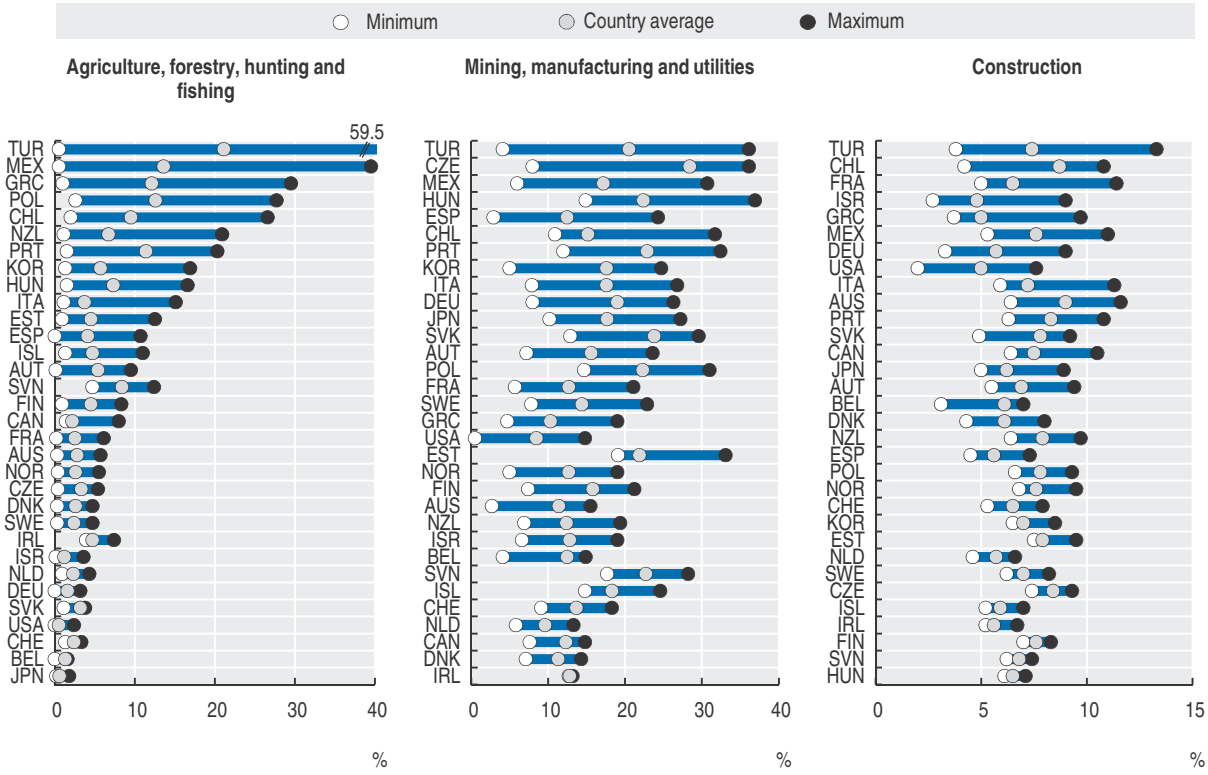
Figure notes

2.40-2.41: Last available year: Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Greece, Hungary, Ireland, Japan, Korea, New Zealand, Poland, Slovak Republic, Slovenia, Spain, Sweden, United States 2012; New Zealand and construction in Portugal 2011; Turkey, 2014.

2.41: First available year: Belgium and Japan 2009, Korea 2004, Canada 2002. Germany, Mexico, Netherlands and Norway data are not included for lack of regional data on comparable years. Turkey is excluded for lack of data on GVA by industry.

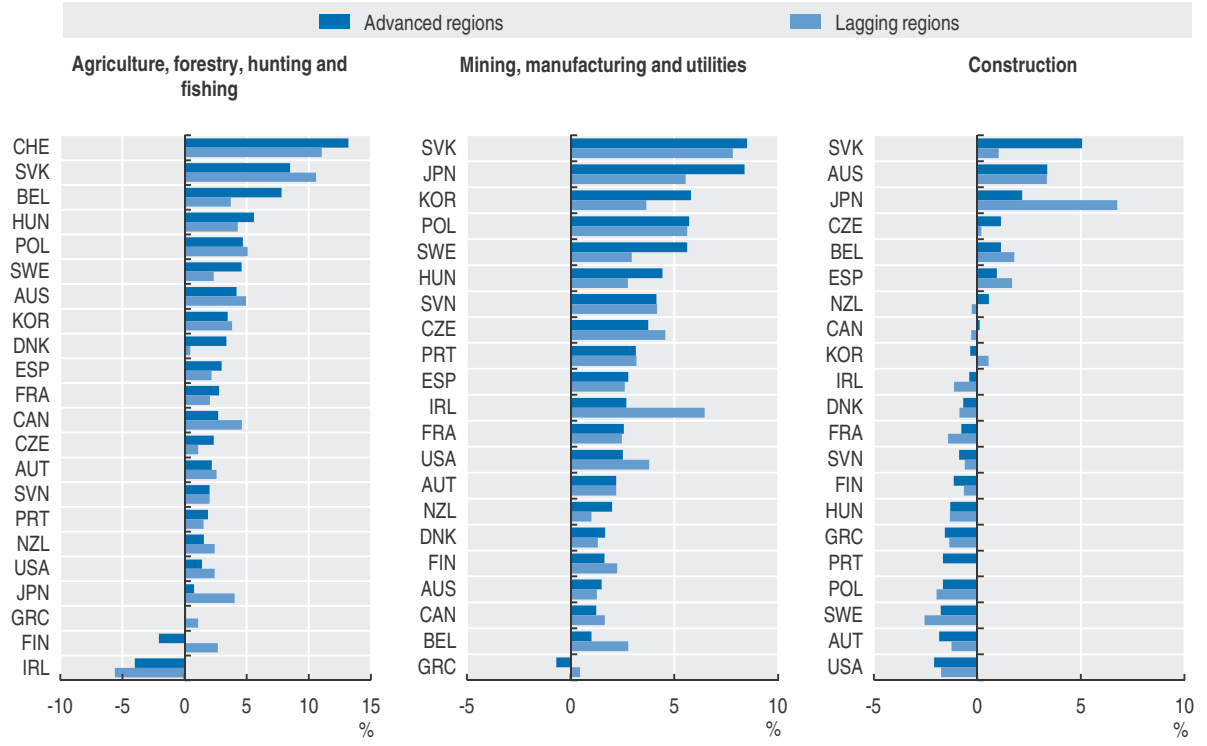
Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

2.40. Regional range of employment share (as a % of regional total employment) in selected industries, 2013 (TL2)



StatLink http://dx.doi.org/10.1787/888933363379

2.41. Annual rate of productivity growth in selected industries in 2000-13, by regional economic performance in 2000, TL2



StatLink http://dx.doi.org/10.1787/888933363381

Impact of the crisis on regional economic disparities

The evolution of the economic disparity within a country is here measured by the growth of the difference in gross domestic product (GDP) per capita between the richest 20% of regions and the poorest 20% of regions. This gap has grown in the OECD area at an average rate of 0.3% yearly in the period 2000-13 (Figure 2.42).

Regional economic disparities, however, can be very different between countries and for the periods before and after the economic crisis of 2008. Among the 27 OECD countries observed, 15 countries have grown in the inter-regional gap between richest and poorest regions for the period 2000-07, with Canada, Hungary, Mexico, the Slovak Republic and Australia having an increase of more than 1.5% per year. For the period 2008-13, this increase concerns 14 countries, with the biggest increases in inequalities located in Ireland and Australia. The crisis had a sharp effect especially in Ireland, Spain and Sweden, countries for which the inter-regional gap increased after the crisis where it was decreasing before, whereas for other countries like Mexico, Canada and Slovenia, the effect was the opposite (reduction after a growth) (Figure 2.43).

The interpretation of the evolution of the gap after 2008 depends on the evolution of the situation of poorest regions compared to richest. Japan, Germany, Canada, New Zealand and Chile had a reduction of the regional gap between 2008 and 2013 due to a better performance of the poorest regions, while in Finland, Portugal and Belgium, the reduction of the gap is due to a lower GDP per capita regression of poorest regions than richest (Figure 2.43).

The gap increased in Ireland, Spain and for six other countries due to higher recession of poorest regions compared to richest, whereas it increased in Australia, Poland, Slovak Republic and Korea due to faster growth in the richest regions (Figure 2.43).

Definition

GDP is the standard measure of the value of the production activity (goods and services) of resident producer units. Regional GDP is measured according to the definition of the System of National Accounts (SNA 2008). To make comparisons over time and across countries, it is expressed at constant prices (year 2010), using the OECD deflator and then it is converted into USD purchasing power parities (PPPs) to express each country's GDP in a common currency.

GDP per capita is calculated by dividing the GDP of a country or a region by its population.

The top and bottom 20% regions are defined as those with the highest/lowest GDP per capita until the equivalent of 20% of the national population is reached.

Source

OECD (2015), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

OECD (2015), "Deflator and purchasing power parities", *OECD National Accounts* (database), *http://dx.doi.org/10.1787/na-data-en*.

Reference years and territorial level

2.42-2.43: GDP 2000-13; TL3.

Australia, Canada, Chile, Mexico and United States only TL2. Germany non-official grids.

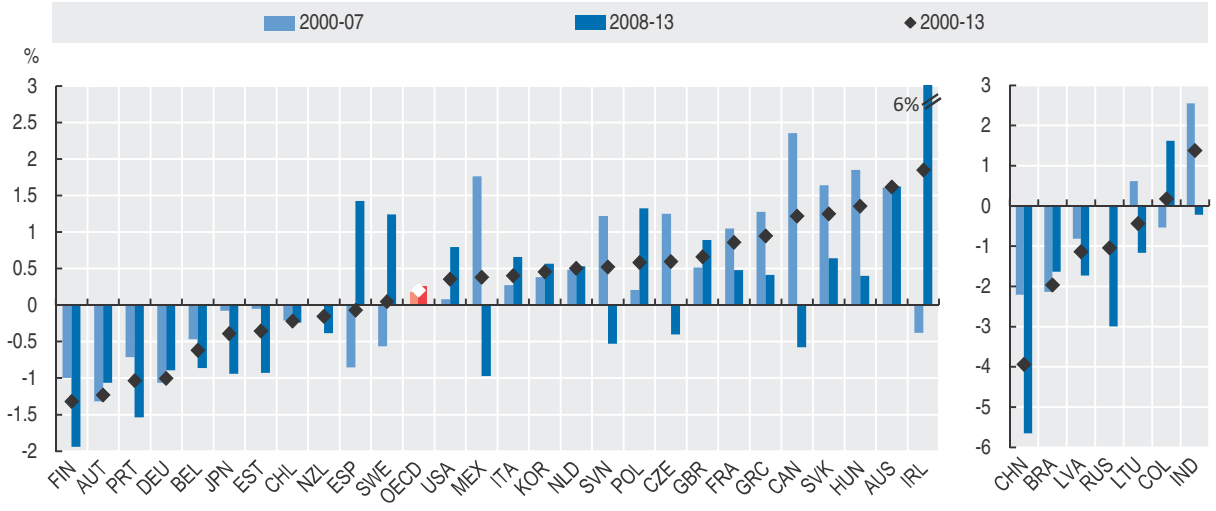
Regional GDP is not available for Iceland, Israel and Turkey.

Figure notes

2.42: Denmark, Norway and Switzerland are excluded due to lack of data for 2000-13.

Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

2.42. Average annual growth of the GDP per capita gap between the richest 20% and the poorest 20% of TL3 regions, 2000-07, 2008-13 and 2000-13



StatLink http://dx.doi.org/10.1787/888933363398

2.43. Evolution of regional disparity in GDP per capita between the richest and poorest TL3 regions,

Gap difference between 2008 and 2013 in percentage

StatLink http://dx.doi.org/10.1787/888933363403

Employment and unemployment in metropolitan areas

Metropolitan areas have contributed to 60% of employment creation across OECD countries in the past 15 years. However, the contribution to job creation varies substantially within and across countries. Metropolitan areas in Italy and Korea accounted for more than 80% of job creation between 2000 and 2014, compared to less than 30% in Switzerland and the Slovak Republic.

Since the economic crisis of 2008, jobs have recovered in many metropolitan areas; however, 2014 employment rates in metropolitan areas are still below 2007 levels in 19 out of 28 OECD countries. The largest differences are observed in Greece, Spain and Ireland where aggregated metropolitan employment rates in 2014 were on average 4 percentage points below the values of 2007. In contrast, metropolitan areas in Germany, Hungary and Estonia saw an increase of the average employment rate by at least 4 percentage points between 2007 and 2014 (Figure 2.44).

Unemployment has generally increased in OECD metropolitan areas since the crisis, from 5.5% in 2008 to 6.6% in 2014. However unemployment in metropolitan areas evolved differently from country to country over this period. While unemployment rates have increased on average by more than 10 percentage points in the metropolitan areas in Greece and Spain, metropolitan areas in Japan, Chile and Germany experienced a reduction in unemployment rates (Figure 2.45).

Definition

281 Metropolitan areas have been identified in 30 OECD countries, according to the OECD-EU methodology that identifies metropolitan areas on the basis of densely populated cities and their commuting zones (travel to work journeys) to reflect the economic geography of the population's daily commuting patterns (see Annex A for details).

Employed persons are all persons who during the reference week worked at least one hour for pay or profit, or were temporarily absent from such work.

Unemployed persons are defined as those who are without work, are available for work, and have taken active steps to find work in the last four weeks.

The unemployment rate is defined as the ratio between unemployed persons and labour force where the latter is composed of unemployed and employed persons.

The employment rate is calculated as the ratio between employment and working age population (aged 15-64 years).

Values of employment and unemployment in the metropolitan areas are estimated by adjusting the corresponding values of TL3 regions (see Annex C).

Source

OECD (2015), "Metropolitan areas", *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/data-00531-en*.

Reference years and territorial level

The functional urban areas (FUA) have not been identified in Iceland, Israel, New Zealand and Turkey. The FUA of Luxembourg does not appear in the figures since it has a population below 500 000 inhabitants.

Further information

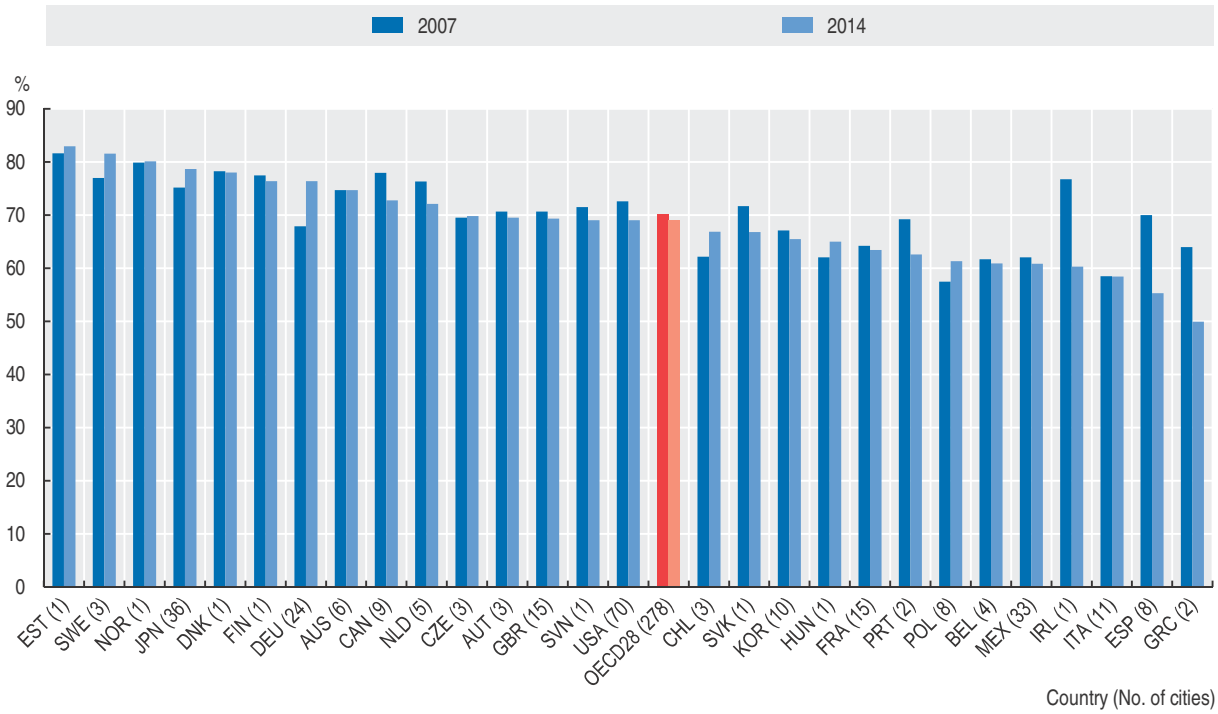
OECD (2012), *Redefining "Urban": A New Way to Measure Metropolitan Areas*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264174108-en*.

Figure notes

2.44-2.45: Values refer to the year 2014 with the exception of Australia, Austria, Czech Republic, Switzerland 2013 and Slovenia 2011. Metropolitan labour figures are estimates based on data at TL3 level except for Chile, Mexico, Poland and Portugal where TL2 are used and NOG for Canada. Figures for Australia and the United States are provided by the Australian Bureau of Statistics and U.S. Bureau of Labor Statistics respectively. Metropolitan working age population is estimated on municipal population for the last two available Population Census. Swiss metropolitan areas are not included in the figures due to lack of data on comparable years.

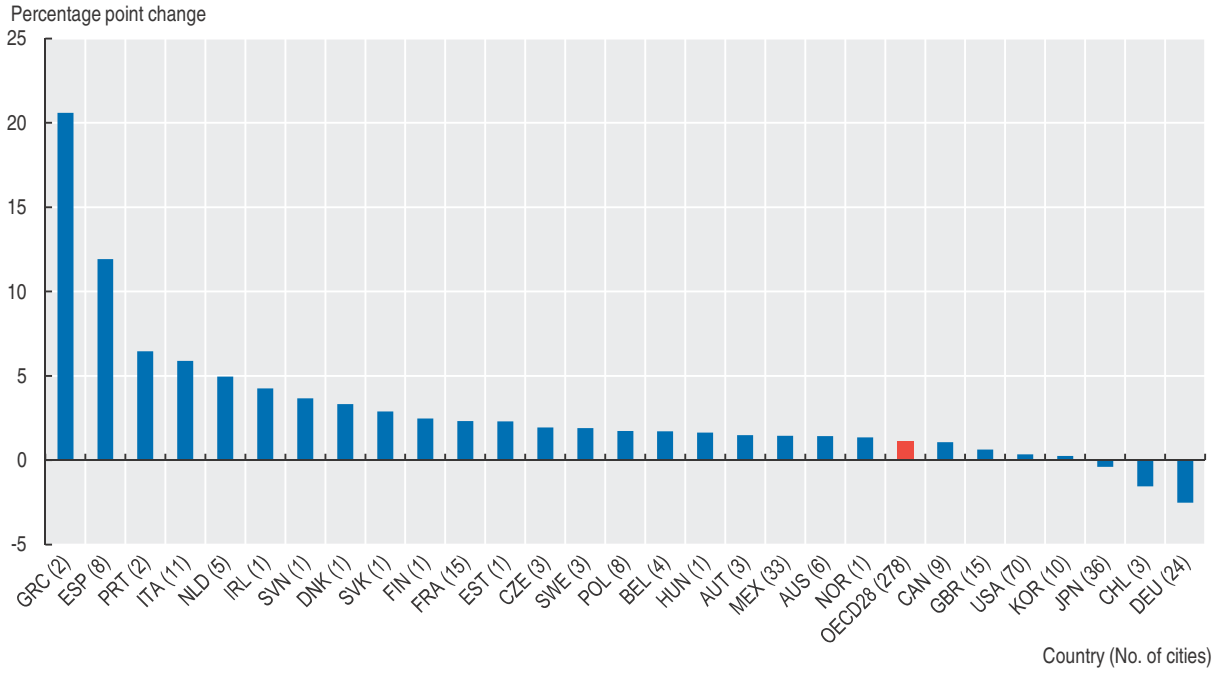
Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

2.44. Average employment rates in metropolitan areas, 2007 and 2014



StatLink http://dx.doi.org/10.1787/888933363415

2.45. Average unemployment rate change in metropolitan areas 2008-14



StatLink http://dx.doi.org/10.1787/888933363422

Regional concentration of innovation related resources

In a knowledge-based economy, many drivers of productivity are linked to innovation-related investments, such as skilled human capital or research and development (R&D). While it is expected that R&D investments or patenting activity concentrate in the most productive regions so as to maximize the return, such a concentration of innovation-related resources in just a few regions may limit the prospects for other regions to catch up if innovation does not "travel" across regions. Given this, a common goal for regional development policy is to reduce inter-regional disparities in these innovation factors by boosting performance in the lagging regions.

Certain innovation-related activities, such as patenting which represents invention, are highly concentrated in a few regions. The top 20% TL3 regions account for over 50% or more of total patenting volume in Slovenia, Japan, and France, followed by Canada, the United Kingdom and the Slovak Republic at somewhat under 50%. Between 1994-96 and 2011-13, the concentration in the top 20% has decreased in half of the countries (19 out of 28) with an increasing concentration noted particularly in Slovenia, and decreasing concentration in the Czech Republic and New Zealand (Figure 2.46).

Business Enterprise R&D expenditure (BERD) illustrates the decisions by firms regarding the location and level of R&D investments to support innovation. While the volume of BERD continued to increase in the OECD area between 2000 and 2013, the share in the top 20% TL2 regions has decreased over this period in 20 out of 24 countries (Figure 2.47). The countries with the highest share of BERD in the top 20% regions are the Slovak Republic, Switzerland, Poland, the United States, France and Hungary. Countries that experienced the largest increases in concentration in the top 20% regions include the Slovak Republic and Finland. Those with notable decreases include the Netherlands and Switzerland.

Definition

The top 20% regions are defined as those with the highest value of the indicator until the equivalent of 20% of the national population is reached. The same calculation is made for the bottom 20%.

Patent data refers to Patent Co-operation Treaty (PCT) applications. Counts are based on the address of inventors (where the invention takes place) and not the address of the applicant.

Gross domestic spending on R&D is defined as the total expenditure (current and capital) on R&D carried out by all resident companies, research institutes, university and government laboratories, etc., in a country.

R&D intensity is defined as R&D expenditure over GDP, whether for Gross Domestic Expenditure on R&D or a sector, such as Business Enterprise R&D.

Across the OECD area, the top 20% regions experienced a slight decrease in their share of BERD from 47% to 45%. The bottom 20% accounted for less than 5%, albeit with a slight increase over the period. While the pie continues to grow, the regions in the middle are taking a slightly larger share.

The concentration of gross domestic R&D expenditures in the top 20% regions has a somewhat different country pattern. The concentration of the non-business R&D component is based largely on the location of high-performing universities and public laboratories that receive mainly public funding. Between 2000 and 2013, the concentration in the top 20% regions increased in one-quarter of countries (6 out of 24) (Figure 2.48), most notably in Greece, where it more than doubled. In the remaining 18 countries, the share in the top 20% regions declined, such as from 54% to 29% in Austria, from 58% to 33% in the Czech Republic and from 47% to 27% in Slovenia.

Source

OECD (2015), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

OECD (2015), *OECD Patent Databases* (database), *http://oecd.org/sti/inno/oecdpatentdatabases.htm*.

Reference years and territorial level

2.46: 1994-2013; TL3.

2.47: Business R&D 2000-13; TL2.

2.48: Total R&D 2000-13; TL2.

Further information

OECD (2015), *Frascati Manual 2015: Guidelines for Collecting and Reporting Data on Research and Experimental Development*, The Measurement of Scientific, Technological and Innovation Activities, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264239012-en*.

OECD (2011), *Regions and Innovation Policy*, OECD Reviews of Regional Innovation, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264097803-en*.

Figure notes

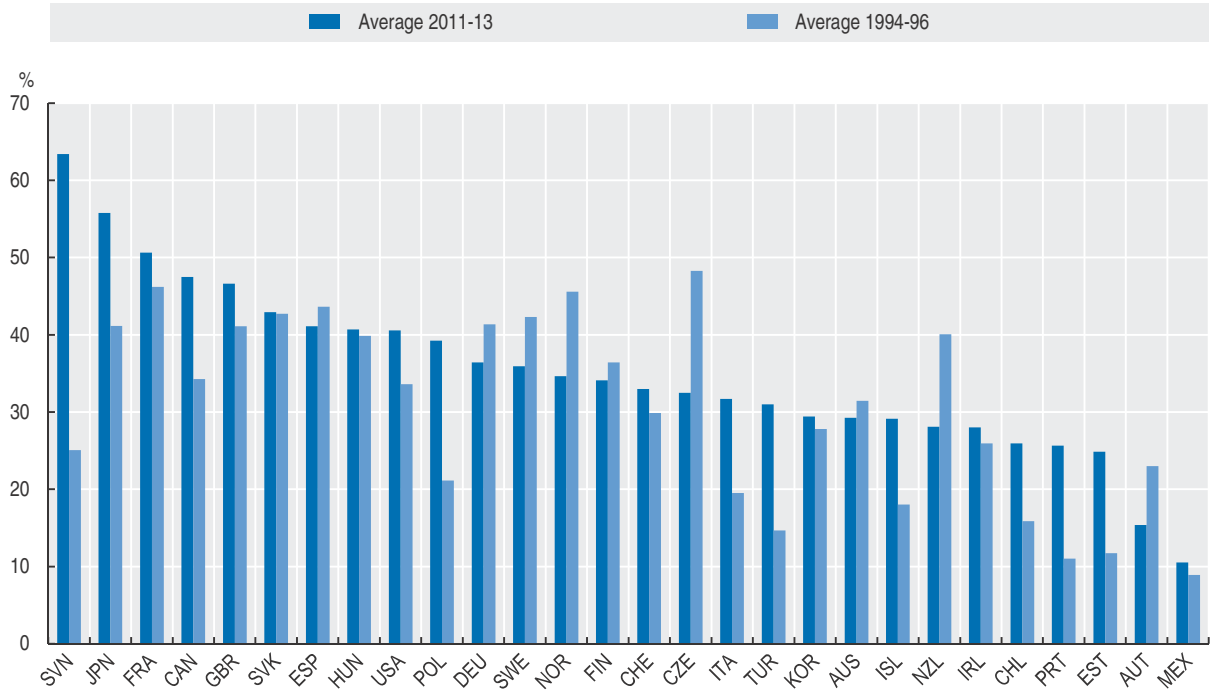
Estonia and Luxembourg are excluded from all figures as both consist of only one TL2 region.

2.46: Belgium, Denmark, Greece, Israel and the Netherlands are not included due to lack of data for comparable years.

2.47-2.48: Chile, Denmark, Iceland, Israel, Japan (included for Total R&D), Mexico, Norway, Switzerland (included for Business R&D) and Turkey are not included due to lack of data and or comparable years. For Business R&D, 231 regions and for Total R&D 229 regions with comparable data were available to calculate OECD-wide top and bottom 20%. Last available year: Greece, Japan, Netherlands, Norway and Switzerland 2011.

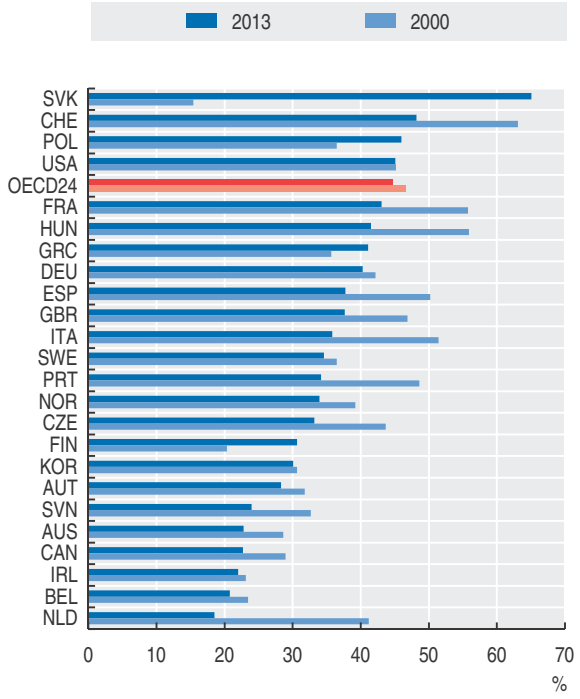
Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

2.46. Concentration of patents in the top 20% of TL3 regions, 1994-96 and 2011-13



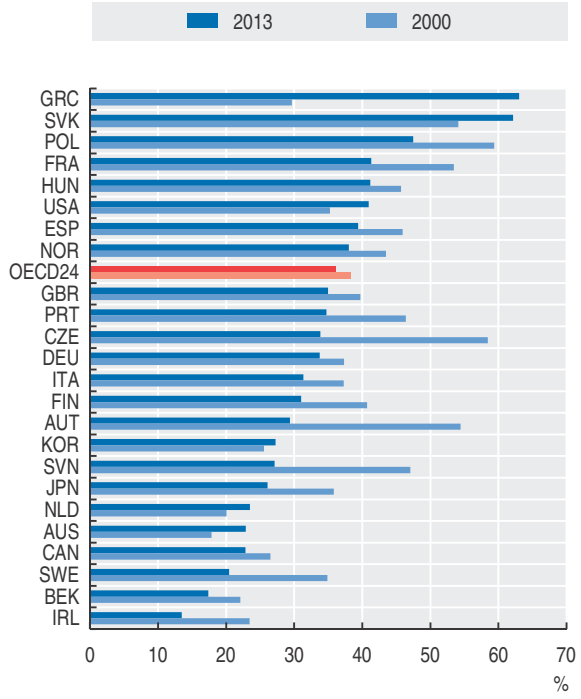
StatLink http://dx.doi.org/10.1787/888933363434

2.47. Concentration of business R&D expenditure in the top 20% of TL2 regions, 2000 and 2013



StatLink http://dx.doi.org/10.1787/888933363447

2.48. Concentration of total R&D expenditure in the top 20% of TL2 regions, 2000 and 2013



StatLink http://dx.doi.org/10.1787/888933363450

Regions and venture capital

Entrepreneurship is an important driver of job creation, competitiveness and economic growth. Countries are therefore increasingly implementing policies to attract venture capital (VC) and business angels at the regional level (OECD, 2011). To attract VC into regions with few VC firms and low levels of investment by non-local VC firms, public policies generally attempt to create a favourable environment for entrepreneurship. This focus can help to remove obstacles for a nascent start-up market, including outside established industry clusters, and facilitate the attraction of VC investments.

Evidence suggests that the allocation of VC is geographically concentrated and plays a primary role in fostering entrepreneurial communities. For example, in the United States, a strong concentration of VC in the top 20% regions has increased from 51% in 1995 to 76% in 2014, largely driven by the dominance of a few metropolitan areas with outstanding performance (Figure 2.49). Many of these same metro areas are found in states with a high rate of business R&D intensity (business R&D share in gross domestic product [GDP]).

Regional concentration of VC investment is striking in most countries (Figure 2.50). The top region in 3 of the 6 countries (United States, France and Canada) was host to almost half (between 48% and 49%) of all VC invested in the respective country in 2014. Such top regions in countries distance themselves from other regions in capturing national VC funds. Germany stands out for having a more balanced pattern of VC investment across regions.

The intensity of regional VC expressed as the share of regional GDP also highlights large regional disparities. Overall, the top regions in Spain, the United States and Germany show a greater VC intensity than in other countries such as France, the United Kingdom and Canada (Figure 2.51). Generally, the shares of VC are between 0.01% and 0.5% of GDP, while in the top regions of Spain, the United States and Germany, those shares constitute 1.3% (Extremadura), 1.2% (California) and 0.8% (Berlin) respectively. In some cases though, the data can give a misleading VC financing picture. Those high regional shares are not always driven by a vibrant entrepreneurial ecosystem. In the case of Extremadura (Spain) or Prince Edward Island (Canada), the top region in 2014 in their respective countries, this is likely due to an unusual volume of investment in a given year combined with a relatively low volume of regional GDP.

Definition

The top 20% regions are defined as those with the highest value of the indicator until the equivalent of 20% of the national population is reached.

Venture Capital: Private capital provided by specialised firms acting as intermediaries between primary sources of finance (insurance, pension funds, banks, etc.) and private start-up and high-growth companies whose shares are not freely traded on any stock market.

Business Expenditure on R&D (BERD), are R&D expenditures performed in the business sector that include both publicly and privately funded R&D. BERD intensity is expressed as the share of BERD in GDP.

Sources

Venture Capital in cities: National Venture Capital Association (NVCA), Business R&D expenditures: OECD (2015), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

Venture Capital in regions: United States: Pricewaterhouse Coopers/National Venture Capital Association MoneyTree™ Report, Data: Thomson Reuters, Canada: Canadian Venture Capital and Private Equity Association, Spain: *Asociación Española de Entidades de Capital Riesgo*, Germany: *Bundesverband Deutscher Kapitalbeteiligungsgesellschaften*, United Kingdom: British Private Equity and Venture Capital Association, France: *Association Française des investisseurs pour la croissance*.

Reference years and territorial level

2.49: Metropolitan areas in the map are defined according to the U.S. Office of Budget and Management definition of Metropolitan Statistical Areas.

2.50-2.51: TL2 level. All venture capital data refers to 2014 and Business R&D to 2011.

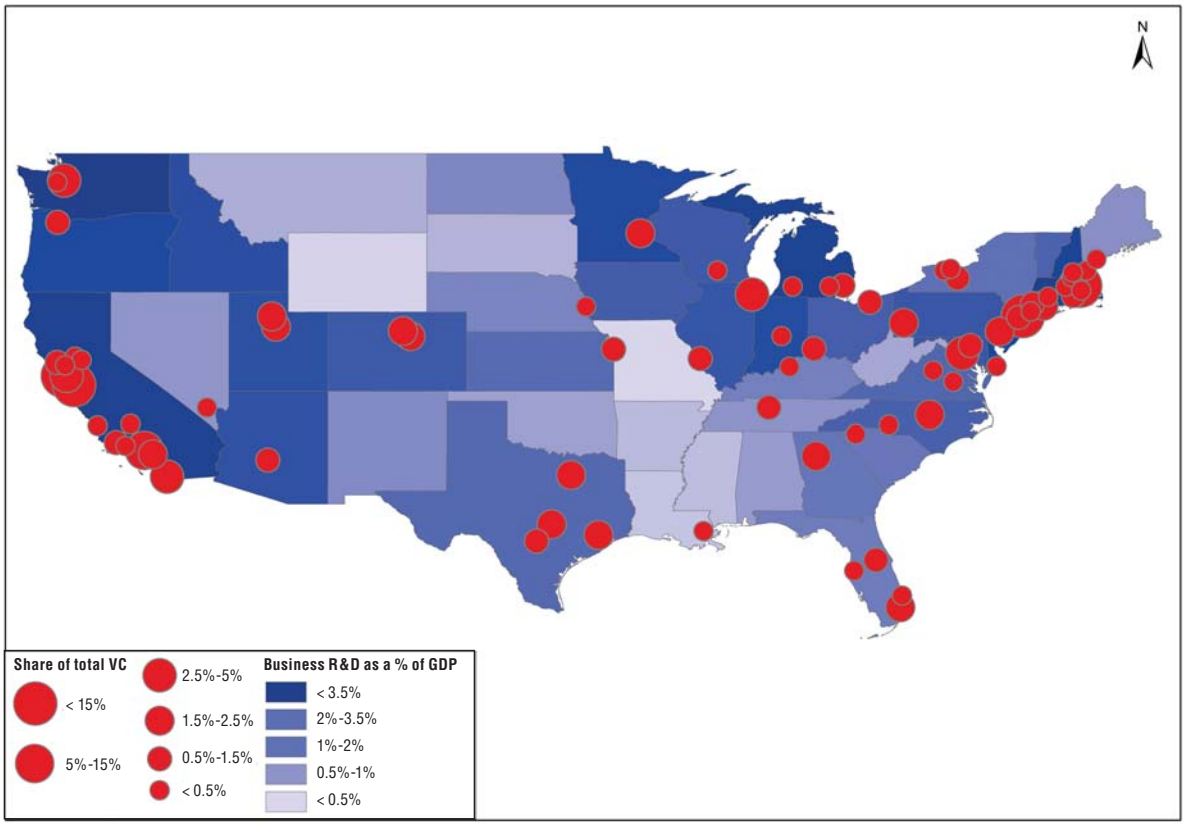
Further information

OECD (2015), *OECD Science, Technology and Industry Scoreboard 2015: Innovation for growth and society*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/sti_scoreboard-2015-en*.

OECD (2014), *Entrepreneurship at a Glance 2014*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/entrepreneur_aag-2014-en*.

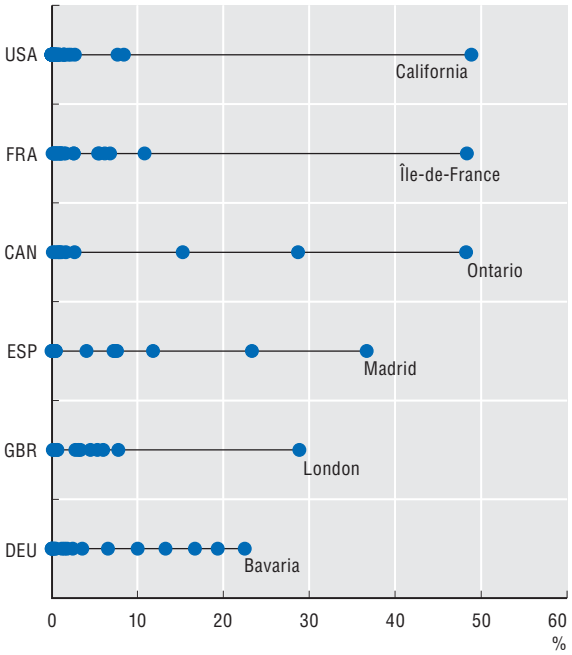
OECD (2011), *Financing High-Growth Firms: The Role of Angel Investors*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264118782-en*.

2.49. BERD intensity by state (2011) and concentration of venture capital in metropolitan areas (2014) in the United States



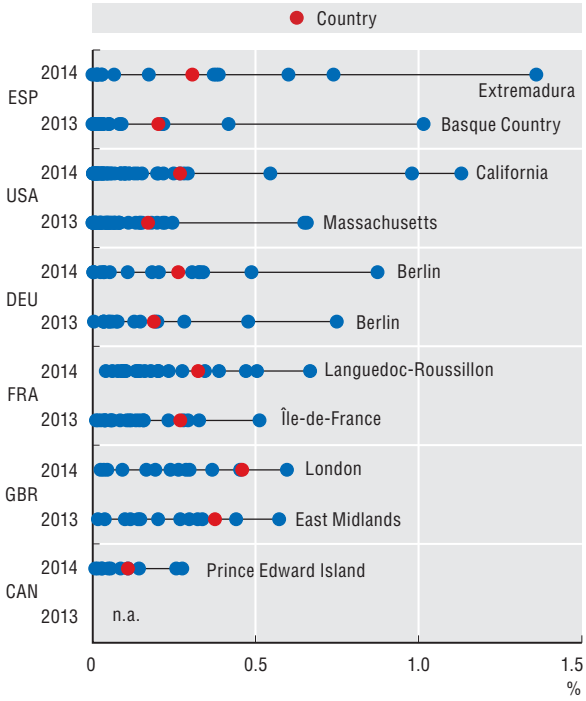
StatLink http://dx.doi.org/10.1787/888933363461

2.50. Regional range in the share of total venture capital investments, 2014 (TL2)



StatLink http://dx.doi.org/10.1787/888933363471

2.51. Regional range in venture capital as share of regional GDP, 2014 (TL2)



StatLink http://dx.doi.org/10.1787/888933363482

Regional differences in highly-skilled workers

The quality of human capital is central to increasing productivity, as the ability to generate and make use of innovation depends on, among other factors, the capacity and skill level of the labour force. The proportion of the labour force with tertiary education is a common proxy for a region's capacity to produce and absorb innovation.

Across OECD countries, large differences in the tertiary educational attainment of the labour force existed in 2014, ranging from 18% in Italy to 45% in Israel. At the same time, large disparities among regions within the same country can also be observed. The United States, Australia, Spain, Turkey, the Czech Republic and Japan show the largest regional disparities with gaps between the top and bottom regions of 25 percentage points or more. Among the top regions across the OECD are many country capitals. The Australian Capital Territory (Australia) is the OECD region with the highest share of tertiary-educated workers (64.6%), followed by the District of Columbia (United States), Greater London (United Kingdom) and Tokyo (Japan) (Figure 2.52).

Between 2000 and 2013 in all countries, both the top 20% and bottom 20% of regions experienced a growth in the share of their labour force with tertiary education (Figure 2.53). The average annual growth rates are relatively high in the majority of countries. Furthermore, in 22 out of 27 countries, the share in the bottom 20% regions grew faster, reducing the gap in tertiary-educated workers between the top and bottom 20% regions. Those countries with the highest increase of tertiary-educated workers in the top 20% regions were Italy, Poland, Slovenia and Portugal, with average annual growth ranging between 5% and 7.7%. Poland, Portugal, Slovenia and Austria also experienced the highest average annual growth in the bottom 20%, with 7.1% per annum in Poland, followed by Portugal (6.6%) and Slovenia (5.4%) and Austria (5.4%).

In contrast, the inter-regional gaps in terms of R&D personnel do not show the same convergence trend as for tertiary-educated workers. Between 2000 and 2013, the gap between the top and bottom 20% regions for the rate of R&D personnel per 1 000 employees increased in 12 out of 19 countries. Those countries experienced higher growth rates in the share of R&D personnel in the top 20% regions. An even more worrying trend is that the bottom 20% regions actually showed declining values, not merely lower growth rates, in many countries (Figure 2.54). Where gaps are narrowing, the bottom 20% regions are increasing R&D personnel in the labour force at a faster rate. In the case of Ireland, Belgium, and the Slovak Republic, the leading regions are decreasing their share of R&D personnel at a faster pace than the bottom 20%. The drop in R&D personnel in the top 20% regions in Finland is likely due in part to the downsizing of the firm Nokia.

Definition

The labour force with advanced educational qualifications is defined as the labour force aged 15 and over that has completed tertiary educational programmes. Tertiary education includes both university qualifications and advanced professional programmes (ISCED 5 and 6).

R&D personnel includes all persons employed directly in R&D activities, such as researchers and those providing direct services such as R&D managers, administrators and clerical staff. Data are expressed in headcounts per 1 000 employees.

The top 20% regions are defined as those with the highest value of the indicator until the equivalent of 20% of the national population is reached.

Source

OECD (2015), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

Reference years and territorial level

All figures refer to TL2 level. Year range: 2.52: 2014, 2.53: 2000-14, 2.54: 2000-13.

Further information

OECD (2015), *Education at a Glance 2015: OECD Indicators*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/eag-2015-en*.

Figure notes

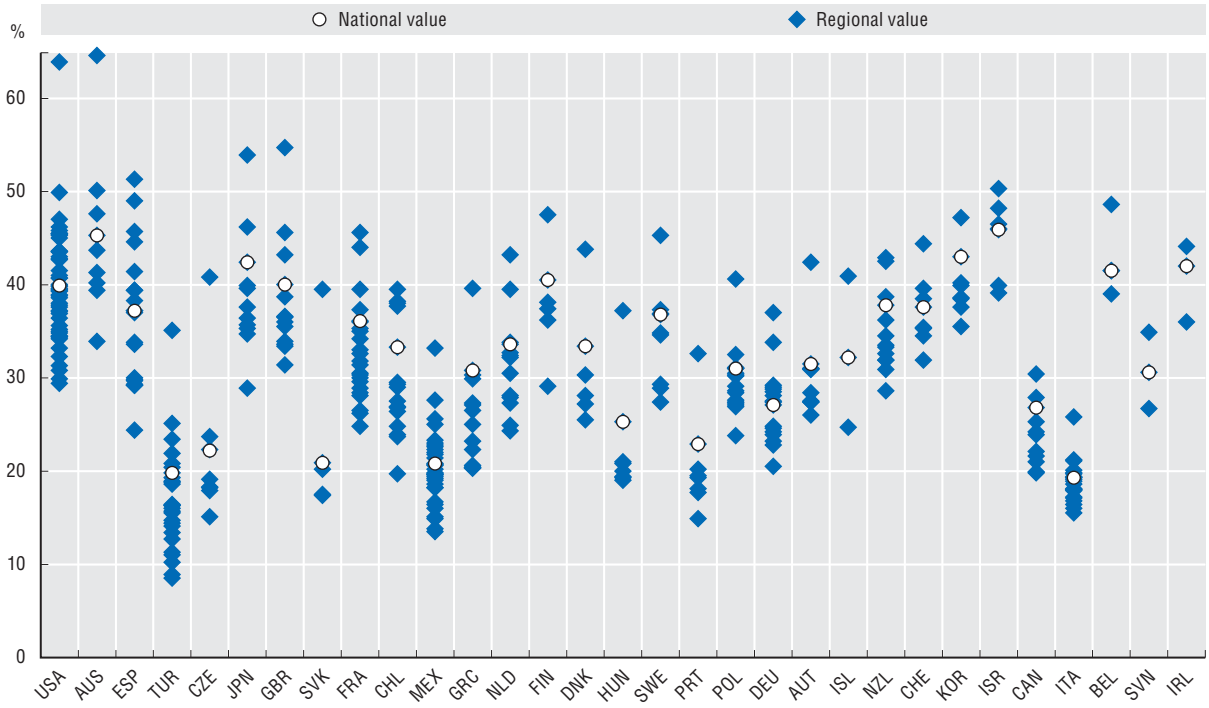
Estonia and Luxembourg are excluded in all figures as both consist of only one defined TL2 region.

