OECD Regions at a Glance



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OECD Regions at a Glance



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Foreword

*In recent years, regional development issues have returned to the policy agenda of many OECD countries. Higher integration driven by institutional processes (*e.g. *European Union, World Trade Organisation) and economic trends (*i.e. *globalisation) is eroding national borders and creating competition along regional lines in the world market. At the same time, the persistence of significant regional disparities challenges countries' capacity to promote economic growth while ensuring social cohesion.*

To evaluate innovative strategies for regional development and diffuse successful policies, in 1999 the OECD created the Territorial Development Policy Committee (TDPC) as an unique forum for international exchange and debate.

The activities of the TDPC have generated new demand for statistical indicators at the sub-national level. Policy makers need sound statistical information on the source of regional competitiveness but such information is not always available. Sub-national data are limited and regional indicators difficult to compare among countries. This is why for some years the Working Party on Territorial Indicators (WPTI) has been carrying out statistical work on the measurement of regional economies.

OECD Regions at a Glance *summarises the main results of this work. On the one hand, it illustrates the use of territorial indicators for the design and assessment of territorial development policies within the policy framework elaborated by the TDPC. On the other hand, it aims to diffuse the statistical tools elaborated by the WPTI for the analysis of regional economies.*

Following the policy approach set by the OECD High-level Meeting on Innovation and Effectiveness in Territorial Development Policy (25-26 June 2003, Martigny, Switzerland), OECD Regions at a Glance *is organised around three major themes:*

1. *regions as actors of national growth;*
2. *making the best of local assets; and*
3. *competing on the basis of regional well-being.*

The first theme highlights that the factors of national growth tend to be strongly localised in a small number of regions so that promoting national growth would require improving the use of these factors within regions. The second theme assesses the economic performances of regions and identifies unused resources that can be mobilised to improve regional competitiveness. Finally, the third theme examines different dimensions of well-being in the perspective that well-being is a key factor to improve regional competitiveness.

This publication was prepared by Brunella Boselli, Konstantinos Melachroinos and Vincenzo Spiezia under the direction of Vincenzo Spiezia, Head of the Territorial Statistics and Indicators Unit.

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A Reader's Guide

Why *OECD Regions at a Glance?*

In recent years, regional development issues have returned to the policy agenda of many OECD countries. Higher integration driven by institutional processes (*e.g.* European Union, World Trade Organisation) and economic trends (*i.e.* globalisation) is eroding national borders and creating competition along regional lines in the world market. At the same time, the persistence of significant regional disparities challenges countries' capacity to promote economic growth while ensuring social cohesion.

The renewed interest in regional issues has generated new demand for statistical indicators at the sub-national level. Policy makers need sound statistical information on the source of regional competitiveness but such information is not always available. Sub-national data are limited and regional indicators difficult to compare among countries.

OECD Regions at a Glance aims to start to fill this gap by analysing and comparing major territorial patterns and regional trends across OECD countries.

Comparing regions

The main issue for economic analysis at the sub-national level is the unit of analysis itself, *i.e.* the region. The word "region" can mean very different things both within and between countries. For instance, the smallest OECD region (Concepcion de Buenos Aires, Mexico) has an area of less than 10 square kilometres whereas the largest (Nunavut, Canada) has over 2 000 square kilometres. Similarly, the population in OECD regions ranges from about 400 inhabitants in Balance ACT (Australia) to more than 47 million in Kanto (Japan).

To address this issue, the OECD has classified regions within each member country (see Sources and Methodologies "OECD Regional Grids"). The classification is based on two territorial levels (TL). The higher level (Territorial Level 2) consists of about 300 macro-regions and the lower level (Territorial Level 3) is composed of more than 2 300 micro-regions.[1] This classification – which, for European countries, is largely consistent with the Eurostat classification – facilitates greater comparability of regions at the same territorial level. Indeed, these two levels, which are officially established and relatively stable in all member countries, are used by many as a framework for implementing regional policies.

A second issue concerns the different "geography" of each region. For instance, in the United Kingdom, one might question the relevance of comparing the highly urbanised area of London to the rural region of the Shetland Islands, despite the fact that both regions belong at the same territorial level. To take account of these differences, the OECD has established a regional typology according to which regions have been classified as predominantly urban, predominantly rural and intermediate. This typology, based on the

1. Level 0 indicates the territory of the whole country and Level 1 denotes groups of macro-regions.

percentage of regional population living in rural or urban communities, enables meaningful comparisons between regions belonging to the same type (Sources and Methodologies "The OECD Regional Typology").

The structure of the publication

Following the new policy approach established in OECD countries, "Regions at a Glance" is organised around three major themes:

1. Regions as the actors of national growth.

2. Making the best of local assets.

3. Competing on the basis of regional well-being.

The first theme highlights that the factors of national growth tend to be strongly localised in a small number of regions so that promoting national growth would require improving the use of these factors within regions. The second theme assesses the economic performance of regions and identifies unused resources that can be mobilised to improve regional competitiveness. Finally, the third theme examines different dimensions of well-being in the perspective that well-being is a key factor in improving regional competitiveness.

Regions as the actor of national growth

Concentration is probably the most striking feature of the geography of economic activity. In all OECD countries, production tends to be concentrated around a small number of urban areas, industries are localised in highly specialised poles, and unemployment is often concentrated in a few regions.

Differences in climatic and environmental conditions discourage human settlement in some areas and favour the concentration of population around a few urban centres. More than half of the OECD population (53%) lives in predominantly urban regions (Figure 1.4). And this pattern of concentration is self-reinforced by higher economic opportunities and wider availability of services stemming from the very process of urbanisation. In many OECD countries – Austria, Canada, Finland, Hungary, Japan, Korea, Mexico, Portugal, Spain Sweden and Turkey – no less than 40% of national GDP is produced in just 10% of regions (Figure 2.1).

The pattern is similar for unemployment. About 47% of unemployment in OECD countries is concentrated in urban regions against 31% and 22% in intermediate and rural regions, respectively (Figure 3.3). The distribution of unemployment by regional type, however, tends to vary significantly among countries. In Belgium, Japan, Korea, Netherlands, the United Kingdom and the United States, at least 60% of national unemployment is concentrated in urban regions. However, no less than half of total unemployment in Finland, Ireland, Norway, Poland and Sweden is concentrated in rural regions. Finally, in France, New Zealand, Spain, the Slovak Republic and Turkey, unemployment is mostly concentrated in intermediate regions.

The key assets of economic growth tend to be localised in a small number of regions. In 2001, 54% of the total patents recorded in OECD member countries came from only 10% of regions (Figure 5.1), and over 64% of the highly educated population live in urban regions (Figure 6.3).

Concentration of economic assets implies that national performances are driven by the dynamism of a small number of regions. On average, 10% of regions accounted for 56% of overall employment creation in OECD countries between 1996 and 2001 (Figure 9.3)

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while about 70% of job losses were concentrated in another 10% (Figure 9.4). Regional factors, therefore, tend to play a role at least as important as national ones in promoting total growth in OECD countries.

Making the best of local assets

Economic performance varies significantly among OECD countries but international disparities are often smaller than the differences observed among regions of the same country. In 2001, GDP per capita in Luxembourg was more than eight times greater than in Turkey. Within Turkey, however, GDP per capita in the region of Kocaeli was almost 13 times higher than in the region of Hakkari. Similarly, GDP per capita in Inner London – West in the United Kingdom was more than nine times higher than in the Isle of Anglesey (Figure 11.2).

In the same year, international differences in unemployment rates were as large as 17 percentage points (Figure 13.1). However, regional differences in unemployment rates were above 20 percentage points in Canada, Italy, Poland and Spain (Figure 13.2).

Economic performances vary significantly among OECD regions. But why are some regions more competitive than others? Regional benchmarking (Table 15.1) makes it possible to identify the main factors explaining high GDP per capita in certain regions (comparative advantage) and low GDP per capita in others (comparative disadvantage).

Productivity appears to be the main comparative advantage in a majority of regions with high GDP per capita (43%). It is also the most frequent comparative disadvantage in an even larger majority of regions with low GDP per capita (62%).

High participation in the labour market appears the second most frequent comparative advantage in regions with high GDP per capita (20%), while labour force participation is the main explanation of low competitiveness in only 8% of regions with a level of GDP per capita below the national average.

Commuting, specialisation and employment rates seem to be equally important in regions with both low and high GDP per capita. These are about 15% for commuting, 7% for specialisation and 6% for employment rates (7% in regions with low GDP per capita).

Finally, skills appear more often to be a comparative advantage than an explanation of poor performance. They are the main comparative advantage in 6% of regions with high GDP per capita against only 1% of regions with low GDP per capita.

Competing on the basis of regional well-being

Economic assets are crucial for regional competitiveness but other more intangible factors – often referred to as well-being – help to explain a region's capacity to attract high-value business and skilled workers.

Well-being crucially depends on the ability to access resources and services that are often available only in large economic centres. On average, the distance (in time) that an OECD citizen has to travel to reach the closest centre is 39 minutes in an urban region, 1.55 hours in an intermediate region, and 3.29 hours in a rural region (Figure 23.2).

Access to higher education varies significantly among regions. Turkey and the Slovak Republic have the largest regional variation in tertiary education enrolments while the United States, the Netherlands and Norway show very small variations in regional enrolment rates (Figure 25.1).

Access to health services is another important aspect of well-being. In almost all countries the number of medical practitioners per capita is highest in urban regions and lowest in rural regions (Figure 27.2). In the Slovak Republic the number of doctors per capita in urban regions is almost twice the country average, while in Austria, Greece, Hungary and Korea, this ratio is no less than 50% higher than the average.

Differences in health status have a similar impact on well-being. In 2001, the largest regional differences were recorded in United States, Australia and Mexico whereas Japan, Netherlands and Portugal showed the smallest differences (Figure 26.2).