2.52: Norway is excluded due to lack of data and/or comparable years.

2.53: Australia, Chile, Denmark, Greece and Turkey are excluded due to lack of data and/or comparable years.

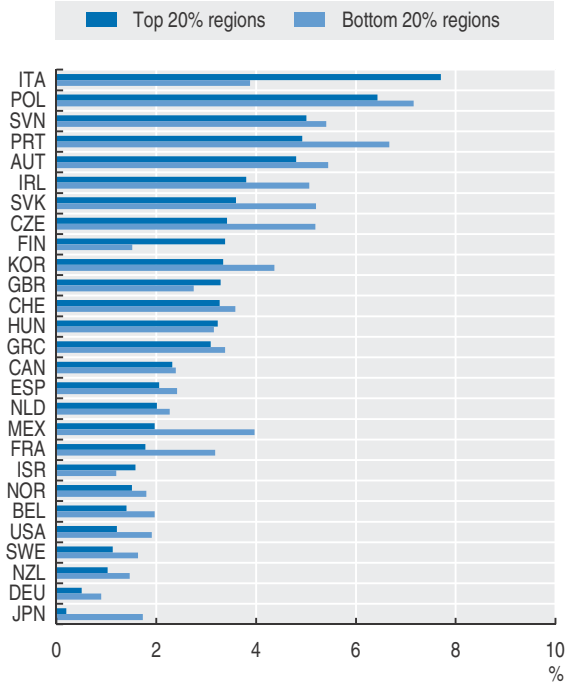
2.54: Australia, Chile, Denmark, Estonia, France, Iceland, Israel, Japan, Luxembourg, Mexico, New Zealand, Switzerland, Turkey, United Kingdom and United States are excluded due to lack of data and/or comparable years.

2.52. Regional range of labour force with tertiary educational attainment in TL2 regions, 2014



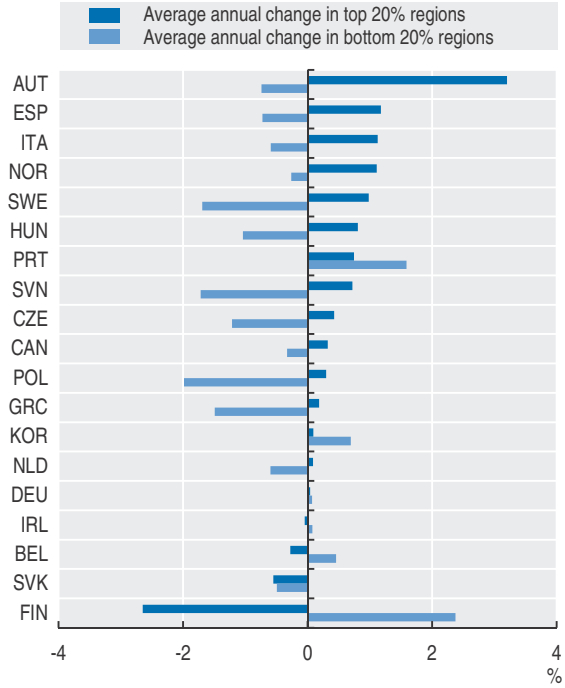
StatLink http://dx.doi.org/10.1787/888933363498

2.53. Average annual change in the share of the labour force with tertiary education in the top and bottom 20% regions, 2000-14



StatLink http://dx.doi.org/10.1787/888933363509

2.54. Average annual change in the share of R&D personnel in the top and bottom 20% regions, 2000-13



StatLink http://dx.doi.org/10.1787/888933363511

Regional patterns of co-patenting

The percentage of regional patent applications with co-inventors from another region, whether or not they belong to the same country, is an indicator of co-operation activity between the two regions.

More than 70% of patents in OECD countries are applied for by two or more inventors. The share of co-patenting in the total Patent Cooperation Treaty (PCT) applications can be high for patenting leader countries (such as the United States and Germany), small economies (such as Iceland and Latvia) and emerging economies (such as India). For most of the countries, the share of patents with co-inventors increased over the last 15 years, and most significantly in Estonia, Iceland, Portugal and Greece; while it decreased in Japan and Luxembourg (Figure 2.55).

The propensity to co-patent with co-inventors from the same TL3 region (average 50%) is higher than with co-inventors from other regions in the same country (average 29%) and from foreign regions (average 21%). Slovenia, Turkey, Japan and Chile show the highest propensity to co-patent within the same region. Japan, Korea, Turkey, and the United States co-patent domestically and show the lowest propensity to co-patent beyond national borders. By contrast, Estonia, Greece, Mexico and Chile – which have a low level of patenting in general – seem more oriented toward international co-operation (Figure 2.56).

Among the 40 regions with the highest number of patent applications, different patterns of collaboration emerge. Top patenting regions such as the region of Flanders (Belgium) and Ontario (Canada) display a high share of collaboration and are relatively more connected with other foreign hubs. The top ranking regions in Asian countries show a lower propensity to collaborate in patenting in general and with foreign regions, exceptions being Shanghai and Beijing. States in the United States show a relatively low share of international collaboration – given their already large pool of domestic co-patenting partners – although it has increased since 1995-97 (Figure 2.57).

Definition

A patent is an exclusive right granted for an invention, which is a product or a process with industrial applicability that provides, in general, a new way of doing something or offers a new technical solution to a problem ("inventive step"). A patent provides protection for the invention to the owner of the patent. The protection is granted for a limited period, generally 20 years.

Data refer to overall patent applications to Patent Co-operation Treaty (PCT) applications.

Patent documents report the inventors (where the invention takes place), as well as the applicants (owners), along with their addresses and country of residence. Patent counts are based on the inventor's region of residence and fractional counts. If two or more inventors are registered on the patent document, the patent is classified as a co-patent.

The number of foreign co-inventors is defined as the number of co-inventors that reside/work in a region outside national borders.

Source

OECD (2015), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data, source and country-related metadata.

Reference years and territorial level

2010-12 average.

TL3 regions, TL2 regions for Brazil, China, India and South Africa.

Further information

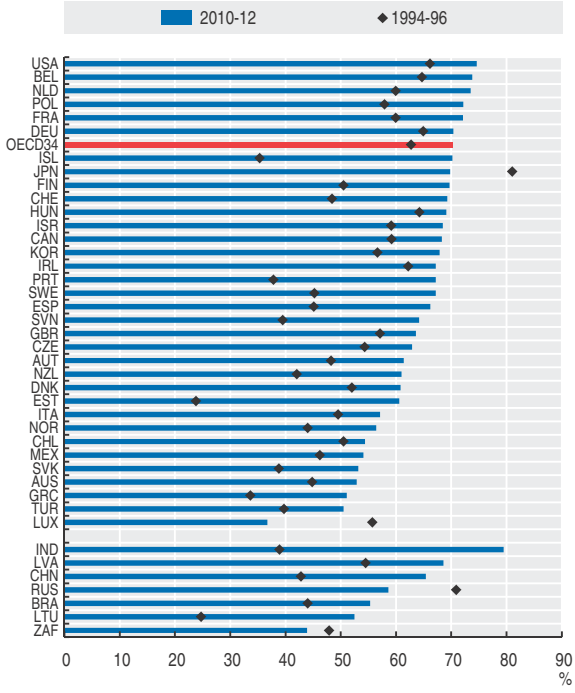
OECD (2009), *OECD Patent Statistics Manual*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264056442-en*.

Figure notes

2.57: TL2 regions; 2010-12 average increase or decrease compared to 1995-97 average. The x- and y- axes are centred to the median among regions.

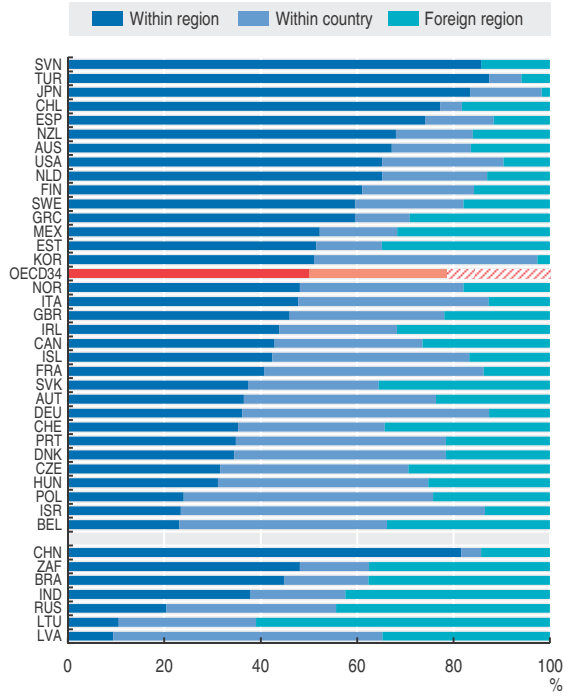
Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

2.55. Patent applications with co-inventors as a % of patents, average 2010-12 and 1994-96



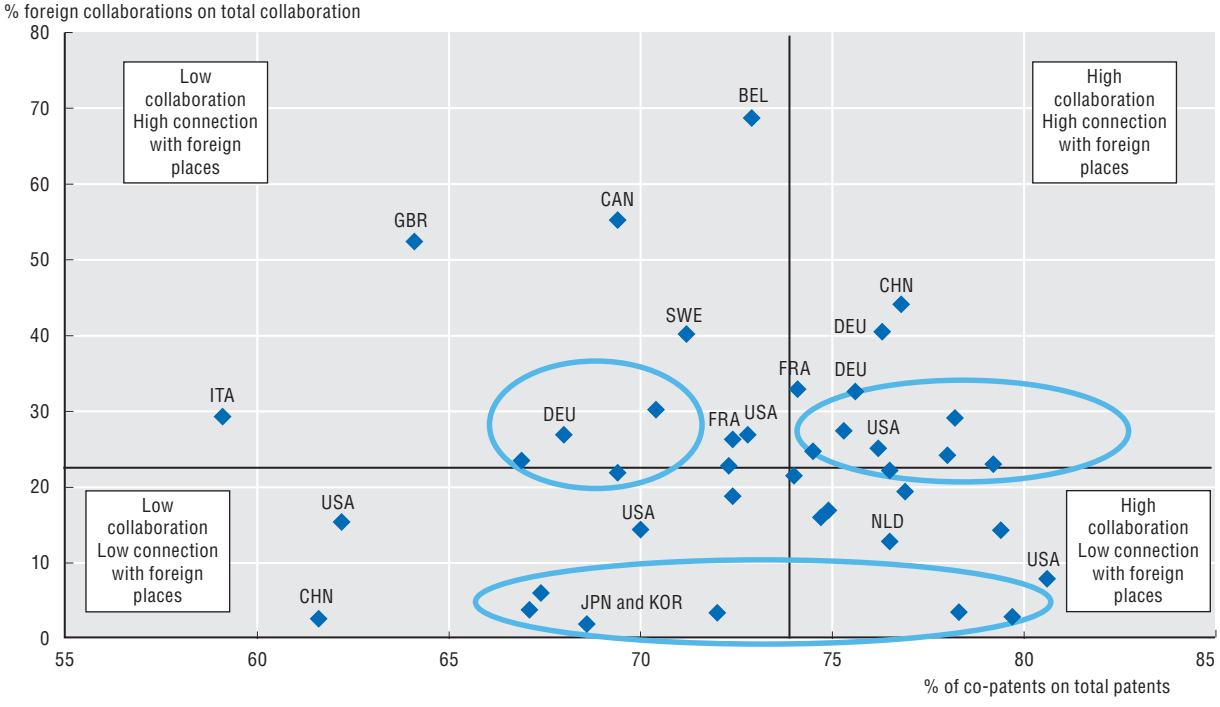
StatLink http://dx.doi.org/10.1787/888933363521

2.56. Share of co-patents by location of partners, TL3 regions, average 2010-12



StatLink http://dx.doi.org/10.1787/888933363536

2.57. Per cent of co-patents (X axis) and foreign collaborations (Y axis) in the top 40 regions with the highest patent applications, 2010-12



StatLink http://dx.doi.org/10.1787/888933363549

Patent activity in metropolitan areas

Metropolitan areas are the places where most inventions take place. In 2011-13, 70% of all patent applications were granted in metropolitan areas for the 19 OECD countries where such data are available. The concentration of patent applications in metropolitan areas is above 70% both in countries with a high level of patenting activity, such as Japan and United States, and in countries with low level of patenting activity, Australia, Chile and Mexico. In Norway and Italy, on the other hand, metropolitan areas account for less than 40% of the country's total patents (Figure 2.58).

In 2011-13, patent intensity (i.e. the number of patents per million inhabitants) in metropolitan areas was around 200, a value more than double that of the rest of the OECD economy (for the 19 OECD countries with data) (Figure 2.59). Eindhoven (Netherlands), Shizuoka (Japan), San Francisco and San Diego (United States) are among the metropolitan areas with the highest patent intensity per million inhabitants (above 1 000).

Metropolitan areas specialise in the Information and Communications Technology (ICT) sector. In 2013, 41% of patents granted in the 236 OECD metropolitan areas with data were in the ICT sector. This was followed by health care (15%), environment (9%), biotechnology (6%) and nanotechnology (1%). Metropolitan areas in Estonia, Finland and Sweden are among the most specialised in ICT patents. Metropolitan areas in Denmark and the Netherlands display the largest share of patents in the health sector compared with other countries, while metropolitan areas in Chile, Mexico and Germany show higher shares in the environmental sector than metropolitan areas in other countries (Figure 2.60).

Definition

281 Metropolitan areas have been identified in 30 OECD countries according to the OECD-EU methodology that identifies metropolitan areas on the basis of densely populated cities and their commuting zones (travel to work journeys) to reflect the economic geography of the population's daily commuting patterns (see Annex A for details).

A patent is an exclusive right granted for an invention, which is a product or a process with industrial applicability that provides, in general, a new way of doing something, or offers a new technical solution to a problem ("inventive step"). A patent provides protection for the invention to the owner of the patent. The protection is granted for a limited period, generally 20 years.

Data refer overall to patent applications made under the Patent Co-operation Treaty (PCT).

Patent documents report the inventors (where the invention takes place), as well as the applicants (owners), along with their addresses and country of residence. Patent counts are based on the inventor's region of residence and fractional counts.

The patent intensity is the ratio between the number of patent applications and the metropolitan area's population.

Patents are allocated to different fields (ICT, health, climate change mitigation, biotechnology or nanotechnology) on the basis of their International Patent Classification (IPC) codes.

Source

OECD (2015), "Metropolitan areas", *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/data-00531-en*.

OECD (2015), *OECD Patent Statistics* (database), *http://dx.doi.org/10.1787/patent-data-en*.

Reference years and territorial level

The functional urban areas (FUA) have not been identified in Iceland, Israel, New Zealand and Turkey. The FUA of Luxembourg does not appear in the figures since it has a population below 500 000 inhabitants.

Data on patent activity in metropolitan areas are available only for 19 OECD countries containing 236 metropolitan areas.

Further information

OECD (2012), *Redefining "Urban": A New Way to Measure Metropolitan Areas*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264174108-en*.

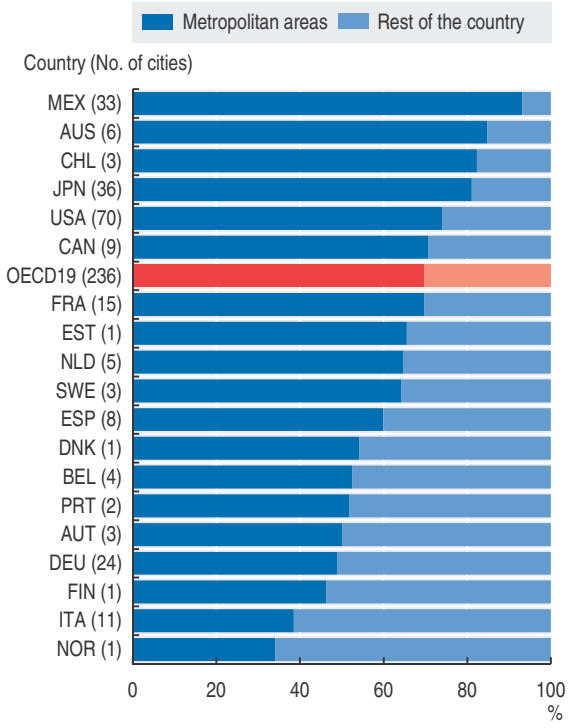
OECD (2015), *OECD Science, Technology and Industry Scoreboard 2015: Innovation for growth and society*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/sti_scoreboard-2015-en*.

Figure notes

2.58-2.60: Figures refer to three-year average 2011-13.

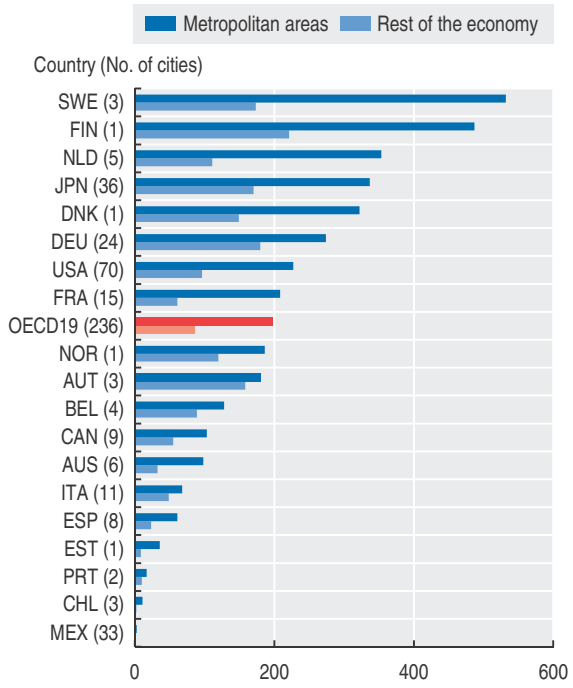
Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

2.58. Per cent of patent applications in metropolitan areas and the rest of the country, average 2011-13



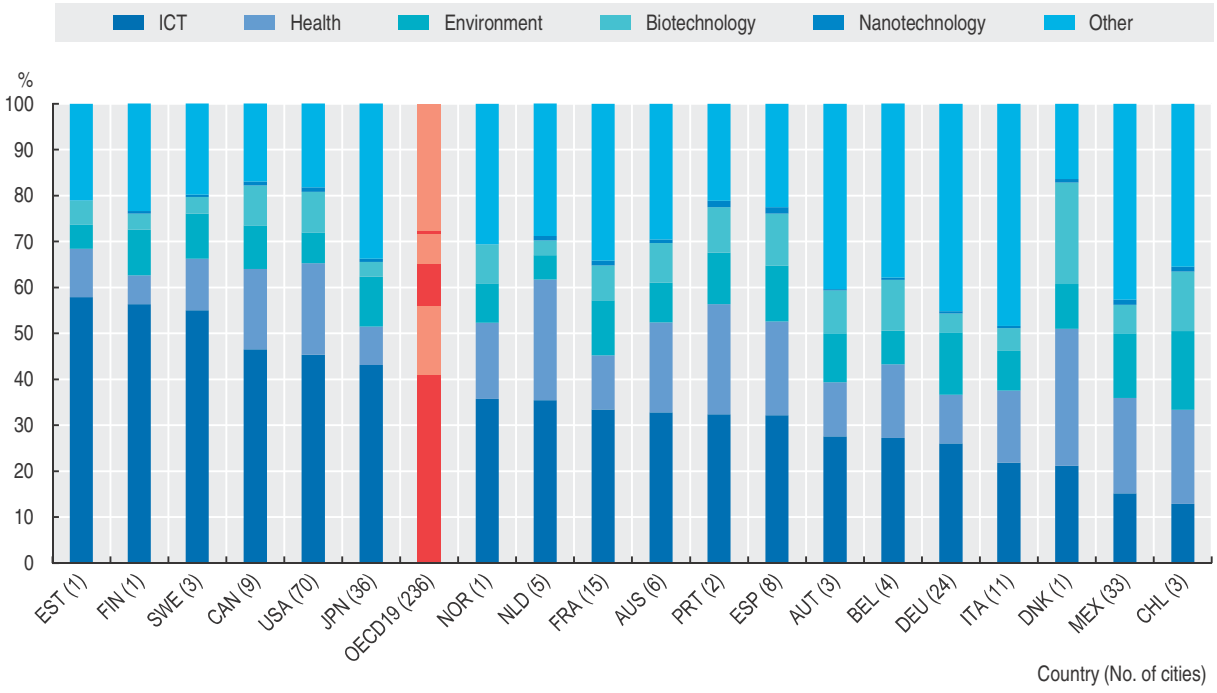
StatLink http://dx.doi.org/10.1787/888933363552

2.59. Patent intensity in metropolitan areas and the rest of the country, average 2011-13
Patent applications per million inhabitants



StatLink http://dx.doi.org/10.1787/888933363567

2.60. Per cent of patent applications in metropolitan areas by sector, average 2011-13



StatLink http://dx.doi.org/10.1787/888933363573

3. SUBNATIONAL GOVERNMENT FINANCE FOR REGIONAL DEVELOPMENT

Subnational government spending

Subnational government spending by type

Subnational government spending by economic function

Spending responsibilities across levels of government

Subnational government investment

Subnational government revenue

Subnational government debt

Challenges for infrastructure investment at subnational level

The data of Chapter 3 are derived mainly from the OECD National Accounts, harmonised according to the new standards of the System of National Accounts (SNA) 2008, with the exception of Chile, Japan and Turkey, which are still under SNA 1993. Eurostat and International Monetary Fund (IMF) data were also used. General government includes four sub-sectors: central/federal government and related public entities; federated government ("states") and related public entities; local government, i.e. regional and local governments, and related public entities; and social security funds. Data are consolidated within the four sub-sectors, as well within each subsector (neutralisation of financial cross-flows). Subnational governments (SNG) are defined as the sum of state government (relevant only for countries having a federal or quasi-federal system of government) and local (regional and local) governments. For Australia and the United States, there is no breakdown available at subnational level between local and state government data.

Subnational government spending

Subnational government (SNG) expenditure stood at USD 6 450 per capita on average in the OECD area, accounting for 17% of gross domestic product (GDP) and 40% of total public expenditure in the OECD in 2014 (Figure 3.1).

Among OECD countries, the SNG share of total public expenditure varied from less than 10% in Greece and Ireland, to almost 80% in Canada. SNG spending may vary according to whether the country is federal or unitary, its size and territorial organisation, the level of decentralisation and the nature of responsibilities for certain sectors (Figure 3.1).

In federal countries, SNG expenditure reached USD 8 500 per capita, corresponding to 19% of GDP and 49% of public expenditure. In Canada the value was almost USD 13 800 per capita, corresponding to 31% of national GDP. In federal countries, the share of expenditure carried out by the local government compared to that of state government varies: while half of SNG expenditure is carried out by municipalities in Austria and 38% in Germany, municipalities represented only 14% of SNG expenditure in Mexico in 2014 (Figure 3.2).

In unitary countries, local government expenditure is lower than in federal countries, representing on average USD 4 330 per capita, or 13% of GDP and 29% of public expenditure. However, while in Chile, Greece, Ireland, New Zealand and Turkey local governments have limited competencies and spending capacity, in Japan and European Nordic countries local expenditure is an important share of public expenditure. In Denmark, for example, SNG expenditure amounts to USD 16 560 per capita, corresponding to 36% of GDP and 64% of public expenditure due to the fact that municipalities administer a number of social security transfers (Figure 3.2).

Definition

General government includes four sub-sectors: central/federal government and related public entities; federated government ("states") and related public entities; local government, i.e. regional and local governments, and related public entities; and social security funds. Data are consolidated within the four sub-sectors. Subnational government is defined as the sum of state governments and local/regional governments.

Expenditure comprises: "current expenditure" and "capital expenditure" (see Annex B for a detailed definition).

The OECD averages are presented as the weighted average of the OECD countries for which data are available, unless otherwise specified (i.e. unweighted average, arithmetic mean, OECD UWA). Data in USD use Purchasing Power Parities.

SNG spending responsibilities have changed over the past 20 years, notably as a result of decentralisation processes that have transferred competences to the subnational level in sectors such as education, health, social protection, economic development, urban and spatial planning, etc. In Spain, for example, the weight of SNG government expenditure in GDP increased by more than 5 percentage points between 1995 and 2014, while the weight of total public expenditure increased by more than 13 percentage points. Some OECD countries, however, have recentralised and thus the share of SNG expenditure has decreased over the last 20 years and especially since the crisis e.g. Ireland, Hungary (Figure 3.3).

The share of SNG expenditure as an indication of spending autonomy should be interpreted with caution. While it often provides a valuable macroeconomic overview of the level of decentralisation, it can also lead to an overestimation of SNG expenditure autonomy. In fact, it does not always assess the real degree of decision-making power and action that SNGs have in terms of expenditure. In some countries, the "spending autonomy" of SNG can be restricted because of mandatory spending (acting as "paying agent" for example for teachers' salaries or social security benefits), regulatory constraints or budget norms.

Source

OECD (2016), *National Accounts Statistics* (database), *http://dx.doi.org/10.1787/na-data-en*.

OECD (2016), "Subnational Government Structure and Finance", *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/05fb4b56-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

2014: National Economic Accounts; Levels of government; 2013: Chile, Mexico and New Zealand; 2012: Australia; 2011: Turkey.

Further information

OECD (2016), "Subnational Governments in OECD Countries: Key data" (brochure), *www.oecd.org/gov/regional-policy/Subnational-governments-in-OECD-Countries-Key-Data-2016.pdf*.

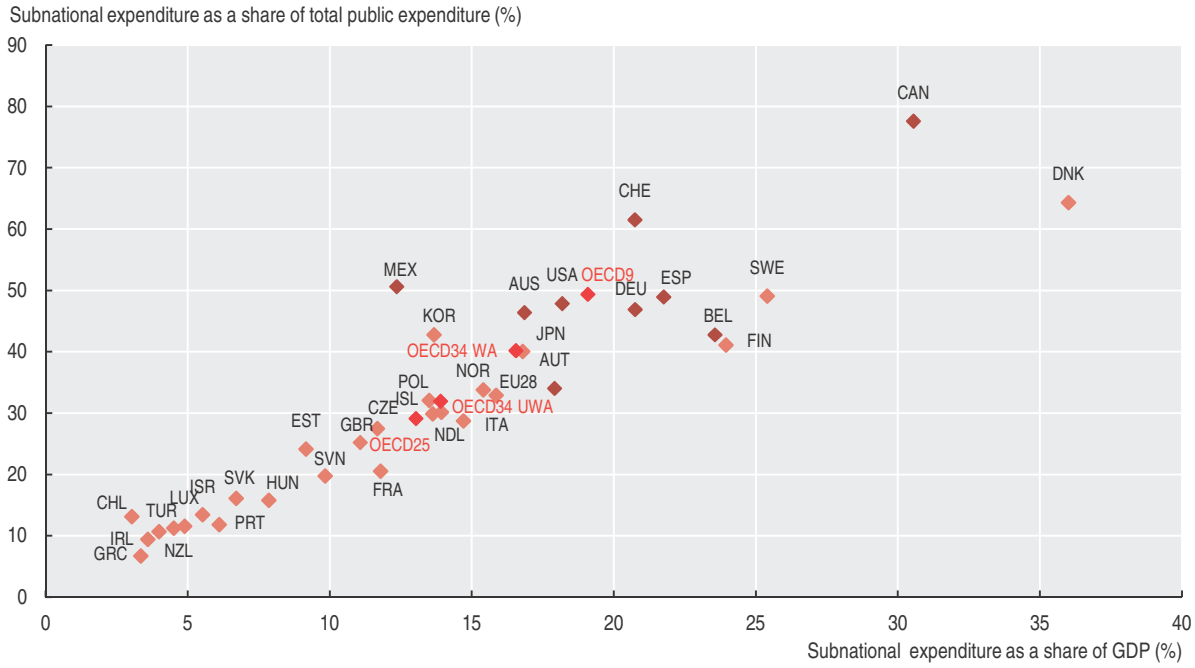
Figure notes

3.1-3.2: OECD9 and OECD25 refer to federal and unitary countries, respectively.

3.3: Australia 1995-2012; Mexico 2003-2013; New Zealand 1995-2013; Iceland 1998-2014; Netherlands 1996-2014; Ireland 2005-2014. No data for Chile and Turkey due to lack of time-series.

Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

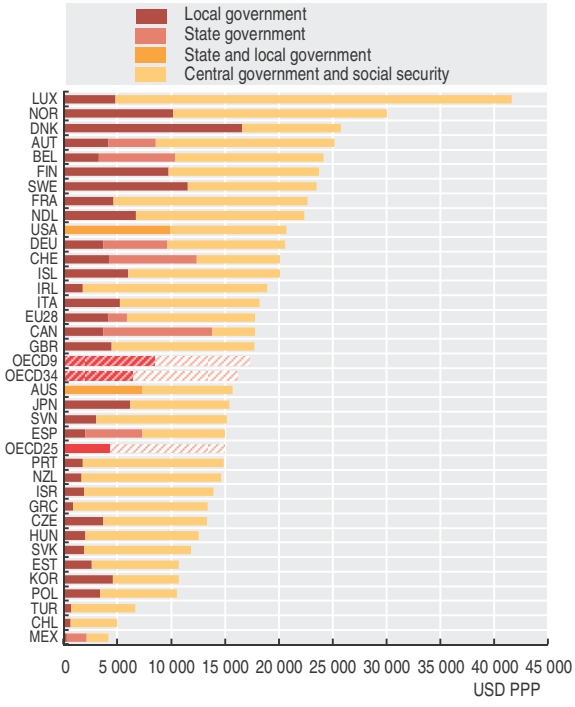
3.1. Subnational government expenditure as a percentage of GDP and total public expenditure, 2014



Federal countries : dark red markers

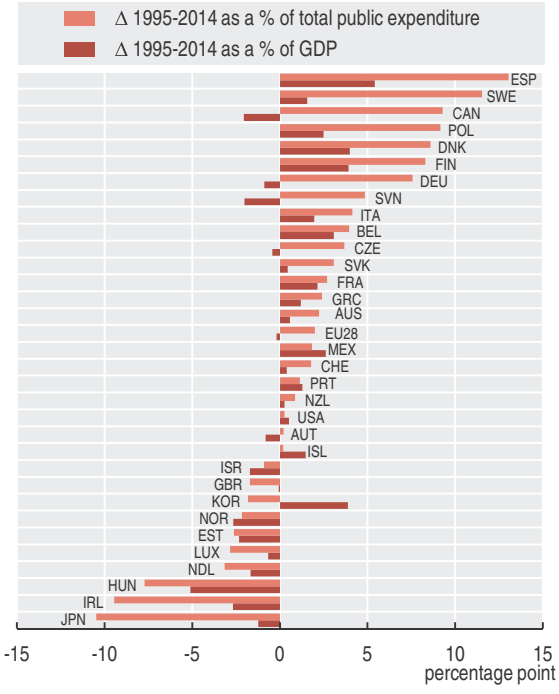
StatLink http://dx.doi.org/10.1787/888933363584

3.2. Public expenditure per capita by level of government (USD PPP), 2014



StatLink http://dx.doi.org/10.1787/888933363596

3.3. Changes in subnational expenditure between 2014 and 1995, as a share of total public expenditure and of GDP (percentage points)



StatLink http://dx.doi.org/10.1787/888933363600

Subnational government spending by type

The importance of subnational governments (SNGs) in the economy is particularly evident when considering their role as employers. Staff spending is the largest expense in SNG budgets, representing on average 36% of expenditure in the OECD area, and ranging from less than 20% in New Zealand to more than 50% in Norway (Figure 3.4). High budget shares for staff spending may reflect the fact that SNGs in several countries have the responsibility, delegated from the central government, for the payment of public workers' salaries, such as teachers, medical staff or social workers. On average in the OECD area, SNGs undertook 63% of public staff expenditure in 2014. This average masks different situations between federal countries (76%) and unitary countries (45%), from less than 10% in Greece and New Zealand to more than 84% in Switzerland and Canada (Figure 3.5).

SNGs also play a significant role in public procurement through the purchase of goods and services for intermediate consumption (equipment and supplies, maintenance and repairs, energy, communication and information technology, consulting, etc.) and the commissioning of public works, often to local small and medium-enterprises.

Definition

General government includes four sub-sectors: central/federal government and related public entities; federated government ("states") and related public entities; local government, i.e. regional and local governments, and related public entities; and social security funds. Data are consolidated within the four sub-sectors. Subnational government is defined as the sum of state governments and local/regional governments.

Expenditure comprises: "current expenditure" and "capital expenditure" (see Annex B for a detailed definition).

Public procurement expenditure is defined as the sum of intermediate consumption, gross fixed capital formation and social transfers in kind via market producers.

The OECD averages are presented as the weighted average of the OECD countries for which data are available, unless otherwise specified (unweighted average, arithmetic mean, OECD UWA).

In 2014, SNGs accounted for 50% of public procurement in the OECD, 61% in federal countries and 38% in unitary countries (Figure 3.6). Among this category, intermediate consumption expenditure and gross fixed capital formation represented respectively 22% and 11% of SNG spending (see section on investment for further details).

"Spending indicators" should be interpreted with caution. They tend to overestimate the level of decentralisation, as SNG spending autonomy is often restricted by mandatory expenses in the case of shared or delegated competences, regulatory constraints, centrally imposed standards on local public service delivery (quantity and quality, cost, etc.) or on public procurement, civil service obligations or budget discipline (e.g. budget balance targets). In many cases, SNGs act simply as paying agents on behalf of the central government, for example for the payment of public staff wages or social benefits, with little or no decision-making power and room for manoeuvre (see Annex D for details).

Source

OECD (2016), *National Accounts Statistics* (database), *http://dx.doi.org/10.1787/na-data-en*.

OECD (2016), "Subnational Government Structure and Finance", *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/05fb4b56-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

National Economic Accounts 2014; Levels of government; Chile, Mexico and New Zealand 2013; Australia 2012; Turkey 2011. Data by type of expenditure are not available for Australia and Chile.

Further information

OECD (2016), "Subnational Governments in OECD Countries: Key data" (brochure), *www.oecd.org/gov/regional-policy/Subnational-governments-in-OECD-Countries-Key-Data-2016.pdf*.

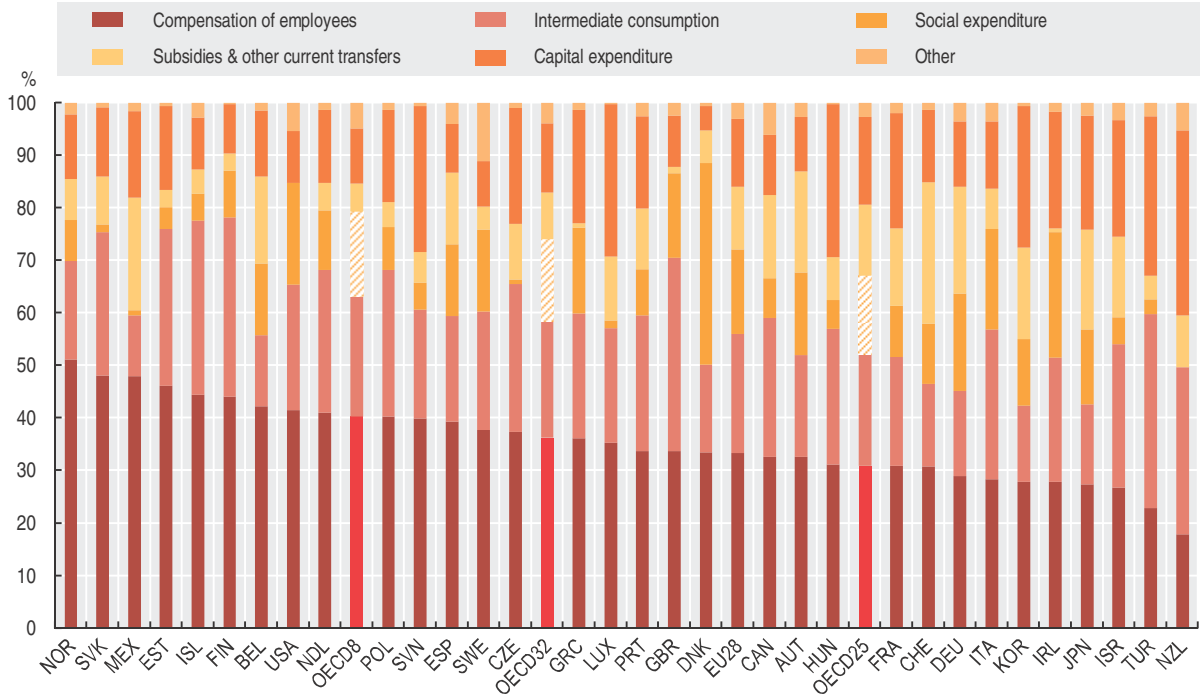
Figure notes

3.4-3.6: OECD8 and OECD24/25 refer to federal and unitary countries, respectively.

3.6: Other category includes taxes and financial charges.

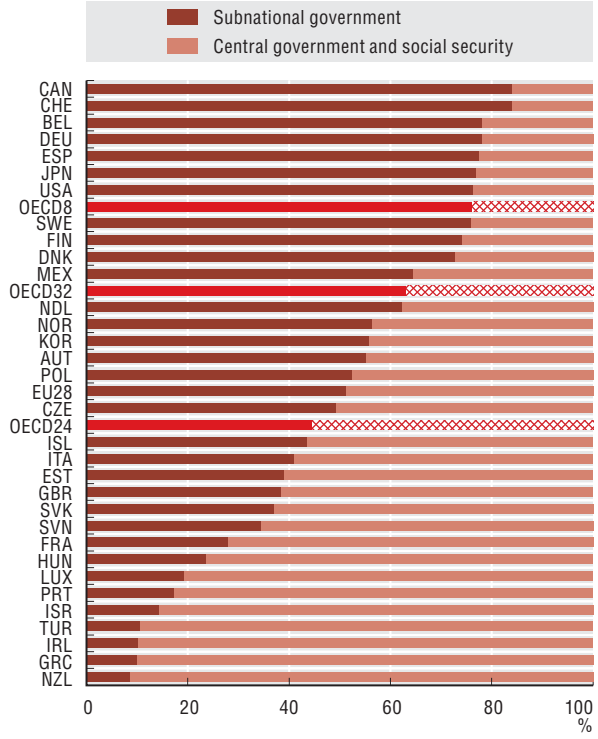
Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

3.4. Breakdown of subnational government expenditure by type, 2014



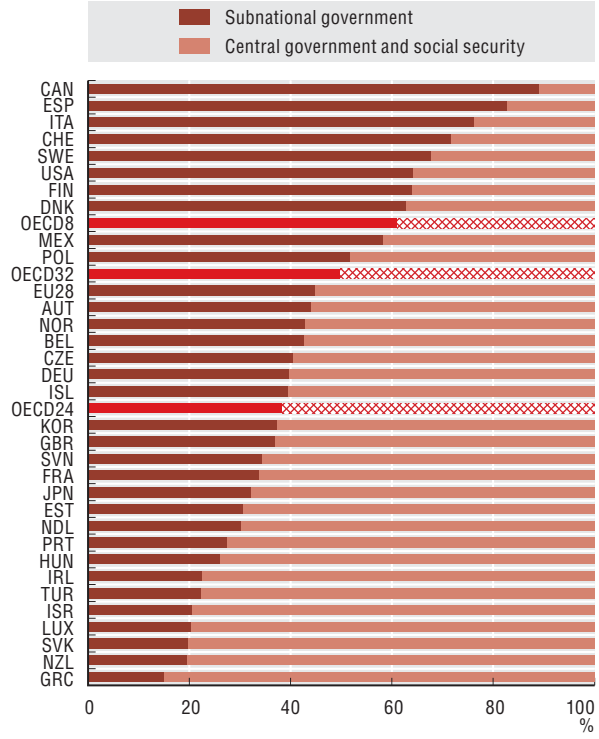
StatLink http://dx.doi.org/10.1787/888933363610

3.5. Subnational staff expenditure as a share of total public staff expenditure, 2014 (%)



StatLink http://dx.doi.org/10.1787/888933363629

3.6. Subnational government procurement as a share of total public procurement, 2014 (%)



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Subnational government spending by economic function

The breakdown of subnational expenditure by economic function provides a measure of subnational governments (SNGs) role in economic functions. Education represents the largest sector in the SNG expenditure, on average 25% of SNG expenditure in the 28 OECD countries where data were available in 2013. In the Slovak Republic, Slovenia, Estonia, Israel, Iceland and the Czech Republic, spending on education exceeded 30% of local budgets, and in the Slovak Republic was 44% (Figure 3.7).

Health is the second highest budget, accounting for 17% of SNG expenditure. It exceeded 23% of SNG budgets in the United States, Spain, Austria, Denmark, Sweden, Finland and reached 47% in Italy.

Excluding general public services (15% of SNG spending), the third largest subnational budget item is social expenditure. This category, which includes current and capital social expenditure, represented around 14% of SNG expenditure in 2013, ranging between 24% and 33% in Germany, Finland, Norway, Sweden, Japan and the United Kingdom. Social services are often provided by the municipal level, perceived to be closer to the needs of citizens, or delegated and outsourced through contracts to the private sector. In federal countries, the regional level can also play an important role in social protection (Austria, Germany and Belgium).

Economic affairs expenditure (transport, communication and economic interventions, etc.) represented almost 14% of OECD SNG expenditure in 2013, and more than 19% in France, Korea, the Czech Republic and Ireland.

Definition

General government includes four sub-sectors: central/federal government and related public entities; federated government ("states") and related public entities; local government, i.e. regional and local governments, and related public entities; and social security funds. Data are consolidated within the four sub-sectors. Subnational government is defined as the sum of state governments and local/regional governments.

Expenditure (current and capital) by economic function follows the Classification of the ten Functions of Government (COFOG): general public services; defence; public order and safety; economic affairs; environmental protection; housing and community amenities; health; recreation, culture and religion; education; and social protection.

The OECD averages are presented as the weighted average of the OECD countries for which data are available, unless otherwise specified (i.e. unweighted average, arithmetic mean, OECD UWA).

Public order, safety and defence expenditures accounted for around 7% of SNG expenditure in 2013. This category includes mainly local and regional police services, fire-protection, civil protection and emergency services.

Housing and community amenities represented on average around 3% of SNG expenditure in the OECD in 2013, and more than 7% in the Slovak Republic, Hungary, Luxembourg, Portugal, France and Ireland. This function comprises various sub-sectors such as supply of potable water, public lighting, urban heating, housing (construction, renovation and acquisition of land) and urban planning and facilities.

Recreation, culture and religion accounted for 2.9% of SNG expenditure in the OECD in 2013, but more than 10% in Estonia, Israel, Luxembourg and Iceland. In Iceland in particular, it reached 16.4% of local budget as culture is considered as a driving force for economic and social development.

Lastly, environment protection accounted for 2.6% of OECD SNG expenditure, exceeding 10% in the Netherlands, Ireland, Luxembourg and Greece.