Safety is an additional factor of regional attractiveness. It contributes to the decision of citizens to live in a certain region and helps to create a positive business environment for firms. Spain, the Slovak Republic, Austria and Turkey appear to have the largest regional disparities in crimes against property. New Zealand, Greece and Denmark showed much smaller differences among regions (Figure 28.1).

Canada, the United States, Australia, Austria, Finland, Korea and Spain also show the largest regional differences in the rate of reported offences against persons, while in Ireland and Denmark reported crime against persons seems to be more evenly distributed among regions (Figure 29.1).

Regional differences in the rate of fatal traffic accidents were largest in Portugal and the United States and smallest in New Zealand, Netherlands and the Slovak Republic (Figure 30.2). Urban regions recorded the higher number of private vehicles per capita in almost all OECD countries. Only in the United States, Sweden, Austria and Canada was the density of private vehicles higher in rural or intermediate regions (Figure 31.2).

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PART I

Regions as the Actors of National Growth

1. Geographic concentration of population

Population is unevenly distributed among regions within countries. On average, approximately one-third of the national population in OECD member countries is located in 10% of its regions (Figure 1.1).

The concentration of population in a small number of territorial units is greatest in Australia, Iceland and Canada, where 10% of regions account for 64%, 62% and 61%, respectively, of the national population. The United States (50%) and Mexico (47%) follow, with around half of their population living in 10% of regions. In contrast, the territorial distribution is more balanced, according to this statistic, in the Czech Republic (12%), the Slovak Republic (15%), Belgium (16%) and Poland (18%).

The Index of Geographic Concentration offers a more accurate picture of the spatial distribution of the population, as it takes into account the area of each region (see "Sources and Methodology"). Figure 1.2 reveals that Canada (0.82), Australia (0.80) and Iceland (0.66) are the countries with the most uneven population distribution, followed by Mexico (0.54), Korea (0.52), the United States (0.51), Sweden (0.51), Portugal (0.51) and the United Kingdom (0.50). In contrast, there is less geographic concentration in the Slovak Republic (0.12), the Czech Republic (0.20), Hungary (0.21), Belgium (0.23), Germany (0.24), the Netherlands (0.25) and Poland (0.25).

Many factors help to shape the geographic distribution of a country's population. Differences in climatic and environmental conditions discourage human settlement in some areas and favour concentration of the population around a few urban centres. This pattern is reinforced by the higher economic opportunities and wider availability of services stemming from urbanisation itself.

As a result, population density tends to vary widely among regions (Figure 1.3). For the OECD as a whole, regional population density ranges from close to zero in Stikine Region (Canada) to 20 356 persons per km^2 in Paris (France). The variation is particularly large in France, Korea, the United Kingdom, Mexico, Denmark and Belgium. In these countries, there is a sharp contrast between predominantly urban regions – which record densities of more than 6 000 inhabitants per km^2 – and predominantly rural regions where population densities do not exceed 100 inhabitants per km^2.

On average, more than half of the OECD population (53%) lives in predominantly urban regions (Figure 1.4). In the Netherlands (85%), Belgium (83%), the United Kingdom (69%), the United States (67%), Germany (62%), Japan (59%), Australia (55%), Korea (53%), Canada (53%), Italy (52%) and Portugal (51%), urban regions account for most of the national population.

Intermediate regions also attract a considerable part of the OECD population (27%). This is particularly true in the Czech Republic (84%), the Slovak Republic (63%), New Zealand (58%) and Switzerland (50%).

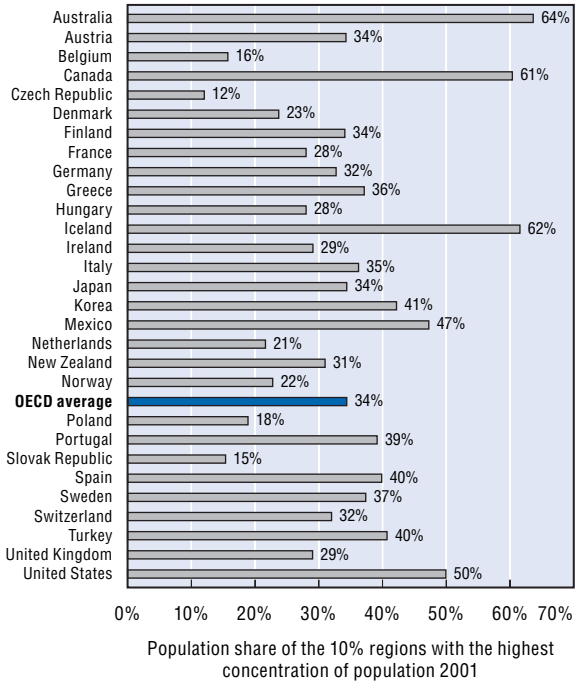
Predominantly rural regions account for a smaller but still significant part of the OECD population (20%). Most of the population resides in rural regions in Ireland (71%), Finland (62%), Sweden (50%) and Norway (50%).

Definition

The number of inhabitants of a given region. Total population can be either the average annual population or the population at a specific date during the year considered.

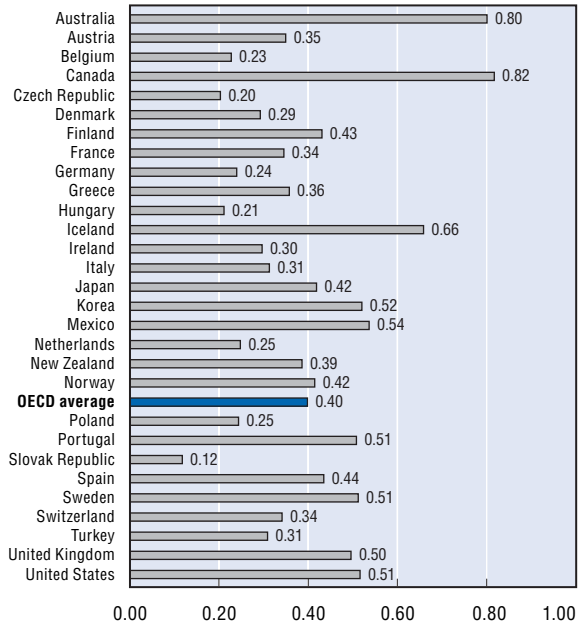
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1.1. **In 15 countries in 2001 more than one-third of the national population was concentrated in only 10% of regions**



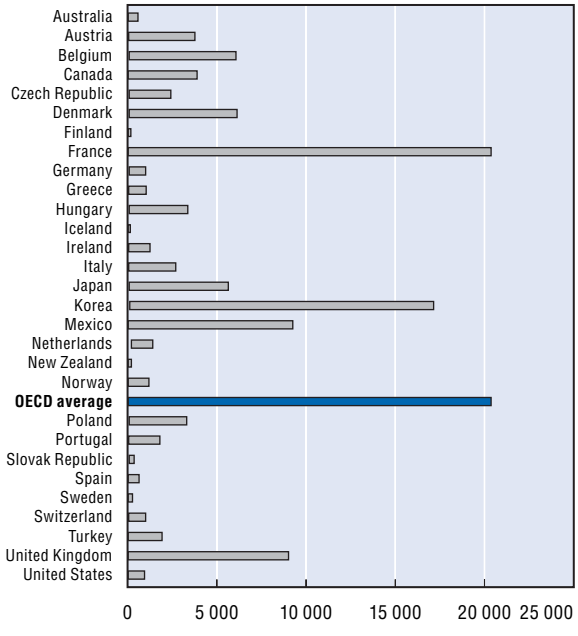
Population share of the 10% regions with the highest concentration of population 2001

1.2. **Canada, Australia and Iceland display the highest geographic concentration of population**



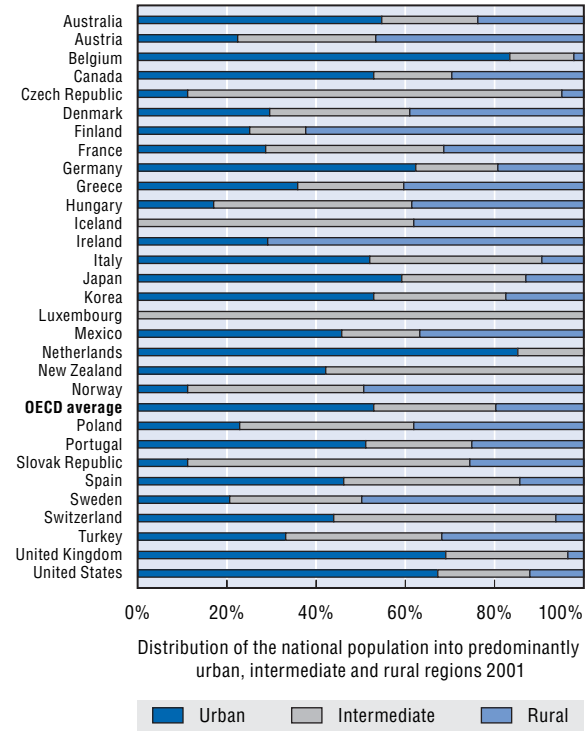
Index of geographic concentration of population 2001

1.3. **Population density varies significantly among OECD regions**



Range of variation in regional population density (number of people per km^2) 2001

1.4. **More than half of the population in OECD countries live in predominantly urban regions**