Source

OECD (2016), *National Accounts Statistics* (database), *http://dx.doi.org/10.1787/na-data-en*.

OECD (2016), "Subnational Government Structure and Finance", *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/05fb4b56-en*.

See Annex B for data sources and country-related metadata.

See Annex D for details of allocation of competencies across levels of government.

Reference years and territorial level

2013: National Economic Accounts; levels of government. COFOG data are not available for Australia, Canada, Chile, Mexico, New Zealand and Turkey. For the United States, data showed in the function "Housing and community amenities" include the "environment protection" function data.

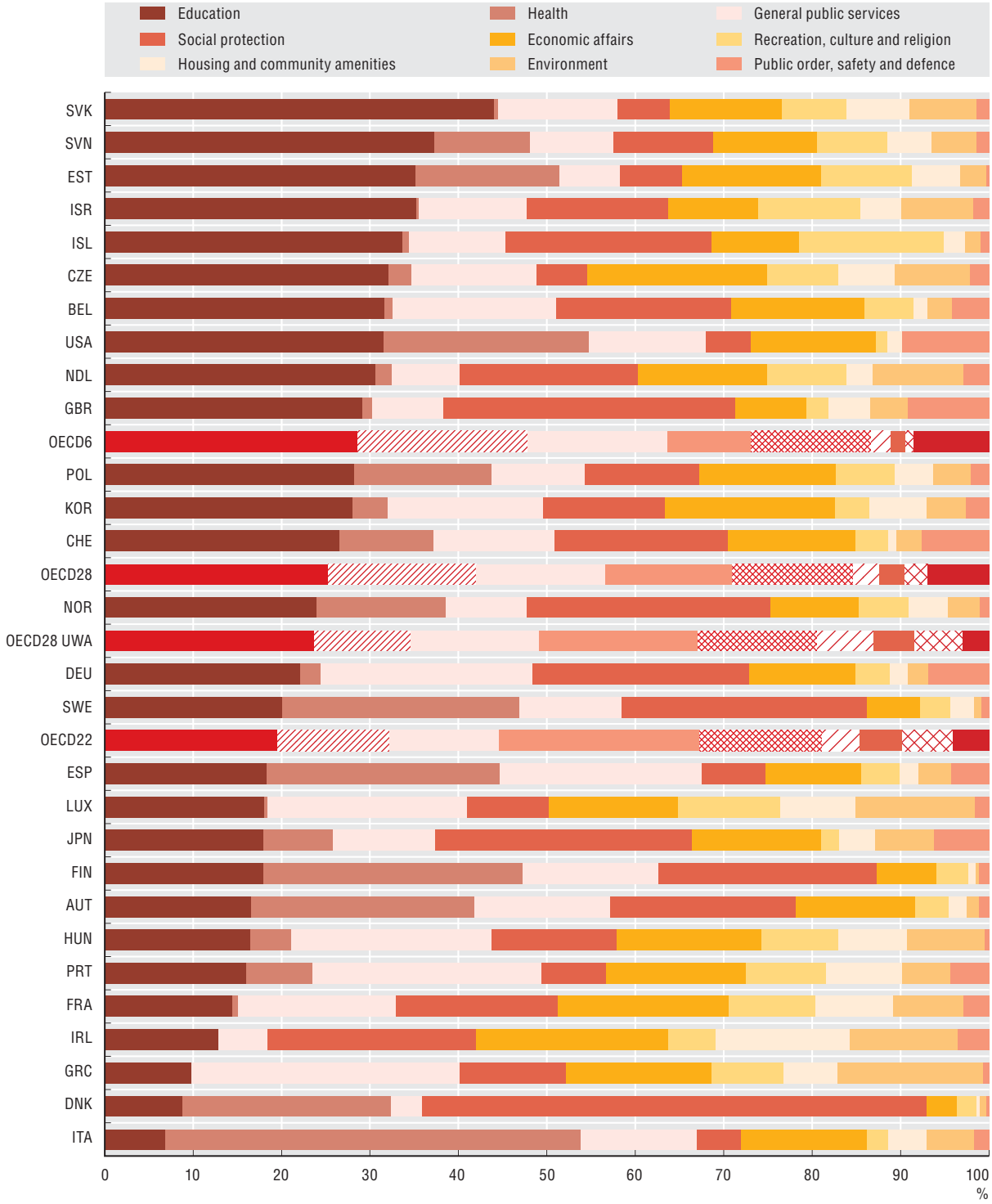
Further information

OECD (2016), "Subnational Governments in OECD Countries: Key data" (brochure), *www.oecd.org/gov/regional-policy/Subnational-governments-in-OECD-Countries-Key-Data-2016.pdf*.

Figure note

Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

3.7. Breakdown of subnational government expenditure by economic function, 2013 (%)



StatLink http://dx.doi.org/10.1787/888933363640

Spending responsibilities across levels of government

The subnational spending by sector provides a standard measure of the distribution of spending responsibilities among the different levels of government in a country. However, spending indicators should be interpreted with caution, as they tend to overestimate the level of decentralisation. Subnational governments (SNGs), for example, may be responsible for a certain economic function but not have full autonomy in exercising them (see Annex D for details).

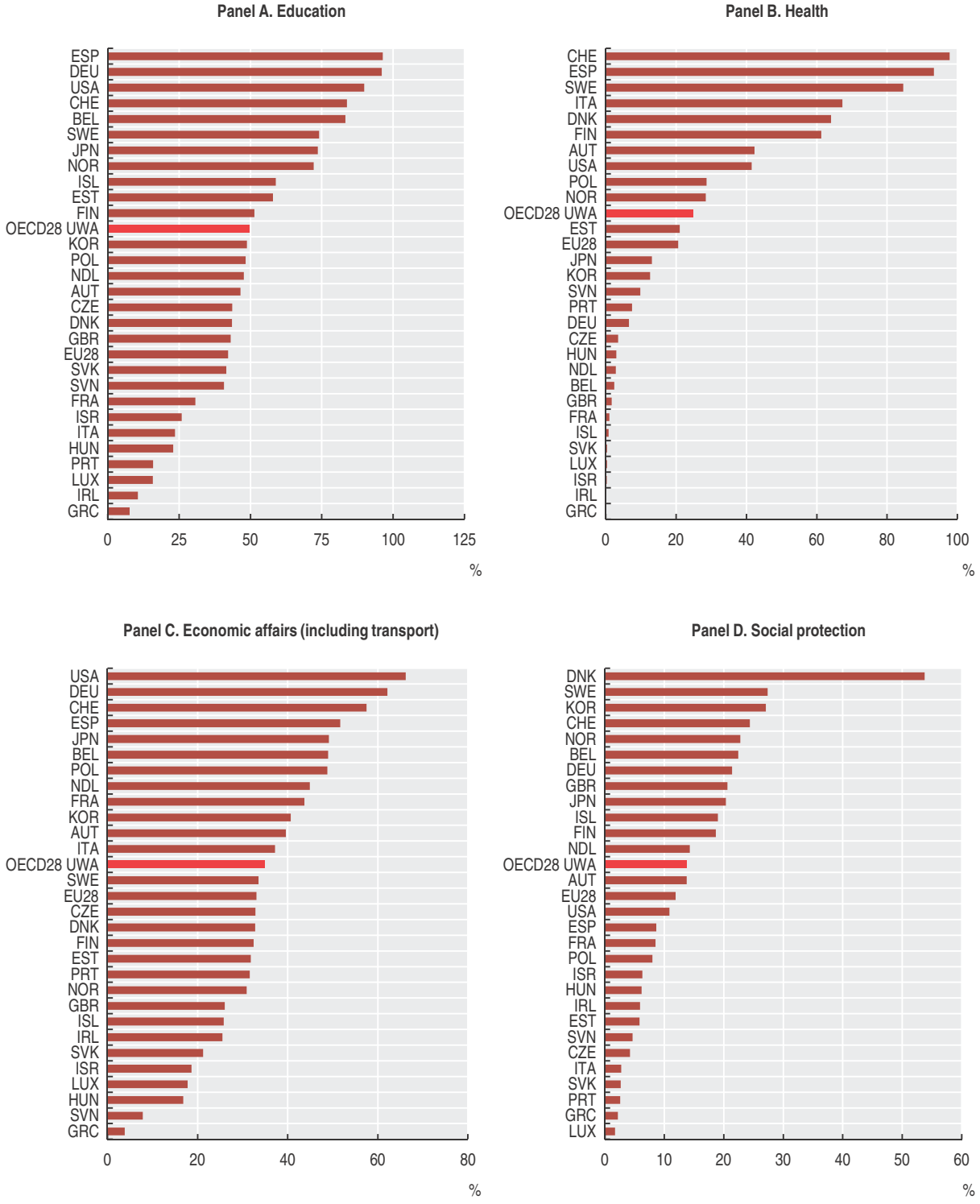
Education is a shared competency across levels of government. As a share of total public spending on education, SNG expenditure on education represented 51% on unweighted average in the OECD in 2013 but above this average in 11 countries (Figure 3.8, panel A). In most countries, SNGs are responsible for construction and maintenance of educational infrastructures and the financing of school-related activities, commonly for the primary level schools (there are however some exceptions, e.g. in Ireland or in Greece where education is provided by central government entities) and frequently also for the secondary level schools. In other countries, SNGs are also in charge of the payment of salaries for administrative and technical staff and teachers. In this case, SNG spending power is limited: financed through earmarked transfers, they act more as paying agents with little control over their budget in an area regulated by the central government level. By contrast, in Belgium, Switzerland, the United States, Germany and Spain, SNG educational expenditure represents more than 75% of public spending in this sector. They are all federal countries, with federated states having a high level of autonomy in educational matters, including vocational teaching and higher education (universities). Finally, in some countries, education is decentralised not at SNG level but directly at the level of education institutions, which may be independent special-purpose governance, (e.g. schools districts in the United States).

In the health sector, SNG expenditure represented 25% of public health spending on unweighted average in the OECD in 2013 (Figure 3.8 panel B). Health remains a centralised responsibility in several countries, such as Greece, Ireland, Israel, Luxembourg, Slovak Republic, France or the United Kingdom. Health competences fall more often under the responsibility of central government or social security bodies and SNGs have no role, or a limited one. At the other end of the spectrum, SNG health spending as a share total health spending exceeds 60% in Italy, Spain, Switzerland and the Nordic countries. Wide responsibilities for planning, organising, delivering and financing healthcare services and infrastructures are decentralised to the municipal level (primary care centres) but especially to the regional level (hospitals, specialised medical services).

SNG accounted for 35% of public spending on economic affairs on unweighted average in the OECD in 2013, more than 50% in Spain, Switzerland, and 66% in the United States (Figure 3.8 panel C). Transport is the main component of this area, representing 75% of economic affairs expenditure on unweighted average (in 18 OECD countries for which data are available). This sector encompasses a wide range of activities from the definition of policies, regulations and standards, to the financing, construction, maintenance and administration. Such activities can cover transport networks, facilities and services in various sub-sectors and at various geographic scales (see Table D.1 in Annex D).

SNG social expenditure corresponded to 15% of total public social spending on unweighted average in the OECD (Figure 3.8 panel D). In the majority of OECD countries, social protection and benefits are mainly provided by the central government, social security bodies or by insurance institutions. Only Denmark stands out from the other countries as local governments are responsible for the administration of cash benefits. However, in this area, there is a significant disconnection between the large share of decentralised social expenditures and the real power of Danish municipalities over them as social protection schemes are largely determined by regulations and standards set at the central level.

3.8. Subnational expenditure as a share of total public expenditure by economic function, 2013 (%)



SNGs are key public actors in housing and community amenities. Their expenditure amounted to 72% of public spending in this area on unweighted average in the OECD in 2013 (Figure 3.8 Panel E). In this field, SNGs play a major role in Belgium, Estonia, Spain, Switzerland and Norway, representing more than 90% of public spending. In Belgium for example, social housing was decentralised entirely to the regions in 1980, also involving a variety of providers such as municipalities, public companies, foundations, co-operatives and non- for profit organizations. In the social housing sector, there has been a widespread privatisation process, which reduced SNG involvement, in particular in central and eastern European countries.

The share of SNGs in total public environmental expenditure is also sizable, reaching 68% in the OECD on a unweighted average in 2013 (Figure 3.8 Panel F). It confirms the key role of SNGs in this field, especially in Portugal, France, Netherlands and Spain, where subnational spending represented more than 85% of total public spending in 2013. In some sectors (e.g. waste, sewerage, parks and green spaces, see Table D.1 in Annex D), the competence is almost fully devolved to local governments or dedicated functional bodies (e.g. waterboards in the Netherlands). It is also often outsourced to agencies, external entities or private providers through public-private partnership contracts (e.g. in France).

As a share of total public spending, subnational expenditure dedicated to recreation, culture and religion amounted 62% on unweighted average in the OECD countries, exceeding 85% in the United States, Switzerland, Germany, Japan and Belgium (Figure 3.8 Panel G). By contrast, central government remains the main public funder in this area in Ireland, Hungary, the Slovak Republic or the United Kingdom.

In most OECD countries, public order and safety functions remain mainly the central government's responsibility. SNG expenditure represents only 25% of public spending in this area on unweighted average (Figure 3.8 Panel H). However, federal countries, such as Switzerland, Germany, the United States, Belgium and Spain record particularly high ratios, as well Japan among the unitary countries.

Definition

General government includes four sub-sectors: central/federal government and related public entities; federated government ("states") and related public entities; local government i.e. regional and local governments and related public entities; and social security funds. Data are consolidated within the four sub-sectors. Subnational government is defined as the sum of state governments and local/regional governments.

Expenditure (current and capital) by economic function follows the Classification of the ten Functions of Government (COFOG): general public services; defence; public order and safety; economic affairs; environmental protection; housing and community amenities; health; recreation, culture and religion; education; and social protection.

The OECD averages are presented as the weighted average of the OECD countries for which data are available, unless otherwise specified (i.e. unweighted average, arithmetic mean, OECD UWA).

Source

OECD (2016), *National Accounts Statistics* (database), *http://dx.doi.org/10.1787/na-data-en*.

OECD (2016), "Subnational Government Structure and Finance", *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/05fb4b56-en*.

See Annex B for data sources and country-related metadata.

See Annex D for details of allocation of competencies across levels of government.

Reference years and territorial level

2013: National Economic Accounts; levels of government. COFOG data are not available for Australia, Canada, Mexico, Chile, New Zealand and Turkey. For the United States, data in the function "housing and community amenities" include the "environment protection" function data.

Further information

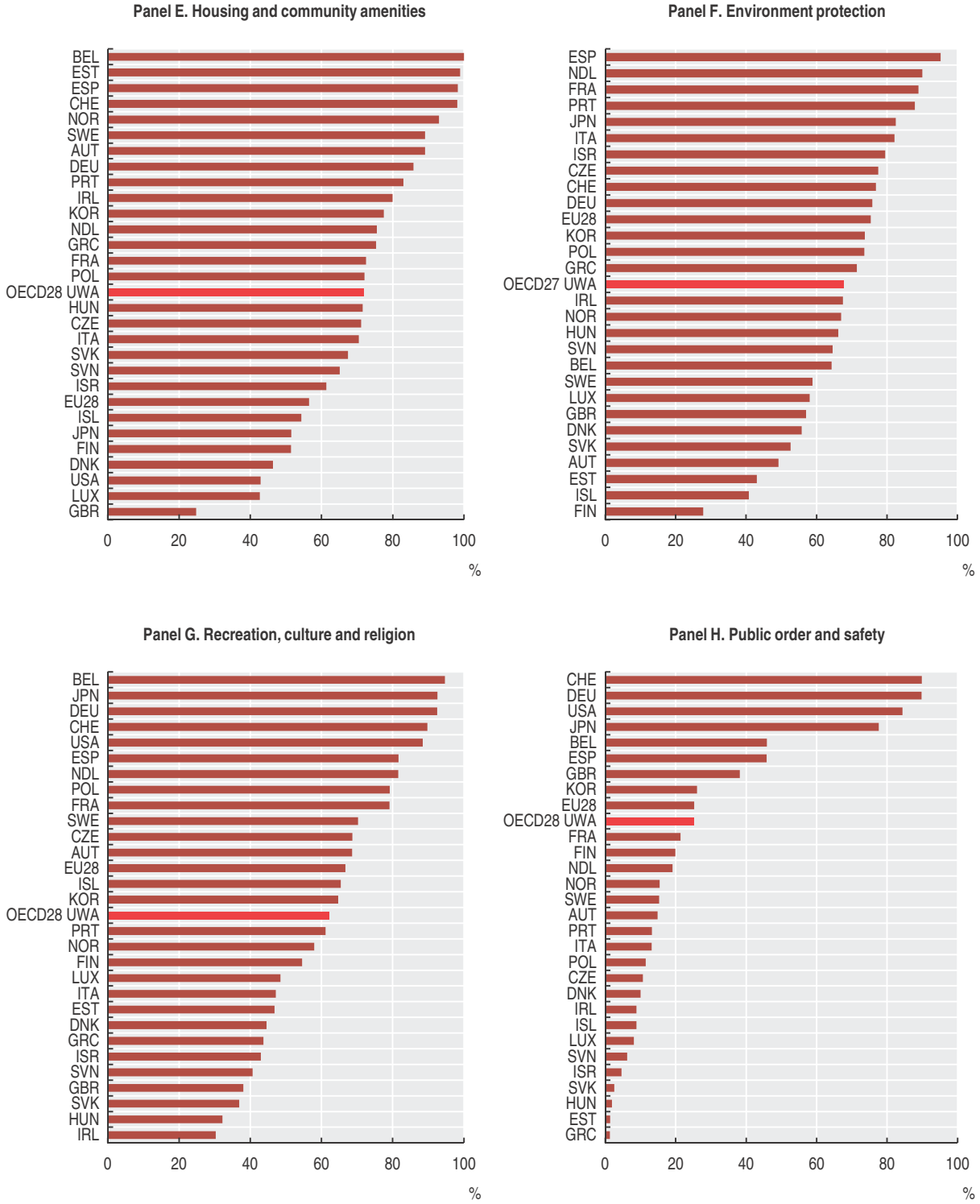
OECD (2016), "Subnational Governments in OECD Countries: Key data" (brochure), *www.oecd.org/gov/regional-policy/Subnational-governments-in-OECD-Countries-Key-Data-2016.pdf*.

Figure notes

3.8: OECD average is unweighted. The total of public spending is non-consolidated.

Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

3.8. Subnational expenditure as a share of total public expenditure by economic function, 2013 (%) *(Cont.)*



StatLink http://dx.doi.org/10.1787/888933363655

Subnational government investment

In most OECD countries, subnational governments (SNGs) have a key role in public investment. In 2014, they carried out around 59% of public investment in the OECD area. This ratio tends to be higher in most federal countries where it combines investments by the states and by local governments. In 2014, more than 70% of public investment was made by SNGs in Germany, Australia, Mexico, Japan, Belgium, up to 95% in Canada (Figure 3.9).

SNG investment represented 1.9% of gross domestic product (GDP) in the OECD in 2014 (total public investment was around 3.2% of GDP) a share that was above 2.8% of GDP in Korea, Japan and Canada and less than 1% of GDP in Chile, Greece, Ireland, the Slovak Republic, the United Kingdom and Portugal (Figure 3.9).

Per capita SNG investment averaged around USD 730 in 2014, compared to USD 510 for the central government and social security sectors. It ranges from USD 57 in Chile to almost USD 1 490 in Canada, with high values of SNG investment per capita (above USD 1 000) found also in Australia, Japan, Switzerland, Norway and Luxembourg (Figure 3.10).

In federal countries, local government investment per capita tends to be smaller than those of state governments, except in Austria and Germany where it is more balanced (there is no breakdown data for the United States and Australia). In unitary countries, the local government role in public investment is a little less pronounced than in federal countries, in particular in countries such as Chile, Greece, Estonia or the Slovak Republic. There are, however, several countries, such as Japan, France and the Czech Republic where local governments played a crucial role in public investment in 2014 with a share of SNG investment in public investment above the OECD average.

In many OECD unitary countries, and typically in the least-decentralised countries, investing is the main function of local governments. In fact, having little competencies in key current spending areas, they tend to implement major national investment projects. Investment accounts for more than 25% of local government expenditure in Hungary, Turkey, Slovenia, Luxembourg and New Zealand, as compared to 11% on average in the OECD.

In a great number of countries, SNG investment was particularly robust in the early years of the global financial crisis due to the involvement of SNG in stimulus plans and strong support from national governments. However, the deepening of the social and economic crisis, as well as the adoption from 2010 onwards of national and subnational budget consolidation measures put severe strain on SNG finance. In a majority of countries, public investment was cut back. Used as a budgetary adjustment variable, investment ultimately declined steeply across OECD countries. The fall stopped in 2013 but the investment has not recovered since and has even slightly declined in the OECD in 2014. Between 2007 and 2014, SNG investment decreased in the OECD (average of -0,5% per year in real terms, totalling -3,7% over the period). It contracted sharply in Ireland, Iceland, Turkey (2007-11), Spain and Greece. However, not all OECD countries followed this trend (Figure 3.11).

Economic affairs were the priority sector for SNG investment in 2013, accounting for 39% of SNG investment on average in the OECD. Under this heading are transport, communications, economic development, energy, construction, etc. Transport systems and facilities make the bulk of investment in this category (around three-quarters). It comprises construction of roads, railways, water transport, air transport and airports, pipeline and other transport systems such as funiculars, cable cars, etc. In Greece, Japan, Portugal and Ireland, investment in economic affairs represented more than 45% of SNG investment in 2013 (Figure 3.12).

The second priority sector for SNG investment in 2013 was education: 22% of SNG investment was made in education for new construction and major building improvements of elementary, secondary and high schools, universities, adult vocational training centres, lodging and transport for pupils and students, etc. SNG educational infrastructure investment was above 25% in Norway, Luxembourg, Israel and the United States, up to 53% in the United Kingdom.

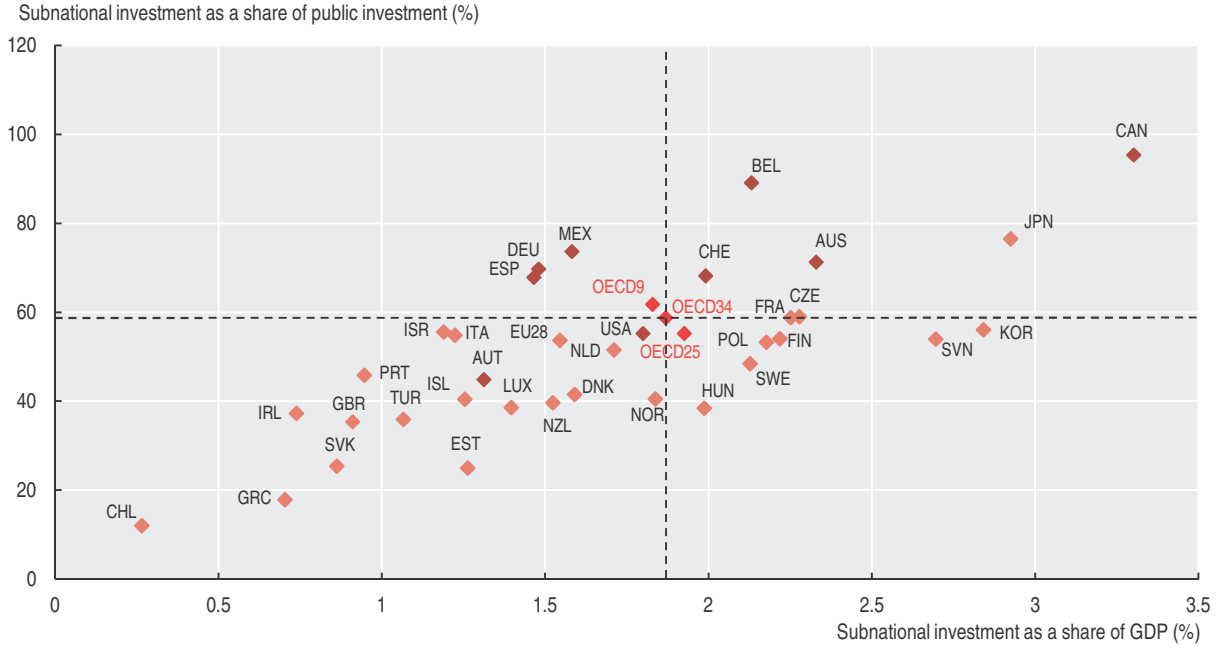
Infrastructure in general public services represented 9% of SNG investment in 2013 but more than 25% in Sweden, Hungary, Switzerland and Belgium. This category comprises mainly construction and improvement of public buildings.

The fourth priority area of SNG investment in 2013 was housing and community amenities which represented almost 9% of SNG investment. This sector comprises construction and remodelling of housing, including acquisition of land, potable water supply, street lighting, etc. Investment in that area exceeded 14% in Slovenia, France, Italy, Ireland and up to 29.5% in the Slovak Republic in 2013.

Environmental infrastructure reached almost 7% of SNG expenditure on average in the OECD in 2013. The share is above 15% in 9 countries and exceeded 20% in Slovenia and Hungary.

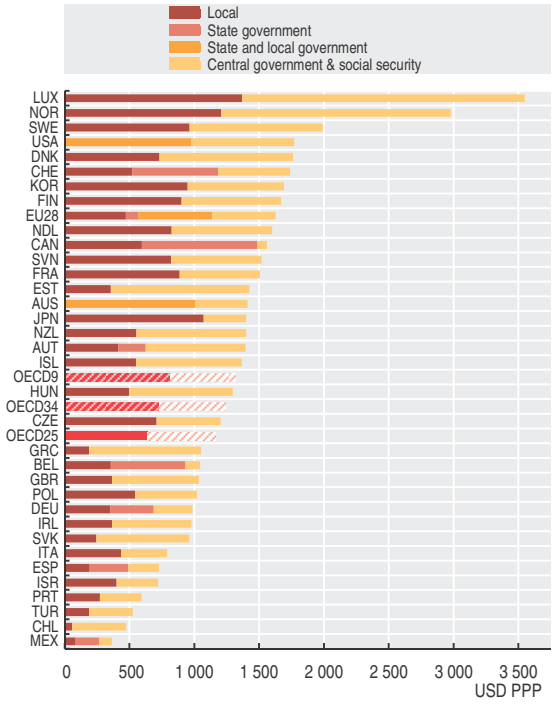
The "other" category represented around 15% of SNG investment in 2013. It comprises investment in recreation and culture facilities, theatres, museums, concert and exhibitions halls, libraries, heritage, zoological and botanical gardens, provision of facilities for religious and other community services etc.

3.9. Subnational government investment as a % of GDP and public investment, 2014



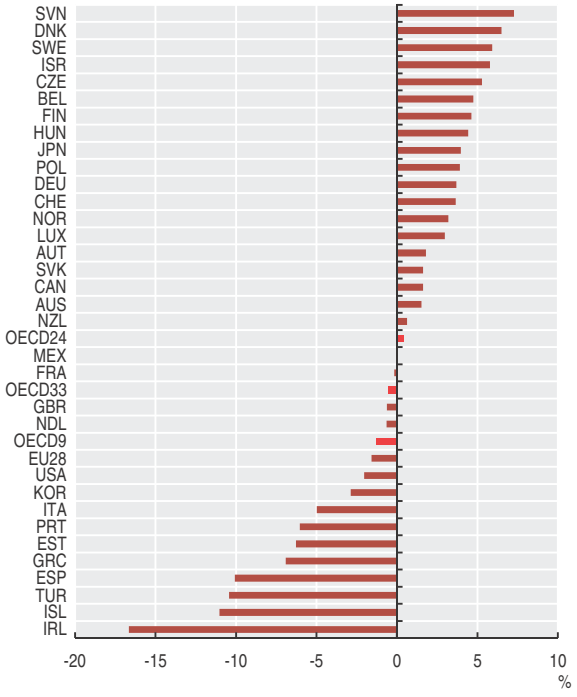
StatLink http://dx.doi.org/10.1787/888933363662

3.10. Public investment by level of government, 2014 (USD PPP per capita)



StatLink http://dx.doi.org/10.1787/888933363672

3.11. Annual average change in subnational government investment between 2007 and 2014



StatLink http://dx.doi.org/10.1787/888933363685

Healthcare investment (hospitals, local health centres, specialised medical and paramedical service centres, maternity and nursing centres, heavy medical equipment) are particularly significant in Denmark and Sweden while investment in public order and safety (mainly police and fire protection facilities) are sizable in the United Kingdom, Austria, Switzerland and Germany.

Finally, investment in the social welfare sector (institutions for disabled persons, retirement homes for elderly persons, social services centres) represented a small share of SNG investment on average in the OECD but significantly more in Iceland, Norway, Belgium and Denmark.

Definition

General government includes four sub-sectors: central/federal government and related public entities; federated government ("states") and related public entities; local government i.e. regional and local governments and related public entities; and social security funds. Data are consolidated within the four sub-sectors. Subnational government is defined as the sum of state governments and local/regional governments.

Capital expenditure is the sum of capital transfers and investment. Gross fixed capital formation is the main component of investment (see Annex B for a detailed definition).

Investment by economic function follows the Classification of the ten Functions of Government (COFOG): general public services; defence; public order and safety; economic affairs; environmental protection; housing and community amenities; health; recreation, culture and religion; education; social protection.

The OECD averages are presented as the weighted average of the OECD countries for which data are available, unless otherwise specified (i.e. unweighted average, arithmetic mean, OECD UWA). Data in USD use Purchasing Power Parities.

Source

OECD (2016), *National Accounts Statistics* (database), *http://dx.doi.org/10.1787/na-data-en*.

OECD (2015), "Subnational Government Structure and Finance", *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/05fb4b56-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

2014: National Economic Accounts; levels of government. 2013: COFOG data not available for Australia, Canada, Chile, Mexico, New Zealand and Turkey. For the United States, data showed in function "housing and community amenities" include the "environment protection" function data.

Further information

OECD (2016), "Subnational Governments in OECD Countries: Key data" (brochure), *www.oecd.org/gov/regional-policy/Subnational-governments-in-OECD-Countries-Key-Data-2016.pdf*.

OECD (2013), *Investing Together: Working Effectively across Levels of Government*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264197022-en*.

OECD (2015), *Recommendation on Effective Public Investment Across Levels of Government – Implementation Toolkit*, *www.oecd.org/effective-public-investment-toolkit/*.

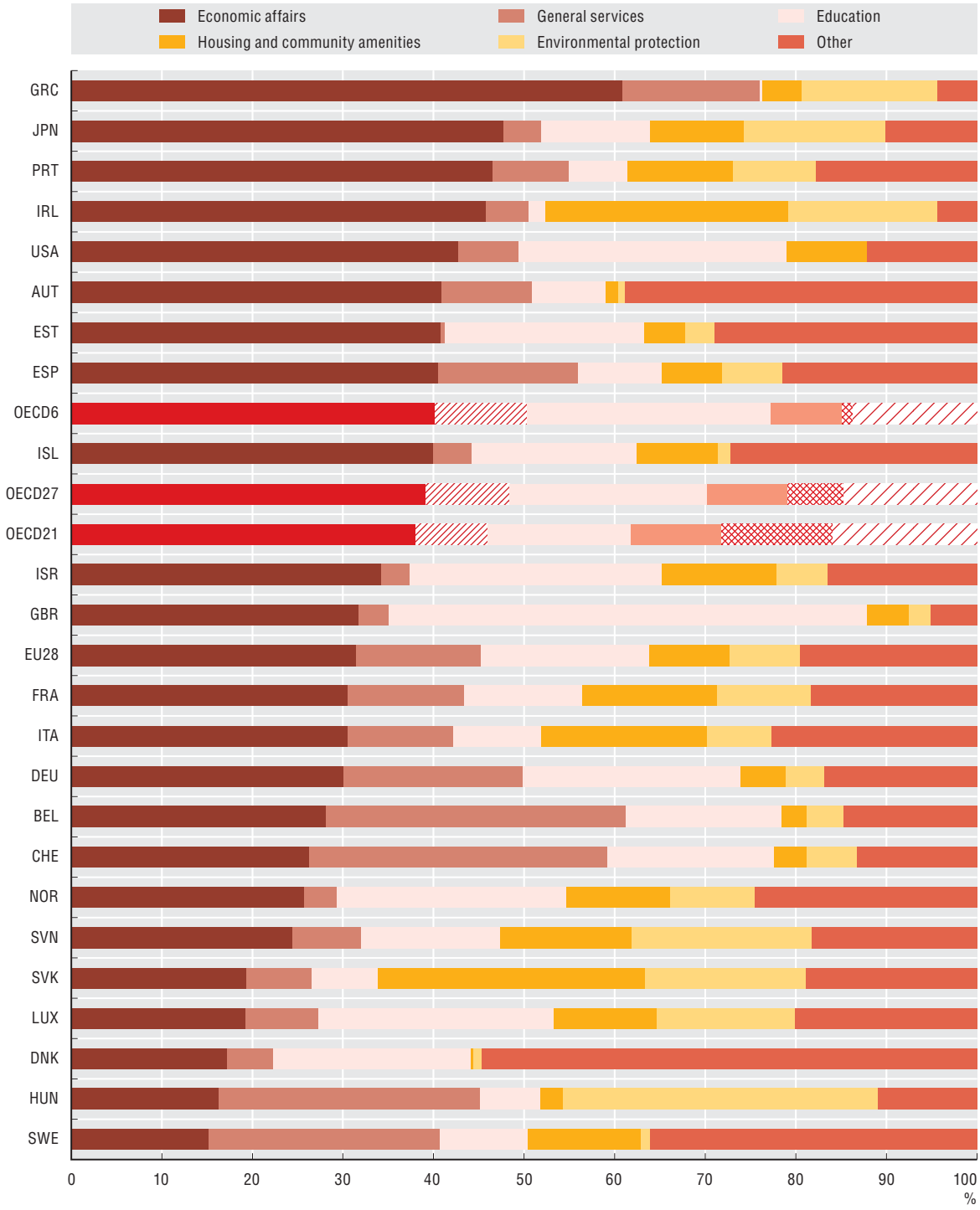
Figure notes

3.11: New Zealand 2013; Turkey 2011. No data for Chile. Per cent change in real terms.

3.12: Other: defence; public order and safety; health; recreation, culture and religion; social protection. Poland, Finland, the Netherlands and the Czech Republic are not represented on the graph because of negative values in some sectors.
OECD6 and OECD21 refer to federal and unitary countries, respectively.

Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

3.12. Breakdown of SNG investment by economic function % of total SNG investment, 2013



StatLink http://dx.doi.org/10.1787/888933363696

Subnational government revenue

In 2014, subnational government (SNG) revenue represented around USD 6 240 per capita, i.e. 16.0% of gross domestic product (GDP) and 42.3% of public revenue on average in the OECD.

There are two main sources of revenue: taxes (44% of SNG revenue in the OECD on average in 2014) and grants and subsidies (38%). It is interesting to note that, on unweighted average, the proportions are reversed, grants and transfers being the first SNG revenue source (50% vs 34% for taxes). Finally, revenue deriving from local public service charges (tariffs and fees) and property (sale and operation of physical and financial assets) represented respectively 15% and 2.2% of SNG revenue. The share of tax revenue in SNG revenue varies a lot from one country to another. They are a particularly significant share in some federal countries, where tax revenue arises both from tax sharing arrangements between the federal government and SNGs (more usually based on personal income tax but also on company income tax and value added tax) and own-source taxation (Germany, Switzerland, the United States, Canada). However, in Mexico, Austria and Belgium, tax revenue - regardless of whether from tax sharing or own-sources - provided less than 20% of revenue in 2014. In unitary countries such as Iceland, Sweden and New Zealand, tax revenue made up more than 50% of local revenue, while taxes amounted to less than 15% of local revenue in Estonia, the Netherlands, the Slovak Republic, Turkey and the United Kingdom. In these countries, as well as in Austria and Mexico, SNGs depend largely on central government transfers (Figure 3.13).

Definition

General government includes four sub-sectors: central/federal government and related public entities; federated government ("states") and related public entities; local government, i.e. regional and local governments, and related public entities; and social security funds. Data are consolidated within the four sub-sectors. Subnational government is defined as the sum of state governments and local/regional governments.

Revenue comprises tax revenues, transfers (current and capital grants and subsidies), tariffs and fees, property income and social contributions. Tax revenue includes both own-source tax and shared tax (see Annex B for a detailed definition).

The OECD averages are presented as the weighted average of the OECD countries for which data are available, unless otherwise specified (i.e. unweighted average, arithmetic mean, OECD UWA).

SNG tax revenue accounted for 7% of GDP in the OECD and 32% of public tax revenue in 2014. As above, there are great variations from one country to another (Figure 3.14). Tax-to-GDP ratio was less than 1% in Estonia, Turkey, the Slovak Republic, Ireland, Greece and Mexico in 2014, but exceeded 10% in Sweden, Finland, Denmark and three federal countries (Switzerland, Germany and Canada), deriving largely from the personal income tax (a shared tax in a number of countries but also a local own-source tax in Nordic countries for example). Property tax is *par excellence* a subnational tax, particularly for the municipal level. However, its importance in SNG tax revenue varies considerably across countries, representing between 90% and 100% of local tax revenue in Australia, the United Kingdom, Ireland, Israel and New Zealand, which are mostly Anglo-Saxon countries. At the other end of the spectrum, it is a minor local tax revenue source in Nordic countries, Luxembourg and Switzerland.

There are great imbalances in several countries between the level of SNG expenditure as a share of public expenditure and the level of SNG tax revenue in public revenue, reflecting - however imperfectly - the level of fiscal decentralisation in OECD countries.

Source

OECD (2016), *National Accounts Statistics* (database), *http://dx.doi.org/10.1787/na-data-en*.

OECD (2016), "Subnational Government Structure and Finance", *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/05fb4b56-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

National Economic Accounts 2014; levels of government; Chile, Mexico and New Zealand 2013; Australia 2012; Turkey 2011.

Further information

OECD (2016), "Subnational Governments in OECD Countries: Key data" (brochure), *www.oecd.org/gov/regional-policy/Subnational-governments-in-OECD-Countries-Key-Data-2016.pdf*.

Figure notes

3.13: OECD averages do not include Chile. No breakdown available for Chile, except for tax and transfer revenues.

3.13-3.14: OECD9 and OECD24 refer to federal and unitary countries, respectively.

Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

3.13. Structure of subnational government revenue, 2014 (%)

StatLink http://dx.doi.org/10.1787/888933363700

3.14. Subnational government tax revenue as a % of public tax revenue and as a % of GDP, 2014

StatLink http://dx.doi.org/10.1787/888933363717

Subnational government debt

The financial and economic crisis led to a strong deterioration in both subnational government (SNG) budget balance and debt in most OECD countries. At the end of 2014, SNG fiscal balance was about -0.5% of gross domestic product (GDP) on average in the OECD. Outstanding gross debt accounted for 23.9% of GDP and 19.8% of total public debt (Figure 3.15).

SNG outstanding debt is very unevenly distributed among OECD countries. It is higher in federal countries than in unitary countries: 31% of GDP and 27% of public debt on average in the first case compared to 15% of GDP and 12% of public debt in the second case. Canada stands out for its high level of subnational debt: 63.5% of GDP and 59% of public debt. On the opposite end of the spectrum, SNG debt is particularly low in Hungary, Greece, Israel, the Slovak Republic and Slovenia, both in terms of GDP and weight of public debt. Two unitary countries have high ratios: Japan (37% of GDP) and Norway (47% of public debt).

In federal countries, state government debt varied in 2014 from 8% of GDP in Austria to around 25% in Spain and Germany and up to 54% in Canada. The local debt varied from 5% in Austria to 10% in Switzerland in 2014 (Figure 3.16).

The relatively small share of local government debt in both unitary and federal countries is driven by legal restrictions on local borrowing. In a majority of countries, local governments can borrow for the long term only to finance investment in infrastructures and large equipment ("golden rule"), which limits the level of indebtedness. Moreover, local borrowing is generally governed by strict prudential rules defined by central or state governments.

Amounting to 71% of total debt on average in the OECD, "financial debt" (loans and debt securities) represents the largest share of SNG debt (Figure 3.17). Debt securities represent a large share of SNG debt (45% on weighted average), especially for states in federal countries (the United States, Canada, Germany). Debt securities are also widespread at the local level in some unitary countries, in particular Japan, Norway, Korea, Estonia and Sweden. However, it is still low or non-existent in numerous unitary countries where bond financing is forbidden for local governments, restricted or rarely used – in comparison to loans, which remain the most widespread form of external funding (26% of total SNG outstanding debt on weighted average in the OECD). Other accounts payable (i.e. commercial debt with suppliers) amounted to 14% on weighted average at the end of 2014. Insurance pensions (i.e. liabilities related to funded or partially-funded civil servant pension schemes) represent 15% of SNG debt on weighted average. They are inexistent non-existent (or not recorded) in 23 OECD countries (Figure 3.18).

Definition

General government includes four sub-sectors: central/federal government and related public entities; federated government ("states") and related public entities; local government, i.e. regional and local governments, and related public entities; and social security funds. Data are consolidated within the four sub-sectors. Subnational government is defined as the sum of state governments and local/regional governments.

Fiscal balance is the difference between government revenues and expenditure. Gross debt includes the sum of the following liabilities: currency and deposits + debt securities + loans + insurance pension and standardised guarantees + other accounts payable. The SNA definition of gross debt differs from the one applied under the Maastricht Protocol (see Annex B for a detailed definition).

The OECD averages are presented as the weighted average of the OECD countries for which data are available, unless otherwise specified (i.e. unweighted average, arithmetic mean, OECD UWA).

Source

OECD (2016), *National Accounts Statistics* (database), *http://dx.doi.org/10.1787/na-data-en*.

OECD (2016), "Subnational Government Structure and Finance", *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/05fb4b56-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

National Economic Accounts; levels of government 2014; Iceland, Israel, Japan and Switzerland 2013. No data for Chile, Mexico and New Zealand. Non-consolidated debt data for Japan, Korea, Switzerland and United States; Canada, Japan and Turkey SNA 1993.

Further information

OECD (2016), "Subnational Governments in OECD Countries: Key data" (brochure), *www.oecd.org/gov/regional-policy/Subnational-governments-in-OECD-Countries-Key-Data-2016.pdf*.

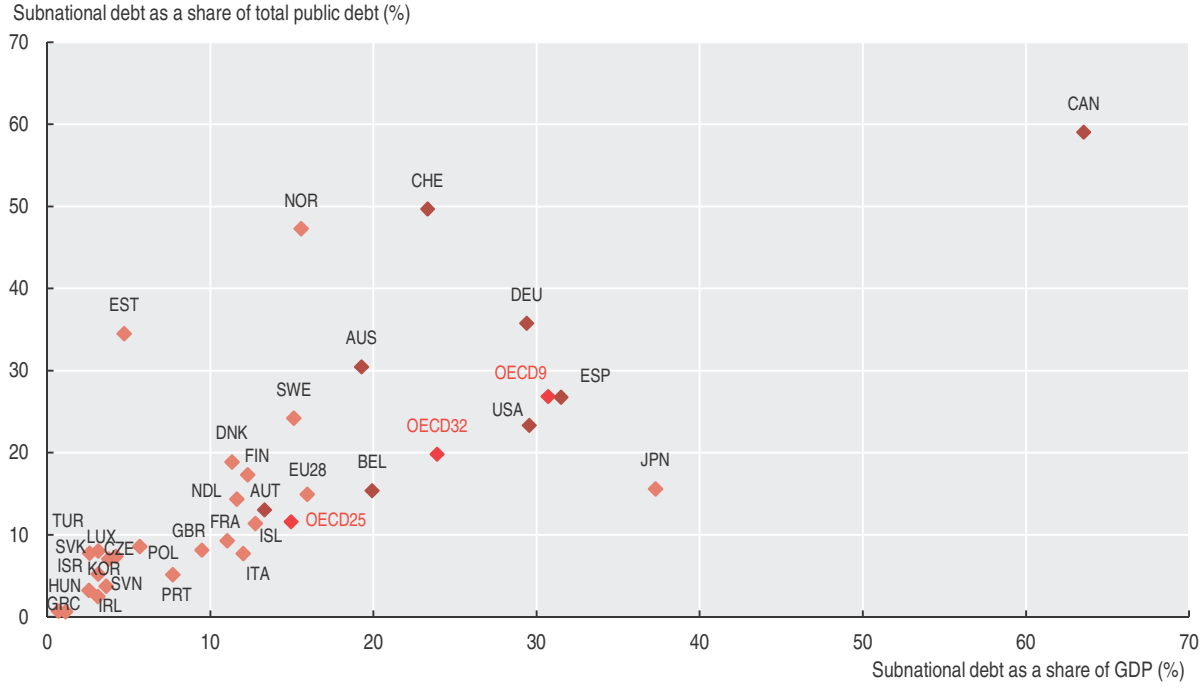
Figure notes

3.15-3.17: OECD9 and OECD25 refer to federal and unitary countries, respectively.