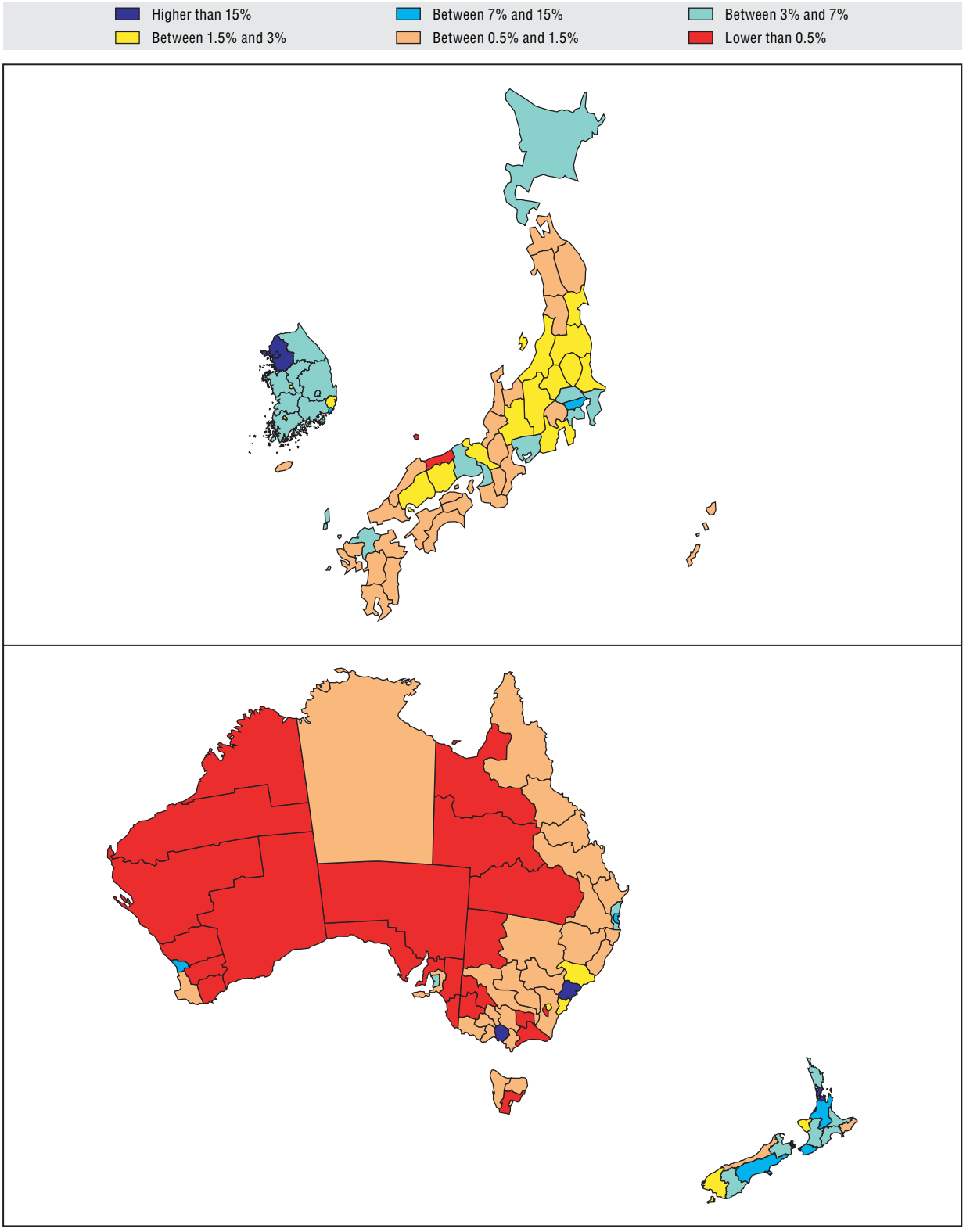


Distribution of the national population into predominantly urban, intermediate and rural regions 2001

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1.5. **Regional share of national population: Asia and Oceania TL3**

2001

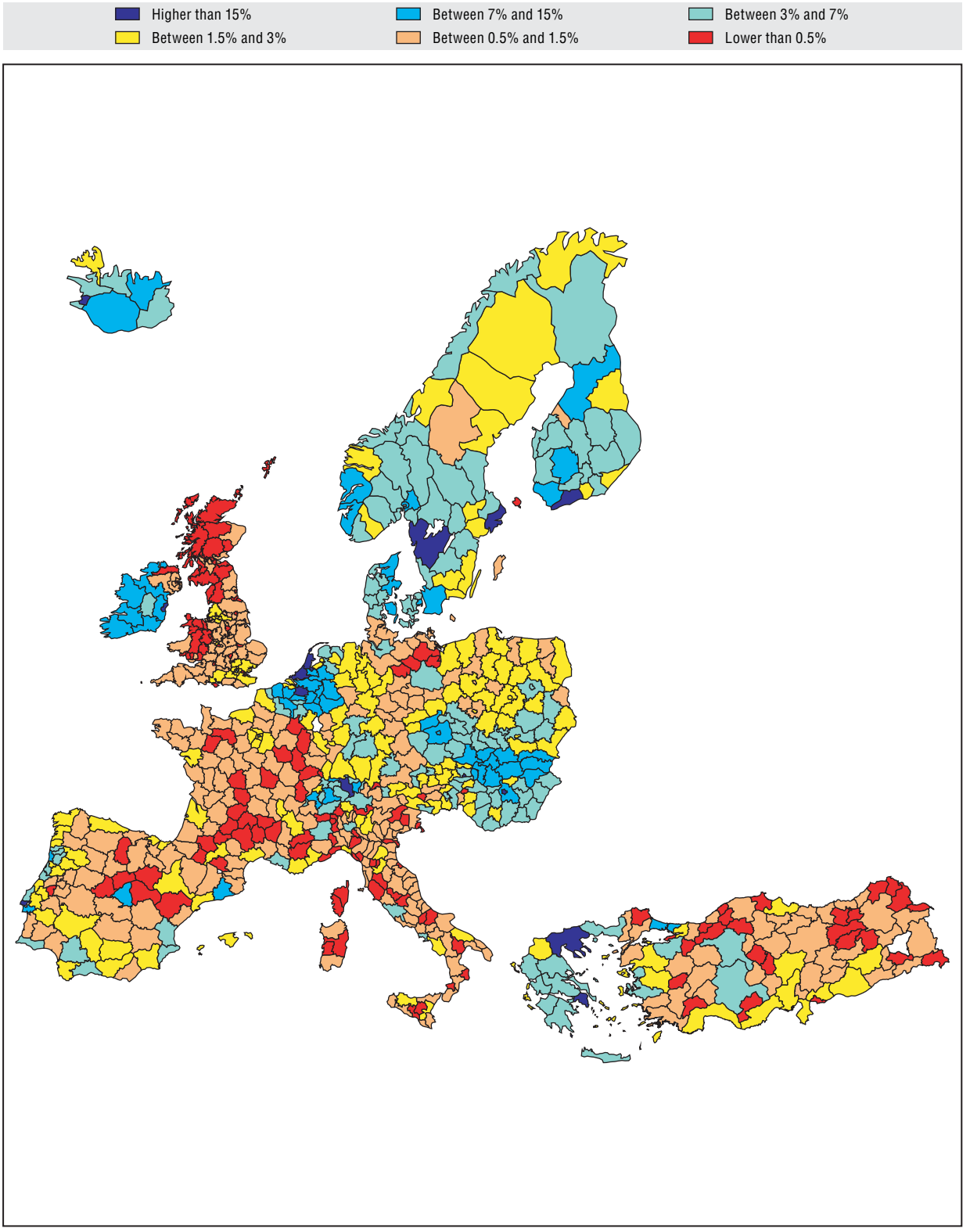


Source: OECD Territorial Database.

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1.6. **Regional share of national population: Europe TL3**

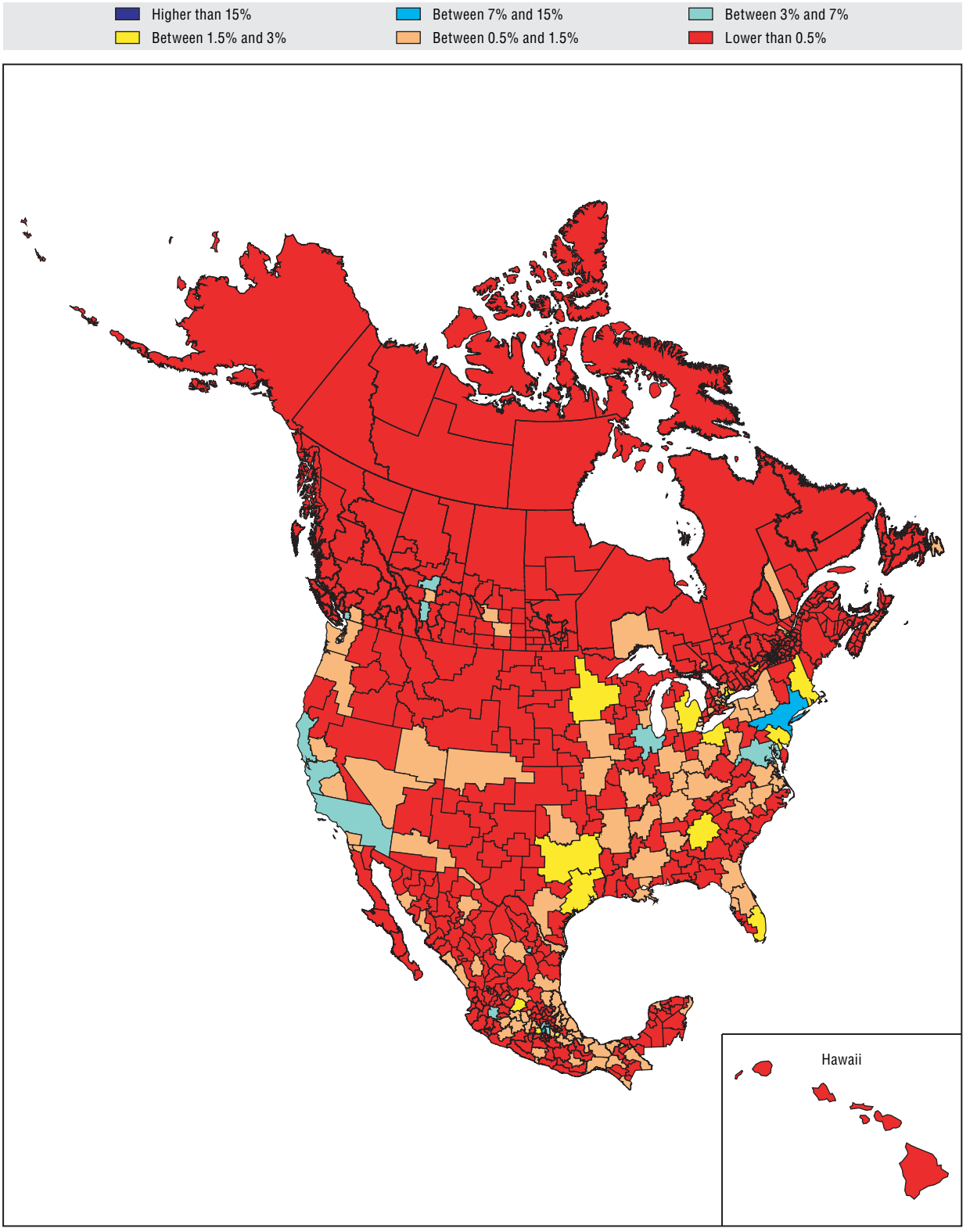
2001



Source: OECD Territorial Database.