3.16-3.17: no breakdown available for Australia and United States between local and state levels.

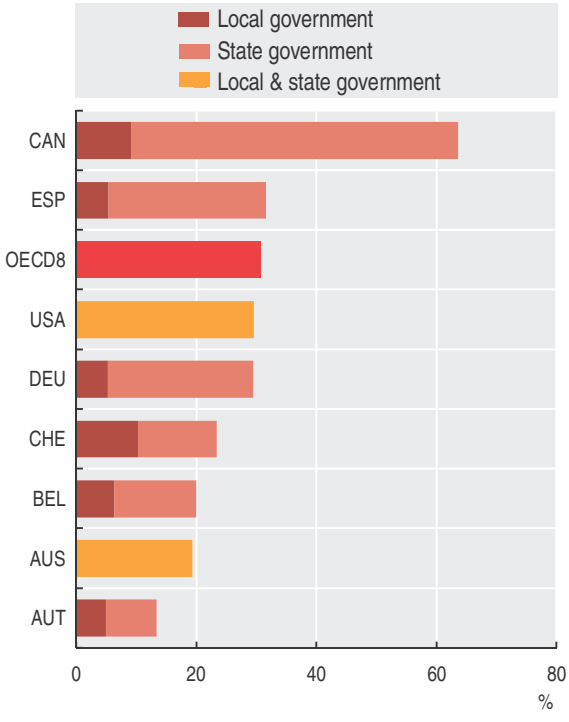
Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

3.15. Subnational government debt as a % of GDP and of public debt, 2014



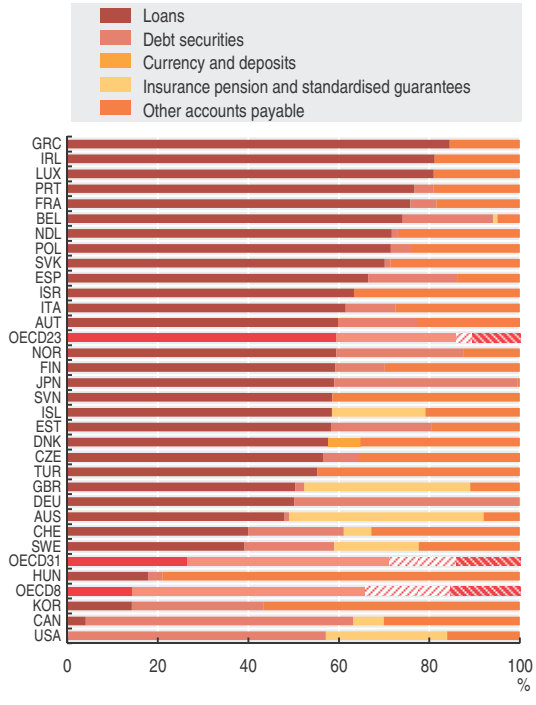
StatLink http://dx.doi.org/10.1787/888933363724

3.16. Local and state government debt in federal countries % of GDP, 2014



StatLink http://dx.doi.org/10.1787/888933363737

3.17. Composition of subnational debt by type of liabilities (%), 2014



StatLink http://dx.doi.org/10.1787/888933363748

Challenges for infrastructure investment at subnational level

The OECD and the EU Committee of the Regions conducted a survey in 2015 to assess the challenges linked to infrastructure investment at the local level across Europe. The results of the consultation show that governance challenges for infrastructure investment are prominent at the subnational level, essentially at the planning stage, and that all levels of government should do more to strengthen the capacities of subnational governments (SNGs) to conduct proper investment strategies. Some of the key findings are summarised below.

In the EU, 44% of the SNGs surveyed reported a decrease in their investment spending since 2010: 12% by less than 10% and 32% by more than 10% (Figure 3.18). Foregone investments concern new investment as well as operations and maintenance. These cuts in public investment are more frequently reported by large SNGs such as regions, inter-municipal/regional structures and counties. By contrast, 30% of small municipalities (less than 50 000 inhabitants) and 28% of medium-sized municipalities have increased their spending by more than 10% since 2010 (Figure 3.19). Smaller investment projects may be a possible consequence of this trend.

More than half (53%) of the SNGs surveyed reported a decrease in grants from the central government. Subnational taxes have proven quite stable in a majority of SNGs since 2010. Furthermore, 39% of SNGs reported a reduction or stabilization in borrowing to finance investment over the past 5 years and only 12% reported an increase. Only 4% of SNGs have increased the use of bond financing. This also reflects the fact that bond financing by SNGs is not permitted in many EU countries, in particular for municipalities (Figure 3.20).

Of the SNGs surveyed, 49% have no opinion on the private sector financing of infrastructure (Figure 3.20). This may reflect a lack of awareness regarding private financing options. Indeed, 23% have decreased their use of private sector financing since 2010. Only a minority of cities and regions (7%) report increasing private sources of financing since 2010, essentially metropolitan areas and regions. Larger SNGs may have the extensive technical and legal capacities required to engage in public private partnerships, while most SNGs below a certain size do not have those capacities. Problematic legal and regulatory environment for public private partnerships is another major challenge, as reported by 35% of SNGs.

Almost all SNGs reported gaps in public investment spending. The perceived financing gaps reflect the competencies allocated to various levels of government. Three-quarters of SNGs reported having experienced investment funding gaps for financing roads, and this rate is up to 85% for small municipalities (Figure 3.21). Almost half of SNGs reported gaps in financing educational infrastructure and 40% have difficulties in financing infrastructures for economic development, recreation and culture.

Challenges for SNG investment go beyond financing and include different aspects of the investment cycle, from the planning stage to implementation.

Three main challenges appear prominent according to the responses to the OECD-CoR survey.

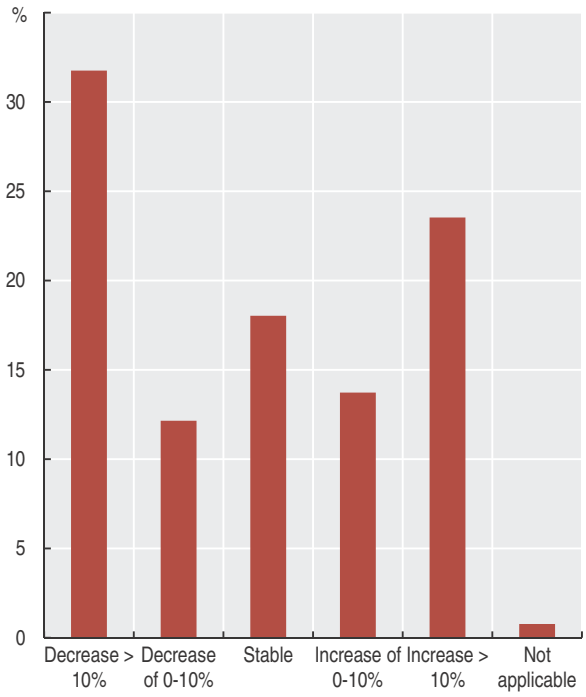
For the vast majority of respondents (90%), the most important difficulties for infrastructure investment are linked to excessive administrative procedures, red tape, and lengthy procurement procedures (Figure 3.22).

A second type of challenge, more directly connected with the responsibility of SNGs, is strategic planning for infrastructure investment strategies. At the core of planning a lack of co-ordination across sectors, levels of government and jurisdictions is marked as a top challenge by three-quarters of SNGs (Figure 3.22).

Finally, lack or weak use of monitoring and results from evaluation are recognised as important challenges for at least 65% of respondents, more prominently by large SNGs (regions, large municipalities). In addition, 66% of SNGs consider that a monitoring system exists, but that monitoring is pursued as an administrative exercise and not used as a tool for planning and decision making (Figure 3.22).

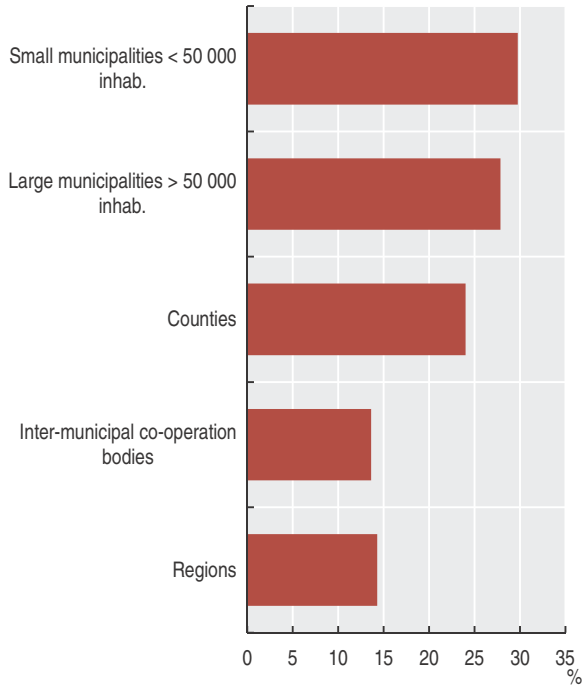
A significant number of SNGs have introduced practices to improve the governance of infrastructure investment in recent years (Figure 3.23). Improved medium-term planning for infrastructure investment is seen as key to improving the governance of investment by a majority of SNGs (67%). Increased external support for designing projects and improved co-operation with neighbouring local governments to favour economies of scale are equally seen as positive practices, which have helped the management of infrastructure investment by two-thirds of SNGs surveyed. It should be noted that the simplification of procurement procedures is seen by 20% of the respondents as a practice that has significantly helped the management of infrastructure investment (Figure 3.23).

3.18. Change in public investment spending in the city/region since 2010



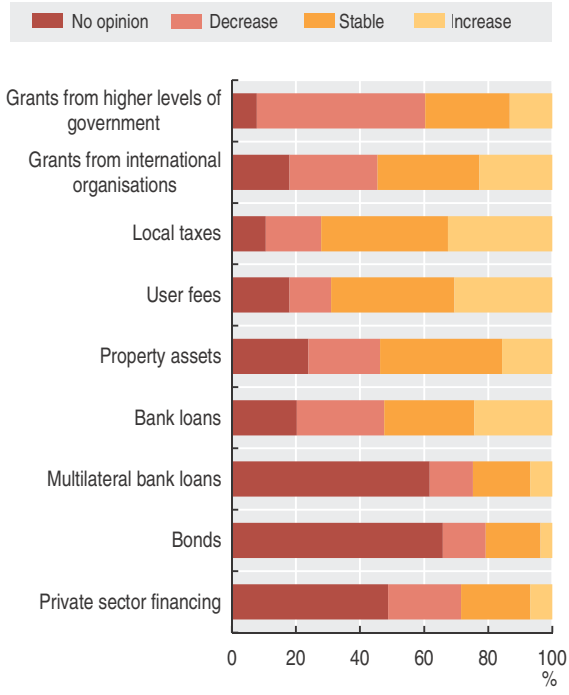
StatLink http://dx.doi.org/10.1787/888933363756

3.19. Type of SNG with an increase in public investment spending by more than 10% since 2010



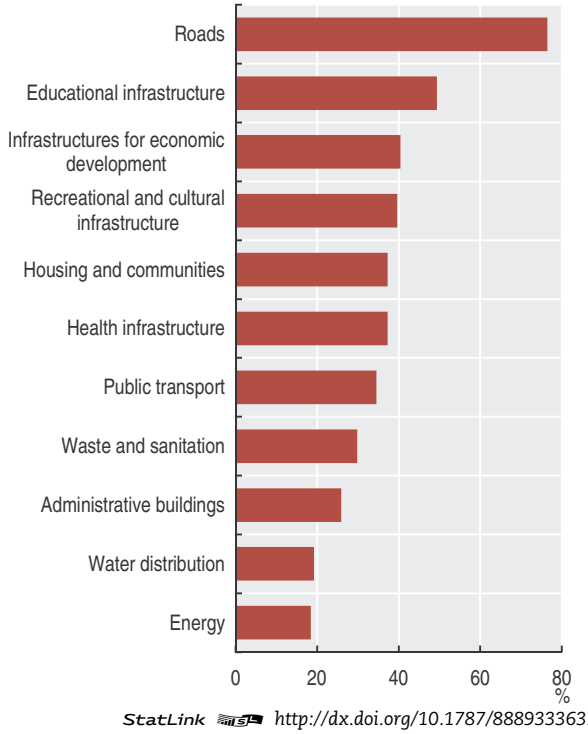
StatLink http://dx.doi.org/10.1787/888933363769

3.20. Change in sources of infrastructure investment funding in the city/region since 2010



StatLink http://dx.doi.org/10.1787/888933363775

3.21. Sectors most affected by funding gaps in the city/region in the past 5 years



StatLink http://dx.doi.org/10.1787/888933363789

Definition

The consultation was conducted by the OECD and the EU Committee of the Regions between 31 March and 15 July 2015 in all the official EU languages.

The survey targeted representatives of subnational governments (regions/ provinces/ landers, counties, municipalities) in charge of investment planning/ financing/monitoring and implementation.

Although the survey does not systematically cover all SNGs in Europe, it provides a picture of challenges encountered by SNGs. In total, there were 296 respondents, 255 of which are SNGs in 27 EU Member States (Luxembourg did not participate in the survey). They represent all categories of SNGs: regions, provinces (25%); intermediary entities (e.g. county, department) (10%); small municipalities i.e. under 50 000 inhabitants (33%); medium municipalities i.e. between 50 000 and 500 000 inhabitants (22%); large municipalities with more than 500 000 inhabitants (2%); and inter-municipal co-operation bodies (8%).

40 additional respondents participated in the survey representing universities, local public enterprises or local agencies with a mixed (public-private) ownership structure.

Source

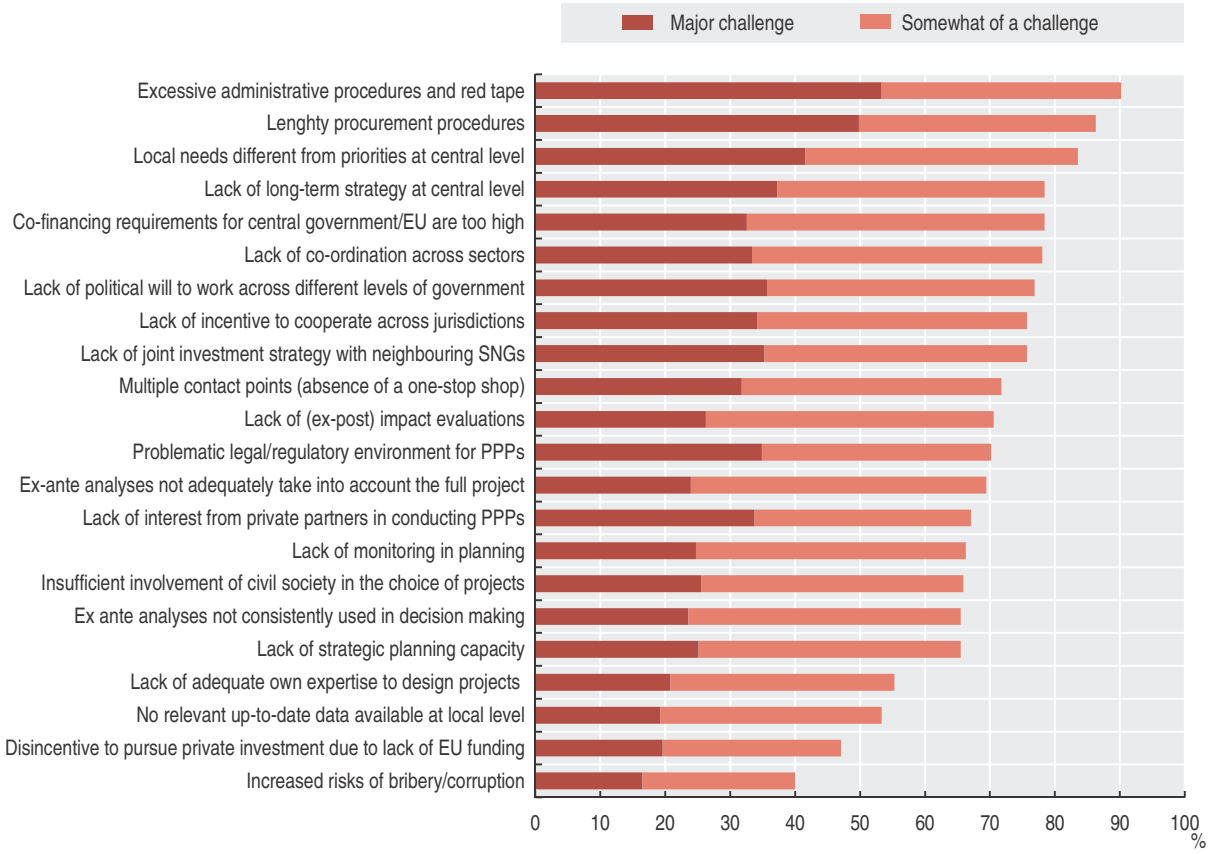
OECD-COR Survey (2015) – Policy highlights Infrastructure planning and investment across levels of government: Current challenges and possible solutions", *www.oecd.org/effective-public-investment-toolkit/oecd-eu-survey.htm*.

Further information

OECD (2015), "Recommendation on Effective Public Investment Across Levels of Government – Implementation Toolkit (brochure)", *www.oecd.org/effective-public-investment-toolkit/oecd-eu-survey.htm*.

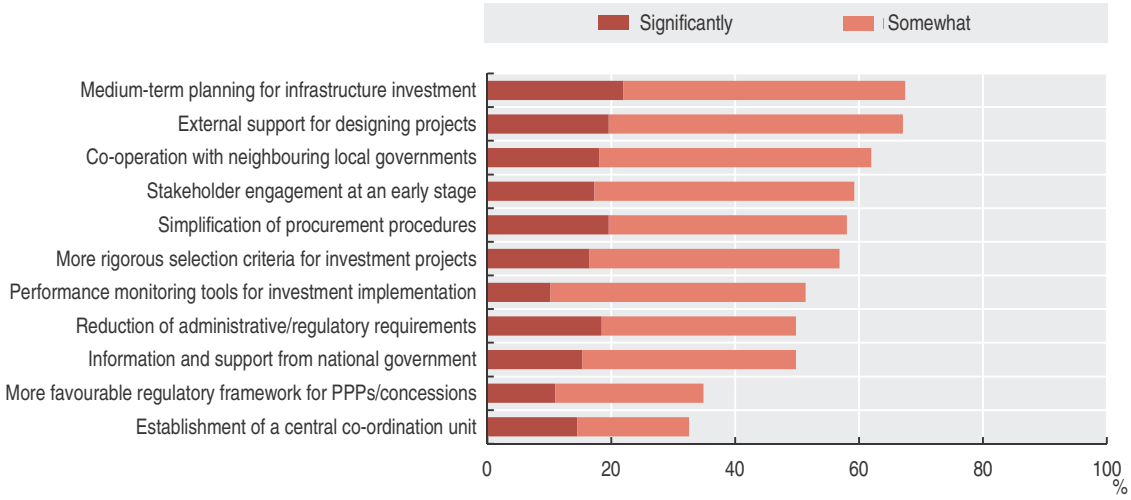
OECD (2013), *Investing Together: Working Effectively across Levels of Government*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264197022-en*.

3.22. What are the main challenges with respect to strategic planning and implementation of infrastructure investment in your city/ region?



StatLink http://dx.doi.org/10.1787/888933363797

3.23. Which practices have helped the management of infrastructure investment in your city/region?



StatLink http://dx.doi.org/10.1787/888933363809

4. INCLUSION AND SUSTAINABILITY IN REGIONS

Concentration of the elderly and children in regions

Demographic challenges of metropolitan areas

Population mobility among regions

Regional disparities in youth unemployment

Part-time employment in regions

Regional access to health

Municipal waste

Household income in metropolitan areas

The data in this chapter refer to TL2 regions in OECD and non-OECD countries, and to metropolitan areas in OECD countries. Regions are classified on two territorial levels reflecting the administrative organisation of countries. Large (TL2) regions represent the first administrative tier of subnational government. Small (TL3) regions are contained in a TL2 region. Metropolitan areas are identified on the basis of population density and commuting journeys, independently of administrative boundaries.

Concentration of the elderly and children in regions

In all OECD countries, with the exception of Luxembourg, the elderly population (those aged 65 years and over) has dramatically increased over the last decade, both in size and as a percentage of the total population.

Due to higher life expectancy and low fertility rates, the elderly population share has increased, accounting for 16% of the OECD population in 2014. In Japan, Italy, Germany, Greece and Portugal the elderly population was one-fifth or more of the total population in 2014. The proportion of elderly population is remarkably lower in the emerging economies (Brazil, Colombia, Peru and South Africa), and in Mexico and Turkey (Figure 4.1).

The elderly population in OECD countries increased more than five times as much as the rest of the population between 2000 and 2014. Significant differences in the growth of the elderly population share can be found among regions in Canada, Mexico, the United States, Spain and Belgium among the OECD countries, and the Russia Federation and Brazil in the non-OECD countries (Figure 4.2).

The elderly dependency rate gives an indication of the balance between the retired population and the economically active. The elderly dependency rate is steadily growing in OECD countries. In 2014, this ratio was around 24% in OECD countries, with substantial differences between countries (42% in Japan versus 10% in Mexico). Differences among regions within the same countries were also large.

In 2014, the elderly dependency rate across OECD regions was generally higher in rural regions than in urban ones. This general pattern was more pronounced in certain countries such as Japan, the Netherlands, Portugal, Spain, the United Kingdom, Australia and Korea (Figure 4.3). On the other hand, in Hungary, Poland and the Slovak Republic the elderly dependency rate was on average higher in predominantly urban regions than in rural regions. The higher the regional elderly dependency rate, the greater the challenges faced by regions in generating wealth and sufficient resources to provide for the needs of the population. Concerns may arise on the financial self-sufficiency of these regions to generate taxes to pay for these services.

The child-to-woman ratio is a measure of fertility, and at regional level it may also reveal specific needs in health and personal services. In Turkey, Canada, Mexico and Chile the children-to-woman ratio ranges across regions from 50 children or more per 100 women in the region with the highest value to less than 25 children per 100 women in the region with the lowest value (Figure 4.4).

Definition

The regional elderly population is the population aged 65 years and over.

The elderly dependency rate is defined as the ratio between the elderly population and the working age (15-64 years) population.

The child-to-woman ratio is defined as the ratio between the number of children aged 0-4 years and the number of females aged 15-49. This ratio is expressed for 100 women.

Source

OECD (2015), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annexes A and B for definitions, data sources and country-related metadata.

Reference years and territorial level

2000-14; TL3.

TL2 regions in Brazil, China, Colombia, Peru, Russian Federation and South Africa.

Further information

Territorial grids and regional typology (Annex A).

Figure notes

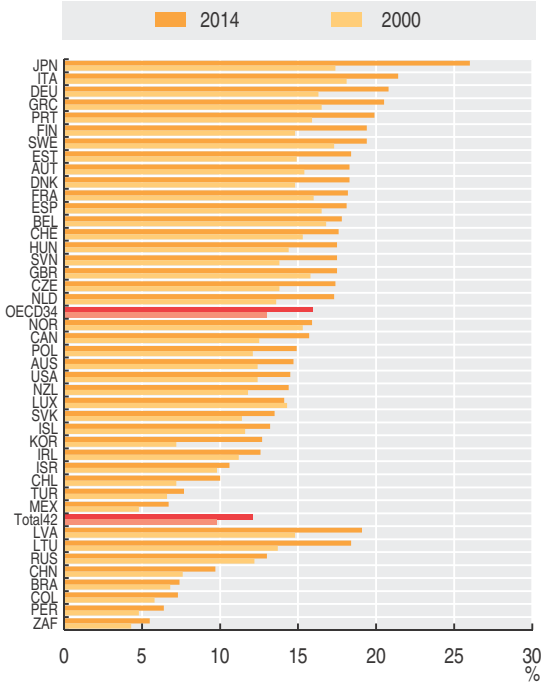
4.1-4.4: Latest available year: Mexico 2010. First available year: Australia and Japan 2001, South Africa 2002, Brazil 2004.

4.3: In order to better show the disparities between rural and urban regions, intermediate regions are not represented in this figure. No rural regions in the Netherlands and New Zealand.

4.4: Israel and Turkey 2013.

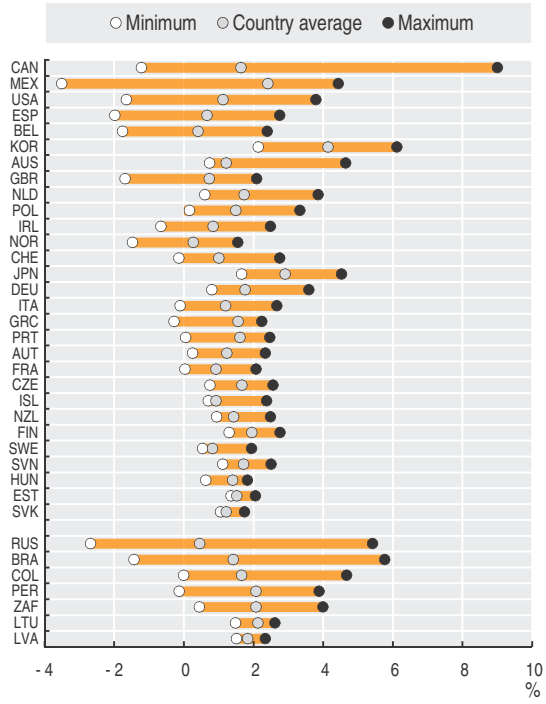
Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

4.1. Elderly population as a % of the total population, 2000 and 2014



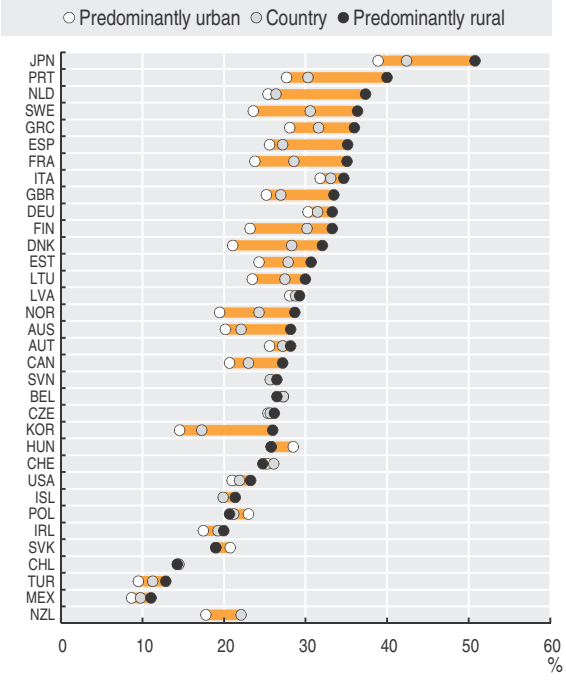
StatLink http://dx.doi.org/10.1787/888933363812

4.2. Yearly growth of regional elderly population, 2000-14 (TL3)



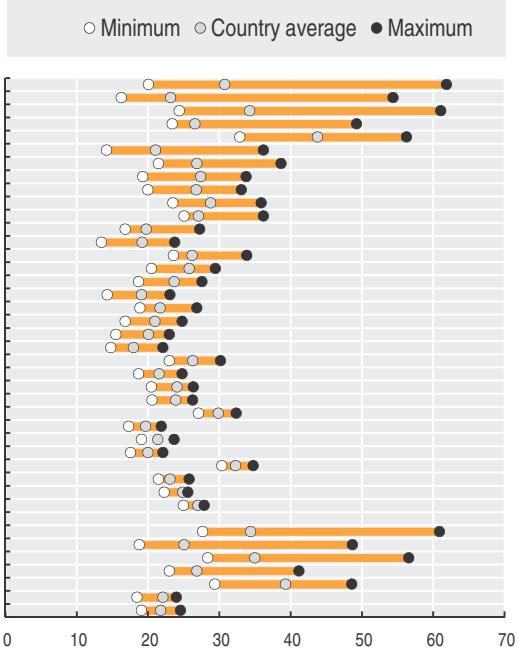
StatLink http://dx.doi.org/10.1787/888933363826

4.3. Elderly dependency rate for countries, predominantly urban and predominantly rural regions, 2014 (TL3)



StatLink http://dx.doi.org/10.1787/888933363832

4.4. Regional variation in child-to-woman ratio, children per 100 women, 2014 (TL3)



StatLink http://dx.doi.org/10.1787/888933363847

Demographic challenges of metropolitan areas

Metropolitan areas are generally the destination of young migrants. Despite this, population ageing has become also an urban phenomenon in many OECD countries. The elderly dependency rate, i.e. the ratio between the elderly population and the working age population, across the 281 OECD metropolitan areas was equal to 22% in 2014, very close to the 24% average in OECD countries. However, while in Japanese metropolitan areas the elderly dependency rate was on average 40% in 2014, in Mexico metropolitan areas this was below 10% (Figure 4.5).

Over the period 2000-14, OECD metropolitan areas have experienced a general rise in the elderly dependency rate (on average, a 4 percentage point increase). The elderly dependency rate increased by more than 5 percentage points on average in the metropolitan areas of Japan, Germany, Italy, Portugal and Greece, between 2000 and 2014. Over the same period, the elderly dependency rate decreased in the metropolitan areas of Belgium, Norway and the United Kingdom (Figure 4.5).

The increase in the elderly dependency rate is due to the rapid increase of the elderly population in all metropolitan areas (on average 2.8% annual growth rate in the period 2000-14) and a moderate increase in the working age population (on average 1% annual growth rate over the same period). In the metropolitan areas of Estonia, Germany, Japan and Greece the working age population declined over the period under analysis (Figure 4.6).

Definition

281 Metropolitan areas have been identified for 30 OECD countries. They are defined as the functional urban areas (FUA) with a population above 500 000.

Functional urban areas can extend across administrative boundaries, reflecting the economic geography of where people actually live and work.

The elderly dependency rate is defined as the ratio between the elderly population and the working age (15-64 years) population.

Elderly dependency rate can be quite different across metropolitan areas in the same country. For example, the difference between Genoa and Naples in Italy, and between Naha and Shizouka in Japan is more than 22 percentage points (Figure 4.7).

Source

OECD (2015), "Metropolitan areas", *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/data-00531-en*.

Reference years and territorial level

2000-14; metropolitan areas.

The FUA have not been identified in Iceland, Israel, New Zealand and Turkey. The FUA of Luxembourg does not appear in the figures since it has a population below 500 000 inhabitants.

Further information

OECD (2015), *Ageing in Cities*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264231160-en*.

OECD (2014), *Society at a Glance 2014: OECD Social Indicators*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/soc_glance-2014-en*.

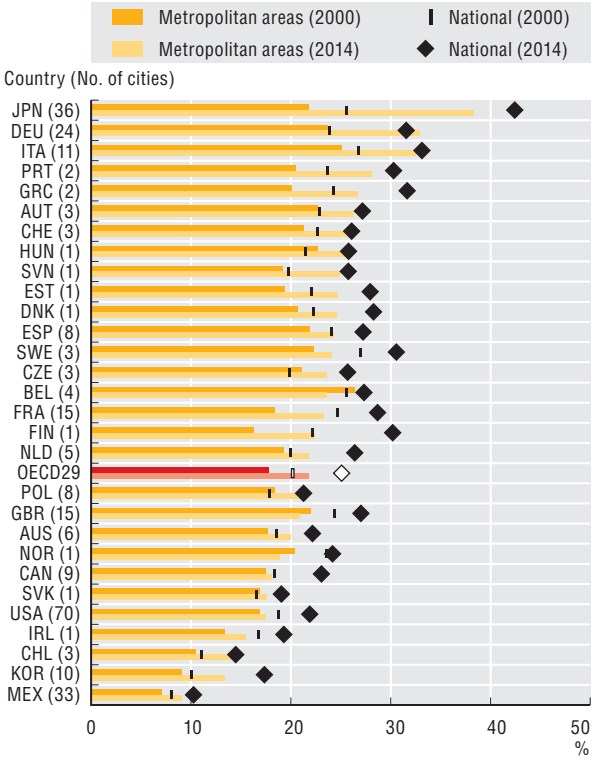
OECD (2012), *Redefining "Urban": A New Way to Measure Metropolitan Areas*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264174108-en*.

Figure notes

4.5-4.7: Country metropolitan average refers to the average of all metropolitan areas in a country. Metropolitan population figures are estimates based on municipal figures for the last two census available for each country.

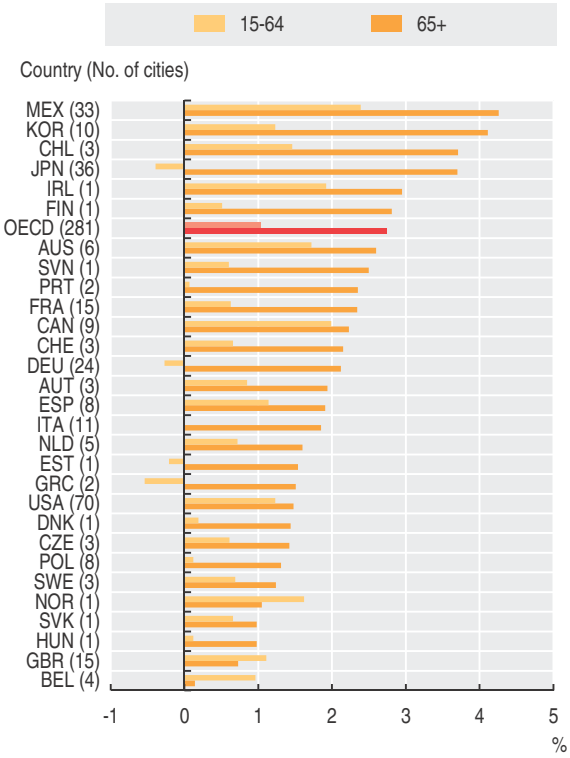
Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

4.5. Elderly dependency rate in OECD metropolitan areas, 2000 and 2014



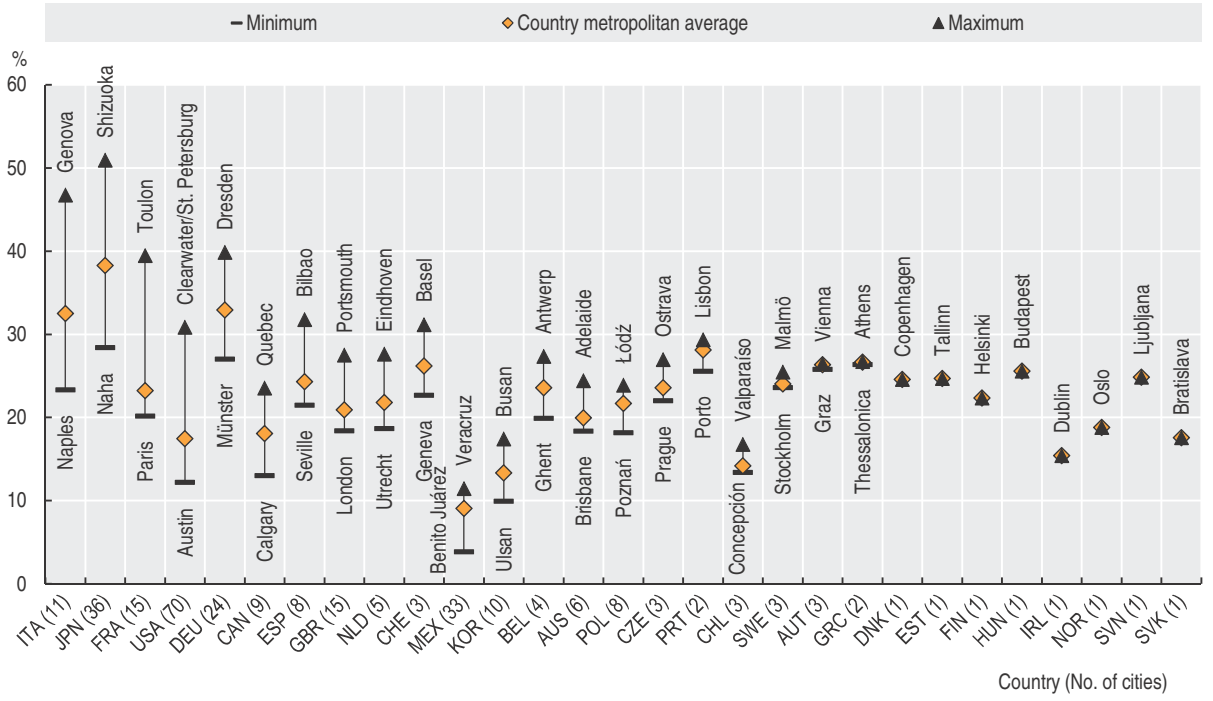
StatLink http://dx.doi.org/10.1787/888933363852

4.6. Annual average growth rates in OECD metropolitan areas (working age population and elderly population), 2000-14



StatLink http://dx.doi.org/10.1787/888933363861

4.7. Countries ranked by differences in old age dependency ratio at metropolitan level, 2014



StatLink http://dx.doi.org/10.1787/888933363874

Population mobility among regions

Inter-regional mobility within countries is an important component of the change in the demographic structure and in the labour force supply.

In the 29 observed OECD countries, 24 million people changed their region of residence yearly in the period 2011-13. This movement corresponded to almost 5% of total population in Korea and Hungary, less than 0.5% in the Slovak Republic and 2% of the total population in the OECD area, more than four times the value of the international migration rate to OECD countries (Figure 4.8).

Regional migration does not affect all regions of a country equally: Division 16, Alberta (Canada), Gümüshane (Turkey) and North Aegean (Greece) were the TL3 regions with the highest positive net migration rate, 3.4%, 2.2% and 1.6% of the regional population, respectively. Agri (Turkey), the Northern Territory-Outback (Australia) and the Region 5, Northwest Territories (Canada) were among the TL3 regions with the highest negative net migration rates (Figure 4.9).

On aggregate, the net migration rate in the predominantly urban regions of 26 OECD countries was 6 people per 10 000 population in 2011-13 versus -2 and -10 in intermediate and rural regions, respectively. However, net migration rates were negative in urban regions in Korea, the United Kingdom, Switzerland, Australia, Portugal and Belgium. On average rural regions were net recipients of regional migration in Korea, Belgium, Switzerland, the United Kingdom and Portugal (Figure 4.10).

Distance to labour markets and services seems to explain migration within OECD countries: with the exception of Turkey, the United States, and Sweden, remote rural regions – i.e. regions which are far in driving distance from urban agglomerations – show higher net negative flows than predominantly rural regions.

The mobility of youth aged from 15 to 29 years old, which represents 10% of the total internal mobility for the observed 17 countries, is, on average, a migration from rural to urban regions where higher education facilities and more diverse job opportunities can be found. In Korea, Germany, the United Kingdom, Japan and the Slovak Republic, more than 90% of young migrants move to predominantly urban regions. Rural regions in Japan will bear the largest share of the future decline in population because of the already high incidence of an elderly population reinforced by out-migration of young people. In contrast, the youth migration flows towards Izmir (Turkey), Gyeonggi-do (Korea) or Inner London-West (United Kingdom), even if still positive, decreased by 30% in the years following the economic crisis (Figure 4.11).

Definition

Data refer to yearly flows of population from one TL3 region to another TL3 region of the same country (regional migration). Outflows are represented as the number of persons who left the region the previous year to reside in another region of the country, while inflows are represented as the number of new residents in the region coming from another region of the country.

The net migration flow is defined as the difference between inflows and outflows in a region. A negative net migration flow means that more migrants left the region than entered it.

Young migrants are those aged between 15 and 29.

Source

OECD (2015), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

2009-13; TL3.

Data for Chile, France, Ireland and New Zealand are not available at regional level.

Further information

Territorial grids and regional typology (Annex A).

Figure notes

4.8-4.10: Available years: Germany 2011-12; Greece, Portugal, Slovenia and United States 2011; Mexico and Netherlands 2010.

4.9: For Canada, the migration flows exclude the region of Stikine, British Columbia.

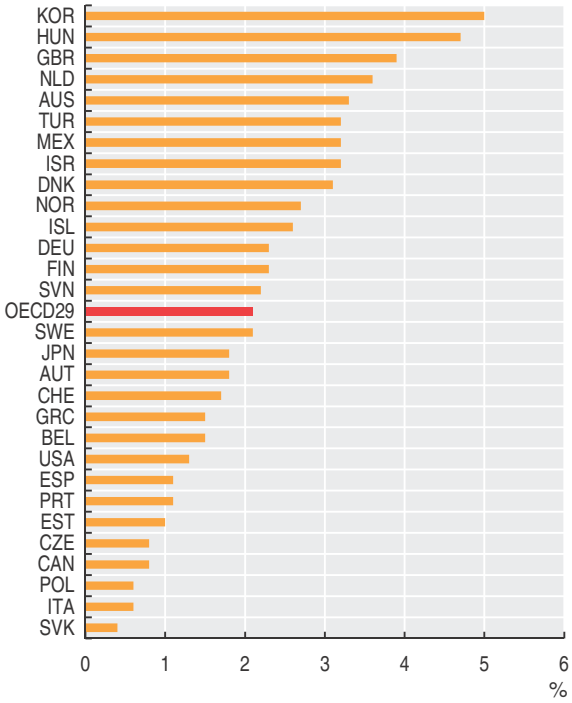
4.11: Available years: Germany 2009-12, Japan 2010-13, Portugal 2011. United Kingdom data do not include Scotland and Northern Ireland.

Greece and Iceland do not have net positive flows in predominantly urban regions.

Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

4.8. Annual regional migration rate, average 2011-13

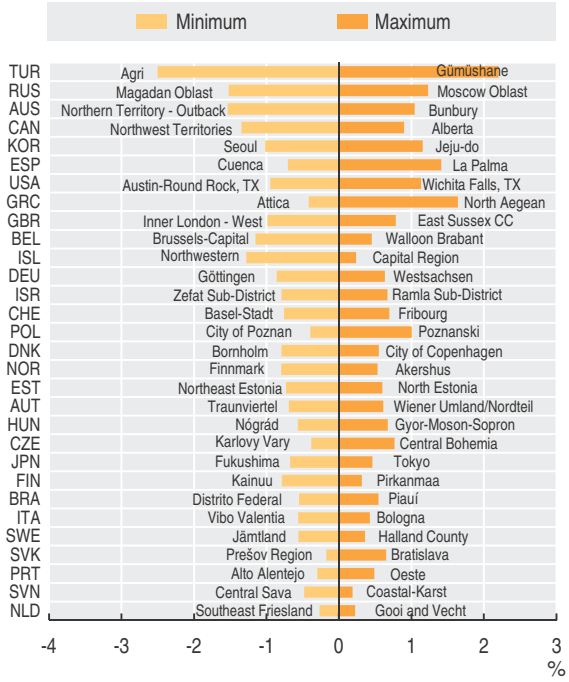
Flows across TL3 regions, % of total population



StatLink http://dx.doi.org/10.1787/888933363889

4.9. Maximum and minimum annual regional migration rate, average 2011-13

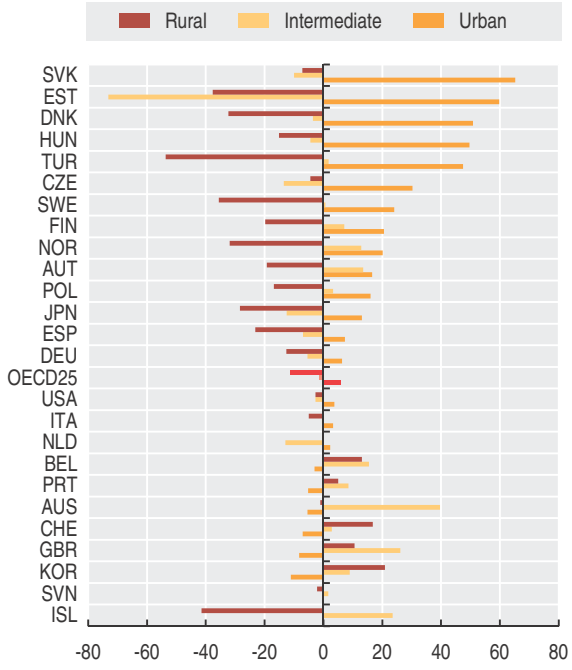
Net flows across TL3 regions, % of total population



StatLink http://dx.doi.org/10.1787/888933363899

4.10. Annual regional migration rate per typology of region, average 2011-13

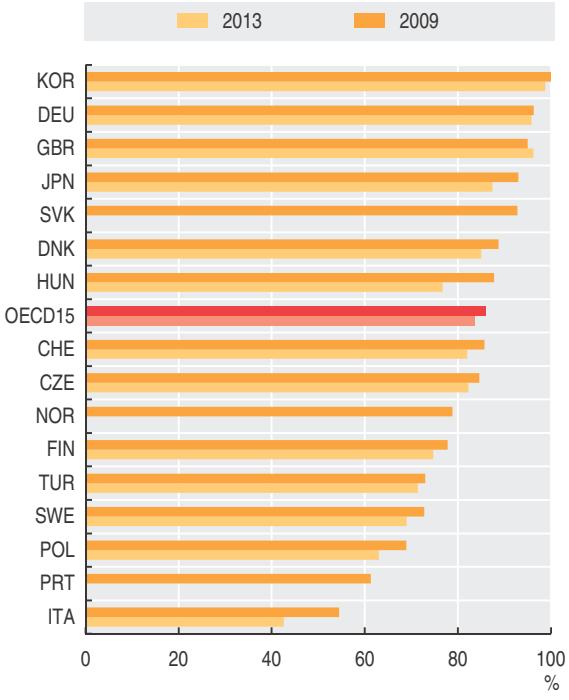
Net flows across TL3 regions per 10 000 population



StatLink http://dx.doi.org/10.1787/888933363901

4.11. Young migrants in urban regions as a % of young migrants in the country, 2009 and 2013

Positive net flows of youth migration across TL3 regions



StatLink http://dx.doi.org/10.1787/888933363916

Regional disparities in youth unemployment

The long-term development of societies, politically and economically, depends to a great extent on the knowledge, skills, values and competences acquired by people at an early age. Educational and working opportunities for the young people are also fundamental to enhance social cohesion, by discouraging people from engaging in illegal activities, reducing political and social conflict, and increasing trust in others and in institutions.