1.7. **Regional share of national population: North America TL3**

2001



Source: OECD Territorial Database.

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Comparing regional concentration among countries: the geographic concentration index

Concentration is probably the most striking feature of the geography of human activities. In all OECD countries, the population tends to be concentrated around a small number of urban areas, industries are localised in highly specialised poles, and unemployment is often concentrated in a few regions.

Although much research has been devoted to this issue, there seems to be little agreement on which statistical indicator best measures geographic concentration. Furthermore, from an OECD perspective, the issue is complicated by the fact that the available indexes are not well suited to international comparisons.

A widely used measure of geographic concentration is the concentration ratio, *i.e.* the ratio between the economic weight of a region and its geographic weight. Taking unemployment as an example, the concentration ratio is calculated by ranking regions by their level of unemployment and dividing the share of national unemployment of the first "*n*" regions by their share of national territory, *i.e.* their area as a percentage of the total area of the country. The larger this ratio, the higher the geographic concentration.

This method, however, is unsuitable for international comparison because the measure of geographic concentration crucially depends on "*n*", the number of regions arbitrarily chosen for the comparison. As an example, consider the geographic distribution of population in two countries, as reported in the table below. If the concentration ratio is measured according to the first region, the population appears more concentrated in Country 1 than in Country 2. However, if the concentration ratio is based on two regions, then Country 1 turns out to be as concentrated as Country 2. Finally, the ranking is reversed when the concentration ratio is based on three regions.

1.1. **Concentration ratios**

Region	Country 1			Country 2		
	Population (as % of total)	Area (as % of total)	Concentration ratio	Population (as % of total)	Area (as % of total)	Concentration ratio
1	40	20	2.0	30	20	1.5
2	20	20	1.5	30	20	1.5
3	20	40	1.0	30	20	1.5
4	20	20	1.0	10	40	1.0

To overcome the limitations of the concentration ratio, the OECD has developed a new indicator, the geographic concentration index (see Sources and Methodology). The index compares the economic weight and the geographic weight over all regions in a given country and is constructed to account for both within- and between-country differences in the size of regions. The geographic concentration index lies between 0 (no concentration) and 1 (maximum concentration) in all countries and is suitable for international comparisons of geographic concentration.

2. Geographic concentration of GDP

Gross domestic product (GDP) is unevenly distributed among regions within countries. On average, 38% of national GDP in OECD member countries in 2001 was produced in only 10% of regions (Figure 2.1).

GDP is particularly concentrated in a small number of regions in Turkey and Portugal, where 10% of regions account for more than half of national GDP. In Austria, Sweden, Spain, Finland, Hungary, Korea, Japan, Canada and Mexico, the top 10% of regions are responsible for more than 40% of national GDP. The territorial distribution of GDP is more dispersed in Belgium, the Netherlands, the Slovak and the Czech Republic, where the 10% of regions with the highest share in national GDP contribute just one-quarter of the national total.

The Geographic Concentration Index offers a more detailed picture of the spatial distribution of GDP, as it takes into account not only the shares of all regions in GDP, but also the area covered by the region. Figure 2.2 reveals significant differences in the levels of spatial concentration of member states. Portugal (0.58), the United Kingdom (0.55) and Sweden (0.54) have the most concentrated distribution of GDP, followed closely by Korea (0.51), Australia (0.51), and Finland (0.50). A further group of eight countries (Norway, Canada, Spain, the United States, Austria, Japan, Turkey and Mexico) also have values well above the OECD average (0.42). There is less geographic concentration in the Slovak Republic (0.24), the Czech Republic (0.29), the Netherlands (0.29), Germany (0.30) and Belgium (0.33).

Intermediate regions appear to attract the largest share of economic activity. Almost 44% of OECD-area GDP is produced in intermediate regions (Figure 2.3). Furthermore, most of the GDP of Australia (95%), Canada (91%), the Czech Republic (70%), the United States (63%) and the Slovak Republic (53%) is produced in these regions. Predominantly urban regions have a slightly lower contribution to OECD-area GDP (43%). Nevertheless, in Belgium (88%), the Netherlands (87%), the United Kingdom (75%), Germany (67%), Japan (63%), Portugal (62%), Italy (57%) and Spain (52%), urban regions account for the greater part of national GDP. Finally, predominantly rural regions account for the smallest, but still a significant, part of OECD-area GDP (13%). Ireland (62%) and Finland (53%) are the two countries in which most national GDP originates from predominantly rural regions.

Concentration of GDP is the result of two factors: concentration of population and regional differences in GDP per capita. A comparison of the indices of geographic concentration for GDP and population shows that, in almost all countries, GDP is more concentrated than population. Only in Korea does the concentration of population exceed that of GDP.

These results suggest the existence of significant "economies of agglomeration", *i.e.* that GDP per capita tends to be higher in regions with a high concentration of population. This pattern seems confirmed in several countries where large urban regions or capital cities (Attiki, Uusimaa, Dublin, Budapest, Grande Lisboa) have become the motors of their national economies.

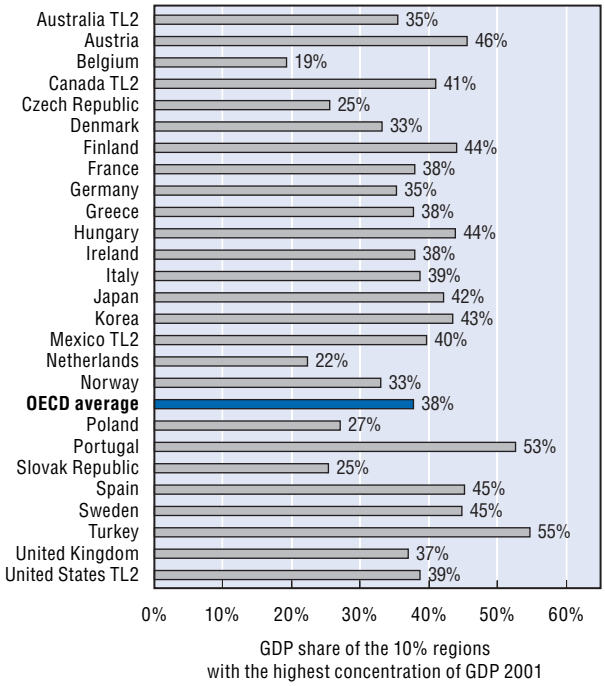
Definition

Gross domestic product – GDP at market prices – is the final result of the production activity of resident producer units. It can be defined in three ways:

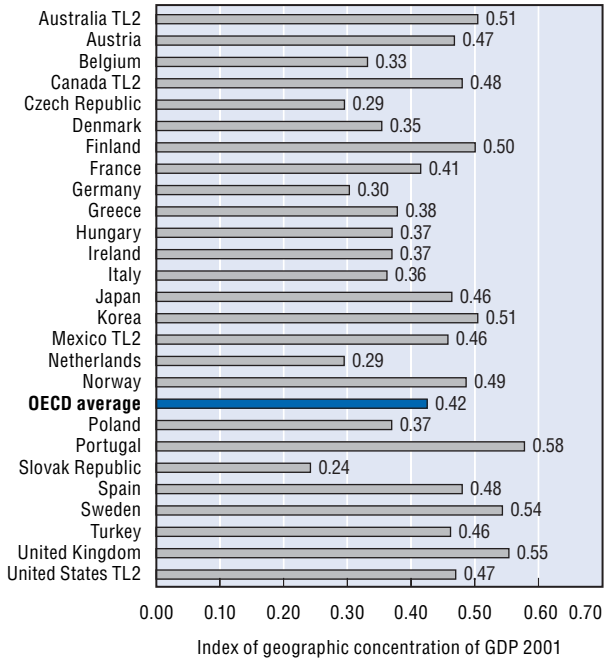
1. Output approach
   GDP is the sum of gross value added of the various institutional sectors or the various industries plus taxes and less subsidies on products (which are not allocated to sectors and industries). It is also the balancing item in the total economy production account.
2. Expenditure approach
   GDP is the sum of final uses of goods and services by resident institutional units (final consumption expenditure and gross capital formation), plus exports and minus imports of goods and services.
3. Income approach
   GDP is the sum of uses in the total economy generation of income account: compensation of employees, taxes on production and imports less subsidies, gross operating surplus and mixed income of the total economy.