In the lagging regions of seven OECD countries and three non-OECD countries, youth unemployment has decreased since 2008. Among the OECD countries, Germany, Chile, France and Israel experienced the largest decreases in youth unemployment over the period 2008-14 (Figure 4.12).

Important regional disparities in youth unemployment still remain within OECD countries; Italy, Greece, Turkey and Spain present the largest subnational gaps in this indicator, 47, 43, 27 and 24 percentage point regional differences, respectively (Figure 4.13).

Another important indicator that depicts a lack of opportunities for the youth in a broader sense is the rate of young people neither in employment nor in education and training (NEET). This indicator is particularly important since it not only reveals, to a certain extent, the current exclusion of the youth in the productive side of the economy, but also the fact that they are not acquiring the skills and competences necessary for both their long-term individual well-being and the long-term development of their country. Strikingly, the regions of Southeastern Anatolia-East (Turkey), Central Greece and Sicily (Italy) have a NEET rate of 52.3%, 43.4% and 42.1% respectively; on the other hand, the regions of Tel Aviv District (Israel), Hokuriku (Japan), Western Norway and Southwest Overijssel (Netherlands) have NEET rates below the 5% (Figure 4.14).

Definition

The youth unemployment rate is defined as the ratio between unemployed persons aged between 15 and 24 and the labour force in the same age class (expressed as a percentage).

The indicator rate of young people neither in employment nor in education and training (NEET) corresponds to the percentage of the population aged 18-24 that is neither employed nor involved in further education or training with respect to the population of the same age class. Regional comparable values are available only for Europe.

Lagging regions are here defined as the regions with the highest unemployment rate and that concentrate 20% of the country's youth (15-24 years old) population.

Source

OECD (2015), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

Youth unemployment and NEET: 2014 or latest available; TL2 except for New Zealand for which data is available only for the regions of North Island and South Island.

Further information

OECD (2015), *How's Life? 2015: Measuring Well-being*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/how_life-2015-en*.

Figure notes

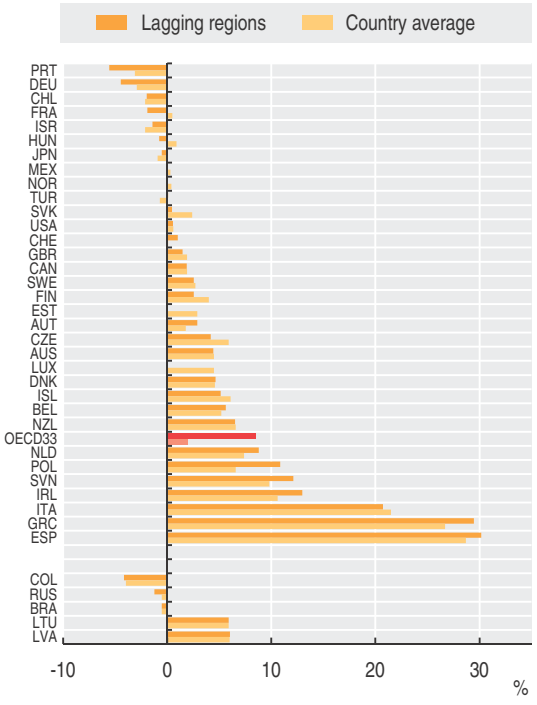
4.12-4.13: Korea is not included. Reference years: Greece, Slovak Republic and Switzerland 2009; Chile, France and Mexico 2010; Portugal 2012. Latest available years: Iceland 2011; New Zealand 2012; and Brazil and Israel 2013.

4.12: The change from the reference year to the latest year available corresponds to the change in percentage points of the average youth unemployment of the regions with the highest unemployment rate and with the 20% of the country's youth (15-24 years old) population. The regions of Burgenland, Carinthia, Salzburg, Vorarlberg (Austria); Åland (Finland); Corsica (France); Zeeland (New Zealand); and Bremen and Saarland (Germany) are not included.

4.14: Australia, Canada, Chile, Israel, Korea and Mexico are not included. Latest available years: Brazil, Israel and South Africa 2013.

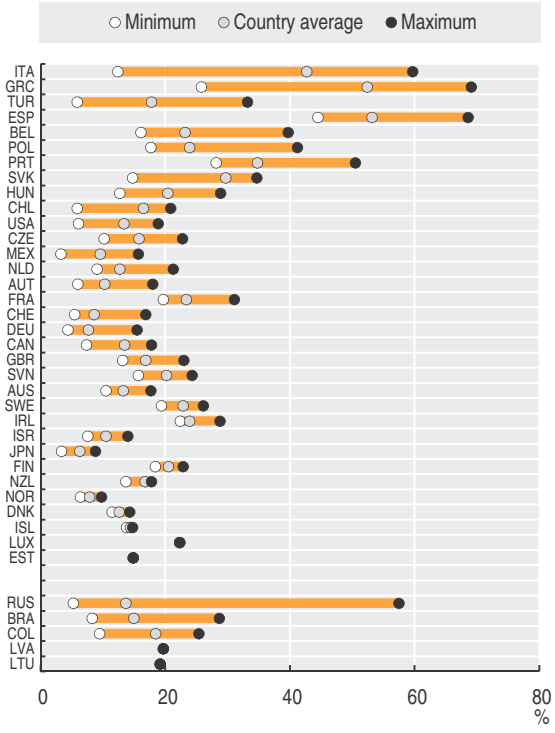
Information on data for Israel: http://dx.doi.org/10.1787/888932315602.

4.12. Change in the youth unemployment rate between 2008 and 2014, country average and lagging regions, (percentage points) (TL2)



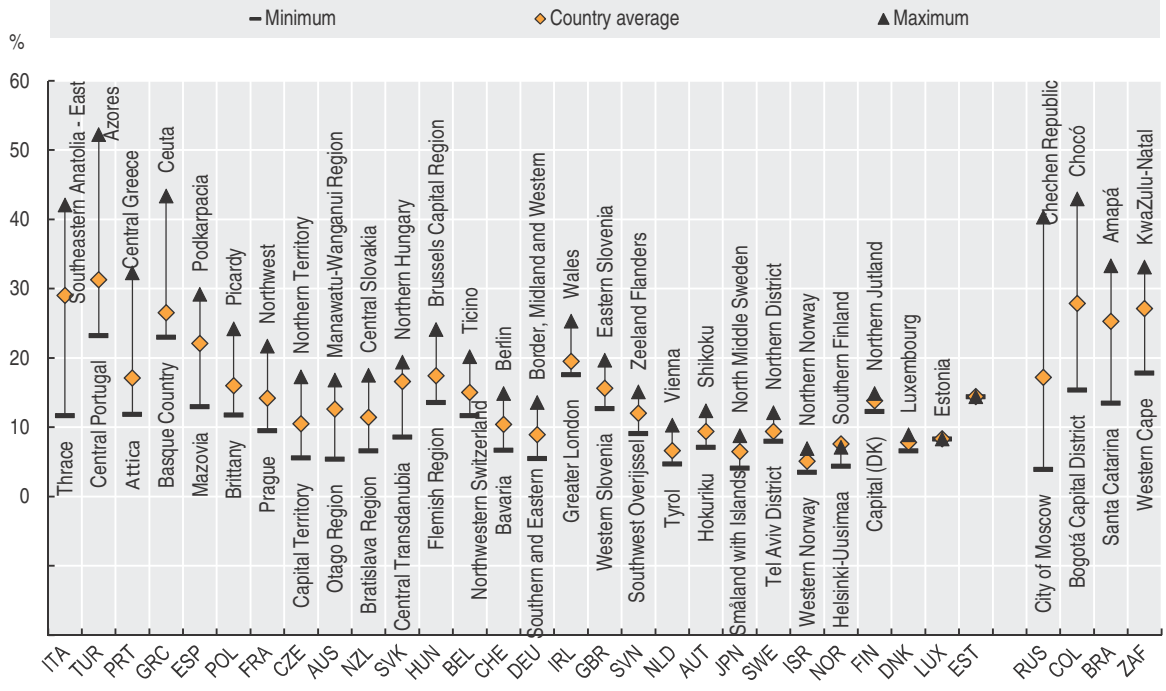
StatLink http://dx.doi.org/10.1787/888933363925

4.13. Regional variation in youth unemployment rate, 2014 (TL2)



StatLink http://dx.doi.org/10.1787/888933363930

4.14. Regional variation in the rate of young people NEET, 2014 (TL2)



StatLink http://dx.doi.org/10.1787/888933363941

Part-time employment in regions

Part-time employment has increased in many OECD countries during the past years, representing almost one-fifth of total employment in 2014. Depending on the institutional and economic context, part-time employment can have opposing effects on the well-being of the working population. On the one hand, part-time workers may suffer a penalty compared to their full-time counterparts in terms of job-security, training, promotion, and unemployment benefits. On the other hand, part-time employment can offer a better family-friendly working-time arrangement. In general, in the presence of the right incentives, part-time jobs seem to promote labour force participation and can be a relevant alternative to inactivity (OECD, 2015a).

The incidence of part-time employment is not evenly distributed across OECD regions. Regions in the Netherlands and Switzerland show the highest shares of part-time employment across the OECD countries considered; while the regions with the lowest share of part-time employment are found in Eastern European countries such as the Slovak Republic, Hungary, Estonia, the Czech Republic and Poland (Figure 4.15). Large regional disparities within countries are found in Turkey, Australia and Chile where, in 2014, the region with highest share of part-time employment has a value more than twice as high as the region with the lowest value (Figure 4.15).

The gender composition of part-time employment is influenced not only by regional demographic characteristics but also by regulatory settings and access to family-oriented services (for example child and elderly care services), which may contribute to increasing the participation of women into the workforce. In the Province of Bolzano-Bozen (Italy), Vorarlberg (Austria), Bavaria (Germany), Basque Country (Spain), Franche-Comté (France), Northern Aegean (Turkey) and Wallonia (Belgium), women account for more than 80% of the total part-time employment, 10 percentage points higher than the OECD average (Figure 4.16). Regions with small shares of women working part-time are Southeastern Anatolia-East (Turkey), Alentejo (Portugal), West Greece and East Slovakia, where the share of women in part-time employment is lower than 50% of the total part-time employment (Figure 4.16).

Definition

The definition of part-time work varies considerably across OECD member countries. The OECD defines part-time working in terms of usual working hours fewer than 30 per week. However, for European TL2 regions, the distinction between full-time and part-time work is based on a spontaneous response by the respondent; except in the Netherlands, Iceland and Norway, where part-time is determined if the usual hours are fewer than 35 hours.

At regional level, a harmonised definition of part-time employment does not exist. Indeed, for some countries, the number of hours defining the number of part-time employees in a region differs from the OECD definition. This makes regional values differ from national estimates relying on a harmonised definition.

Incidence of part-time employment refers to the proportion of part-time employees with respect to the total number of employed persons in a region.

Source

OECD (2015), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

Reference years and territorial level

2014; TL2.

Israel, Norway, United States and Brazil 2013. New Zealand 2012.

No regional data are available for Iceland and Korea.

Further information

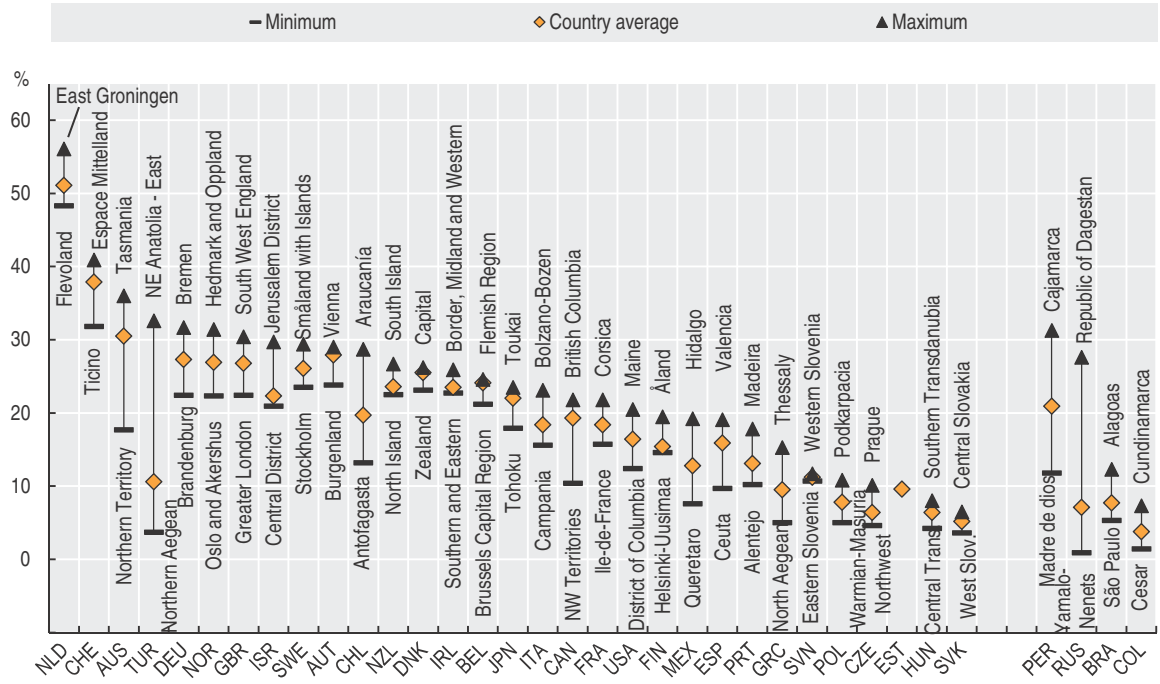
OECD (2015), "The incidence of part-time employment has continued to increase: Percentage of employees aged 15-64, 2007-14", in *OECD Employment Outlook 2015*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/empl_outlook-2015-graph7-en*.

Figure notes

4.16: Female part-time employment data exclude the regions of Yukon, Northwest Territories and Nunavut for Canada, and Åland for Finland.

Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

4.15. Regional variation in the percentage of part-time employment, 2014 (TL2)



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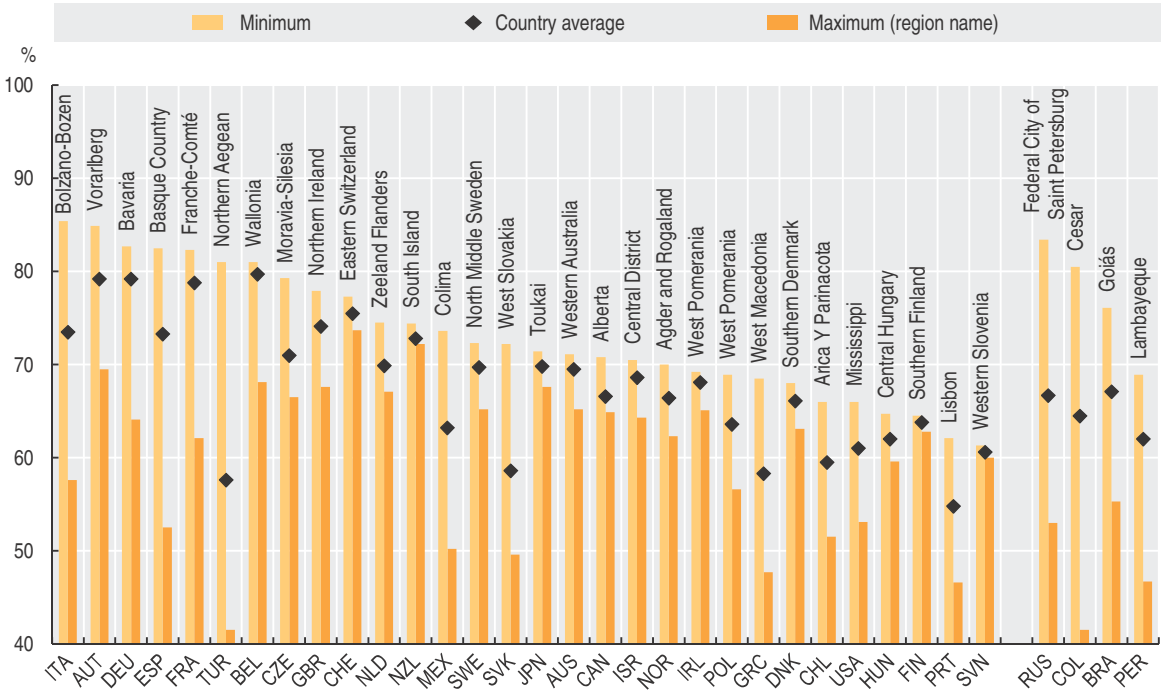
4.16. Share of female part-time employment: Highest and lowest, 2014 (TL2)



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Regional access to health

Health services and doctors are distributed unequally across different regions in most OECD countries, and this causes concern about how to ensure access to health everywhere and foster better health outcomes.

The most important regional differences in the number of hospital beds per 10 000 inhabitants can be found in Japan, Poland and Germany. Very low levels of hospital beds are found in Nuevo Leon (Mexico), Tarapaca (Chile), Yukon (Canada) and Southeastern Anatolia-East (Turkey), where the hospital beds were below 20 per every 10 000 inhabitants in 2013 (Figure 4.17).

In 2013, the largest regional disparities in the density of physicians were found in the United States, Greece, the Czech Republic and the Slovak Republic. While regions such as the District of Columbia (United States) and Attica (Greece) had levels close to 9 active physicians per every 1 000 inhabitants, in Illinois (United States) and Central Greece the density of physicians was below 3 doctors per 1 000 people (Figure 4.18).

In the period 2008-13, the change in the density of physicians has been modest in the lagging regions, i.e. those regions with the lowest density of physicians and concentrating 20% of the country's population; on average it increased only by 0.2 doctors per 1 000 inhabitants. Nevertheless, some improvements can be observed in the lagging regions of Israel, Portugal, Finland, Estonia, Norway and Slovenia (an average increase of 0.5 physicians per 1 000 inhabitants); whereas the lagging regions of Spain and Belgium have worsened over the same period (an average decrease of 0.7 doctors per 1 000 inhabitants) (Figure 4.19).

Definition

The number of physicians includes general practitioners and specialists actively practicing medicine during the year in both public and private institutions. Density of physicians is defined as the number of active physicians per every 1 000 people.

The number of hospital beds refers to beds in all hospitals, including general hospitals, mental health and substance abuse hospitals, and other specialty hospitals. Hospital bed rate is defined as the number of hospital beds for every 10 000 people.

Lagging regions are here defined as the regions with the lowest density of physicians and that concentrate 20% of the country's population.

Source

OECD (2015), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

See Annex B for data sources and country-related metadata.

Reference years and territorial level

Density of physicians: 2013 or latest available; TL2 except for Estonia which is presented at the TL3 level, and for New Zealand for which data is available only for the regions of North Island and South Island.

Hospital bed rate: 2013 or latest available; TL2 except for Estonia which is presented at the TL3 level.

Further information

OECD (2015), *How's Life? 2015: Measuring Well-being*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/how_life-2015-en*.

Ono,T., M. Schoenstein and J. Buchan (2014), "Geographic Imbalances in Doctor Supply and Policy Responses", *OECD Health Working Papers*, No. 69, OECD Publishing, Paris, *http://dx.doi.org/10.1787/5jz5sq5ls1wl-en*.

Figure notes

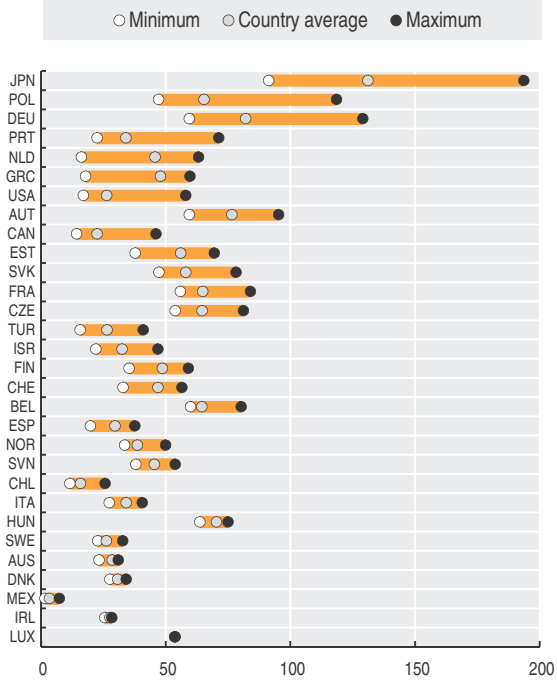
4.17: Iceland, Korea, New Zealand and United Kingdom are not included. Latest available years: Netherlands 2002; Chile and United States 2009; Belgium, Canada, Japan and Luxembourg 2010; Greece and Mexico 2011; Australia, Israel, Italy and Sweden 2012.

4.18-4.19: Iceland and Ireland are not included. Reference years: Peru 2007; Chile 2010. Latest available years: New Zealand and United Kingdom 2010; Canada, Chile, Luxembourg and United States 2011; Australia, Belgium, Denmark, Israel, Japan, Peru and Sweden 2012; and Korea 2014.

4.19: The change from the reference year to the latest year available corresponds to the change in the density of physicians (active physicians per 1 000 inhabitants) of the regions with the lowest density of physicians and with 20% of the country's population.

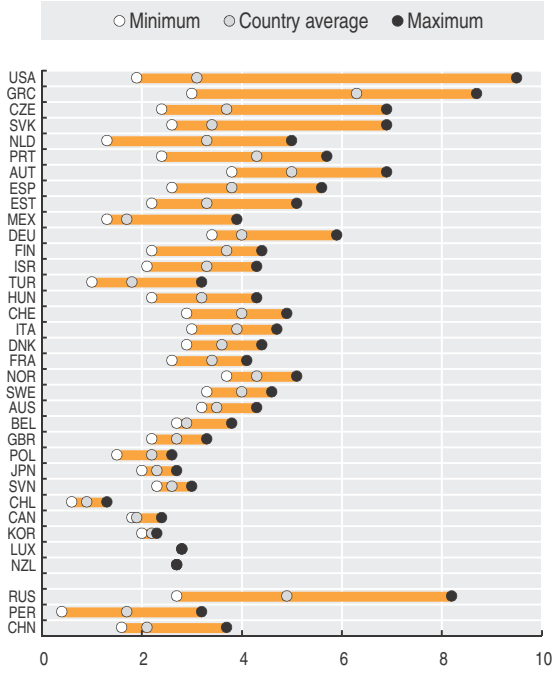
Information on data for Israel: http://dx.doi.org/10.1787/888932315602.

4.17. Regional variation in hospital bed rate (per 10 000 inhabitants), 2013 (TL2)



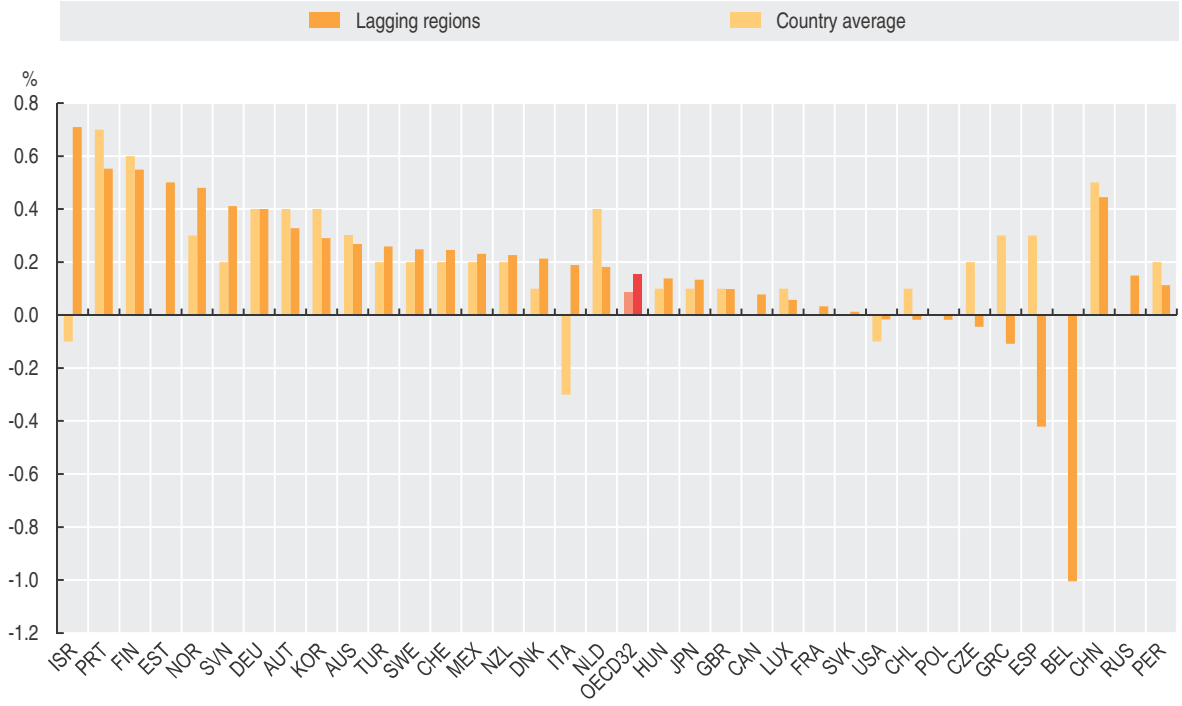
StatLink http://dx.doi.org/10.1787/888933363978

4.18. Regional variation in density of physicians (per 1 000 inhabitants), 2013 (TL2)



StatLink http://dx.doi.org/10.1787/888933363986

4.19. Change in density of physicians (per 1 000 inhabitants) between 2008 and 2013, (TL2)



StatLink http://dx.doi.org/10.1787/888933363997

Municipal waste

Municipal waste management and treatment play an important role to abate and control pollution. Indeed, it helps prevent the formation of greenhouse gas emissions, such as methane and other toxic gases, which form through the degradation of organic waste in landfills, particularly in warmer climates. Additionally, efficient waste management reduces the risk of spreading diseases.

Waste production depends largely on consumption, production patterns, lifestyles, among other things. In 2013, 518 kg per capita of municipal waste were produced on average across OECD countries. This figure varied from 293 kg per capita in Estonia to 751 kg per capita in Denmark (Figure 4.20). Over the past 20 years, municipal waste generated in the OECD area was stable. The largest increases were experienced in countries such as Denmark, Greece, and Austria (over 140 kg per capita in this period), while countries such as New Zealand or Slovenia registered the largest decrease in the municipal waste production per capita (more than 180 kg per capita). Despite the use of different methodologies in accounting for national waste which could influence the comparison of national data, 51% of the countries under analysis show improvements in waste management practices over this period.

Municipal waste differences also exist within the same country (Figure 4.21). Significant regional differences between the lowest and the highest regions in terms of waste per capita exist in Chile, Spain, Mexico and Canada.

Definition

Municipal waste is generally defined as the total waste collected by or on behalf of municipalities. It includes waste from households, commerce, institutions and small businesses, yard and garden. The definition excludes municipal waste from construction and demolition and municipal sewage.

Waste recycled refers to the total waste recycled or incinerated (including composting).

Similarly, large differences are observed at the regional level in terms of recycled waste. The largest differences, among the 18 OECD countries where data are available, are observed in the Slovak Republic, Germany and Poland (Figure 4.22).

Source

National data: OECD (2016), *OECD Environmental Statistics* (database), *http://dx.doi.org/10.1787/env-data-en*.

Regional data: OECD (2016), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

OECD (2015), "Metropolitan areas", *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/data-00531-en*.

Reference years and territorial level

2013; TL2.

No regional data are available for Australia, Switzerland, Denmark, Finland, Greece, Iceland, New Zealand, Sweden and the United States. See Annex B for data sources and country-related metadata. The sum of collected regional data on waste does not always match the OECD national data.

No municipal waste recycling data at regional level are available for Australia, Canada, Chile, Denmark, Finland, Greece, Iceland, Ireland, Israel, Mexico, New Zealand, Spain, Sweden, Switzerland, Turkey and the United States.

Further information

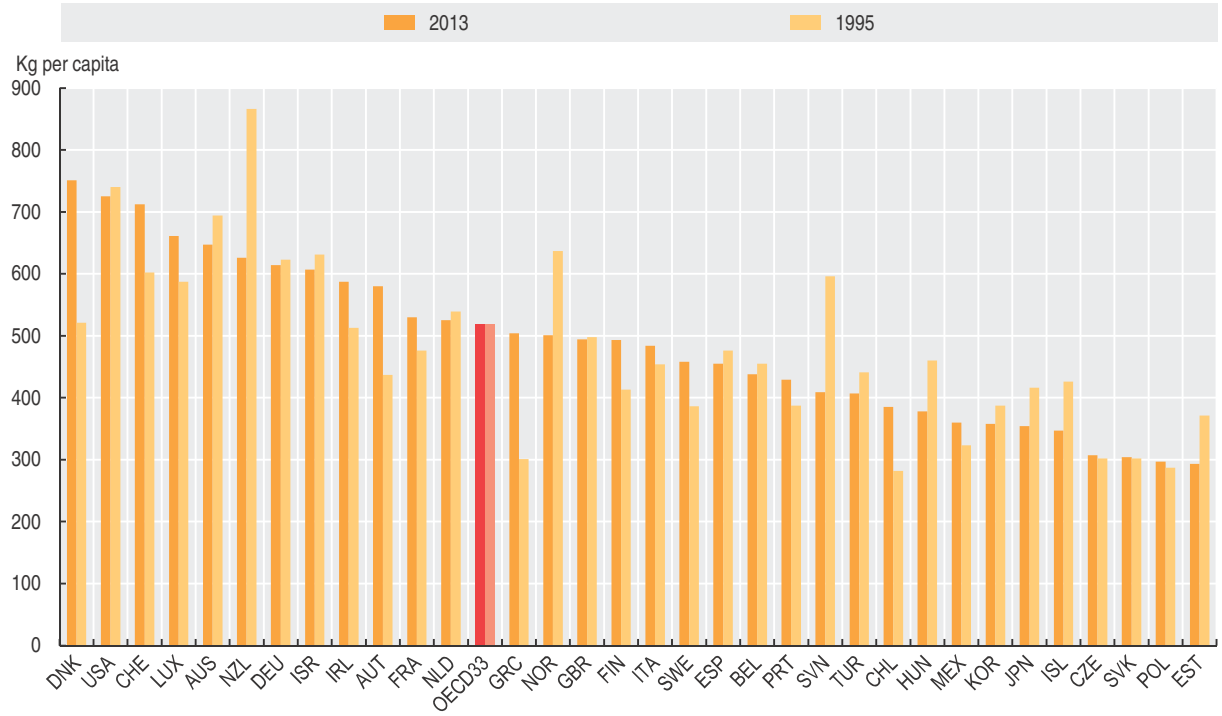
OECD (2015), *Environment at a Glance 2015: OECD Indicators*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264235199-en*.

Figure notes

4.20: Latest available year: Australia and Chile 2009; Japan 2010; Austria, Greece, Ireland, Korea, Mexico, United States 2012. First available year: Australia and Israel 2000.

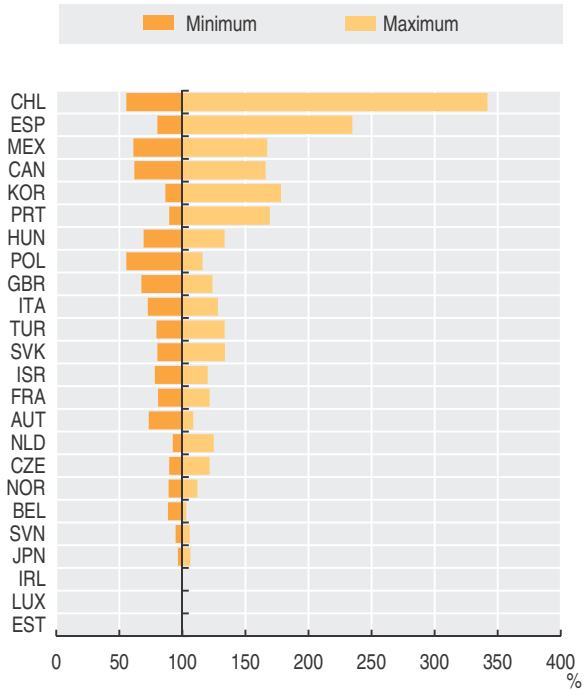
Information on data for Israel: http://dx.doi.org/10.1787/888932315602.

4.20. Municipal waste (kg per capita), 1995 and 2013



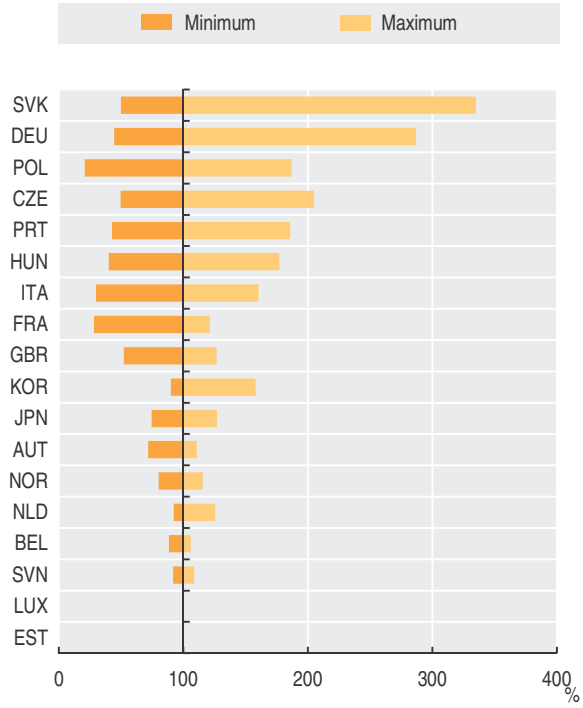
StatLink http://dx.doi.org/10.1787/888933364003

4.21. Range in regional municipal waste per capita, 2013, (TL2) country average value = 100



StatLink http://dx.doi.org/10.1787/888933364017

4.22. Range in regional municipal waste recycled per capita, 2013, (TL2) country average value = 100



StatLink http://dx.doi.org/10.1787/888933364027

Household income in metropolitan areas

People living in metropolitan areas have higher income than those living outside metropolitan areas. According to the estimation of household disposable income in 18 OECD countries, based in most cases on tax records, the average income in metropolitan areas is on average 17% higher than elsewhere (Boulant et al., 2016). The income *premium* in metropolitan areas with respect to the national average is always positive, with the exceptions of Belgium, but it can differ significantly across countries (Figure 4.23). Mexico is the country where the difference between income of metropolitan and non-metropolitan residents is the highest (68%), followed by Hungary (37%), Estonia (34%) and Chile (23%). It should be acknowledged, however, that relatively higher incomes do not necessarily imply a higher purchasing power available to metropolitan residents. In fact, differences in living costs between locations can offset partially earning differences across urban and rural places.

Definition

The disposable income of private households is derived by adding transfers and subtracting taxes from the market income. The market income of private households is composed by wages and salaries, income from capital and private transfers, such as remittances, private pensions, etc. Taxes include personal income taxes and social security contributions by the employees. On the other hand, transfers include direct cash and in-kind transfers, such as cash transfers, free food transfers, school feeding programmes, etc.

Disposable income per equivalent household is expressed in USD purchasing power parities (PPP) at constant prices (year 2010). The equivalence scale consists in dividing household income by the square root of the average household size.

The Gini coefficient is a measure of inequality among all inhabitants of a given metropolitan area (see Annex C for the formula). The index takes on values between 0 and 1, with zero interpreted as a situation in which the income of all households is the same (no inequality).

Larger metropolitan areas have on average higher income, but also higher inequalities. Larger cities often concentrate the most skilled people with high-income and this is reflected in the observed inequality. Gini coefficients for household disposable income were estimated for 121 metropolitan areas in 11 OECD countries. According to these estimations, large differences within countries can be observed in the income inequality of the different metropolitan areas. For example, in the United States, the metropolitan areas of Albany, NY and Columbia, SC had a Gini coefficient for household disposable income close to 0.30, which was much lower than those encountered in Miami, FL and in McAllen, TX (close to 0.43), in 2014. Similarly, income inequalities in Brussels was 0.38 in 2013, much higher than in Antwerp, Liège and Gent, where the Gini coefficient ranged between 0.29 and 0.31. Mexico is another country showing large differences in income inequality across its largest cities. Differently from Belgium, however, the capital city, which is also the largest metropolitan area, does not record the highest levels of income inequality. The Gini coefficient in Reynosa was 0.41 in 2010, significantly lower than in the metropolitan area of Tuxtla Gutiérrez (0.50) (Figure 4.24).

Source

OECD (2015), *OECD Regional Statistics* (database), *http://dx.doi.org/10.1787/region-data-en*.

Boulant, J., M. Brezzi and P. Veneri (forthcoming) "Income levels and inequality in metropolitan areas: a comparative approach in OECD countries", *OECD Regional Development Policy Working Papers*.

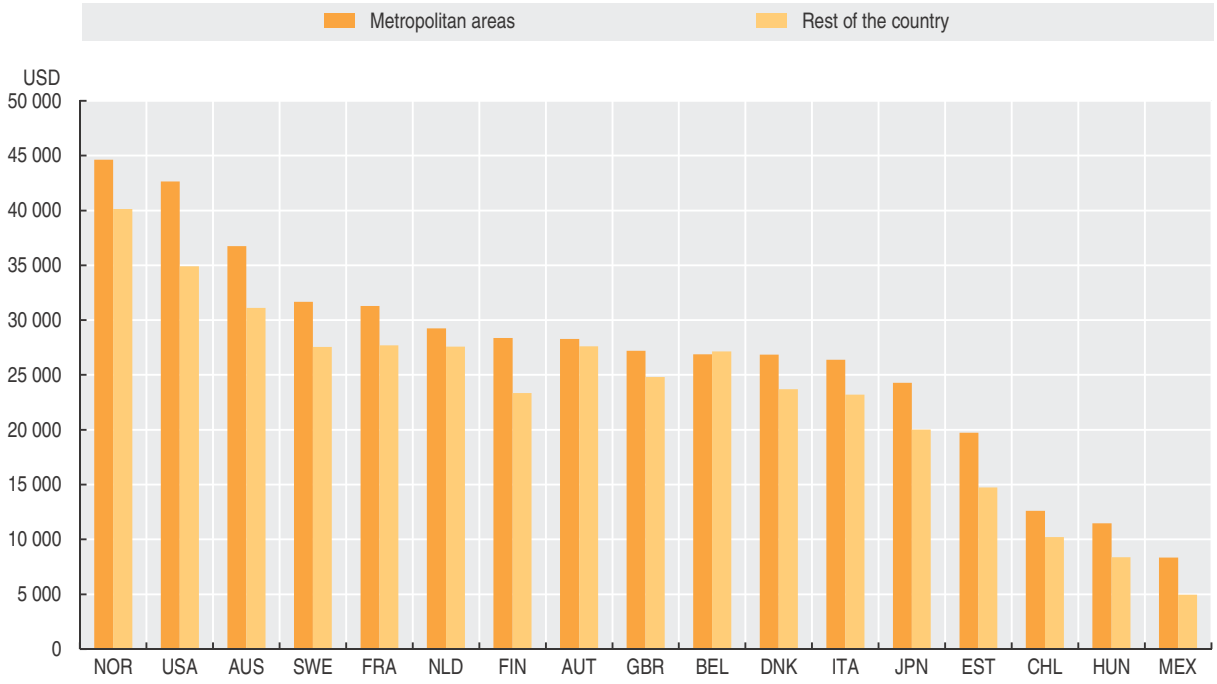
See Annex B for data sources and country-related metadata.

Reference years and territorial level

Disposable income per equivalent household: Mexico, 2010; Australia and France, 2011; Austria and United Kingdom, 2012; Estonia, Finland and United States, 2014.

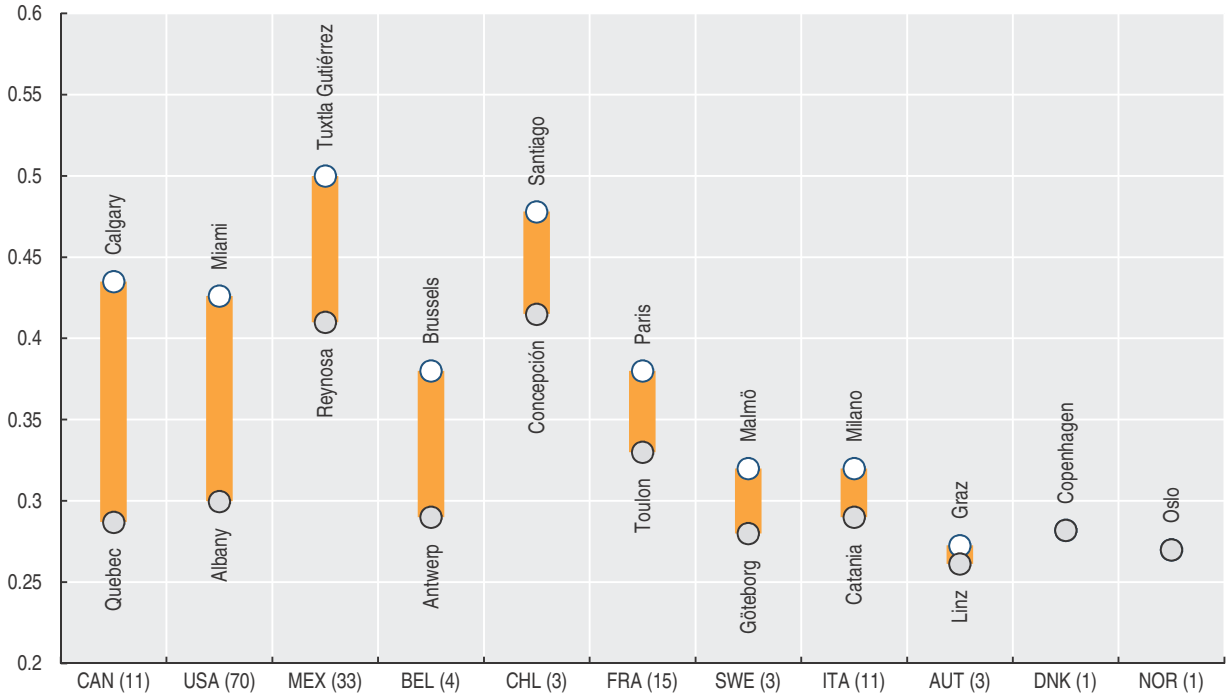
Gini coefficient for household disposable income: Mexico 2010; France, 2011; Austria, 2012; United States, 2014.

4.23. Metropolitan and non metropolitan disposable income per equivalent household, 2013



StatLink http://dx.doi.org/10.1787/888933364034

4.24. Minimum and maximum Gini coefficients for household disposable income in metropolitan areas, 2013



StatLink http://dx.doi.org/10.1787/888933364045

ANNEX A

Defining regions and functional urban areas

Table A.1. **Territorial grid of OECD member countries**

	Region	Territorial level 2 (TL2)	Non-official grid (NOG)	Territorial level 3 (TL3)
AUS	Australia	States/territories (8)	-	Statistical Areas Level 4 and Greater Capital City Statistical Area (49)
AUT	Austria	Bundesländer (9)	-	Gruppen von Politischen Bezirken (35)
BEL	Belgium	Régions (3)	-	Arrondissements (44)
CAN	Canada	Provinces and territories (13)	LFS, Economic areas (71)	Census divisions (294)
CHL	Chile	Regions (15)		Provincias (54)
CZE	Czech Republic	Oblasti (8)	-	Kraje (14)
DNK	Denmark	Regioner (5)	-	Landsdeler (11)
EST	Estonia	Region (1)	-	Groups of maakond (5)
FIN	Finland	Suuralueet (5)	-	Maakunnat (19)
FRA	France	Régions (22)	-	Départements (96)
DEU	Germany	Länder (16)	Spatial planning regions (96)	Kreise (412)
GRC	Greece	Development regions (13)	-	Regional units and combination of regional units (51)
HUN	Hungary	Planning statistical regions (7)	-	Counties + Budapest (20)
ISL	Iceland	Regions (2)	-	Landsvaedi (8)
IRL	Ireland	Groups regional authority regions (2)	-	Regional authority regions (8)
ISR	Israel	Districts (6)	-	-
ITA	Italy	Regioni (21)	-	Province (110)
JPN	Japan	Groups of prefectures (10)	-	Prefectures (47)
KOR	Korea	Regions (7)	-	Special city, metropolitan area and province (16)
LUX	Luxembourg	State (1)	-	State (1)
MEX	Mexico	Estados (32)	-	Grupos de municipios (209)
NDL	Netherlands	Provinces (12)	-	COROP regions (40)
NZL	New Zealand	Regional councils (14)	-	Regional councils (14)
NOR	Norway	Landsdeler (7)	-	Fylker (19)
POL	Poland	Vojewodztwa (16)	-	Podregiony (66)
PRT	Portugal	Comissaoes de coordenaçao e desenvolvimento regional + regioes autonomas (7)	-	Grupos de municipios (30)
SVK	Slovak Republic	Zoskupenia krajov (4)	-	Kraj (8)
SVN	Slovenia	Kohezijske regije (2)	-	Statistične regije (12)
ESP	Spain	Comunidades autonomas (19)	-	Provincias (59)
SWE	Sweden	Riksomraden (8)	-	Län (21)
CHE	Switzerland	Grandes regions (7)	-	Cantons (26)
TUR	Turkey	Regions (26)	-	Provinces (81)
GBR	United Kingdom	Regions and countries (12)	-	Upper tier authorities or groups of lower tier authorities or groups of unitary authorities or LECs or groups of districts (139)
USA	United States	States and the District of Columbia (51)	-	Economic areas (179)

Table A.2. **Territorial grid of selected emerging economies**

Country	Territorial levels 2 (TL2)	Territorial levels 3 (TL3)
Brazil	Estados + distrito federal (27)	Mesoregiao (137)
China	31 provinces; special administrative region of Hong Kong, China special administrative region of Macao, China and Chinese Taipei (33)	-
Colombia	Departamentos + Capital District (33)	-
India	States and union territories (35)	-
Latvia	Region (1)	Statistical regions (6)
Lithuania	Region (1)	Counties (10)
Peru	Departamentos + Provincia Constitucional del Callao (25)	-
Russian Federation	Oblast or okrug (83)	-
South Africa	Provinces (9)	-

Table A.3. **Smallest and largest regional population and population density by country**

Country	Number of TL3 regions	Region with the highest		Region with the lowest		Numbe of TL2 regions	Region with the highest		Region with the lowest	
		Population	Density	Population	Density		Population	Density	Population	Density
Australia	49	4 840 628	444.5	37 800	0.1	8	7 518 472	164.3	245 079	0.2
Austria	35	1 765 575	4 469.8	20 451	20.3	9	1 765 575	4 469.8	287 318	57.7
Belgium	44	1 183 841	7 353.1	46 784	44.9	3	6 429 064	7 353.1	1 183 841	213.7
Canada	294	2 808 503	4 456.5	573	0.00	13	13 678 740	25.9	36 510	0.02
Chile	54	5 452 548	2 685.6	2 687	0.1	15	7 228 581	469.3	107 334	1.0
Czech Republic	14	1 302 336	2 561.2	300 309	66.2	8	1 680 287	2 561.2	1 125 429	70.9
Denmark	11	851 769	4 360.7	40 305	59.5	5	1 749 405	687.1	581 057	73.8
Estonia	5	572 103	132.0	124 684	13.2	1	1 315 819	30.3	1 315 819	30.3
Finland	19	1 585 473	174.3	28 666	2.0	5	1 585 473	174.3	28 666	6.4
France	96	2 595 539	21 265.1	76 543	14.8	22	12 005 077	999.4	323 092	37.2
Germany	412	3 421 829	4 531.2	34 084	35.6	16	17 571 856	3 854.7	657 391	68.8
Greece	51	3 856 059	1 013.2	19 902	11.0	13	3 856 059	1 013.2	198 109	30.1
Hungary	20	1 744 665	3 322.5	198 392	52.3	7	2 965 413	428.8	917 492	64.8
Iceland	8	208 752	200.2	6 972	0.6	2	208 752	200.2	116 919	1.2
Ireland	8	1 271 557	1 386.6	290 143	32.1	2	3 372 718	92.9	1 232 783	38.4
Israel	-	-	-	-	-	6	1 976 300	7 740.1	951 900	82.4
Italy	110	4 321 244	2 691.4	57 699	31.3	21	9 973 397	438.3	128 591	39.7
Japan	47	13 390 000	6 992.2	574 000	64.7	10	35 922 000	2 739.6	3 878 000	64.7
Korea	16	12 280 678	16 334.7	581 069	90.6	7	25 029 687	2 138.3	581 069	90.6
Luxembourg	1	549 680	212.6	549 680	212.6	1	549 680	212.6	549 680	212.6
Mexico	209	8 360 233	7 525.0	9 167	0.8	32	16 618 928	5 980.3	710 986	10.0
Netherlands	40	1 417 821	3 301.1	47 958	144.7	12	3 577 032	1 273.8	380 621	185.3
New Zealand	14	1 526 900	341.2	32 800	1.4	14	1 526 900	341.2	32 800	1.4
Norway	19	634 463	1 488.3	75 207	1.6	7	1 210 220	241.8	382 253	4.5
Poland	66	1 719 692	3 326.3	267 900	43.0	16	5 292 567	368.8	960 226	57.7
Portugal	30	2 026 481	1 560.9	39 251	14.5	7	3 644 195	935.3	247 440	23.5
Slovak Republic	8	818 916	301.2	557 608	69.5	4	1 836 664	301.2	618 380	82.8
Slovenia	12	546 314	214.5	42 983	36.6	2	1 079 655	122.3	981 430	89.1
Spain	59	6 378 297	6 259.0	10 603	9.0	19	8 388 875	6 259.0	83 870	26.3
Sweden	21	2 163 042	331.4	57 161	2.6	8	2 163 042	331.4	368 617	3.4
Switzerland	26	1 425 538	5 117.2	15 778	27.4	7	1 808 480	858.2	346 539	100.3
Turkey	81	14 160 467	2 725.2	75 620	11.5	26	14 160 467	2 725.2	763 570	26.1
United Kingdom	139	2 241 058	10 656.5	21 618	7.1	12	8 821 331	5 389.3	1 835 847	68.5
United States	179	23 708 665	615.0	82 488	0.5	51	38 802 500	4 144.0	584 153	0.5

StatLink http://dx.doi.org/10.1787/888933364235

Table A.4. **Percentage of national population living in predominantly urban, intermediate and predominantly rural regions (TL3) and number of regions classified as such in each country**

	Percentage of population (2014)			Number of regions (TL3)		
	Rural (%)	Intermediate (%)	Urban (%)	Rural	Intermediate	Urban
Australia	19.7	10.1	70.2	29	11	9
Austria	44.1	20.8	35.1	25	5	5
Belgium	8.6	23.6	67.8	13	13	18
Canada	27.4	16	56.6	229	35	30
Chile	35.9	15.7	48.4	41	7	6
Czech Republic	32.9	42.9	24.2	6	6	2
Denmark	28.9	48.8	22.4	4	5	2
Estonia	45.2	11.4	43.5	3	1	1
Finland	40.4	30.5	29.1	12	6	1
France	30.6	34.6	34.8	55	27	14
Germany	16.3	42	41.7	118	204	90
Greece	43.8	10.6	45.7	44	5	2
Hungary	46.7	35.6	17.7	13	6	1
Iceland	35.8	64.2	-	7	1	0
Ireland	72.4	-	27.6	7	0	1
Italy	20.1	43	36.9	41	50	19
Japan	12	31.4	56.7	13	22	12
Korea	17.2	13.1	69.6	5	3	8
Luxembourg	-	100	-	0	1	0
Mexico	36.6	17.4	46	145	30	34
Netherlands	0.6	26.9	72.5	1	17	22
New Zealand	-	55.2	44.8	0	12	2
Norway	32.3	44	23.7	10	7	2
Poland	33.2	38.5	28.3	24	26	16
Portugal	20.1	26.9	53	15	8	7
Slovak Republic	50.2	38.4	11.4	4	3	1
Slovenia	43.4	56.6	-	7	5	0
Spain	7.3	33.5	59.2	14	29	16
Sweden	15.9	61.6	22.6	8	12	1
Switzerland	7.4	54.3	38.3	4	16	6
Turkey	30.2	36.4	33.4	49	27	5
United Kingdom	2.9	23.2	73.9	13	37	89
United States	37.7	20.2	42.1	132	21	26

StatLink http://dx.doi.org/10.1787/888933364249

Figure A.1. **Extended regional typology**

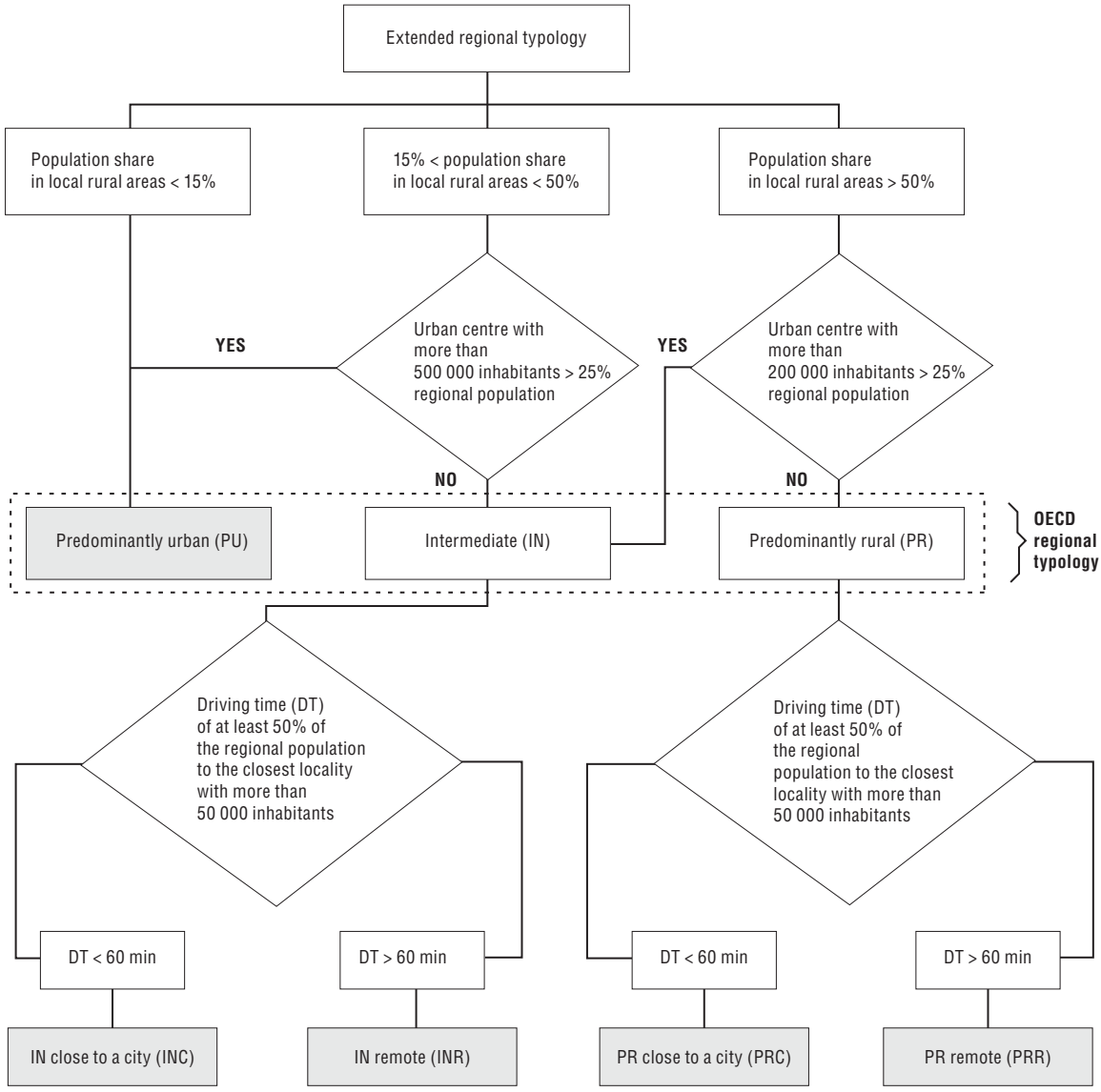
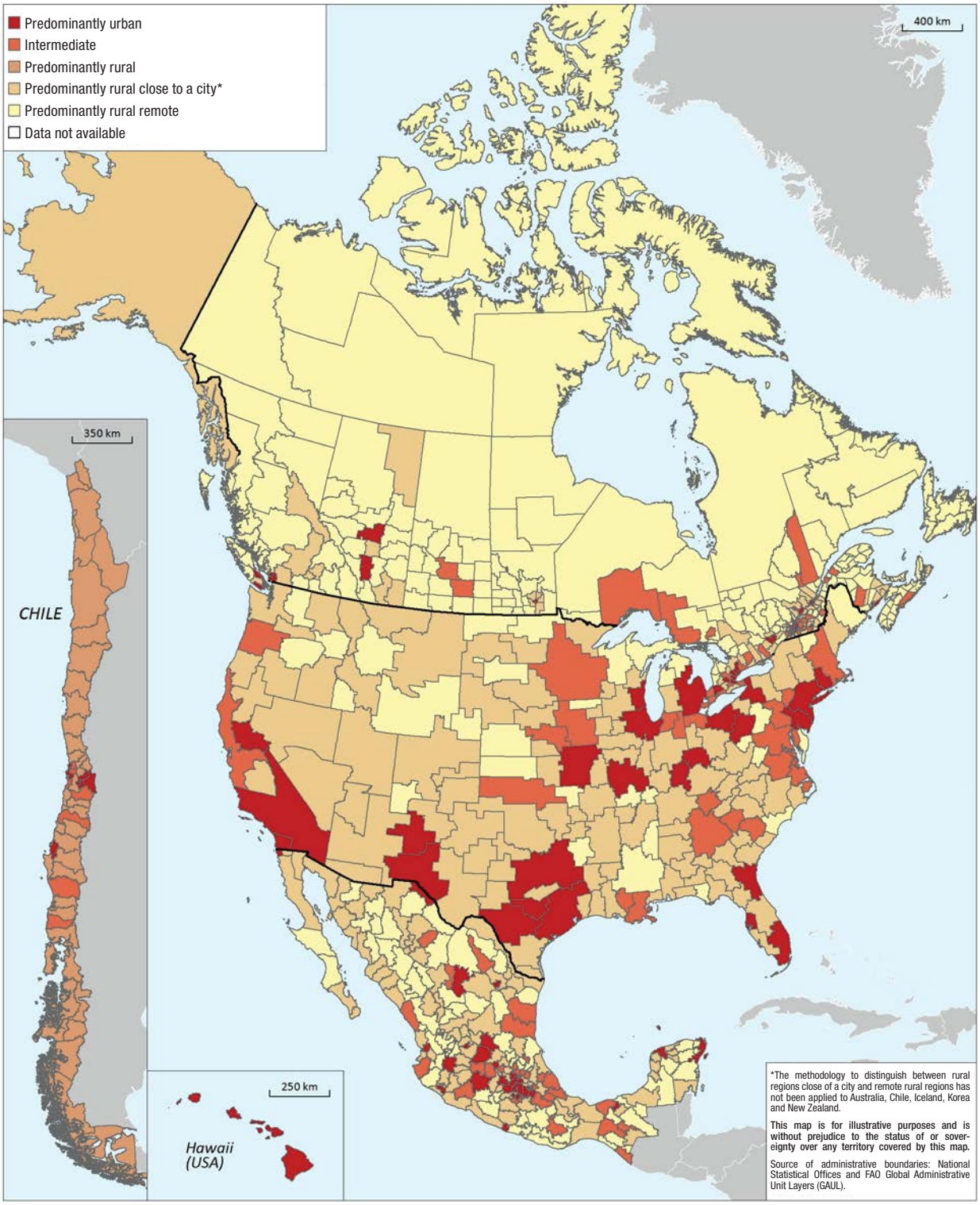
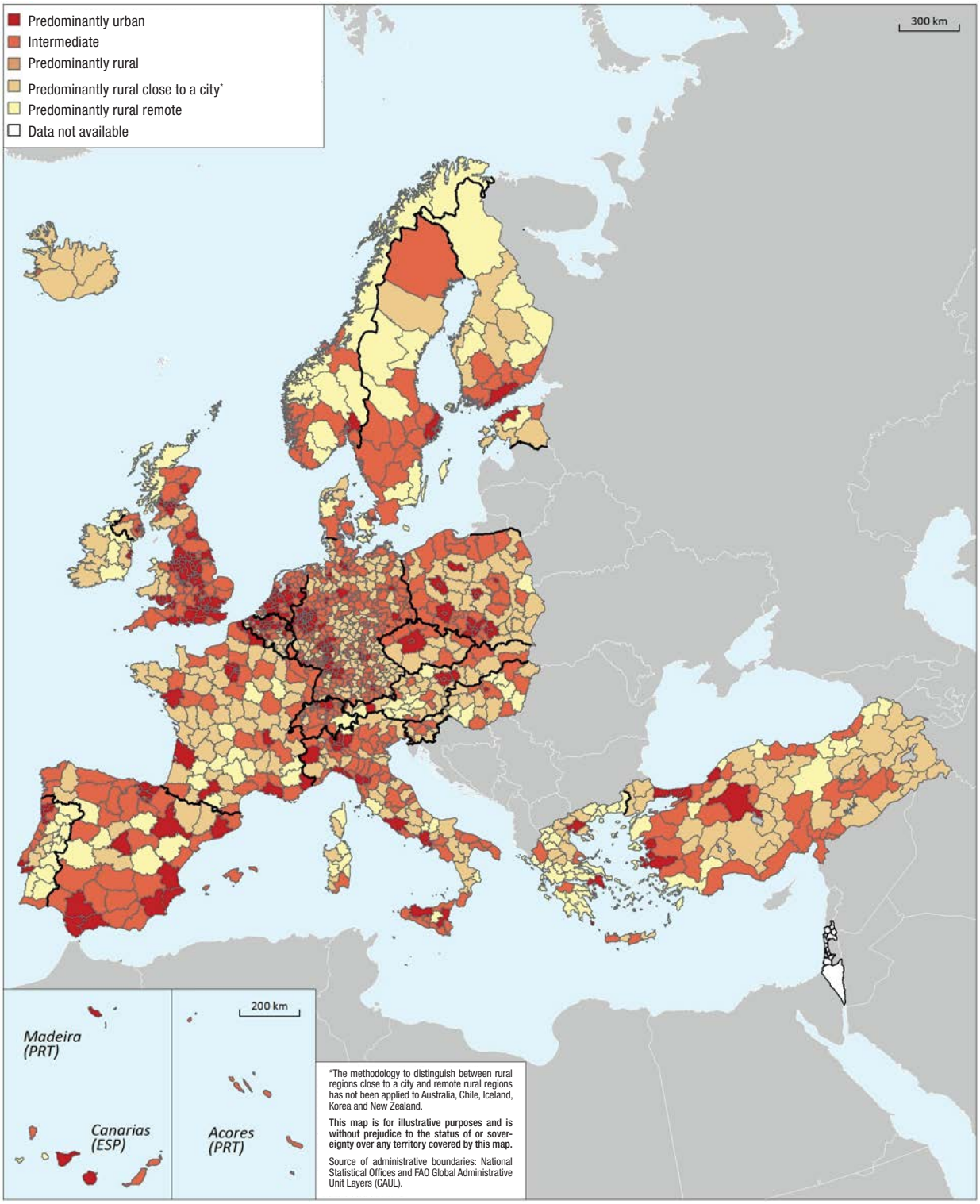


Figure A.2. **Extended regional typology: Americas (TL3)**



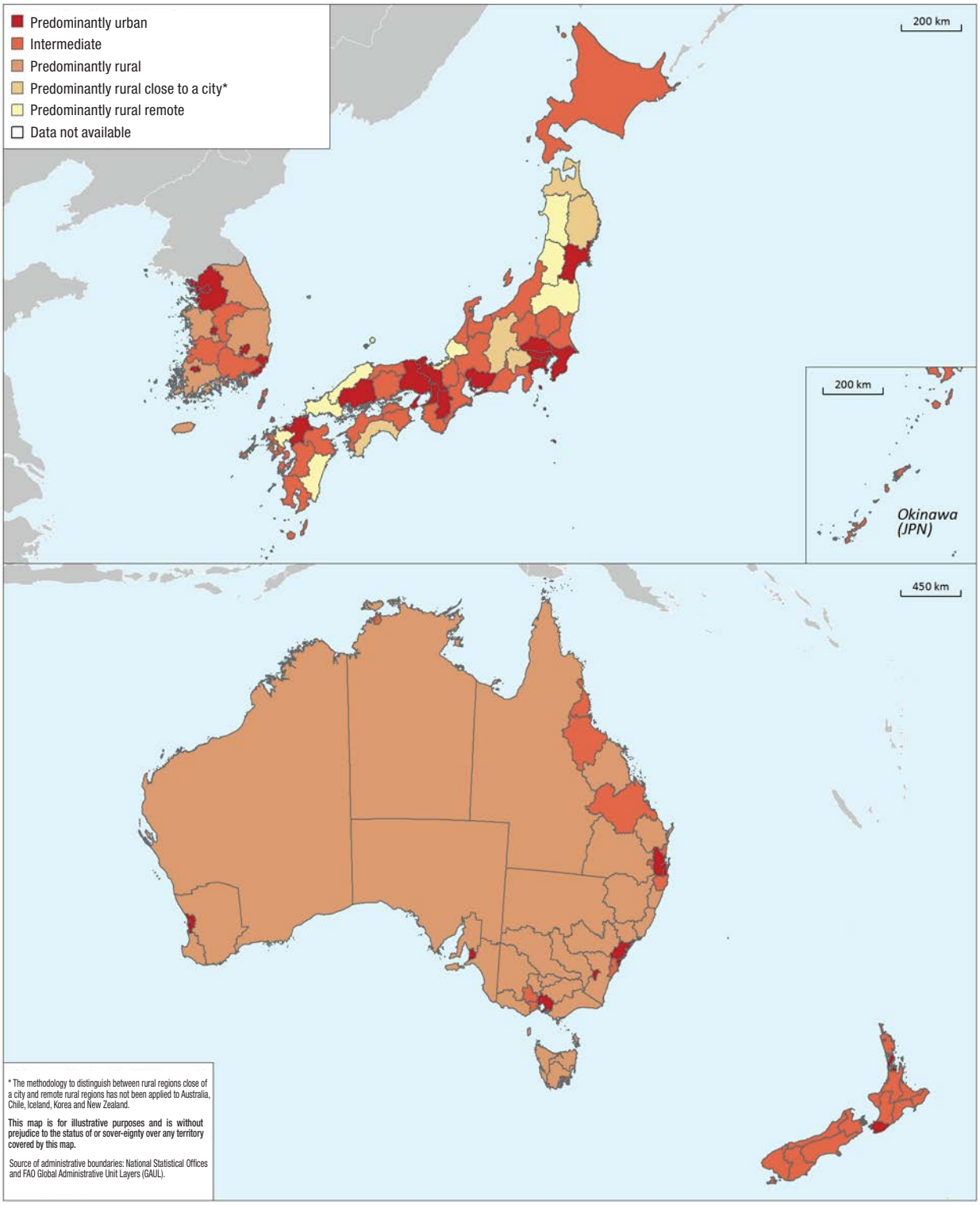
StatLink http://dx.doi.org/10.1787/888933364058

Figure A.3. **Extended regional typology: Europe (TL3)**



StatLink http://dx.doi.org/10.1787/888933364061

Figure A.4. **Extended regional typology: Asia and Oceania (TL3)**



StatLink http://dx.doi.org/10.1787/888933364079

Figure A.5. **Methodology to define the functional urban areas**

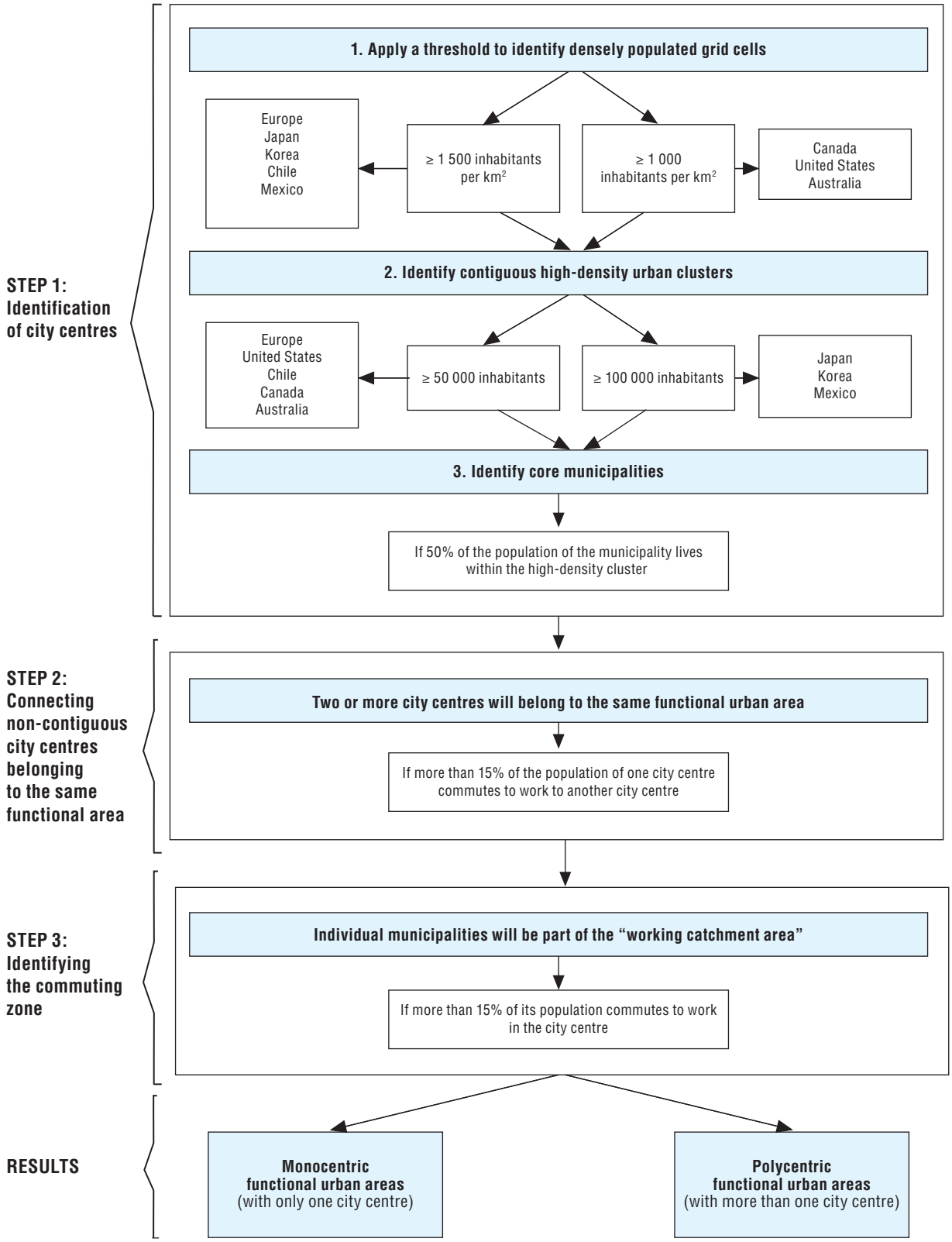


Table A.5. **Number of Metropolitan areas and share of national population in metropolitan areas, 2014**

Metropolitan areas (functional urban areas with population above 500 000)

Country		Total metropolitan areas		Population between 500 000 and 1.5 million		Population above 1.5 million		Rest (non metropolitan)
		Number	% of national population	Number	% of national population	Number	% of national population	% of national population
AUS	Australia	6	65.7	2	7.9	4	57.8	34.3
AUT	Austria	3	47.5	2	14.7	1	32.8	52.5
BEL	Belgium	4	44.6	3	21.5	1	23.1	55.4
CAN	Canada	9	57.2	6	18.3	3	38.9	42.8
CHL	Chile	3	48.3	2	10.8	1	37.5	51.7
CZE	Czech Republic	3	29.7	2	11.5	1	18.2	70.3
DNK	Denmark	1	36.0	-	-	1	36.0	64.0
EST	Estonia	1	40.3	1	40.3	-	-	59.7
FIN	Finland	1	27.5	1	27.5	-	-	72.5
FRA	France	15	40.7	12	16.0	3	24.7	59.3
DEU	Germany	24	39.4	18	18.6	6	20.8	60.6
GRC	Greece	2	41.4	1	9.0	1	32.4	58.6
HUN	Hungary	1	29.2	-	-	1	29.2	70.9
IRL	Ireland	1	39.9	1	39.9	-	-	60.1
ITA	Italy	11	30.5	7	8.1	4	22.5	69.5
JPN	Japan	36	69.5	30	17.4	6	52.1	30.5
KOR	Korea	10	76.0	7	14.3	3	61.7	24.0
MEX	Mexico	33	52.1	26	20.2	7	31.9	47.9
NLD	Netherlands	5	37.6	4	23.0	1	14.6	62.4
NOR	Norway	1	25.5	1	25.5	-	-	74.6
POL	Poland	8	30.2	6	15.4	2	14.8	69.8
PRT	Portugal	2	40.3	1	12.6	1	27.7	59.7
SVK	Slovak Republic	1	13.5	1	13.5	-	-	86.5
SVN	Slovenia	1	28.4	1	28.4	-	-	71.6
ESP	Spain	8	37.8	6	14.3	2	23.5	62.2
SWE	Sweden	3	37.3	2	16.3	1	20.9	62.7
CHE	Switzerland	3	35.1	3	35.1	-	-	64.9
GBR	United Kingdom	15	41.1	12	15.7	3	25.3	58.9
USA	United States	70	54.7	42	13.9	28	40.8	45.3

StatLink http://dx.doi.org/10.1787/888933364254

ANNEX B

Sources and data description

User guide: List of variables

Variables used	Page	Chapter(s)
Area	147	2
Age-adjusted mortality rates based on mortality data	148	1
Death rates due to diseases of the respiratory system	148	1
Employment at place of work and gross value added by industry	149	2
Gini index of household disposable income	149	1
Gross domestic product (GDP)	150	2
Homicides	151	1
Hospital beds	152	4
Household disposable income	153	1
Households with broadband connection	154	4
Housing expenditures as a share of household disposable income	155	1
Individuals with unmet medical needs	155	1
Labour force, employment at place of residence by gender, unemployment, total and growth	156	1 and 2
Labour force by educational attainment	158	1
Life expectancy at birth, total and by gender	159	1
Life satisfaction	159	1
Local governments in metropolitan areas	160	2
Metropolitan population, total and by age	161	2
Motor vehicle theft	162	1
Municipal waste and recycled waste	163	4
Number of rooms per person	163	1
Part-time employment	164	4
Perception of corruption	164	1
PCT patent and co-patent applications, total and by sector	165	2
Physicians	165	4
$PM_{2.5}$ particle concentration	166	1
Population, total, by age and gender	166	2
Population mobility among regions	167	4
R&D expenditure	169	2
R&D personnel	170	2
Social network support	170	1
Subnational government expenditure, revenue, investment and debt	171	3
Voter turnout	171	1
Young population neither in employment nor in education or training	172	4
Youth unemployment	173	4

The tables refer to the years and territorial levels used in this publication.

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.

Area

	Source
EU23 countries[1]	Eurostat: General and regional statistics, demographic statistics, population and area
Australia	Australian Bureau of Statistics (ABS), summing up SLAs
Canada	Statistics Canada http://www12.statcan.ca/english/census01/products/standard/popdwell/Table-CD-P.cfm?PR=10&T=2&SR=1&S=1&O=A
Iceland	Statistics Iceland
Israel	Central Bureau of Statistics – Statistical Abstract of Israel.
Japan	Statistical Office, Area by Configuration, Gradient and Prefecture www.stat.go.jp/English/data/nenkan/1431-01.htm
Korea	Korea National Statistical Office
Mexico	Mexican Statistical Office (INEGI)
New Zealand	Statistics New Zealand, data come from the report "Water Physical Stock Account 1995–2005"
Norway	Statistics Norway, StatBank table: Table: 09280: Area of land and fresh water (km²) (M)
Switzerland	Office fédéral de la statistique, ESPOP, RFP
Turkey	Eurostat: General and regional statistics, demographic statistics, population and area
United States	Census Bureau www.census.gov/population/www/censusdata/density.html
Brazil	Instituto Brasileiro de Geografia e Estadística (IBGE)
China	National Bureau of Statistics of China
India	Statistics India (Indiastat)
Russian Federation	Federal State Statistics Service of Russian Federation
South Africa	Statistics South Africa

1. EU23 countries : Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden and the United Kingdom.

Age-adjusted mortality rates based on mortality data

	Source	Year	Territorial level
Australia	Australian Bureau of Statistics; Table 3302.0	2012	2
Austria	Statistics Austria	2013	2
Belgium	Federal Public Service Economy/Statistics Belgium	2013	2
Canada[1]	Statistics Canada; CANSIM, Table 051-0002	2013	2
Chile	INE	2012	2
Czech Republic	Institute of Health Information and Statistics of the Czech Republic	2013	2
Denmark	Statistics Denmark; Table FOD207	2013	2
Estonia	Statistics Estonia; Table PO052	2013	3
Finland	Statistics Finland	2013	2
France	Insee	2013	2
Germany	Federal Office of Germany and the Statistical Offices of the Federal States	2013	2
Greece	Hellenic Statistical Authority	2013	2
Hungary	Hungarian Central Statistical Office	2013	2
Iceland	Statistics Iceland	2013	2
Ireland	CSO; Table VSA07	2013	2
Israel	Central Bureau of Statistics Israel	2013	2
Italy	Istat; Table P.5	2013	2
Japan	Statistics Bureau of Japan, MIC	2013	2
Korea	Statistics Korea	2013	2
Mexico	National Institute of Statistics and Geography (INEGI)	2012	2
Netherlands[2]	Eurostat regional statistics; Table demo_r_pjangrp3	2013	2
New Zealand	Statistics New Zealand	2013	2
Norway	Statistics Norway; Table 01222 and 08426	2013	2
Poland	Central Statistical Office of Poland	2013	2
Portugal	Statistics Portugal	2013	2
Slovak Republic	Statistical Office of the SR	2013	2
Slovenia	Statistical Office of the Republic of Slovenia	2013	2
Spain	INE	2013	2
Sweden	Statistics Sweden	2013	2
Switzerland	Swiss Federal Statistical Office; Table BEVNAT	2013	2
Turkey	Turkish Statistical Institute	2013	2
United Kingdom[3]	Eurostat regional statistics; Table demo_r_pjangrp3	2013	2
United States	US Centers for Disease Control and Prevention	2013	2
Brazil	Ministry of Health	2013	2
Colombia	DCD	2013	2
Latvia[2]	Eurostat regional statistics; Table demo_r_pjangrp3	2013	3
Peru	Ministry of Health	2013	2
Russian Federation	Federal State Statistics Service	2013	2

1. Canada: Stillbirths are excluded. Data refer to the age attained at the last birthday preceding death.
2. Data refer to the age reached during the year.
3. United Kingdom: Data refer to the age in completed years.

Death rates due to diseases of the respiratory system

	Source	Years	Territorial Level
EU17 countries[1] + Switzerland	Eurostat (2015) Deaths from diseases of the respiratory system by NUTS 2, crude death rates per 100 000 inhabitants http://ec.europa.eu/eurostat/data/database.	2010	2

1. Europe17 countries: Austria, Czech Republic, Germany, Spain, Finland, France, Greece, Hungary, Ireland, Italy, the Netherlands, Norway, Poland, Portugal, Slovak Republic, Slovenia, Sweden.

Employment at place of work and gross value added by industry (ISIC rev. 4)

	Source	Years	Territorial level
EU23 countries[1]	Eurostat, Regional economic accounts, Branch accounts, Employment	2000-13	2
Australia[2]	Australian Bureau of Statistics, cat. no. 5220.0 – Australian National Accounts: State Accounts, and Table 6291.0.55.003 Labour Force	2000-13	2
Canada	Statistics Canada. CANSIM database, Tables 379-0028 Gross domestic product (GDP) at basic prices and 282-0008 Labour force survey estimates (LFS), by North American Industry Classification System	2002-12	2
Chile	Banco Central de Chile	2013	2
Iceland	n.a.	-	-
Israel	n.a.	-	-
Japan	Statistics Bureau, Economically Active Population Survey & Local Area Labour Force Survey	2009-12	2
Korea	Korean National Statistical Office – KOSIS Census on basic characteristics of establishments	2004-12	2
Mexico	INEGI. Consulta interactiva de datos www.inegi.org.mx/sistemas/olap/proyectos/bd/consulta.asp?p=16859&c=17383&s=est&cl=3#.	2013	2
New Zealand	Statistics New Zealand. Gross domestic product by industry, per region	2000-12	2
Norway	Eurostat, Regional economic accounts, Branch accounts, Employment	2013	2
Switzerland	Federal Statistical Office FSO. Gross value added (GVA) by canton and industries (je-e-04.06.02) and Swiss Labour Force Survey – SLFS	2002-2012	2
Turkey	Turkish Statistical Institue (TurkStat). Employment data from the Household Labour Force Survey. No regional breakdown for GVA by industry.	2009-14	2
United States	Bureau of Economic Analysis. Gross Value Added by State and employment by industry (SA25, SA25N)	2000-12	2

1. EU23 countries: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden and the United Kingdom. Data availability: Last available year: 2012 for Slovak Republic, Poland, Sweden, Hungary, Slovenia, Czech Republic, Portugal, Spain, Ireland, France, Austria, Denmark, Finland, Australia, Canada, Belgium, Greece; 2011 for Portugal. First available year 2009 for Belgium. Germany and Netherlands data are not included for the productivity growth due to lack of comparable data for the period.
2. Australia: Data are derived from ANZSIC and do not match the ISIC classification.

Gini index of household disposable income (regional)

	Source	Years	Territorial level
EU23 countries[1]	EU-SILC	2010-14	2
Canada	Canadian Income Survey, 2013 reference income	2013	2
Chile	Source: Encuesta de Caracterización Socioeconómica Nacional (CASEN), 2013	2013	2
Denmark	Danish Law Model System 2013	2013	2
France	ERFS, 2010 reference income	2010	2
Germany	Socio-Economic-Panel (SOEP), 2013 reference income	2013	2
Israel	Household expenditure survey 2014	2014	2
Japan	Comprehensive Survey of Living Conditions, 2009	2009	2
Mexico	Encuesta Nacional de Ingreso y Gastos des Hogares 2014	2014	2
Netherlands	Income Panel Survey, 2014	2014	2
Norway	Income and Wealth Statistics for Household, 2014 reference income	2014	2
New Zealand	Household economic survey, 2011 reference income	2011	2 regions
Sweden	Swedish Household Income Survey, 2013 reference income	2013	2
Turkey	Turkish SILC, 2013 reference income	2013	2
United Kingdom	Households Below Average Income, average for 2010-2012	2010-12	2
United States	CPS ASEC (redesigned), average for 2013-14 reference income	2013-14	2

1. Belgium, Czech Republic, Greece, Hungary (NUTS1), Ireland, Poland (NUTS1) and Slovak Republic: EU-SILC, 2014 wave (2013 reference income) ; Austria and Spain: EU-SILC, 3-year average 2011-13 reference income ; Slovenia and Switzerland: EU-SILC, 2011 wave (2010 reference income) ; Finland : EU-SILC, 2015 wave, 2014 reference income ; Italy: EU-SILC, 3-year average 2012-14 reference income.

Gross domestic product

	Source	Years	Territorial level
EU23 countries[1, 3, 5]	Eurostat, Regional economic accounts	2000-13	2, 3 and metropolitan areas
Australia[3]	Australian Bureau of Statistics, 5220.0. Gross state product, figures based on fiscal year (July-June).	2000-13	2 and metropolitan areas
Canada[3]	Statistics Canada, Provincial economic accounts	2000-13	2 and metropolitan areas
Chile[2, 3]	Banco central de Chile. Cunetas nacionales de Chile	2000-13	2 and metropolitan areas
Iceland[4]	n.a.	-	-
Israel[4]	n.a.	-	-
Japan[3, 5]	Economic and Social Research Institute, Cabinet Office, data are based on fiscal year (April-March).	2000-13	2, 3 and metropolitan areas and metropolitan areas
Korea[3]	Korean National Statistical Office	2000-13	2, 3 and metropolitan areas
Mexico[3]	INEGI, System of national accounts of Mexico	2000-13	2 and metropolitan areas
New Zealand	Statistics New Zealand	2000-13	2,3
Norway[3, 5]	Norwegian Regional Accounts	2008-12	2, 3 and metropolitan areas
Switzerland[3, 5]	Swiss Federal Statistical Office, Statweb	2008-12	2, 3 and metropolitan areas
Turkey	Turkish Statistical Institute (TurkStat), no data available after 2001	-	2
United States[3]	Bureau of Economic Analysis	2000-13	2 and metropolitan areas
Brazil	Instituto Brasileiro de Geografia e Estadística (IBGE)	2000-12	2
China	National Bureau of Statistics of China	2004-12	2
Colombia	Departamento Administrativo Nacional de Estadistica	2001-10	2
India	Statistics India (Indiastat)	2004-10	2
Indonesia	Statistics Indonesia.	2004-12	2
Russian Federation	Federal State Statistics Service of Russian Federation	2000-12	2
South Africa	Statistics South Africa	2000-13	2

1. EU23 countries: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden and the United Kingdom. Due to break in series generated by the change in SNA classification, the Secretariat made estimates for Belgium (2000-08), Germany (2000-09), Italy (2000-10) and Netherlands (2000-09) based on previous data releases from Eurostat.
2. Chile: to allow comparison across time, from 1995 to 2010 Tarapacá includes Arica Y Parinacota, and Los Lagos includes Los Rios. Data are not available in two regions.
3. Available years at metropolitan level: Austria, Germany, Estonia, Spain, Finland, France, Hungary, Ireland, Italy, Poland and Sweden 2000-12; Switzerland and Norway 2008-12; Japan 2001-12; United States 2001-13, Mexico 2003-13; Belgium, Czech Republic, Denmark, Greece, Netherlands, Portugal, Slovenia, Slovak Republic, United Kingdom, Korea, Canada, Chile, Australia 2000-13. GDP estimates at metropolitan areas level were based on TL3 data with the exception of Germany where the NOG were used; Australia, Belgium, Canada, Chile, Greece, Mexico and the Netherlands where TL2 data were used. Metropolitan figures for the United States were provided by the U.S. Bureau of Economic Analysis. The methodology to estimate GDP figures at metropolitan level is described in Annex C.
4. Iceland and Israel: Data not available at the regional level.
5. Available years at TL3 level: Austria, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Poland, Spain, Sweden 2000-12; Japan 2001-12; Lithuania 2005 12; Norway and Switzerland and Norway 2008-12.