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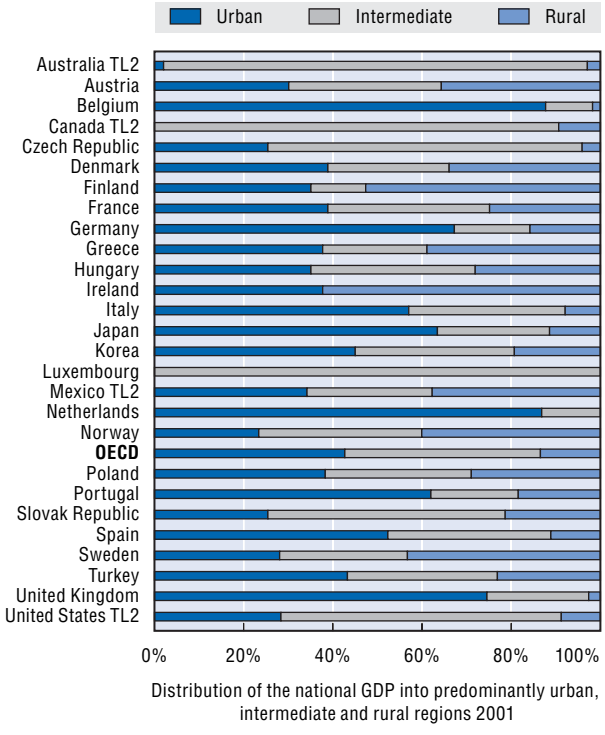
2.1. In 11 countries more than 40% of national GDP is concentrated in only 10% of regions



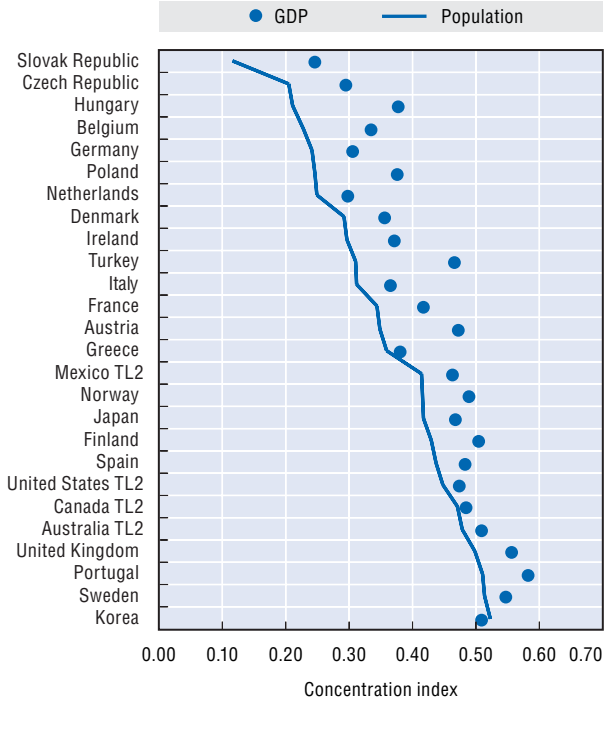
2.2. In 2001 Portugal, the United Kingdom and Sweden displayed the highest geographic concentration of GDP



2.3. In 2001 intermediate and predominantly urban regions accounted for more than 86% of total OECD-area GDP



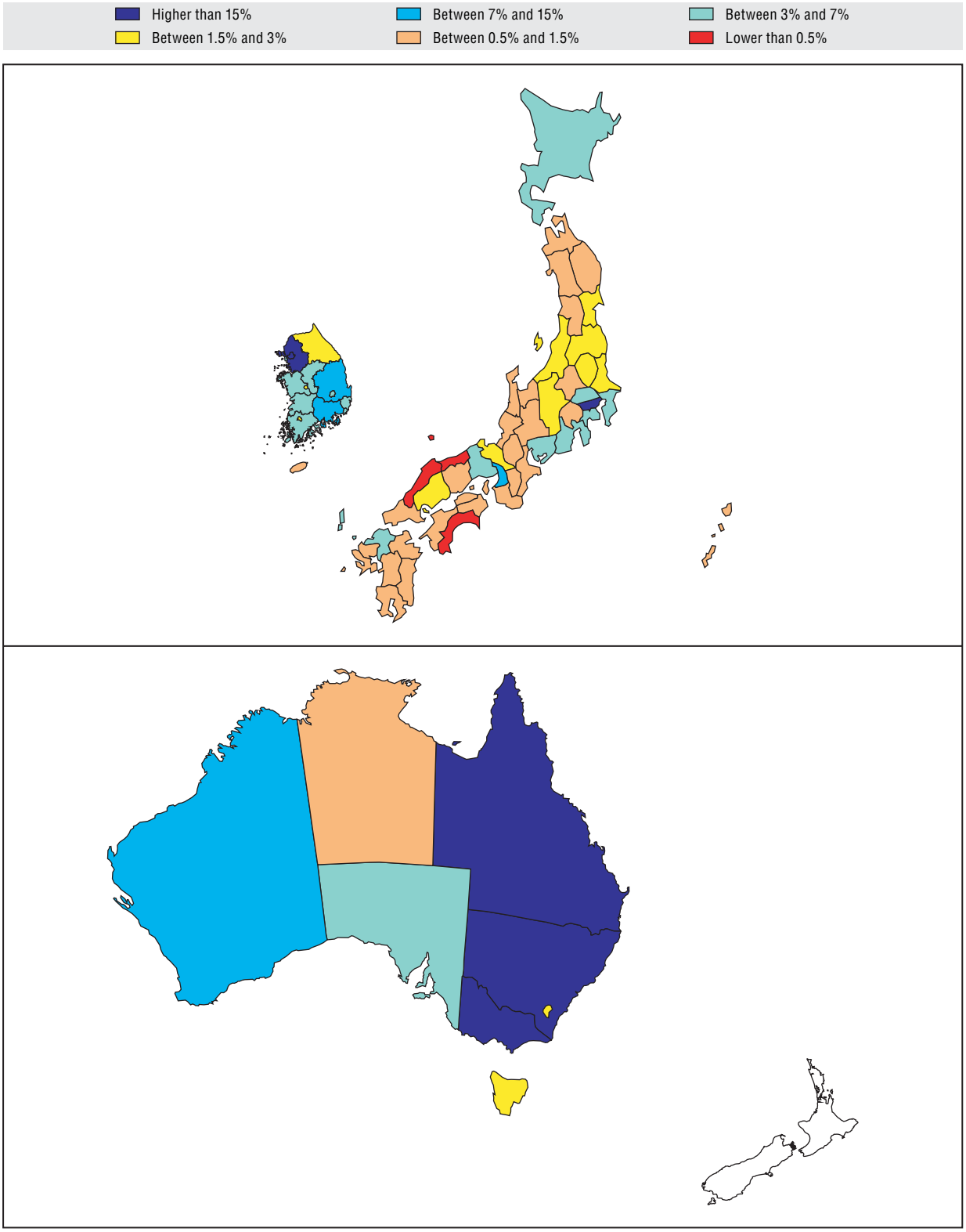
2.4. The spatial distribution of GDP does not reflect the geographic distribution of the population



Statlink: *http://dx.doi.org/10.1787/425650000580*

2.5. **Regional share of national GDP: Asia TL3 and Oceania TL2**

2001

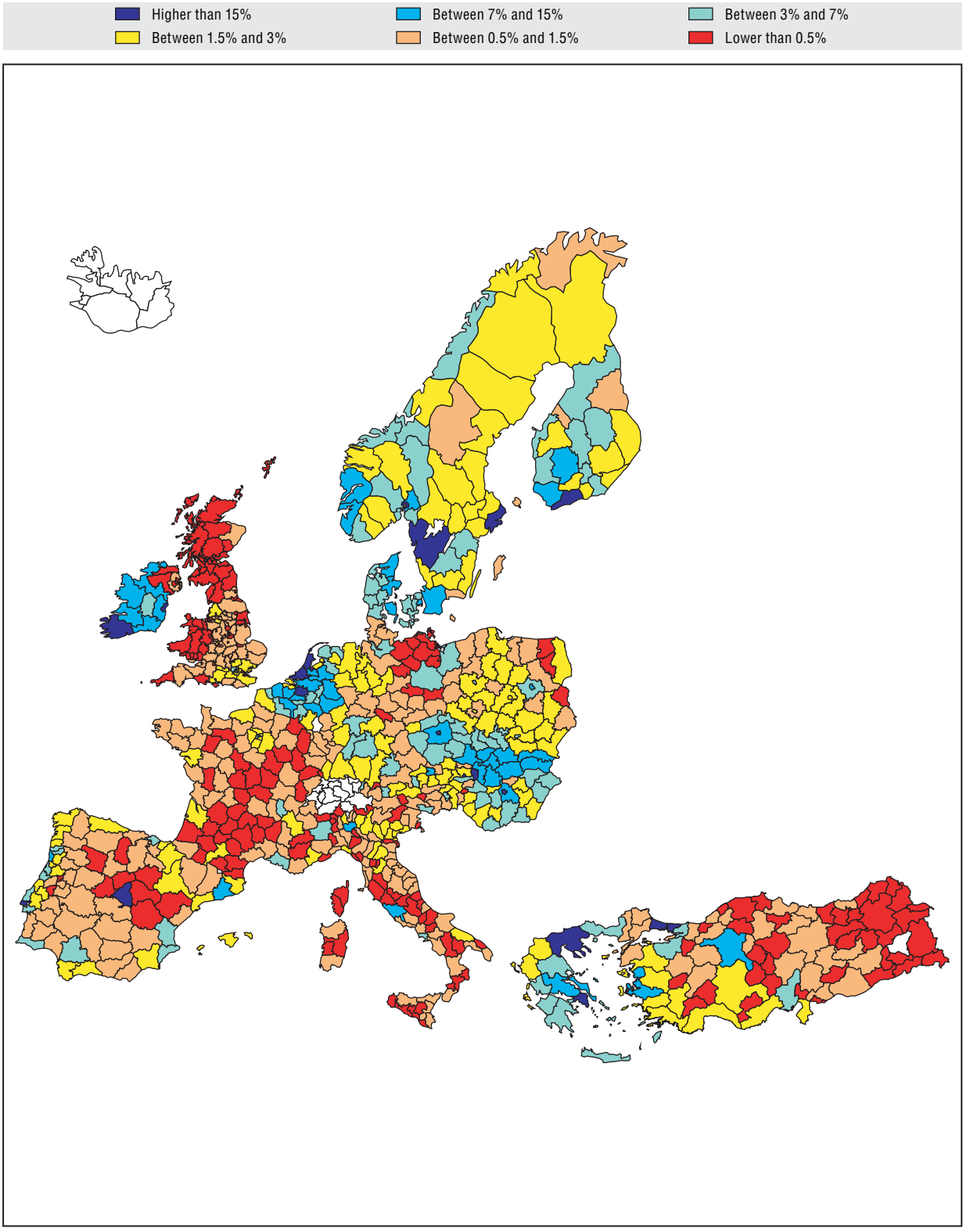


Source: OECD Territorial Database.