Homicides

	Source	Years	Territorial Level
Australia	Australian Bureau of Statistics (ABS), Recorded Crime – Victims, Australia, 2013 (cat. no. 4510.0)	2013	2
Austria	Austria Home Office, Crime Statistics	2013	2
Belgium	Belgian Federal Police	2013	2
Canada	Statistics Canada. CANSIM database Table 253-0001 – Homicide Survey, Canadian Centre for Justice Statistics	2012	2
Chile[1]	INE, Chile. Undersecretariat of Crime Prevention, Ministry of Interior and Public Safety	2012	2
Czech Republic	Czech Statistical Office; Police of the Czech Republic	2013	2
Denmark[2]	Statistics Denmark, StatBank Table STRAF11: Reported criminal offences, Homicide series	2013	2
Finland	Statistics Finland, Justice statistics	2013	2
France	INSEE, Etat 4001 annuel, DCPJ	2012	2
Estonia[3]	OECD Regional Questionnaire; information provided by the delegate of the Working Party of Territorial Indicators (WPTI)	2013	3
Germany	OECD Regional Questionnaire; information provided by the delegate of the Working Party of Territorial Indicators (WPTI)	2010	2
Greece	Hellenic Statistical Authority, Hellenic Police (offences committed)/ completed and attempted action	2013	2
Hungary	Ministry of Justice, Chief Prosecutor's Department	2013	2
Iceland	OECD Regional Questionnaire; information provided by the delegate of the Working Party of Territorial Indicators (WPTI)	2012	2
Ireland	CSO, StatBank Ireland, Table CJQ02: Recorded Crime Offences by Garda Region	2013	2
Israel[9]	Central Bureau of Statistics Israel	2013	2
Italy[4]	ISTAT, crimes reported by the police forces to the judicial authority	2013	2
Japan	Criminal Statistics in 2014, National Police Agency, Publications of the Police Policy Research Center	2014	2
Korea	Korean Ministry of Justice	2013	2
Mexico[5]	Directorate General of Government of Mexico, Public Safety and Justice Statistics	2014	2
Netherlands	Statistics Netherlands (CBS)-STATLINE	2012	2
New Zealand	Statistics New Zealand, Annual Recorded Offences for the latest Calendar Years (ANZSOC)	2014	2
Norway	Directorate of the Police of Norway (homicides) and Statistics Norway (crime against property)	2013	2
Poland[6]	National Police Headquarters	2011	2
Portugal[7]	Ministry of Justice – Directorate-General for Justice Policy	2013	2
Slovak Republic	Statistical Office of the Slovak Republic, regional database Datacube	2013	2
Slovenia	OECD Regional Questionnaire; information provided by the delegate of the Working Party of Territorial Indicators (WPTI)	2012	2
Spain	INE	2013	2
Sweden	Swedish National Council for Crime Prevention (Brå)	2013	2
Switzerland[8]	Federal Statistical Office (FSO), Police crime statistics	2013	2

Homicides *(cont.)*

	Source	Years	Territorial Level
Turkey	General Directorate of Security, General Commandership of Gendarme	2013	2
United Kingdom	ONS, Crime and Justice, Table 04, Police Force Area Data Tables – Crime in England and Wales, Year Ending December 2013	2013	2
United States	Federal Bureau of Investigation, Crime in the United States, Table 4	2013	2

1. Figures are people who have been the victim of murder. Data based on crimes known by one police force (Carabineros de Chile).
2. Reported criminal offences.
3. In some cases the distribution of indicators by regions is unknown. Therefore the sums of regions are not always equal with the total for Estonia.
4. In a few cases, when it's hard to identify the exact place where a crime is committed, the sum of provincial data doesn't equal the regional total data (the latter including more crimes).
5. National Census 2012 State Law Enforcement. As part of the implementation of the National Census of Law Enforcement 2011 and 2012, the figure provided for 2010 and 2011 corresponds to the data of the relevant offenses, registered preliminary enquiries initiated by the Public Prosecutor of the Common Jurisdiction in each of the federal states.
6. Data have been revised. They include ascertained crimes from the category of homicide and infanticide in any form.
7. Murders account for surveys of the judicial police coming out with proposed charges for the crime of murder consummated.
8. From 2009, police statistics on crime have been revised and are thus not comparable to the old police statistics; this translates into a break in series between 2008 and 2009.
9. The police districts are different from CBS districts, Northern district data Includes Haifa District. Some files are not included in the districts data when they are managed at the national level. Homicides data includes acts of terrorism.

Hospital beds

	Source	Year	Territorial Level
EU23 countries[1]	Eurostat, available beds in hospitals (tgs00064)	2013	2
Australia[2]	Australian Institute of Health and Welfare (AIHW), for Public Hospitals, Table 4.1. ABS; for Private Hospitals cat. no. 4390.0)	2012	2
Canada	Canadian MIS Database (CMDB), CIHI	2010	2
Chile	INE, Chile. Department of Health Statistics and Information (DEIS), Ministry of health (MINSAL)	2009	2
Iceland	n.a.	-	-
Israel	Central Bureau of Statistics Israel, Ministry of Health of Israel	2012	2
Japan	Statistics Bureau, Survey of Medical Institutions, MHLW Japan	2010	2
Korea	n.a.	-	-
Mexico	Statistics Private Health Establishments. INEGI. Bulletin of Statistical Information. Secretariat for Health (SS)	2011	2
New Zealand	n.a.	-	-
Norway	Eurostat, available beds in hospitals (tgs00064)	2013	2
Switzerland	Federal Statistical Office (FSO), Neuchâtel; Swiss Medical Association (FMH), Bern; Medical Statistics of Physicians, yearly census	2013	2
Turkey[3]	Ministry of Health, General Directorate of Health Research, Health Statistics Yearbook	2013	2
United States[4]	US Center for Disease Control and Prevention	2009	2

1. EU23 countries: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden and the United Kingdom 2012 data for Italy and Sweden 2011 data for Greece 2010 for Belgium and Luxembourg and Netherlands 2002 data.
2. Australia: average available beds count from public hospital and private hospital. Private Hospital includes both private acute and/or psychiatric hospitals and free-standing day hospital facilities. Available beds are those immediately available (occupied and unoccupied) for the care of admitted patients as required. In the case of free-standing day hospital facilities, they include chairs, trolleys, recliners and cots and are used mainly for post-surgery recovery purposes only.
3. Turkey Health statistics have been revised for 2000 and onwards. Ministry of Defence Hospitals were not included before 2012.
4. United States data only refers to community hospitals. Community hospitals are non-federal short-term general and special hospitals whose facilities and services are available to the public.

Household disposable income

	Source	Years	Territorial level
EU21 countries[1]	Eurostat, Household income statistics, primary and disposable income	1995-13	2
Australia	Australian Bureau of Statistics, Australian National Accounts, Household Income Account (cat. no. 5220.0 table 12). Gross disposable income series	1995-13	2 and metropolitan areas
Austria	Statistics Austria	2012	Metropolitan areas
Belgium	Statistics Belgium	2013	Metropolitan areas
Canada	Statistics Canada. CANSIM database. Table 384-0040 – Current accounts – Households, provincial and territorial	1995-13	2 and metropolitan areas
Chile[3]	National Socio-economic Survey (CASEN),	1996-12	2 and metropolitan areas
Denmark	Statistics Denmark	2013	Metropolitan areas
Estonia	Statistics Estonia	2014	Metropolitan areas
Finland	Statistics Finland	2014	Metropolitan areas
France	Insee	2011	Metropolitan areas
Hungary	Hungarian Ministry for National Economy	2013	Metropolitan areas
Iceland[2]	n.a.	-	-
Israel	Central Bureau of Statistics- Income Survey	1996-11	2
Italy	Ministry of Economy and Finance	2013	Metropolitan areas
Japan[3]	Statistics Bureau of Japan Ministry of Internal Affairs and Communications	2001-12 2013	2 and Metropolitan areas
Korea	Statistics Korea, KOSIS database – Korean Regional Accounts	2010-13	2
Mexico[2]	INEGI, Household Income and Expenditure National Survey Socioeconomic Conditions Module (MCS)	2008-14	2 and metropolitan areas
Netherlands	Statistics Netherlands	2013	Metropolitan areas
New Zealand[3]	Statistics New Zealand. Household income by region	1998-13	2
Norway	Statistics Norway, Regional Accounts. Table: 09797: Households' income	2011-13	2 and metropolitan areas
Sweden	Statistics Sweden	2013	Metropolitan areas
Switzerland[2]	n.a.	-	-
Turkey[2]	Turkish Statistical Institue (TurkStat)	2014	2
United Kingdom	Office for National Statistics	2012	Metropolitan areas
United States	U.S. Bureau of Economic Analysis, Table SA51 Disposable Personal Income American Community Survey	1995-14 2014	2 and Metropolitan areas

The disposable income of private households is derived from the balance of primary income by adding all current transfers from the government, except social transfers in kind and subtracting current transfers from the households such as income taxes, regular taxes on wealth, regular inter-household cash transfers and social contributions.

The disposable income of households does not take into account social transfer in kind to households. A preferable measure of material condition of households at regional level could be the adjusted disposable income which additionally reallocates income from government and non-profit institutions serving the households, through expenditure on individual goods and services such as health, education and social housing (in-kind expenditure). Interregional disparities of adjusted household income could shed a light on possible areas of social exclusion, material deprivation and lack of access to essential services.

1. EU21 countries: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden and the United Kingdom. Denmark, Austria: 2000-13; Slovenia: 1999-2012; Belgium, France, Netherlands and Spain: 1995-2011; Finland, Hungary and Sweden: 2000-12; Ireland: 1996-2012; Germany and Italy: 1995-2012; Poland: 2010-12; Portugal: 2000-11; United Kingdom: 1997-2013; Estonia: 2008-13; Slovak Republic: 1996-2012.
2. Iceland and Switzerland: data are not available at the regional level.
3. Chile, Greece, Japan and New Zealand: primary income of households are not available at the regional level.

Households with broadband connection

	Source	Year	Territorial Level
EU14 countries[1]	Eurostat, Regional information society statistics, Households with broadband access, table isoc_r_broad_h	2014	2
Australia	Australian Bureau of Statistics (ABS), Household Use of Information Technology, Australia, 2012-13 (cat. no. 8146.0), Financial year	2013	2
Belgium	Statistics Belgium, ICT indicators for households and individuals (2005-13)	2014	2
Canada	Statistics Canada, CANSIM (database), Table 203 00272 Survey of household spending (SHS)	2012	2
Chile	INE, Chile, National Statistical Institute	2012	2
Czech Republic	Czech Statistical Office CZSO, Information technology survey	2014	2
Hungary	HCSO, Hungarian Central Statistical Office	2014	2
Iceland	Statistics Iceland. Internet connections and access devices in households 2003-12, broadband connection	2012	2
Israel	Central Bureau of Statistics Israel, Household expenditure survey, Table 16	2013	2
Japan	Statistics Bureau, Ministry of Internal Affairs and Communications, Japan	2011	2
Korea	Korean Ministry of Science, ICT and Future Planning – Survey on the Internet Usage (MSIP, KISA)	2014	2
Mexico	INEGI-Módulo, Availability and Use of Information Technologies in Households (MODUTIH)	2014	2
New Zealand	Statistics New Zealand: The household Use of Information and Communication Technology (ICT) Survey	2012	2
Poland	Central Statistical Office of Poland	2014	2
Portugal	Statistics Portugal (INE), Survey on Information and Communication Technologies Usage in Private Households	2014	2
Slovak Republic	Statistical Office of the SR, ICT usage in households and by individuals	2014	2
Spain	INE	2014	2
Switzerland	Federal Statistical Office of Switzerland (FSO). 2006-11 : Enquête sur le budget des ménages (EBM) Société de l'information – Internet haut débit – Indicateur 30107 ; 2014 Omnibus TIC	2014	2
Turkey	Eurostat, Regional information society statistics, Households with broadband access, table isoc_r_broad_h	2013	2
United States	Census Bureau, American Community Survey (ACS), 1-year estimates, table S1501	2011	2

1. EU14 refers to Austria, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Norway, Slovenia, Sweden, United Kingdom.

Housing expenditures as a share of household disposable income

	Source	Year	Territorial level
Australia	Australia Bureau Statisitics; Table 4130.0	2011	2
Austria	Statistics Austria, EU-SILC	2013	2
Belgium	Household Budget Survey	2012	2
Canada	Statistics Canada; CANSIM, Table 203-0022	2012	2
Chile[1]	n.a.	-	-
Czech Republic[1]	n.a.	-	-
Denmark	Statistics Denmark; Household Budget Survey, Table FU5	2012	2
Finland	Statistics Finland; Table 140_ktutk_tau_104	2012	2
France[1]	n.a.	-	-
Germany[1]	n.a.	-	-
Greece[1]	n.a.	-	-
Hungary	Hungarian Central Statistical Office	2013	2
Iceland[1]	n.a.	-	-
Ireland	Household Budget Survey	2010	2
Israel	Central Bureau of Statistics Israel	2013	2
Italy	OECD estimates based on ISTAT – Household Budget Survey	2013	2
Japan	OECD estimates based on Monthly spending on housing data, Table 11	2013	2
Korea[1]	n.a.	-	-
Mexico[1]	n.a.	-	-
Netherlands[1]	n.a.	-	-
New Zealand	Statistics New Zealand	2013	North/South Islands
Norway	OECD estimates based on Statistics Norway – Survey on Consumer Expenditure	2012	2
Poland	Household Budget Survey	2013	2
Portugal	Statistics Portugal, Household Budget Survey	2011	2
Slovak Republic	Statistical Office of the SR, Household Budget Survey	2012	2
Slovenia[1]	n.a.	-	-
Spain	OECD estimates based on INE - Household Budget Survey; Table-10722	2011	2
Sweden[1]	n.a.	-	-
Switzerland	Household Budget Survey 2009-11 (3-year-pooled sample)	2010	2
Turkey	Household Budget Survey	2013	2
United Kingdom	Office for National Statistics; Table A35	2012	2
United States[1]	n.a.	-	-

1. Chile, Czech Republic, France, Germany, Greece, Iceland, Korea, Mexico, Netherlands, Slovenia, Sweden and United States: data not available at the regional level.

Individuals with unmet medical needs

	Source	Year	Territorial Level
EU9 countries[1]	European Survey on Income and Living Conditions (EU-SILC)	2013	2
Chile	Ministry of Social Development, Government of Chile, Encuesta de Caracterización Socioeconómica Nacional (Casen)	2013	2
Mexico	Instituto Nacional de Salud Pública (INSP), Encuesta Nacional de Salud y Nutrición (ENSANUT)	2013	2
New Zealand	Ministry of Health, New Zealand Health Survey	2013	2
Turkey	European Survey on Income and Living Conditions (EU-SILC)	2013	2

1. EU9 refers to Austria, Czech Republic, Estonia, Finland, France, Greece, Italy, Spain and the United Kingdom.

Labour force, employment at place of residence by gender, unemployment (total and growth)

	Source	Year	Territorial level
Australia[5]	Australian Bureau of Statistics; Table 6291.0.55.001	2001-14	2, 3 and metropolitan areas
Austria[2, 5]	Statistics Austria, Labour Force Statistics Survey	2000-13	2, 3 and metropolitan areas
Belgium[1, 5]	Eurostat, Labour Force	2000-14	2 and metropolitan areas
Canada[1, 5]	Statistics Canada; CANSIM, Table 282-0002	2001-14	2, NOG and metropolitan areas
Chile[1, 5]	INE, New National Employment Survey	2000-14	2 and metropolitan areas
Czech Republic[2, 5]	Czech Statistical Office, Labour Force Survey	2000-13	2, 3 and metropolitan areas
Denmark[5]	Statistics Denmark; Table RASA1	2000-14	2, 3 and metropolitan areas
Estonia[5]	Statistics Estonia; Table ML243 (employment), Table ML4645 (labour force) and Table ML50 (unemployment)	2000-14	3 and metropolitan areas
Finland[5]	Statistics Finland	2000-14	2, 3 and metropolitan areas
France[5, 6]	Eurostat, Labour Force statistics for TL2 and Insee for TL3	2000-14	2, 3 and metropolitan areas
Germany[2, 5]	Federal Employment Agency	2001-14	2, NOG and metropolitan areas
Greece[2, 5]	Hellenic Statistical Authority, Labour Force Survey	2000-14	2, 3 and metropolitan areas
Hungary[5]	Hungarian Central Statistical Office, Labour Force Survey	2000-14	2, 3 and metropolitan areas
Iceland[1]	Statistics Iceland	2000-14	2
Ireland	Eurostat, Labour Force statistics for Labour force and employment; CSO Table QNQ22 for unemployment	2000-14	2 and 3
Israel[1, 2, 3]	Central Bureau of Statistics Israel	2000-14	2
Italy[5]	ISTAT, Labour Force Survey	2000-14	2, 3 and metropolitan areas
Japan[5]	Statistics Bureau of Japan, Labour Force Survey	2001-14	2, 3 and metropolitan areas
Korea[5]	Statistics Korea, Economically Active Population Survey & Local Area Labour Force Survey	2000-14	2, 3 and metropolitan areas
Luxembourg	Eurostat, Labour Force	2000-13	2
Mexico[1, 5]	INEGI, National Survey of Occupation and Employment	2000-14	2 and metropolitan areas
Netherlands[2, 5]	Eurostat, Labour Force	2000-14	2, 3 and metropolitan areas
New Zealand[4, 5]	Statistics New Zealand, Household Labour Force Survey	2000-14	2 and 3
Norway[1, 5]	Statistics Norway	2000-14	2, 3 and metropolitan areas
Poland[2, 5]	Central Statistical Office of Poland, Labour Force Survey	2000-14	2, 3 and metropolitan areas
Portugal[1, 5]	Statistics Portugal, Labour Force Survey	2000-14	2 and metropolitan areas
Slovak Republic[5]	Statistical Office of the SR, Labour Force Survey	2000-14	2, 3 and metropolitan areas
Slovenia[2, 5]	Eurostat, Labour Force	2001-14	2, 3 and metropolitan areas
Spain[5]	INE, Labour Force Survey	2000-14	2, 3 and metropolitan areas
Sweden[5]	Statistics Sweden, Labour Force Survey	2000-14	2, 3 and metropolitan areas
Switzerland[1, 5]	Federal Statistical Office of Switzerland, Structural Labour Force Survey	2000-14	2 and metropolitan areas
Turkey[1]	TURKSTAT, Household Labour Force Survey Revised Results	2000-14	2

Labour force, employment at place of residence by gender, unemployment (total and growth) *(cont.)*

	Source	Year	Territorial level
United Kingdom[5]	Office for National Statistics	2000-14	2, 3 and metropolitan areas
United States[5]	U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics program	2000-14	2, 3 and metropolitan areas
Brazil	IBGE, National Survey by Household Sampling	2004-13	2
Colombia	DANE, Great integrated Household Survey	2001-12	2
Latvia[2]	Eurostat, Labour Force Statistics	2000-14	3
Lithuania[2]	Eurostat, Labour Force Statistics	2000-14	3
Peru	National Institute of Statistics and Informatics, National Household Survey	2001-14	2
Russian Federation	Federal State Statistics Service, Labour force Survey	2000-14	2
South Africa	Statistics South Africa; Quarterly Labour Force Survey, Table P0211	2000-14	2

1. Belgium, Canada, Chile, Iceland, Israel, Mexico, Norway, Portugal, Switzerland and Turkey: data not available at the territorial level 3.
2. Labour market statistics by urban-rural typology (urt_lmk) for unemployment at TL3
3. Israel: Data not available at the regional level.
4. New Zealand: Gisborne/Hawke's Bay combined (NZ016 included in NZ015), Tasman/Nelson/Marlborough/West Cost combined (NZ022 included in NZ021).
5. Available years at metropolitan level: Australia, Austria and the Czech Republic 2000-13; Slovenia 2001-11; Germany 2001-14; Denmark 2007-14; Switzerland 2007-13; Belgium, Estonia, Spain, Finland, France, Greece, Hungary, Ireland, Italy, Netherlands, Norway, Poland, Portugal, Sweden, Slovak Republic, United Kingdom, Mexico, Korea, Japan, Canada, United States and Chile 2000-14. Metropolitan labour figures are estimates based on labour data at TL3 level except for Belgium, Chile, Greece, Mexico, Netherlands, Poland and Portugal were TL2 data are used and NOG for Canada and Germany. Australia and United States figures are provided by the Australian Bureau of Statistics and the U.S. Bureau of Labour Statistics respectively. The methodology to estimate labour figures at metropolitan level is described in Annex C.
6. Regional values derived from the Labour Force Survey in France should be taken with caution due to the relatively small sample size.

Labour force by educational attainment

	Source	Year	Territorial Level
EU21 countries[1, 8, 9] plus Norway and Switzerland[8]	Eurostat, Labour Force Survey, Regional education statistics	2000-14	2
Australia[2]	Australian Bureaus of Statistics, Table 6227.0 Education and Work, LFS	2010-14	2
Canada[3]	Statistics Canada. CANSIM (database), Table 282-0004 – Labour force survey estimates (LFS), by educational attainment, gender and age group, annual	2000-13	2
Chile[4]	INE Chile, New National Employment Survey	2010-14	2
Estonia[1]	Statistics Estonia, Labour Force by county and educational level (ML123)	2000-13	3
Iceland[7]	Statistics Iceland Labour force survey. Educational attainment of the population 25-64 year old, 2003-12	2003-12	2
Israel	Central Bureau of Statistics Israel	2000-13	2
Japan[7]	Statistics Bureau, 1990, 2000 and 2010 Population Census	2000-10	2
Korea[2]	KOSIS, Economically Active Population Survey	2000-14	2
Mexico[4]	INEGI, National Population and Housing Censuses	2000-10	2
New Zealand	Statistics New Zealand. Household Labour Force Survey	2000-12	2
Turkey[5]	TURKSTAT, Household Labour Force Survey Revised Results	2006-14	2
United States[6]	Census Bureau, American Community Survey (ACS), 1-year estimates, table S1501	2000-13	2
Brazil[7]	IBGE, Pesquisa Nacional por Amostra de Domicílios – PNAD	2004-13	2
Colombia	DANE, Great integrated household survey (GEIH for its acronym in Spanish)	2005-14	2
Russian Federation	Federal State Statistics Service (Rosstat), Labour force Survey, population in age 15-72 years old	2000-14	2

1. EU20 refers to Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Poland, Portugal, Slovenia, Slovak Republic, Spain, Sweden, United Kingdom (except Northern Ireland). Data refer to the labour force aged 15 and over.
2. Australia and Korea: Data refer to total labour force.
3. Canada: Data refer to the labour force aged 15 and over.
4. Chile and Mexico: Data refer to the population aged 15 and over.
5. Turkey: Illiterate people are included in the ISCED 0-2.
6. United States: Data refer to the population aged 18 and over.
7. Total labour force educational attainment includes persons not classified by level of education.
8. First year available: Slovenia and Switzerland 2001; Finland 2005; Denmark 2007.
9. Last year available: Estonia 2013.

Life expectancy at birth, total and by gender

	Source	Year	Territorial level
EU9[1]	Eurostat, Regional Demographic Statistics	2013	2
Australia	Australian Bureau of Statistics; Table 3302.0	2013	2
Austria	Statistics Austria	2013	2
Canada[2]	Statistics Canada; CANSIM, Table 102-0512	2011	2
Chile	INE/OECD estimates	2012	2
Czech Republic	Czech Statistical Office	2013	2
Denmark	Statistics Denmark; Table HISBR	2013	2
Estonia	Statistics Estonia; Table PO0452	2013	3
Finland	Statistics Finland	2013	2
Germany	Federal Office of Germany and the Statistical Offices of the Federal States	2013	2
Greece	Hellenic Statistical Authority	2013	2
Hungary	Hungarian Central Statistical Office	2013	2
Iceland[3]	n.a.	-	-
Israel	Central Bureau of Statistics	2013	2
Italy	Istat; Table P.5	2013	2
Japan[4]	Statistics Bureau of Japan, MIC	2010	2
Korea	OECD estimates based on provincial population weighted average	2013	2
Mexico[5]	National Institute of Statistics and Geography (INEGI)	2013	2
New Zealand[6]	Statistics New Zealand	2013	2
Poland	Central Statistical Office of Poland	2013	2
Portugal	Statistics Portugal	2013	2
Slovak Republic	Statistical Office of the SR	2013	2
Spain	INE	2013	2
Turkey	Eurostat, Regional Demographic Statistics	2013	2
United States[7]	Measure of America	2010	2
Colombia	DANE	2013	2
Peru	National Institute of Statistics and Informatics	2013	2
Russian Federation	Federal State Statistics Service	2013	2

1. EU9 refers to Belgium, France, Ireland, Netherlands, Norway, Slovenia, Sweden, Switzerland and United Kingdom (except Northern Ireland).
2. Canada: Rates used in this table for the calculation of life expectancy are calculated with data that exclude: births to mothers not resident in Canada, births to mothers resident in Canada, province or territory of residence unknown, deaths of non-residents of Canada, deaths of residents of Canada whose province or territory of residence was unknown and deaths for which age or gender of decedent was unknown. Rates used in this table for the calculation of life expectancy are based on data tabulated by place of residence. Life expectancy for the Yukon, the Northwest Territories and Nunavut should be interpreted with caution due to small underlying counts.
3. Iceland: Data not available at the regional level.
4. Japan: TL2 data computed as the average value of TL3 regions.
5. Mexico: 2011-13: CONAPO. Population forecast 2010-50, *www.conapo.gob.mx*.
6. New Zealand: Life expectancy data presented for each year is based on registered deaths in the three years centred on that year. New Zealand life expectancy from abridged life tables. This may differ to data from complete life tables.
7. United States: 2010 data source is Measure of America calculations using mortality counts from the Centers for Disease Control and Prevention, National Center for Health Statistics. Mortality – All County Micro-Data File, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Population counts are from the CDC WONDER Database.

Life satisfaction

	Source	Years	Territorial level
All countries[1, 2]	Gallup World Poll www.gallup.com/services/170945/world-poll.aspx.		
	Average 2006-14	TL2	

1. Life satisfaction is expressed as the mean score on an 11-point scale (based on the Cantril ladder measure). It is measured using a survey question in which respondents are asked "Please imagine a ladder, with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?".
2. Regional estimates are derived by micro-data pooling the yearly surveys 2006-14. TL3 regions for Estonia. Estimates are not available for the following regions: Northwest Territories, Nunavut, Yukon (Canada); Helsinki-Usimaa, Aland (Finland).

Local governments in metropolitan areas

	Source	Years	Territorial level
Australia	Australian Bureau of Statistics , Local Government Areas (LGA)	2011	Metropolitan areas
Austria	Eurostat, Gemeinden (LAU2)	2011	Metropolitan areas
Belgium	Eurostat, Gemeenten/Communes (LAU2)	2011	Metropolitan areas
Canada	Statistics Canada (Statcan), Census Subdivisions (towns, villages, etc) (CSD)	2006	Metropolitan areas
Chile	Instituto Nacional de Estadísticas (INE) Chile, Comunas	2002	Metropolitan areas
Czech Republic	Eurostat, Obce (LAU2)	2011	Metropolitan areas
Denmark	Eurostat, Kommuner (LAU1)	2011	Metropolitan areas
Estonia	Eurostat, Vald, linn (LAU2)	2011	Metropolitan areas
Finland	Eurostat, Kunnat/Kommuner (LAU2)	2011	Metropolitan areas
France	Eurostat, Communes (LAU2)	2011	Metropolitan areas
Germany	Eurostat, Gemeinden (LAU2)	2011	Metropolitan areas
Greece	Eurostat, Demotiko diamerisma/Koinotiko dimerisma (LAU2)	2011	Metropolitan areas
Hungary	Eurostat, Települések (LAU2)	2011	Metropolitan areas
Iceland[1]	n.a.	-	-
Ireland	Eurostat, Local governments (LAU1)	2011	Metropolitan areas
Israel[1]	n.a.	-	-
Italy	Eurostat, Comuni (LAU2)	2011	Metropolitan areas
Japan	National Land Numerical Information Service of Japan, Shi (city), Machi or Cho (town) and Mura or Son (village)	2006	Metropolitan areas
Korea	Korea Statistical Information Service (KOSIS), Si (city), Gun (county), Gu (district)	2014	Metropolitan areas
Luxemburg	EUROSTAT, Communes (LAU2)	2011	Metropolitan areas
Mexico	Instituto Naconal de Estadística y Geografía (INEGI), Municipios	2011	Metropolitan areas
Netherlands	Eurostat, Gemeenten (LAU2)	2011	Metropolitan areas
New Zealand[1]	n.a.	-	-
Norway	Eurostat, Municipalities (LAU2)	2011	Metropolitan areas
Poland	Eurostat, Gminy (LAU2)	2011	Metropolitan areas
Portugal	Eurostat, Freguesias (LAU2)	2011	Metropolitan areas
Slovak Republic	Eurostat, OBCE (LAU2)	2011	Metropolitan areas
Slovenia	Eurostat, Obèine (LAU2)	2011	Metropolitan areas
Spain	Eurostat, Municipios (LAU2)	2011	Metropolitan areas
Sweden	Eurostat, Kommuner (LAU2)	2011	Metropolitan areas
Switzerland	Eurostat, Municipalities (LAU2)	2011	Metropolitan areas
Turkey[1]	n.a.	-	-
United Kingdom	UK Office for National Statistics, Country Councils.	2001	Metropolitan areas
United States	U.S. Census Bureau (2002) Census of Governments, Municipalities or Townships	2000	Metropolitan areas

1. The functional urban areas, and by extension the metropolitan areas, have not been identified in Iceland, Israel, New Zealand and Turkey.

Metropolitan population: Total, by age

	Source	Years	Territorial level
Australia	Australian Bureau of Statistics	2001-11	Metropolitan areas
Austria	Statistics Austria	2001-11	Metropolitan areas
Belgium	Statistics Belgium	2001-11	Metropolitan areas
Canada	Statistics Canada, Census Canada	2000-11	Metropolitan areas
Chile	INE Chile	2002-10	Metropolitan areas
Czech Republic	Czech Statistical Office	2001-10	Metropolitan areas
Denmark	Statistics Denmark	2001-11	Metropolitan areas
Estonia	Statistics Estonia, Population database	2000-11	Metropolitan areas
Finland	Statistics Finland	2000-12	Metropolitan areas
France	INSEE, Demographic Census	1999-09	Metropolitan areas
Germany	Regionaldatenbank Deutschland	2001-10	Metropolitan areas
Greece	National Statistical Service of Greece	2001-11	Metropolitan areas
Hungary	Hungarian Central Statistical Office	2001-11	Metropolitan areas
Iceland[1]	n.a.	-	-
Ireland	Central Statistics Office of Ireland	2002-11	Metropolitan areas
Israel[1]	n.a.	-	-
Italy	ISTAT, Demography in Figures	2001-11	Metropolitan areas
Japan	Statistical Office, Population and Households data	2000-10	Metropolitan areas
Korea	Korea National Statistical Office	2000-10	Metropolitan areas
Luxemburg	STATEC – Statistical Portal	2001-12	Metropolitan areas
Mexico	INEGI, Demographic Census	2000-10	Metropolitan areas
Netherlands	Statistics Netherlands	2001-10	Metropolitan areas
New Zealand[1]	n.a.	-	-
Norway	Statistics Norway	2001-11	Metropolitan areas
Poland	Central Statistical Office of Poland	2002-10	Metropolitan areas
Portugal	INE, Demographic Census	2001-11	Metropolitan areas
Slovak Republic	Statistical Office of the Slovak Republic	2001-10	Metropolitan areas
Slovenia	Statistical Office of the Republic of Slovenia	2002-10	Metropolitan areas
Spain	INE, Demographic Census	2001-10	Metropolitan areas
Sweden	Statistics Sweden	2000-10	Metropolitan areas
Switzerland	Swiss Federal Statistics Office	2000-10	Metropolitan areas
Turkey[1]	n.a.	-	-
United Kingdom	Office for National Statistics	2001-10	Metropolitan areas
United States	U.S. Census Bureau	2000-10	Metropolitan areas

1. The functional urban areas, and by extension the metropolitan areas, have not been identified in Iceland, Israel, New Zealand and Turkey.

Motor vehicle theft

	Source	Year	Territorial Level
Australia	Australian Bureau of Statistics (ABS), Recorded Crime Victims, Australia, 2013 (cat. no. 4510.0)	2013	2
Austria	Statistics Austria, Crime Statistics	2013	2
Belgium	Belgian Federal Police	2013	2
Canada[1]	Statistics Canada. CANSIM database, Table 252-0051	2011	2
Chile[2]	INE, Chile. Undersecretariat of Crime Prevention, Ministry of Interior and Public Safety	2013	2
Czech Republic	Czech Statistical Office CZSO, Police of the Czech Republic	2013	2
Germany[8]	n.a.	-	-
Denmark	Statistics Denmark, StatBank Table STRAF11	2013	2
Estonia[8]	n.a.	-	-
Finland	Statistics Finland, Justice statistics	2013	2
France[3]	INSEE, Etat 4001 annuel, DCPJ	2012	2
Greece[8]	n.a.	-	-
Hungary	OECD Regional Questionnaire; information provided by the delegate of the Working Party of Territorial Indicators (WPTI)	2013	2
Ireland	CSO, StatBank Ireland. Table CJQ02	2011	2
Iceland[8]	n.a.	-	-
Israel	Central Bureau of Statistics Israel	2013	2
Italy	National Statistical Institute, ISTAT	2013	2
Japan	National Police Agency. Publications of the Police Policy Research Center: Crime in Japan in 2014	2014	2
Korea[8]	n.a.	-	-
Luxembourg[8]	n.a.	-	-
Mexico[4]	National Statistical Institute, INEGI	2011	2
New Zealand[5]	New Zealand Police	2014	2
Netherlands[8]	n.a.	-	-
Norway[8]	n.a.	-	-
Poland	National Police Headquarters	2011	2
Portugal	Ministry of Justice of Portugal – Directorate-General for Justice Policy, motor vehicle theft crimes recorded by the police	2013	2
Slovak Republic[6]	Statistical Office of the Slovak Republic, regional database	2013	2
Slovenia	OECD Regional Questionnaire; information provided by the delegate of the Working Party of Territorial Indicators (WPTI)	2012	2
Spain	INE	2013	2
Sweden	Swedish National Council for Crime Prevention (Brå)	2014	2
Switzerland[7]	Federal Statistical Office (FSO). Police crime statistics	2013	2
Turkey	General Directorate of Security, General Commandership of Gendarme	2013	-
United Kingdom[8]	n.a.	-	-
United States	Federal Bureau of Investigation, Crime in the United States. Table 4, by Region, Geographic Division and State	2013	2

1. Canada: total theft of motor vehicle, actual incidents.
2. Chile: data based on crimes known by police (called "casos policiales" in Spanish). Do not include motor attempted theft of vehicles.
3. France: data includes car theft (index 35), theft of motor vehicles with two wheels (index 36) and theft of vehicles with cargo (index 34). Some motor vehicle thefts are recorded by the corresponding national institutions (such as central offices) of the police and gendarmerie. These thefts are not registered in a particular TL3 region, thus the national total does not fully correspond with the sum of the TL3 regions.
4. Mexico: National Census 2012 State Law Enforcement. As part of the implementation of the National Census of Law Enforcement 2011 and 2012, the figure provided for 2010 and 2011 corresponds to the data of the relevant offenses, registered preliminary inquiries initiated by the Public Prosecutor of the Common Jurisdiction in each of the federal states.
5. New Zealand: the number of offences police recorded for theft or unlawful taking of a motor vehicle. This includes instances where a vehicle is taken for a joy ride and later recovered, as well as instances where vehicles are taken permanently.
6. Slovak Republic: since 2005, data on NUTS 1 level need not to be equal to the sum of NUTS 2 level data because NUTS 1 data also includes regionally unspecified offences recorded by Railway Police, Military Police, Corps of Prison and Court Guard, and Customs Director.
7. Switzerland: from 2009, police statistics on crime have been revised and are thus not comparable to the old police statistics; this translates into a break in series between 2008 and 2009.
8. Germany, Estonia, Greece, Iceland, Korea, Luxembourg, Netherlands, Norway, and United Kingdom: data not available at the regional level.

Municipal waste and recycled waste

	Source	Years	Territorial level
All countries[1, 2, 3]	OECD Regional Database Regional municipal data were provided by the individual member countries through the annual OECD regional data questionnaire	1995-13	2

National data: OECD (2015), *Environment at a Glance 2015: OECD Indicators*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264235199-en*.

1. No municipal waste data at regional level are available for Australia, Denmark, Finland, Germany, Greece, Iceland, New Zealand, Sweden, Switzerland and the United States. Last year available: Canada (2008), Mexico (2009), Ireland (2010), France and the United Kingdom (2011), Chile, Spain and Turkey 2012.
2. No municipal waste recycling data at regional level are available for Australia, Canada, Chile, Denmark, Finland, Greece, Ireland, Israel, Iceland, Mexico, New Zealand, Spain, Sweden, Switzerland, Turkey and United States. Last year available: France and United Kingdom (2011), Germany 2012.
3. National data: last available year: Australia and Chile 2009, Japan 2010, Austria, Greece, Ireland, Korea, Mexico and United States 2012. First year available: Australia and Israel 2000.

Number of rooms per person

	Source	Year	Territorial level
Australia	Australia Bureau Statisitics, table 4130.0	2011	2
Austria	Statistics Austria, Microcensus Housing Survey	2013	2
Belgium	Eurostat, Regional Statistics	2012	2
Canada	Statistics Canada	2011	2
Chile	n.a.	-	-
Czech Republic	Czech Statistical Office, EU SILC	2013	2
Denmark	OECD Regional Questionnaire/information provided by the delegate of the Working Party on Territorial Indicators	2014	2
Finland	Statistics Finland,	2012	2
France	Insee, Population census	2010	2
Germany	Eurostat, Regional Statistics	2013	2
Greece	Hellenic Statistical Authority, Population – Housing Census	2013	NUTS 1
Hungary	Hungarian Central Statistical Office, Population micro-census	2011	2
Iceland	n.a.	-	-
Ireland	Eurostat, Regional Statistics	2012	2
Israel	Central Bureau of Statistics Israel	2013	2
Italy	ISTAT, Population and housing Census	2011	2
Japan	Statistics Bureau of Japan	2013	2
Korea	Statistics Korea, Housing Census General	2010	2
Mexico	National Institute of Statistics and Geography (INEGI)	2010	2
Netherlands	Eurostat, Regional Statistics	2012	2
New Zealand	Statistics New Zealand	2013	2
Norway	Eurostat, Regional Statistics	2012	2
Poland	OECD estimates based on Central Statistical Office – dwelling stock by location	2012	2
Portugal	Statistics Portugal, Population and housing census	2011	2
Slovak Republic	Statistical Office of the SR, Household Budget Survey	2013	2
Slovenia	Eurostat, Regional Statistics	2013	2
Spain	INE	2012	2
Sweden	Eurostat, Regional Statistics	2012	2
Switzerland	Federal Statistical Office, GWS	2013	2
Turkey	Information provided by the delegate of the Working Party on Territorial Indicators	2012	2
United Kingdom[1]	Eurostat, Regional Statistics	2011	2
United States	American Community Survey	2012	2

1. United Kingdom: Regional values available except for Scotland.

Part-time employment total and by gender

	Source	Year	Territorial level
EU23 countries[1]	Eurostat, Employment by full-time/part-time, table lfst_r_lfe2eftpt	2014	2
Australia	Australian Bureau of Statistics (ABS), Labour Force, (cat. no. 6291.55.001): EM3 – Employed Person by Usual Hours Worked	2014	2
Canada[2, 6]	Statistics Canada. CANSIM database, Table 282-0002 – Labour force survey estimates (LFS)	2014	2
Chile	OECD Regional Questionnaire; information provided by the delegate of the Working Party of Territorial Indicators (WPTI)	2014	2
Iceland	n.a.	-	-
Israel[3]	Central Bureau of Statistics Israel	2013	2
Japan	OECD Regional Questionnaire; information provided by the delegate of the Working Party of Territorial Indicators (WPTI)	2014	2
Korea	n.a.	-	-
Mexico	INEGI. Encuesta Nacional de Ocupación y Empleo (ENOE)	2014	2
New Zealand	Statistics New Zealand	2012	2
Norway	Statistics Norway	2013	2
Switzerland	Eurostat, Employment by full-time/part-time (lfst_r_lfe2eftpt)	2014	2
Turkey[4]	TURKSTAT, Household Labour Force Survey Revised Results	2014	2
United States[5]	U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics program. Current Population Survey, Geographic Profile of Employment and Unemployment, table 22	2013	2
Brazil	IBGE, Pesquisa Nacional por Amostra de Domicílios – PNAD	2013	2
Colombia	DANE – Gran Encuesta Integrada de Hogares – GEIH – (Labour Houshold survey)	2012	2
Russian Federation	Federal State Statistics Service (Rosstat), Labour force Survey, population in age 15-72 years old	2014	2

The definition of part-time work varies considerably across OECD member countries. The OECD defines part-time working in terms of usual working hours fewer than 30 per week. At regional level there does not exist a harmonised definition of part-time employment. Indeed, for some countries, the number of hours defining the number of part-time employees in a region differs from the OECD definition. This makes regional values to differ from national estimates relying on a harmonised definition. However, for European TL2 regions, the distinction between full-time and part-time work is based on a spontaneous response by the respondent; except in the Netherlands, Iceland and Norway were part-time is determined if the usual hours are fewer than 35 hours.

1. EU23 countries: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden and United Kingdom.
2. Canada: Part-time employment consists of persons who usually work less than 30 hours per week at their main or only job. Estimates in thousands, rounded to the nearest hundred.
3. Israel: part-time employment consists of persons who usually work less than 35 hours a week.
4. Turkey: Total figures may not be exact due to the rounding of the numbers. Sample size is too small for reliable estimates for figures less than two thousand persons in each cell. Full time/part time distinction is made by the usual hours worked in the main job using 30 hours threshold.
5. United States: a part-time schedule in the U.S. is officially defined as 1–34 hours per week. To approximate the OECD definition of less than 30 hours per week, the first two categories from the persons at work by hours of work table were added up. Hence, the universe for the data below excludes persons who were not at work during the Current Population Survey reference week. (Nationally in 2013, about 3.5 per cent of employed persons were not at work in an average week).
6. Canada and Finland: no data on part time employment by gender.

Perception of corruption

Country	Source	Years	Territorial level
All countries[1, 2, 3]	Gallup World Poll www.gallup.com/services/170945/world-poll.aspx.	Average 2006-14	TL2

1. Perception of corruption is measured using a survey question in which respondents are asked to rank from 0 to 10: "Is corruption widespread throughout the government in (this country), or not?".
2. Regional estimates are derived by micro-data pooling the yearly surveys 2006-14. Estimates are TL2 except for New Zealand for which data is available only for North Island and South Island and TL3 regions for Estonia.
3. Further details in Brezzi, M. and M. Díaz Ramírez (2016),"Building subjective well-being indicators at the subnational level: A preliminary assessment in OECD regions", *OECD Regional Development Working Papers*, No. 2016/03, OECD Publishing, Paris, *http://dx.doi.org/10.1787/5jm2hhcjftvh-en*.