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2.6. **Regional share of national GDP: Europe TL3**

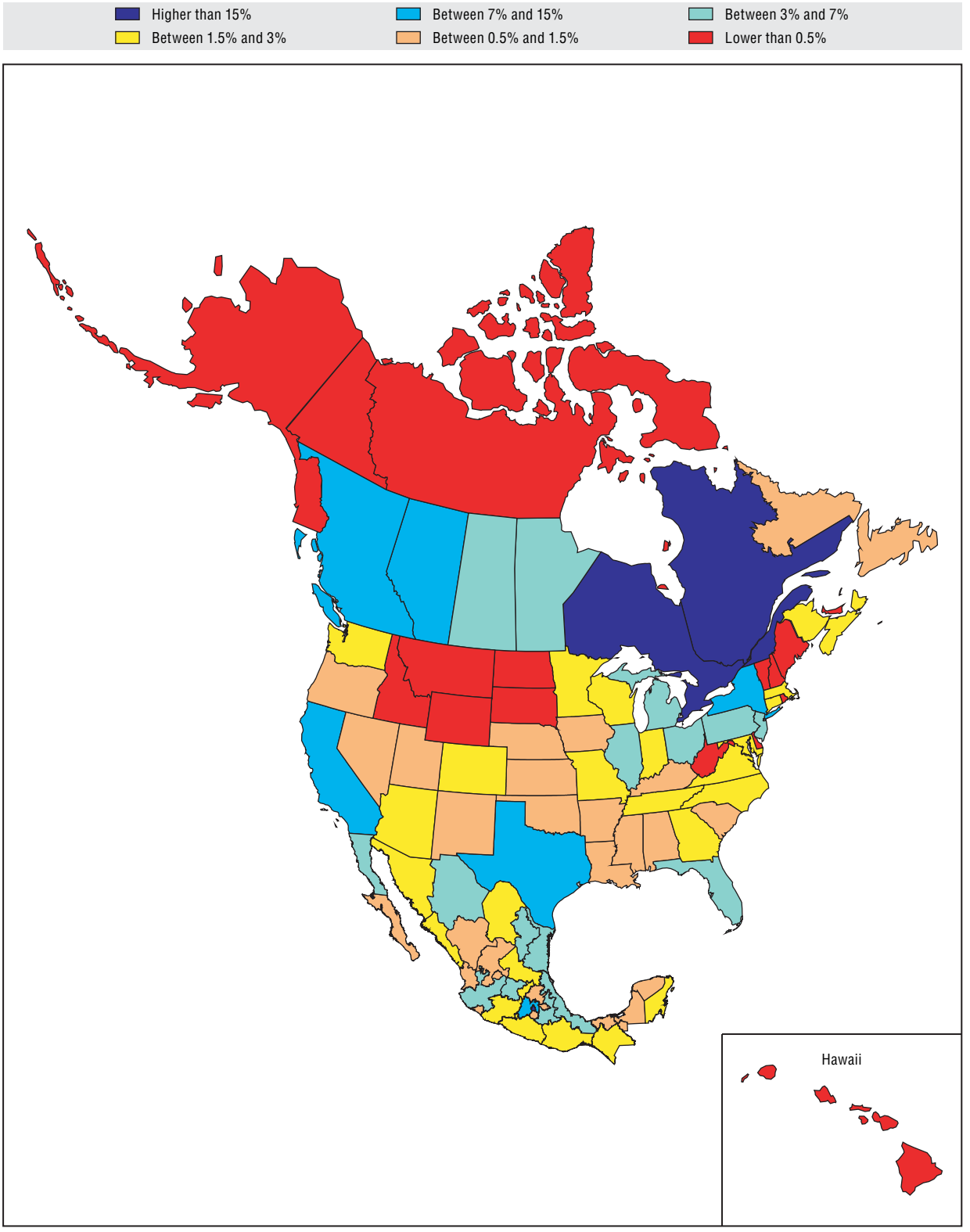
2001



Source: OECD Territorial Database.

2.7. **Regional share of national GDP: North America TL2**

2001



Source: OECD Territorial Database.

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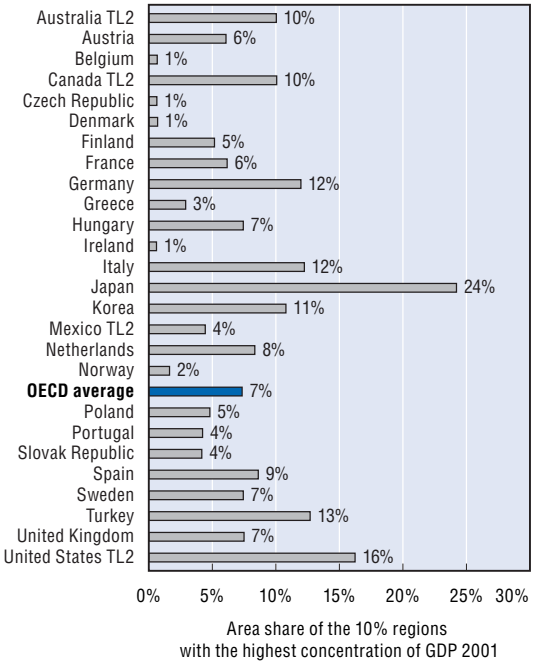
GDP concentration and agglomeration economies

An interesting aspect of the concentration of GDP is that the relevant regions usually cover rather small parts of the national territories. In Belgium, the Czech Republic, Denmark, Greece, Ireland, Mexico, Norway, Poland, Portugal and the Slovak Republic, the 10% of regions with the highest share in national GDP account for less than 5% of the national area (Figure 2.8). In member states in which these regions represent a larger fraction of the national territory, it is still evident that a significant amount of national economic activity takes place within narrow zones or poles of development.

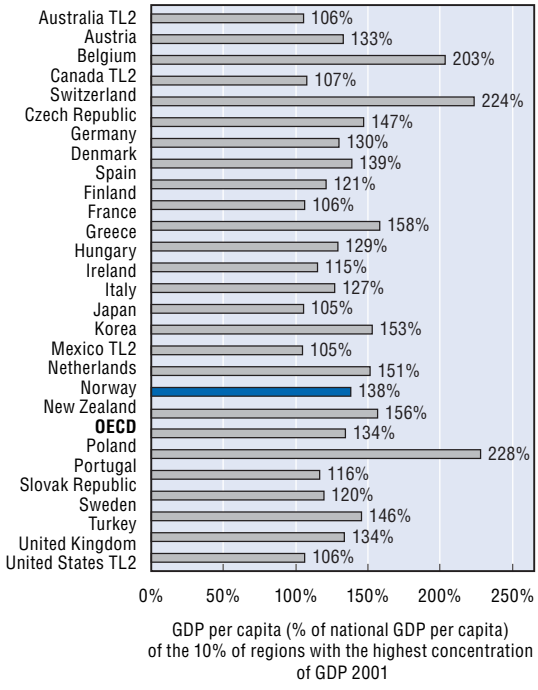
Urban areas and large towns in intermediate regions are prime zones or poles of development. The clustering of businesses and people in a small area improves the efficiency of the local economy and leads to the production of more output per capita. Figure 2.9 reveals that in every country the 10% of regions with the highest concentration of GDP enjoy a GDP per capita well above the national average.

Agglomeration economies are considered to be the main driving force behind the clustering of economic activity. The concept was introduced more than a century ago by Alfred Marshall who identified three sources of agglomeration. First, the advantages that large labour markets entail for firms (easier to find specialised personnel) and skilled workers (easier to find employment) alike. Second, the linkages between intermediate and final-goods producers which allow firms to benefit from specialisation in some parts of the production process and from increased production volumes. Third, the knowledge spillovers that stem from the cross-fertilisation of ideas regarding innovation. Based on these ideas, modern economists have highlighted the role of sharing (infrastructure, risks, gains from variety, specialisation, etc.), matching (between business partners or firms and employees) and learning (knowledge creation, accumulation and diffusion) as the underlying mechanisms of agglomeration economies.

2.8. **The 10% of regions with the highest concentration of GDP account for a small fraction of the national area...**



2.9. **... and record GDP per capita figures well above the national average**



3. Geographic concentration of unemployment

In 2001, total unemployment in OECD countries was over 32 million, *i.e.* an unemployment rate of more than 6%. In every country, unemployment tended to concentrate in only a few regions. On average, 37% of national unemployment in 2001 was located in only 10% of regions (Figure 3.1).

Concentration is greatest in Australia and Canada, where the Concentration Index was 0.81 and 0.79, respectively (Figure 3.2). It is also significant in Korea and Mexico (an index of 0.61), the United Kingdom (0.57), Ireland (0.56), Portugal (0.54) and the United States (0.52). In most other countries, the Concentration Index is close to the OECD average (0.43). Only in Hungary, Poland and the Slovak Republic is unemployment more evenly distributed across regions.

About 47% of unemployment in OECD countries is found in urban regions, compared to 31% and 22% in intermediate and rural regions, respectively (Figure 3.3). The distribution of unemployment by regional type, however, tends to vary significantly among countries.

In Belgium, Japan, Korea, the Netherlands, the United Kingdom and the United States, at least 60% of national unemployment is in urban regions. However, no less than half of total unemployment in Finland, Ireland, Norway, Poland and Sweden is in rural regions. Finally, in France, New Zealand, Spain, the Slovak Republic and Turkey, unemployment is most concentrated in intermediate regions.

Concentration of unemployment is the result of two factors: concentration of the labour force and regional differences in unemployment rates. A comparison of the concentrations indexes for unemployment and the labour force shows that the geographic distribution of unemployment does not mirror that of the labour force (Figure 3.4). Therefore, regional differences in unemployment rates help to explain the concentration of unemployment.

In a majority of countries (and especially in Belgium, the Czech Republic, Italy, Korea, Mexico, Turkey and the United Kingdom) unemployment is more concentrated than the labour force. This implies that unemployment rates are higher in regions where the labour force is more concentrated, *i.e.* in "core" regional labour markets.

The opposite pattern applies to a smaller group of countries (particularly Finland, Hungary, Ireland, Iceland, the Netherlands and Sweden) where unemployment rates are higher in regions where the labour force is less concentrated, *i.e.* in "peripheral" labour markets.

Portugal, Spain and the United States are the only countries where the concentration of unemployment does not seem affected by regional differences in unemployment rates.

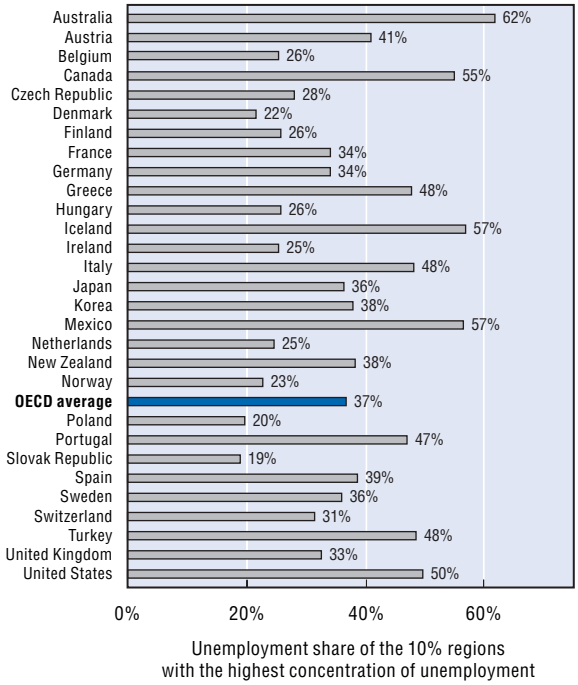
These different geographic patterns – core vs. periphery and rural vs. urban – suggest that the characteristics of unemployment are quite different from one country to another. Total unemployment is commonly regarded as a comparable statistics at the national level but it hides, in fact, a variety of situations that reflect the specific features of sub-national regions.

Definition

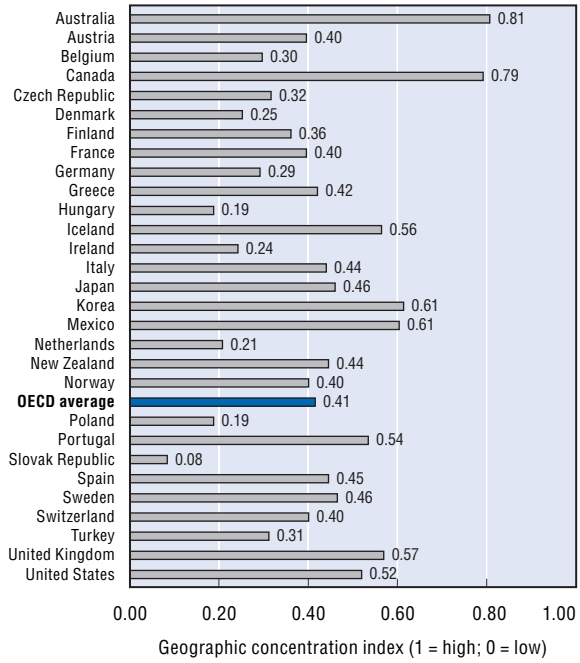
Unemployed persons comprise persons who were (all three conditions must be fulfilled simultaneously):

1. without work during the reference week;
2. available for work at the time (*i.e.* were available for paid employment or self-employment before the end of the two weeks following the reference week);
3. actively seeking work (*i.e.* had taken specific steps in the four-week period ending with the reference week to seek paid employment or self-employment).

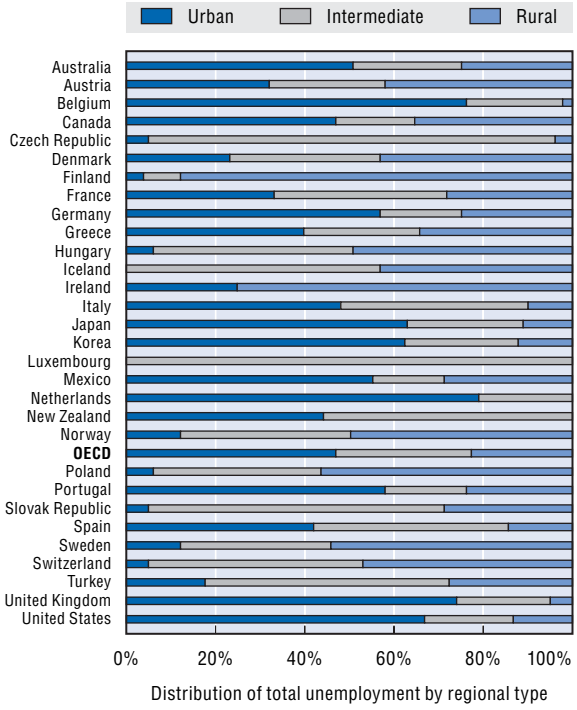
3.1. On average, 37% of national unemployment in 2001 was concentrated in only 10% of regions



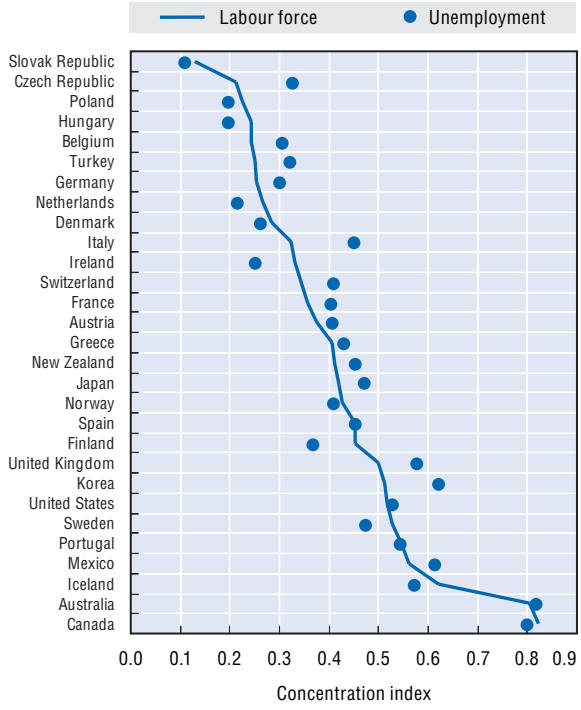
3.2. Unemployment is most concentrated in Australia and Canada and least concentrated in the Slovak Republic



3.3. About 47% of unemployment in OECD countries is concentrated in urban regions



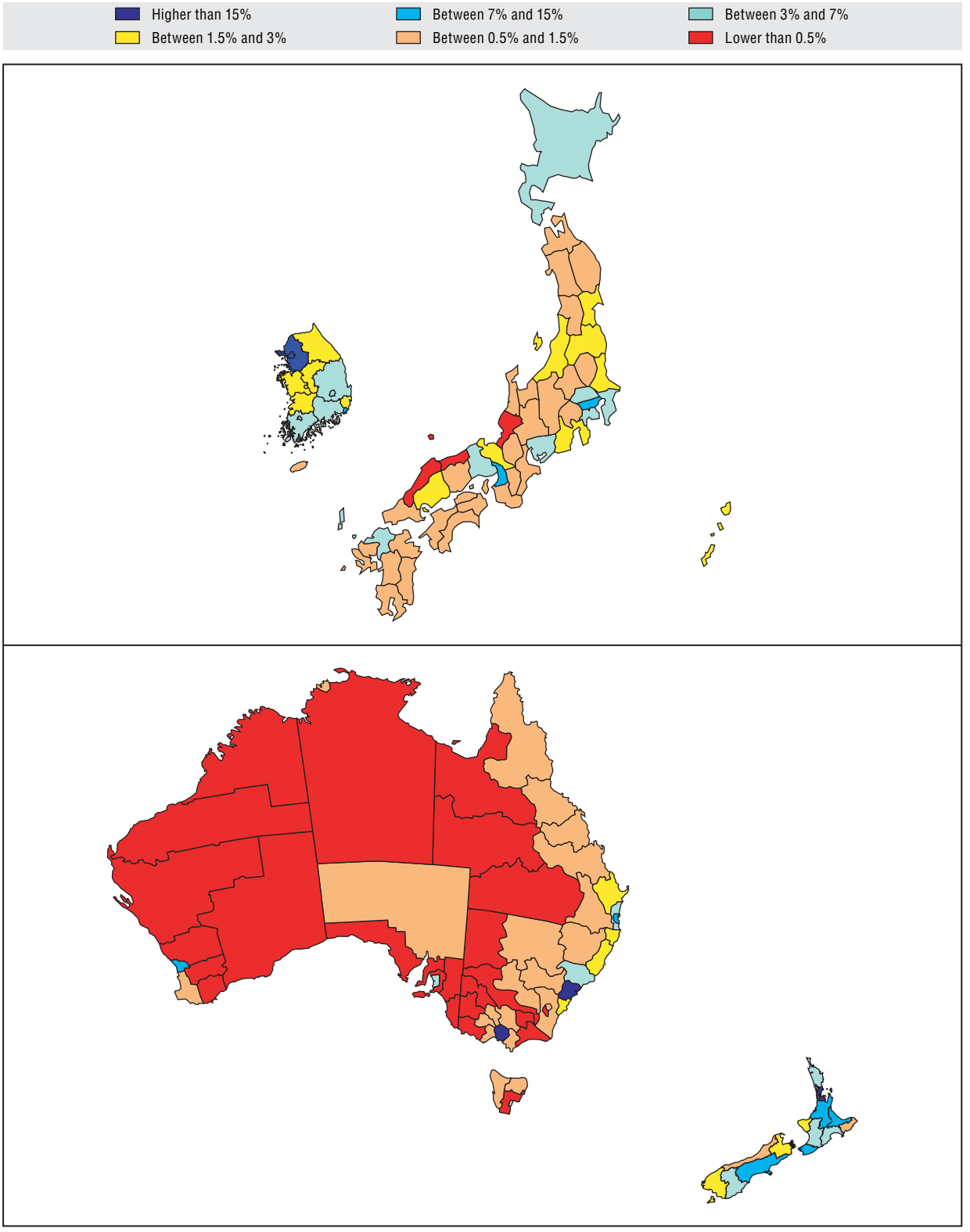
3.4. Concentration of unemployment does not mirror concentration of the labour force