PCT patents applications

	Source	Years	Territorial level
All countries	OECD REGPAT Database	1995-2013	2 and 3
OECD 19[1, 2, 3, 4]	OECD REGPAT Database	2012	Metropolitan areas

1. The OECD REGPAT Database presents patent data that have been linked to regions according to the addresses of the applicants and inventors. For more information on the database, see: *www.oecd.org/dataoecd/22/19/40794372.pdf*.
2. A patent is generally granted by a national patent office or by a regional office that does the work for a number of countries, such as the European Patent Office and the African Regional Intellectual Property Organization. Under such regional systems, an applicant requests protection for the invention in one or more countries, and each country decides whether to offer patent protection within its borders. In this publication the patent data comes from the WIPO-administered Patent Co-operation Treaty (PCT) which provides for the filing of a single international patent application which has the same effect as national applications filed in the designated countries. An applicant seeking protection may file one application and request protection in as many signatory states as needed. More info on PCT: *www.wipo.int/export/sites/www/pct/en/basic_facts/faqs_about_the_pct.pdf*.
3. Patent counts are provided for selected technology areas such as information and communication technology (ICT), biotechnology, nanotechnology and for technologies related to the environment and health. For more information, see *www.oecd.org/dataoecd/5/19/37569377.pdf*. For classifications of environmental related technologies see *www.oecd.org/env/consumption-innovation/indicator.htm*.
4. OECD (19) refers to Australia, Austria, Belgium, Canada, Chile, Denmark, Estonia, Finland, France, Germany, Italy, Japan, Mexico, Netherlands, Norway, Portugal, Spain, Sweden, and the United States. Only for these 19 countries was it possible to link the addresses of the applicants and inventors to the post codes of municipalities belonging to the metropolitan area.

Physicians

	Source	Years	Territorial Level
EU23 countries[1]	Eurostat, health personnel by NUTS 2 regions (hlth_rs_prsrg)	2013	2
Australia[2]	Australian Institute of Health and Welfare (AIHW), Medical Workforce 2012	2012	2
Canada[3]	Canadian Institute of Health Information (CIHI) Canadian Insitute for National Health Information (CIHI). Physician Database, table A.1.5	2011	2
Chile	Department of Health Statistics and Information (DEIS), Ministry of Health (Minsal)	2011	2
Iceland	n.a.	-	-
Israel	Central Bureau of Statistic (CBS)	2012	2
Japan	Statistics and Information Department, Minister's Secretariat, Ministry of Health, Labour and Welfare	2012	2
Korea	Korea National Statistical Office	2013	2
Mexico	Ministry of Health	2013	2
New Zealand	Medical Council, The New Zealand Medical Force in 2010	2010	2
Norway	Eurostat, Regional health statistics	2013	2
Switzerland	FSO Federal Statistical Office, Neuchâtel; Swiss Medical Association (FMH), Bern; Medical Statistics of Physicians, yearly census	2013	2
Turkey	National Statistics Agency, TURKSTAT	2013	2
United States[4]	American Medical Association	2011	2
China[5]	National Bureau of Statistics China	2013	2
Peru	Ministerio de Salud-Oficina de Estadística e Informática-Registro Nacional de Establecimientos de Salud	2012	2
Russian Federation	Federal State Statistics Service (Rosstat)	2013	2

1. EU23 countries: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden and United Kingdom. 2012 data for Belgium, Denmark, Italy and Sweden, 2011 data for Luxembourg, 2010 for United Kingdom. No regional data available in Ireland.
2. Australia: the data refers to the number of employed medical practitioners, including clinicians and non-clinicians.
3. Canada: includes physicians in clinical and/or non-clinical practice. Excludes residents and unlicensed physicians who requested that their information not be published as of 31 December 2005.
4. United States: excludes doctors of osteopathy, and physicians with unknown addresses and who are inactive. Includes all physicians not classified according to activity status.
5. China: physicians data include licensed (assistant) doctors.

$PM_{2.5}$ particles concentration

	Source	Years	Territorial level
All countries	van Donkelaar, A., et al. (2014) "Use of Satellite Observations for Long-Term Exposure Assessment of Global Concentrations of Fine Particulate Matter", Environmental Health Perspectives, Vol. 123(2).	2012-14	2 and metropolitan areas

The methodology is described in the Annex C.

Population: Total, by age and gender

	Source	Years	Territorial Level
Australia	Australian Bureau of Statistics, cat. no. 3235.0, Population Estimates by Age and Sex, Regions of Australia (ASGS 2011), population at 30 June	2001-14	3
Austria	Statistics Austria, Population statistics, population at 1 January	2000-14	3
Belgium	Federal Public Service (FPS) Economy/Statistics Belgium. Official count of the resident population, population at 1 January	2000-14	3
Canada	Statistics Canada. CansimTable 051-0062. Population Estimates based on Standard Geographical Classification 2011, population at 1 July	2000-14	3
Chile	INE, Chile. Population projection and estimates by sex and age. 1990-2020, average annual population	2000-14	3
Czech republic[1]	Czech Statistical Office CZSO. Population of territorial units of the Czech Republic	2000-14	3
Denmark	Statistics Denmark – StatBank, (FOLK1), population at 1 January	2008-14	3
Estonia	Statistics Estonia. Statistical database – table PO022, population at 1 January	2000-14	3
Finland	Statistics Finland, Population Statistics, Population structure, population at 1 January	2000-14	3
France	Insee – Estimations de population pour la France métropolitaine, population at 1 January	2000-14	3
Germany	Spatial Monitoring System of the Federal Institute for Building (BBSR). Statistical Offices of the Federal States, table 173-21-5-B	2000-14	3
Greece	Hellenic Statistical Authority, Population statistics, population at 1 January	2001-14	3
Hungary	HCSO, Hungarian Central Statistical Office, population at 1 January	2000-14	3
Iceland	Statistics Iceland, population at 1st of January by municipality	2000-14	3
Ireland	CSO, StatBank Ireland, population estimates: table PEA07, population in April; 2014 data collected from Eurostat	2000-14	3
Israel[1, 3]	Central Bureau of Statistics Israel	2000-14	2
Italy	National Institute for Statistics (Istat). Intercensal resident population estimates (1991-2001 and 2002-2010) and population projection for reference year 2011 onwards. Population at 1 January; 2014 data collected from Eurostat	2000-14	3
Japan	Statistics Bureau, Current Population Estimates as of 1 October	2001-14	3
Korea	Statistics Korea, KOSIS database, yearly average projected population by age, population at 1 October	2001-14	3
Luxembourg	Eurostat regional statistics, table demo_r_pjangrp3, population at 1 January	2000-14	3
Mexico	INEGI, mid-year estimates, Population and Housing Census (1990,95,00,05,2010), OECD estimates for inter-census years. As from 2011 data are based on population projection, population at 30 June	2000-10	3
Netherlands	Eurostat regional statistics, table demo_r_pjangrp3, population at 1 January	2003-14	3
New Zealand	Statistics New Zealand, Population Statistics. Boundaries at 1 January 2013. NZ.DOTSTAT (Tablecode 7501), population at 30 June	2000-14	3
Norway	Statistics Norway, population at 1 January; 2014 data collected from Eurostat	2000-14	3
Poland[1]	Central Statistical Office of Poland. Local Data Bank (Population and Vital statistics – Population by sex and age group (NTS-5)	2000-14	3
Portugal	Statistics Portugal (INE), Demographic Statistics, population at 1 January	2000-14	3
Slovak Republic	Statistical Office of the Slovak Republic, population at 1 January	2000-14	3
Slovenia	Statistical Office of the Republic of Slovenia. SI-STAT Data Portal. population at 1 January; 2014 data collected from Eurostat	2000-14	3
Spain	INE-INEBASE Population data historical series, 1971 to 2014, population at 1 January	2000-14	3

Population: Total, by age and gender *(cont.)*

	Source	Years	Territorial Level
Sweden[1]	Statistics Sweden	2000-14	3
Switzerland[1]	Swiss Federal Statistical Office: from Dec-2010 onwards (Population and Households Statistics (STATPOP) ; Dec-1990 to Dec-2009: Annual Population Statistics (ESPOP); break in series between 2010 and 2011	2000-14	3
Turkey[1, 3]	Turkish Statistical Institue (TurkStat). The source of 2007-14 data is Address Based Population Registration System (ABPRS) and de jure population	2001-13	3
United Kingdom	Office for National Statistics, ONS, Nomis database, population at 1 January for TL2; 2014 data collected from Eurostat	2000-14	3
United States	United States Census Bureau – State and County Population Estimates, Table PEPAGESEX, population at 1 July	2000-14	3
Brazil[2]	Instituto Brasileiro de Geografia e Estatística, IBGE, census 1991, 2000, 2010	2004-14	2
China	China Statistical database – Age composition and dependency ratio of population table	2000-14	2
Colombia	DANE. Estimation of population 1985-2005 and projection of population 2005-2020 by department	2000-14	2
India	Estimated mid-year population by states/UTs	2001-13	2
Indonesia	Statistics Indonesia – Population of Indonesia by Province	2000-14	2
Latvia	Central Statistical Bureau of Latvia, population by statistical region	2000-14	3
Lithuania	Eurostat regional statistics, population on 1 January, table demo_r_pjangrp3	2000-14	3
Russian Federation	Federal State Statistics Service (Rosstat). Number of de-jure (resident) population on subjects of the Russian Federation	2000-14	2
South Africa	Statistics South Africa, population estimates for the period 2002-2014 based on 2011 Census	2002-14	2

1. Population at 31 December restated at 1 January the following year by OECD.
2. First available year for population by age: 2004.
3. Last available year for population by age: 2013.

Population mobility among regions (total and young)

	Source	Years	Territorial level
Australia[1]	Australian Bureau of Statistics (ABS), ABS.Stat	2011-13	3
Austria	Statistics Austria, Migration statistics	2011-13	3
Belgium	FPS Economie/Statistics Belgium	2011-13	3
Canada	Statistics Canada. Cansim Table 051-0012	2011-13	2
Chile[6]	n.a.	-	-
Czech Republic	Czech Statistical Office CZSO	2011-13	3
Denmark	Statistics Denmark, StatBank, table FLY55	2011-13	3
Estonia	Statistics Estonia, Statistical database, table POR06	2011-13	3
Finland	Statistics Finland, Population Statistics, Migration	2011-13	3
France[6]	n.a.	-	-
Germany[7]	Spatial Monitoring System of the BBSR. Periodic update of population statistics by the Federal Office of Germany and the Statistical Offices of the Federal States	2011-12	3
Greece	Hellenic Statistical Authority. Population-Housing Census (2001, 2011)	2011	3
Hungary	HCSO, Hungarian Central Statistical Office, Internal migration statistics based on the registration system of home addresses	2011-13	3
Iceland	Statistics Iceland, Internal migration	2011-13	3
Ireland[6]	n.a.	-	-
Israel	Central Bureau of Statistics Israel	2011-13	2
Italy	Istat, Iscrizioni e calcellazioni anagrafiche (changes of residence from/to italian municipalities)	2011-13	3
Japan[7]	Statistics Bureau, Migrants by prefecture derived from the Basic Resident Registers	2011-13	3
Korea[2]	Statistics Korea, KOSIS database – Internal Migration Statistics	2011-13	3
Mexico	INEGI. Censo de población y vivienda 2010	2010	3
Netherlands	Statistics Netherlands on Statline	2010	2
New Zealand[6]	n.a.	-	-

Population mobility among regions (total and young) *(cont.)*

	Source	Years	Territorial level
Norway	Statistics Norway. Statbank, table 01222: Population change (M)	2011-13	3
Poland	Central Statistical Office of Poland, PESEL register	2011-13	3
Portugal[3]	Statistics Portugal (INE), Census 2001 and 2011	2011	3
Slovak Republic	Statistical Office of the SR	2011-13	3
Slovenia	Statistical Office of the Republic of Slovenia, Ministry of the Interior – Central Population Register, Ministry of the Interior – Administrative Internal Affairs Directorate	2011	3
Spain	INE – Data provided by the delegate of the OECD Working Party on Territorial Indicators	2011-13	3
Sweden	Statistics Sweden, Central Office for Administrative and Electronic Public Services registration system	2011-13	3
Switzerland	Swiss Federal Statistical Office, 1990 to 2010: Annual Population Statistics (ESPOP), from 2011 onwards: Population and Households Statistics (STATPOP)	2011-13	3
Turkey	Turkish Statistical Institue (TurkStat), Address Based Population Registration System	2011-13	3
United Kingdom[4]	National Statistical Office, Population Estimates	2011-13	3
United States[5]	Secretariat's calculation using Internal Revenue Service (IRS) Individual Master File, Statistics of Income.	2011	3
Brazil	IBGE, 1991, 2000 e 2010 Census, 2004-13: Pesquisa Nacional por Amostra de Domicílios – PNAD	2011-13	2
Russian Federation	Federal State Statistics Service (Rosstat) calculations based on Federal Migration Service data	2011-13	2

Data refer to domestic migration: inflows and outflows of population from one region to another region of the same country. They do not include international immigration and outmigration.

1. Australia: Regional internal migration covers the movement of people from one location to another within Australia. Regional internal migration estimates (RIME) are prepared for sub-state regions and captures moves over each financial year on an annual basis.
2. Korea: Sejong Province, new province created as from August 2012. Due to limited data availability, Sejong data have been aggregated in Chungcheongnam-do (KR053).
3. Portugal: 2011 census micro-data refer to flows between 31 December 2009 and 21 March 2011.
4. United Kingdom: data do not include Scotland and Northern Ireland.
5. United States: Secretariat's computation of inflows and outflows at TL3 level by aggregating county-to-county bilateral migration data from the IRS Individual Master File system, based on tax filing units. *www.irs.gov/uac/SOI-Tax-Stats-County-to-County-Migration-Data-Files*.
6. France and Ireland data not available at regional level. Chile and New Zealand regional data are not included for lack of comparability with the other countries.
7. Young immigrants data available for the period 2009-12 for Germany and 2010-13 for Japan.

Research and development (R&D) expenditure

	Source	Years	Territorial level
EU21[1]	Eurostat, Regional Science and technology Statistics, R&D expenditures and personnel, Total intramural R&D expenditure (GERD) by sector of performance and region	2001-13	2
Australia[2]	Australian Bureau of Statistics 8104.0 – Research and Experimental Development, Businesses, Australia, 2010-11 8109.0 – Research and Experimental Development, Government and Private Non-Profit Organisations, Australia, 2008-09 8111.0 – Research and Experimental Development, Higher Education Organisations, Australia, 2010	2000-12	2
Canada	Statistics Canada. CANSIM database, Table 358-0001 – Gross domestic expenditures on research and development, by performer sector	2000-13	2
Chile	Instituto Nacional de Estadísticas (INE) Chile, Survey of Expenditure and Personnel in R&D	2009-12	2
Iceland	n.a.	-	-
Israel	Central Bureau of Statistics	2007-08	2
Japan	n.a.	-	-
Korea	Korea Institute of Science and Technology Evaluation and Planning (KISTEP)	2000-13	2
Mexico	n.a.	-	-
New Zealand	n.a.	-	-
Norway	Eurostat, Regional Science and Technology Statistics, R&D expenditures and personnel, Total intramural R&D expenditure (GERD) by sector of performance and region	2001-13	2
Switzerland[3]	Eurostat, Regional Science and Technology Statistics, R&D expenditures and personnel, Total intramural R&D expenditure (GERD) by sector of performance and region	2008-12	2
Turkey	n.a.	-	-
United States	National Science Foundation, National Center for Science and Engineering Statistics. Science and Engineering State Profiles www.nsf.gov/statistics/states/#ui-tabs-4.	2000-13	2

Gross Domestic Expenditure on R&D (GERD) is the total intramural expenditure on R&D performed in the region or country during a given period. GERD is disaggregated in four sectors: business enterprise, government, higher education and private and non-profit. The Business Enterprise sector is comprehensive of all firms, organizations and institutions whose primary activity is the market production of goods or services (other than higher education) for sale to the general public at an economically significant price. It also includes the private non-profit institutions mainly serving the above mentioned firms, organizations and institutions (See Frascati Manual section 3.4). The Government sector is comprehensive of all departments, offices and other bodies which furnish, but normally do not sell to the community, those common services, other than higher education, which cannot otherwise be conveniently and economically provided, as well as those that administer the state and the economic and social policy of the community. (Public enterprises are included in the business enterprise sector). It also includes non-profit institutions controlled and mainly financed by government, but not administered by the higher education sector (see Frascati Manual section 3.5). The higher education sector is comprehensive of all universities, colleges of technology and other institutions of post-secondary education, whatever their source of finance or legal status. It also includes all research institutes, experimental stations and clinics operating under the direct control of or administered by or associated with higher education institutions (see Frascati Manual section 3.7). The Private non-profit sector is comprehensive of Non-market, private non-profit institutions serving households (i.e. the general public) and private individuals or households (see Frascati Manual section 3.6).

Source: OECD (2015), *Frascati Manual 2015: Guidelines for Collecting and Reporting Data on Research and Experimental Development, The Measurement of Scientific, Technological and Innovation Activities*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264239012-en*.

First available year: 2001 for Czech Republic and Sweden; 2002 for Austria, Belgium and Ireland; 2003 for Germany and Slovenia, 2005 for Netherlands and United Kingdom; 2007 for Denmark. Only 2011 data for Greece.

1. EU21 countries: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, and the United Kingdom.
2. Australia: 2012 R&D Business expenditures for Australia refer to 2013-14 fiscal year.
3. Switzerland: only Business R&D expenditure.

Research and development (R&D) personnel (headcounts)

	Source	Years	Territorial Level
EU21[1]	Eurostat, Total R&D personnel by sectors of performance (employment) and region	2001-13	2
Australia[3]	n.a.	-	-
Canada[2]	Statistics Canada. CANSIM database Table 358-0160 Provincial distribution of personnel engaged in research and development, by performing sector and occupational category	2013	2
Chile	Instituto Nacional de Estadísticas (INE) Chile, Survey of Expenditure and Personnel in R&D	2009-12	2
Iceland[3]	n.a.	-	-
Israel	Central Bureau of Statistics	2007-08	2
Japan[3]	n.a.	-	-
Korea	Korea Institute of Science and Technology Evaluation and Planning (KISTEP)	2000-13	2
Mexico[3]	n.a.	-	-
New Zealand[3]	n.a.	-	-
Norway	Eurostat, Total R&D personnel by sectors of performance (employment) and region	2001-13	2
Switzerland[5]	Eurostat, Total R&D personnel by sectors of performance (employment) and region	2008-12	2
Turkey[3]	n.a.	-	-
United States[4]	National Science Foundation, National Center for Science and Engineering Statistics; Science and Engineering State Profiles www.nsf.gov/statistics/states/#ui-tabs-4	2008-13	2

1. EU21: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, and United Kingdom. R&D personnel by sectors for France: 2001.
   First available year: 2001 for Czech Republic, Greece and Sweden; 2002 for Austria, Belgium and Ireland; 2003 for Germany and Slovenia; 2005 for Netherlands and the United Kingdom; 2007 for Denmark; 2009 for Finland.
2. Canada: Data are expressed in full-time equivalent.
3. Australia, Iceland, Mexico, New Zealand: Data not available at the regional level. Data available for Israel are Higher Education and Business R&D personnel, and for Japan, total Government R&D personal.
4. United States: total R&D personnel estimate: based on employed science, engineering, or health (SEH) doctorate holders.
5. Switzerland: only Business R&D personnel.

Social network support

	Source	Years	Territorial level
All countries	Gallup World Poll www.gallup.com/services/170945/world-poll.aspx	Average 2006-14	TL2

Perceived social network support is based on the survey question: "If you were in trouble, do you have relatives or friends you can count on to help you whenever you need them, or not?"
Regional estimates are derived by micro-data pooling the yearly surveys 2006-14 and they show the percentage of the regional sample responding "Yes" to the survey question. TL3 regions for Estonia. Estimates are not available for the following regions: Northwest Territories, Nunavut, Yukon (Canada); Helsinki-Usimaa, Aland (Finland).

Subnational government expenditure, revenue, investment and debt

	Source	Years	Territorial level
All countries[1, 2, 3, 4, 5]	OECD National Accounts	2014	-

Tax revenue: comprises taxes on production and imports (D2), current taxes on income and wealth (D5) and capital taxes (D91). It includes both own-source tax revenue (or "autonomous") and tax revenue shared between central and subnational governments. NB: the SNA 2008 has introduced some changes concerning the classification of some shared tax revenues. In several countries, certain tax receipts have been recently reclassified as transfers and no longer as shared taxes.

1. Data at country level are derived mainly from the OECD National Accounts harmonised according to the new standards of the System of National Accounts (SNA) 2008, implemented by most OECD countries since December 2014 (exceptions are, at the time of this publication: Chile, Japan and Turkey which are still under SNA 1993). They are complemented by data from Eurostat, IMF (Chile) and national statistical institutes for some countries or indicators (in particular, territorial organisation). Data were extracted in January 2016. Subnational government: is defined here as the sum (non-consolidated) of subsectors S 1312 (federated government) and S 1313 (local government).
2. Total public expenditure comprises: current expenditure (compensation of employees, intermediate consumption, social expenditure, subsidies and other current transfers, taxes, financial charges, adjustments) and capital expenditure (investments plus capital transfers (i.e. investment grants and subsidies in cash or in kind made by subnational governments to other institutional units).
3. Total public revenue comprises tax revenue (see below), transfers (current and capital grants and subsidies), tariffs and fees, property income and social contributions;
4. Public investment includes gross capital formation and acquisitions, less disposals of non-financial non-produced assets. Gross fixed capital formation (or fixed investment) is the main component of investments. NB: since the new standards of the SNA 2008, expenditures on research and development and weapons systems are included in gross fixed capital formation.
5. The General Government gross debt definition based on the SNA 2008, includes the sum of the following liabilities: currency and deposits + debt securities + loans + Insurance pension and standardised guarantees + other accounts payable. Most debt instruments are valued at market prices. NB: OECD definition differs from the one defined in the EU Maastricht protocol which is restricted to the sum of the first three items (i.e. mainly borrowing).

Voter turnout

	Source	Last Year	Territorial level
Australia	Australian Electoral Commission. Federal election	2013	2
Austria	Austrian Federal ministry of interior, parliamentary elections	2013	2
Belgium	Federal Portal of Belgium. Parliamentary elections	2013	2
Canada	Elections Canada, Election Results 19 October 2015 – enr.elections.ca	2015	2
Chile	INE, Chile. Electoral service (Servel)	2013	2
Czech Republic	Czech Statistical Office CZSO, Results of Election to the Chamber of Deputies of the parliament	2013	2
Denmark	Danish general election – http://electionresources.org/dk/data/	2015	2
Estonia	Estonian parliamentary election – http://rk2015.vvk.ee/detailed.html	2015	3
Finland	Statistics Finland, Presidential elections, second round	2012	2
France	BEEP – Ministère de l'intérieur	2012	2
Germany	Data sent by the German delegate of the OECD Working Party on Territorial Indicators, German Federal election	2013	2
Greece	Ministry of Interior, Parliamentary Elections 2012 – www.ypes.gr/en/Elections/	2012	2
Hungary	Hungarian National Election Office	2014	2
Iceland	Results of general elections – www.statice.is/statistics/population/elections/general-elections/	2003	2
Ireland	Houses of the Oireachtas – www.oireachtas.ie	2011	2
Israel	Central Bureau of Statistics Israel	2013	2
Italy	Ministero dell'interno, Dipartimento per gli Affari Interni e Territoriali. Servizi Elettorali	2013	2
Japan	Statistics Bureau (2014: Representatives elections)	2014	2
Korea	Korean National Election Commission	2014	2
Mexico	INEGI, general elections	2012	2
Netherlands	Dutch Electoral Council (Kiesraad) – www.kiesraad.nl/	2012	2
New Zealand	New Zealand Electoral Commission, general election	2014	2
Norway	Statistics Norway	2013	2
Poland	Central Statistical Office of Poland, National Election Commission	2015	2

Voter turnout *(cont.)*

	Source	Last Year	Territorial level
Portugal	Ministry of Internal Administration of Portugal- Directorate-General of Internal Administration	2015	2
Slovak Republic	Statistical Office of the SR	2014	2
Slovenia	Republic of Slovenia Early elections for deputies to the National Assembly	2014	2
Spain	INE	2015	2
Sweden	Swedish Election Authority	2014	2
Switzerland	Statistique suisse – www.politik-stat.ch/nrw2015wb_fr.html	2015	2
Turkey	Data sent by the Turkish delegate of the OECD Working Party on Territorial Indicators	2011	2
United Kingdom	Data sent by the UK delegate of the OECD Working Party on Territorial Indicators	2015	2
United States	US Census. Reported Voting and Registration of the Citizen Voting-Age Population	2012	2

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

	Source	Reference population	Year	Territorial level
EU21[1]	Eurostat, Young people neither in employment nor in education and training by sex and NUTS 2 regions (NEET rates) [edat_lfse_22]	15-24	2014	2
Australia	n.a.	-	-	-
Canada	n.a.	-	-	-
Chile	n.a.	-	-	-
Iceland	n.a.	-	-	-
Israel	Central Bureau of Statistics Israel	15-24	2013	2
Japan	Statistics Bureau	15-24	2014	2
Korea	n.a.	-	-	-
Mexico	n.a.	-	-	-
New Zealand	Statistics New Zealand. Infoshare database, Household Labour Force Survey	15-24	2014	2
Norway	Eurostat, Young people neither in employment nor in education and training by sex and NUTS 2 regions (NEET rates) [edat_lfse_22]	15-24	2014	2
Switzerland	Eurostat, Young people neither in employment nor in education and training by sex and NUTS 2 regions (NEET rates) [edat_lfse_22]	15-24	2014	2
Turkey	TURKSTAT, Household Labour Force Survey Revised Results	15-24	2014	2
United States	n.a.	-	-	-
Brazil	IBGE, Pesquisa Nacional por Amostra de Domicílios – PNAD	15-24	2013	2
Colombia	DANE	15-24	2014	2
Russian Federation	Federal State Statistics Service (Rosstat), Labour force survey	15-24	2014	2
South Africa	Statistics South Africa, General Household Survey 2002-13	15-24	2013	2

The indicator on young people neither in employment nor in education and training (NEET) corresponds to the percentage of the population 18-24 who are not employed and not involved in further education or training. The numerator of the indicator refers to persons who meet the following two conditions: (a) they are not employed (i.e. unemployed or inactive according to the International Labour Organisation definition) and (b) they have not received any education or training in the four weeks preceding the survey. The denominator in the total population consists of the same age group and gender, excluding the respondents who have not answered the question "participation to regular education and training", *http://ec.europa.eu/eurostat/data/database*.

1. EU21 countries: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden and United Kingdom.

Youth unemployment

	Source	Reference population	Year	Territorial level
EU23[1]	Eurostat, Regional labour market statistics, unemployment	15-24	2008-14	2
Australia	Australian Bureau of Statistics (ABS), Labour Force, Cat. no. 6291.0.55.001	15-24	2008-14	2
Canada[2]	Statistics Canada. CANSIM database, Table 282-0002 – Labour force survey estimates (LFS)	15-24	2008-14	2
Chile	National Institute of Statistics, INE	15-24	2010-14	2
Iceland	n.a.	15-24	2008-11	2
Israel	Central Bureau of Statistics – LFS	15-24	2008-13	2
Japan	Statistics Bureau, MIC	15-24	2008-14	2
Korea	n.a.	-	-	-
Mexico	National Institute of Statistics, INEGI, Employment and Occupation National Survey	15-24	2010-14	2
New Zealand	Statistics New Zealand – Household Labour Force Survey	15-24	2008-12	North/South Islands
Norway	Statistics Norway	15-24	2008-14	2
Switzerland	Eurostat, Regional labour market statistics, unemployment	15-24	2009-14	2
Turkey	Turkish Statistical Institute, LFS	15-24	2008-14	2
United States	Bureau of Labour Statistics, Local Area Unemployment Statistics	15-24	2008-14	2
Brazil	IBGE, Pesquisa Nacional por Amostra de Domicílios – PNAD	15-24	2008-13	2
Colombia	DANE – Gran Encuesta Integrada de Hogares – GEIH – (Labour Houshold survey)	15-24	2008-14	2
Russian Federation	Federal State Statistics Service (Rosstat), Labour force survey	15-24	2008-14	2

1. EU23 countries: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden and United Kingdom.
   Austria: no data for Salzburg (AT32) and Vorarlberg (AT34). Germany: 2010 data for Bremen (DE5) and 2013 for Saarland (DEC).
   First available year: 2012 for Portugal, 2010 for France, 2009 for Slovak Republic and Greece.
2. Canada: Data are not available for the regions Yukon Territory, Nunavut and Northwest Territories.

ANNEX C

Indexes and estimation techniques

Gini index

Definition: Regional disparities are measured by an unweighted Gini index. The index is defined as:

$$GINI = \frac{2}{N-1}\sum_{i=1}^{N-1}\left|F_i - Q_i\right|$$

where N is the number of regions, $F_i = \frac{i}{N}$, $Q_i = \frac{\sum_{j=1}^{i} y_j}{\sum_{i=1}^{n} y_i}$ and y_i is the value of variable y (e.g. GDP per capita, unemployment rate, etc.) in region j when ranked from low (y_1) to high (y_N) among all regions within a country.

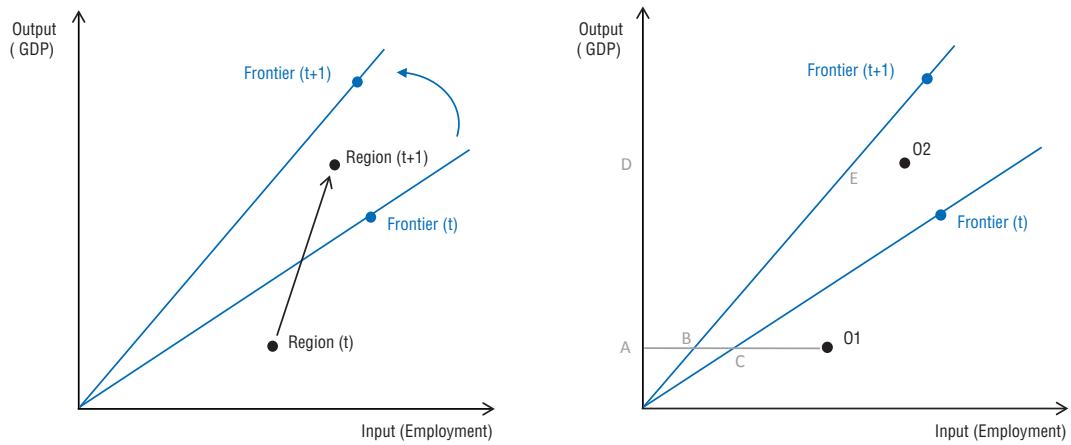
The index ranges between 0 (perfect equality: y is the same in all regions) and 1 (perfect inequality: y is nil in all regions except one).

Interpretation: The index assigns equal weight to each region regardless of its size; therefore differences in the values of the index among countries may be partially due to differences in the average size of regions in each country. Only countries with more than four regions are included in the computation of the Gini index.

Malmquist decomposition

Definition: The Malmquist index allows the decomposition of the productivity growth of a region between two effects, the frontier shift effect which is the change of regional productivity related to the gain of productivity of the frontier, and the catch-up effect which is the acceleration of the productivity of the region towards the frontier. The frontier in this publication is defined, by country, as the top 10% regions with the highest GDP per employee until the equivalent of 10% of national employment is reached. The frontier at OECD level is the simple average of each country's frontier.

Productivity growth = frontier shift-effect × catch-up effect



The frontier-shift effect is the change of the frontier's productivity slope over the two periods (t) to (t+1), and the catch-up effect is defined by:

$$\text{Catch} - \text{up} = \frac{DE}{DO_2} \Big/ \frac{AC}{AO_1}$$

Where AC and DE are the theoretical levels of employment that region O should have, in order to have the same level of productivity as the frontier, in respect of the levels of its GDP in t and t+1. AO_1 and DO_2 are the levels of employment of the region O respectively in t and t+1. The productivity growth of the region.

Interpretation: If the region has reduced its productivity gap with the frontier (it has caught-up), the catch-up effect is above 1, and below 1 when the region has increased the productivity gap (it hasn't caught-up) compared to the frontier's productivity.

Methodology to adjust GDP, total employed and unemployed at metropolitan level

The proposed methodology uses the socio-economic values (GDP, employment and unemployment) in TL3 regions as data inputs (see exceptions in Annex B) and the distribution of population based on census data.

In comparison to previous editions of Regions at a Glance, the methodology to adjust socio-economic data to metropolitan areas has evolved from the use of raster population data (i.e. Landscan) to municipal population census data as the input data source. This change has allowed the use of more up-to-date data (census data *c.a.* 2011) as well as the use of harmonised municipal boundaries over time. Indeed, long time-series have been generated using consistent boundaries of municipalities between the two census data points by using GIS techniques.

The suggested methodology is composed of three main steps:

- intersect the municipal boundaries with the TL3 boundaries by the use of GIS techniques;
- attribute each municipality a GDP value by weighting for the population in each municipality; and
- calculate the sum of municipalities' GDP values belonging to each metro area.

An improved method would be to use employment data rather than population data in step 2. For example, the United Kingdom Office for National Statistics provides income estimates at ward level down-scaling the regional values through various variables including household size, employment status, proportion of the ward population claiming social benefits, and proportion of tax payers in each of the tax bands, etc. A similar method is used by the U.S. Bureau of Economic Analysis to estimate the GDP for U.S. Metropolitan Statistical Areas. The Federal Statistical Office of Switzerland used CLC-Data-Classes urban continuous fabric, urban discontinuous fabric and industrial or commercial units for all neighbouring countries by calibrating with other data to estimate data for jobs in grid cells. However these types of data input are not available in most OECD countries therefore a simpler solution was adopted.

A similar technique is applied to estimate employment and unemployment in metropolitan areas with working age population (15-65 years old) used as data input in step 2.

It has to be noted that the estimates of GDP, employment and unemployment in the metropolitan areas do not adhere to international standards; the comparability among countries relies on the use of the same methodology applied to areas defined with the same criteria.

Methodology to measure the annual exposure to air pollution in regions and metropolitan areas

The estimated average exposure to air pollution ($PM_{2.5}$) is based on GIS-based methodology at TL2 and metropolitan level using the satellite-based $PM_{2.5}$ estimates of van Donkelaar et al. (2014) at 0.1^{o} x 0.1^{o} geographic grid resolution. The method used to produce the estimates is the following:

- the satellite-based of air pollution at $1km^2$ are multiplied by the population living in that area (using a $1km^2$ resolution population grid);
- the exposure to air pollution in a region (or a metropolitan area) is given by the sum of the population weighted values of $PM_{2.5}$ in the $1km^2$ grid cells falling within the boundaries of the region (metropolitan area); and
- finally, the average exposure to $PM_{2.5}$ concentration in a region is given by dividing this aggregated value by the total population in the region.

This indicator is derived from global satellite observations of PM concentration. It has the advantage of being computable globally without requiring country capacity investments in data collection.

Theil entropy index

Definition: Regional disparities are measured by a Theil entropy index, which is defined as:

$$Theil = \frac{1}{N}\sum_{i=1}^{N}\frac{y_i}{\bar{y}}\ln\left(\frac{y_i}{\bar{y}}\right)$$

Where N is the number of regions in the OECD, y_i is the variable of interest in the i-th region (i.e. household income, life expectancy, homicide rate, etc.) and $\bar{y}$ is the mean of the variable of interest across all regions.

The Theil index can be easily decomposed in two components: one is the disparities within subgroups of regions – where for example is subgroup is identified by a set of regions belonging to a country; another one is the disparities between subgroups of regions (i.e. between countries). The sum of these two components is equal to the Theil index.

In order to decompose the Theil index, let's start by assuming *m* groups of regions (countries). The decomposition will assume the following form:

$$Theil = \frac{1}{N}\sum_{i=1}^{N} s_j \frac{y_{ij}}{y_j} \ln\left(\frac{y_i}{\bar{y}}\right) + \frac{1}{M}\sum_{i=1}^{M} s_j \ln\left(\frac{y_i}{\bar{y}}\right)$$

Where the first term of the formula is the *within* part of the decomposition it is equal to the weighted average of the Theil inequality indexes of each country. Weights, s_i, are computed as the ratio between the country average of the variable of interest and the OECD average of the same variable. The second term is the between component of the Theil index and it represents the share of regional disparities that depends on the disparities across countries.

Interpretation: The Theil index ranges between zero and ∞, with zero representing an equal distribution and higher values representing a higher level of inequality.

The index assigns equal weight to each region regardless of its size; therefore differences in the values of the index among countries may be partially due to differences in the average size of regions in each country.

ANNEX D

Responsibilities across levels of government

In federal countries, the sovereignty is shared between the federal government and federated states which have their own constitution, parliament and government, and large competences, while federal governments have in general exclusive and listed competences such as foreign policy, defence, money, criminal justice system, etc. In most federal countries, local governments are "creations" of the federated states. Falling directly under their jurisdiction, their responsibilities are defined by state constitutions and laws, and they often differ from one state to another. In quasi-federation (Spain) and "hybrid countries", devolved nations (United Kingdom) or regions (Italy) can define, through primary and/or secondary legislative powers, the local government functioning. In unitary countries, the sovereignty is not shared. The assignment of responsibilities is generally defined by national laws.

National or regional regulations provide more or less details on local governments' responsibilities, as they often refer to the general clause of competence or "subsidiarity principle", especially for the municipal level, which gives local authorities an explicit freedom to act in the best interests at local level. In this case, laws rarely limit and specify local responsibilities but enumerate broad functions instead, except if a particular responsibility is devolved by law to another government level. Laws can also define whether a subnational responsibility is an own/exclusive local function, a delegated task on behalf of the central government or another subnational government (SNG) or a shared responsibility with another institutional government level. In addition, some subnational responsibilities can be mandatory while others are optional. As a result, the breakdown of competences between central/federal government and SNGs as well as across SNG levels is particularly complex, leading sometimes to competing and overlapping competences and a lack of visibility and accountability concerning public policies. For each sector and sub-sector, one or more levels of government (central government, state or region, intermediary government and municipal level) may intervene and exercise one or more key functions: regulating, operating, financing and reporting (Table D.1).

Table D.1. **Responsibilities sectors and sub-sectors**

Responsibility sectors and sub-sectors
Social Welfare Nursery schools/Social care for children and youth/Support services for families /Elderly/Disabled people/Inclusion & poverty/Immigrants & integration of foreigners/Social welfare centres
Health Primary healthcare (medical centres)/Special healthcare (e.g. dental care)/Preventative healthcare/Hygiene/Hospital
Education Pre-elementary/Primary/Secondary/Higher/Vocational education/Special education/Research & Development

Table D.1. **Responsibilities sectors and sub-sectors** *(cont.)*

Responsibility sectors and sub-sectors
Utilities Refuse collection/Waste disposal/Drinking water distribution/Sewerage/Irrigation/Gas distribution/Electricity provision/Public lighting/Urban heating/Street cleaning
Environment Parks & green areas/Nature preservation/Water quality/Noise/Air pollution/Soil protection
Employment Subsidies/Adult vocational training/Employment services/Back to work programmes
Spatial planning Urban and land use planning/Urbanism/Regional planning
Housing Housing subsidies/Construction/renovation/Management
Transports Road networks and facilities (highways, national, regional, local)/park spaces/Railway networks and facilities (national, regional, local)/Airports (international, national)/Ports (sea and fishing, inland waterways)/Public transport (road)/public transport (railways, tramway)/Special transport services (e.g. pupil and student transport)/Traffic signs and lights
Economic development Support to local enterprises and entrepreneurship/Agriculture and rural development/Communication/IT/Industry/Technological development/Mining/Tourism/Commerce
Culture & Recreation Sports/Librairies/Museums/Cultural heritage/Media
Public order and safety Police/Firefighting/Civil protection and emergency services
General public administration and defence Administrative services (marriage, birth, etc.); Public facilities (town houses, etc.); Local defence

Note: This classification differs from the one used in the national accounts to analyse expenditure by economic sector (Classification of the Functions of Government or COFOG).
Source: Authors' elaboration based on various sources.

Figure D.1. **Breakdown of responsibilities across SNG levels: A general scheme**

Municipal level

- **A wide range of responsibilities:**
  - General clause of competence
  - Eventually, additional allocations by the law
- **Community services:**
  - Education (nursery schools, preelementary and primary education)
  - Urban planning and management
  - Local utility networks (water, sewerage, waste, hygiene, etc.)
  - Local roads and city public transport
  - Social affairs (support for families and children, elderly, disabled, poverty, social benefits, etc.)
  - Primary and preventative healthcare
  - Recreation (sport) and culture
  - Public order and safety (municipal police, fire brigades)
  - Local economic development, tourism, trade fairs
  - Environment (green areas)
  - Social housing
  - Administrative and permit services

Intermediary level

- **Specialised and more limited responsibilities of supra-municipal interest**
- **An important role of assistance towards small municipalities**
- **May exercise responsibilities delegated by the regions and central government**
- **Responsibilities determined by the functional level and the geographic area:**
  - Secondary education or specialised education
  - Supra-municipal social and youth welfare
  - Secondary hospitals
  - Waste treatment treatment
  - Secondary roads and public transport
  - Environment

Regional level

- **Heterogeneous and more or less extensive responsibilities depending on countries (in particular, federal vs unitary)**
- **Services of regional interest:**
  - Secondary/higher education and professional training
  - Spatial planning
  - Regional economic development and innovation
  - Health (secondary care and hospitals)
  - Social affairs, e.g. employment services, training, inclusion, support to special groups, etc.
  - Regional roads and public transport
  - Culture, heritage and tourism
  - Environmental protection
  - Social housing
  - Public order and safety (e.g. regional police, civil protection)
  - Local government supervision (in federal countries)

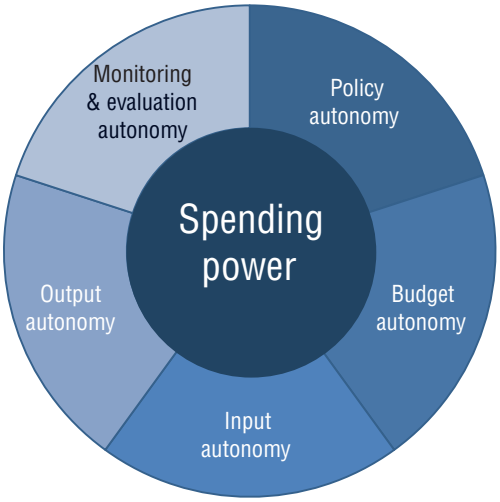
Source: Authors' elaboration.

Subnational government responsibilities and spending power

The assignment of responsibilities to SNGs does not mean that SNGs have full autonomy in exercising them. Firstly, because responsibilities can be defined as shared or delegated. Secondly, because there may be a gap between the principles and the operational reality: competent SNGs may not have the means to cope with the financial costs (unfunded mandates), or may no longer have (in case of financial crisis). Thirdly, this situation comes most of the time from the fact that SNGs do not have full autonomy and decision-making authority in their fields of responsibility, functioning sometimes more as agencies funded and regulated by the central government rather than as independent policy makers.

In order to gauge true spending power, a set of institutional indicators has been established by the OECD Network on Fiscal Relations across Levels of Government, based on a detailed assessment of institutional, regulatory and administrative control central government exerts over various SNGs policy areas (Steffen Bach, Hansjörg Blöchliger and Dominik Wallau, 2009).

Figure D.2. **Main categories of spending power of SNGs**



Five categories related to major facets of autonomy have been distinguished (Bach et al, 2009):

- Policy autonomy: To what extent do SNGs exert control over main policy objectives and main aspects of service delivery? To what extent are SNGs obliged to provide certain services e.g. through constitutional provisions or central government legislation?
- Budget autonomy: To what extent do SNGs exert control over the budget e.g. is expenditure autonomy limited by earmarked grants or expenditure limits? Do fiscal rules specifically limit fiscal autonomy in a certain policy area?
- Input autonomy: To what extent do SNGs exert control over the civil service and other input-side aspects of a service? To what extent can SNGs negotiate and shape wages and the wage structure of civil servants? To what extent are SNGs free to tender or contract out services?
- Output autonomy: To what extent do SNGs exert control over service standards such as the level and quality of public services delivered? To what extent can SNGs define output criteria?
- Monitoring and evaluation autonomy: To what extent do SNGs exert control over evaluation, monitoring and benchmarking? To which government level are service providers reporting?

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Contents

Executive summary
Reader's guide
1. Well-being in regions
2. Regions as drivers of national competitiveness
3. Subnational government finance and investment for regional development
4. Inclusion and sustainability in regions
Annex A. Defining regions and functional urban areas
Annex B. Sources and data description
Annex C. Indexes and estimation techniques
Annex D. Responsibilities across levels of government

Further reading:

OECD Regional Outlook 2016 (forthcoming)
How's Life in Your Region? Measuring Regional and Local Well-being for Policy Making (2014)

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