Statlink: *http://dx.doi.org/10.1787/223255354335*

3.5. **Regional share of national unemployment: Asia and Oceania TL3**

2001

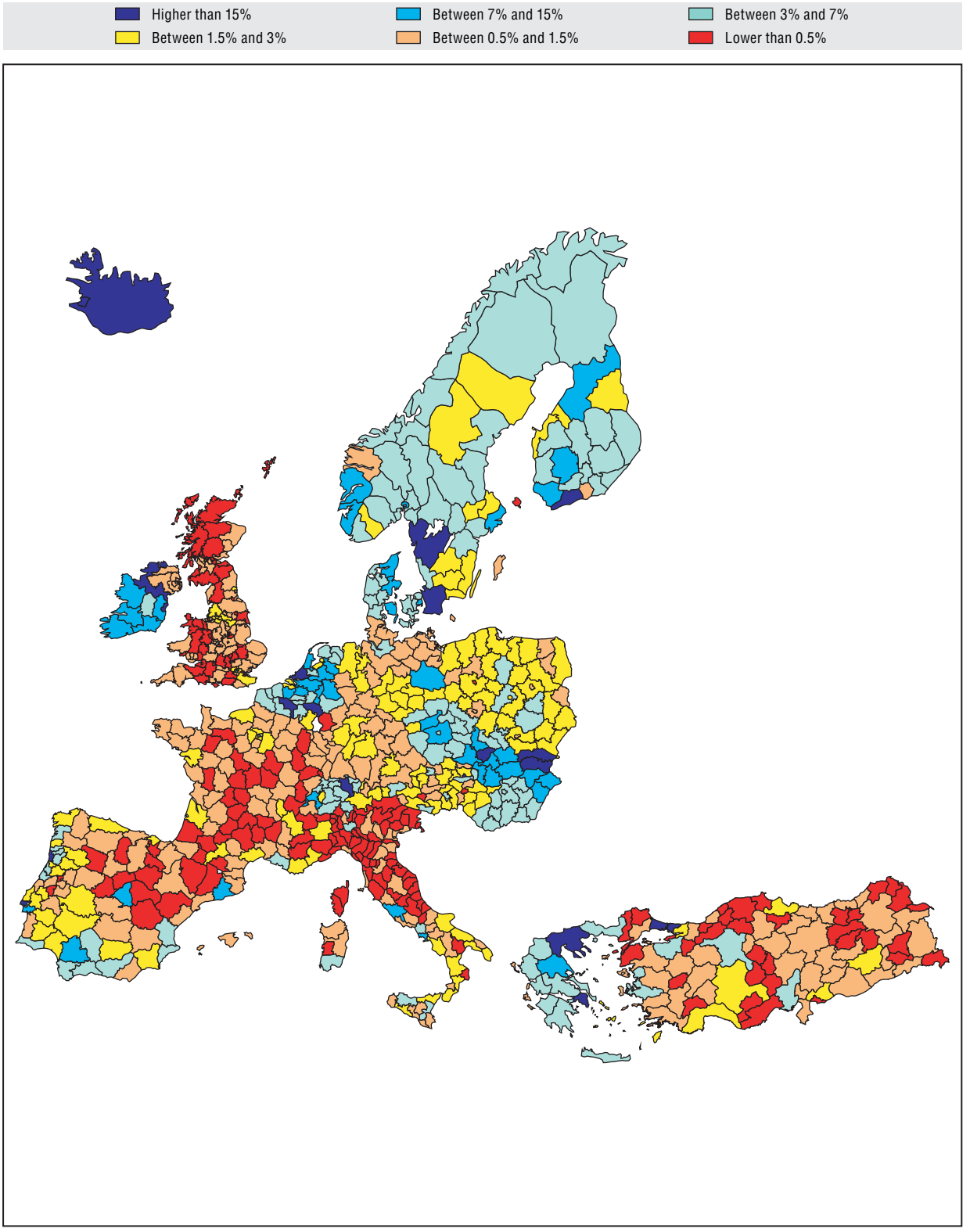


Source: OECD Territorial Database.

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3.6. **Regional share of national unemployment: Europe TL3**

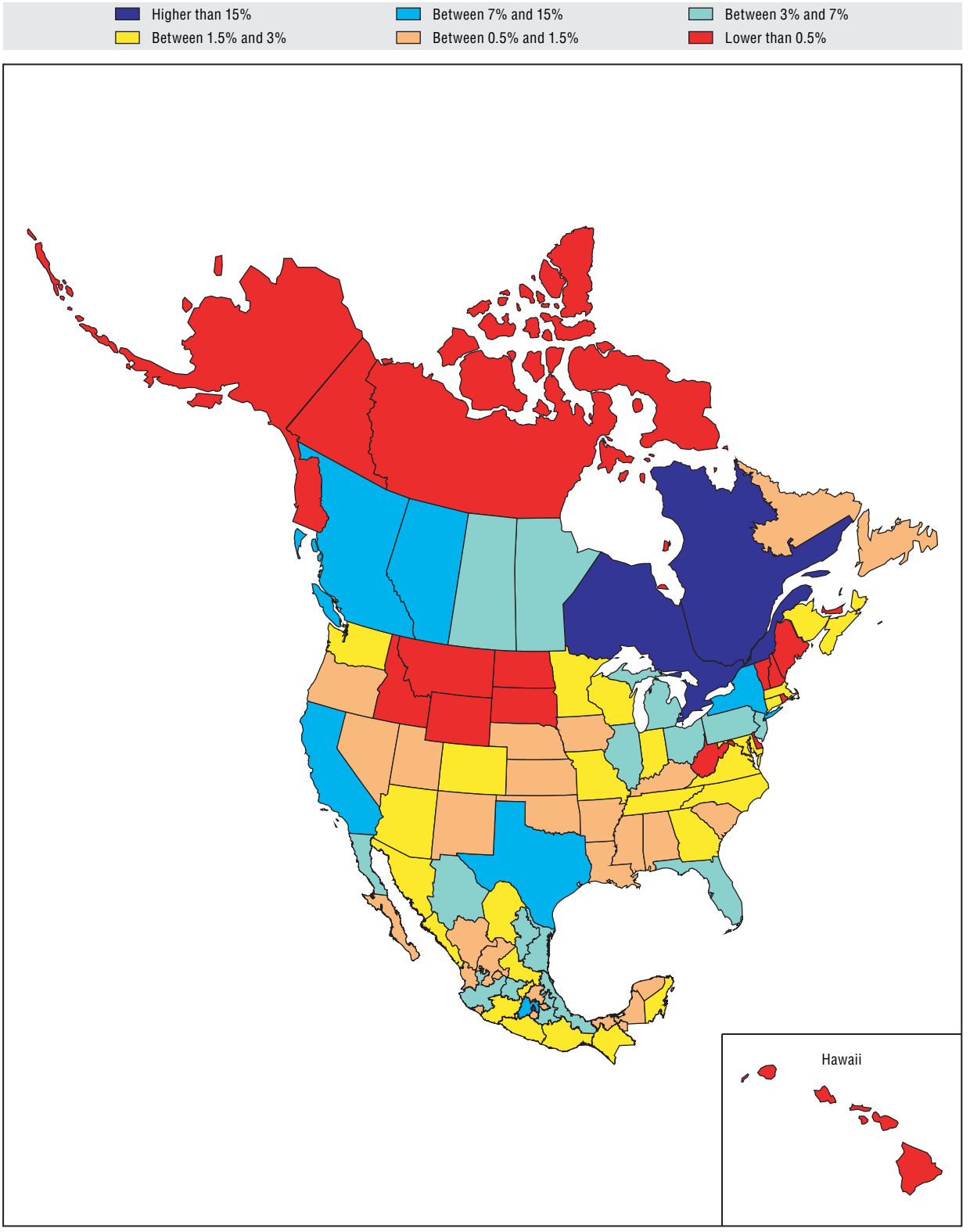
2001



Source: OECD Territorial Database.

3.7. **Regional share of national unemployment: North America TL3**

2001



Source: OECD Territorial Database.

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Reducing unemployment: what role for regional policies?

In most OECD countries unemployment tends to be concentrated in a small number of regions. This pattern suggests that a reduction in unemployment in these few regions would have a large impact on national unemployment. The issue, however, is whether a reduction in unemployment should be pursued only through national policies, *i.e.* the same policy for all regions, or whether it would also require a regional approach, *i.e.* a specific policy targeted to the regions with the largest number of unemployed people.

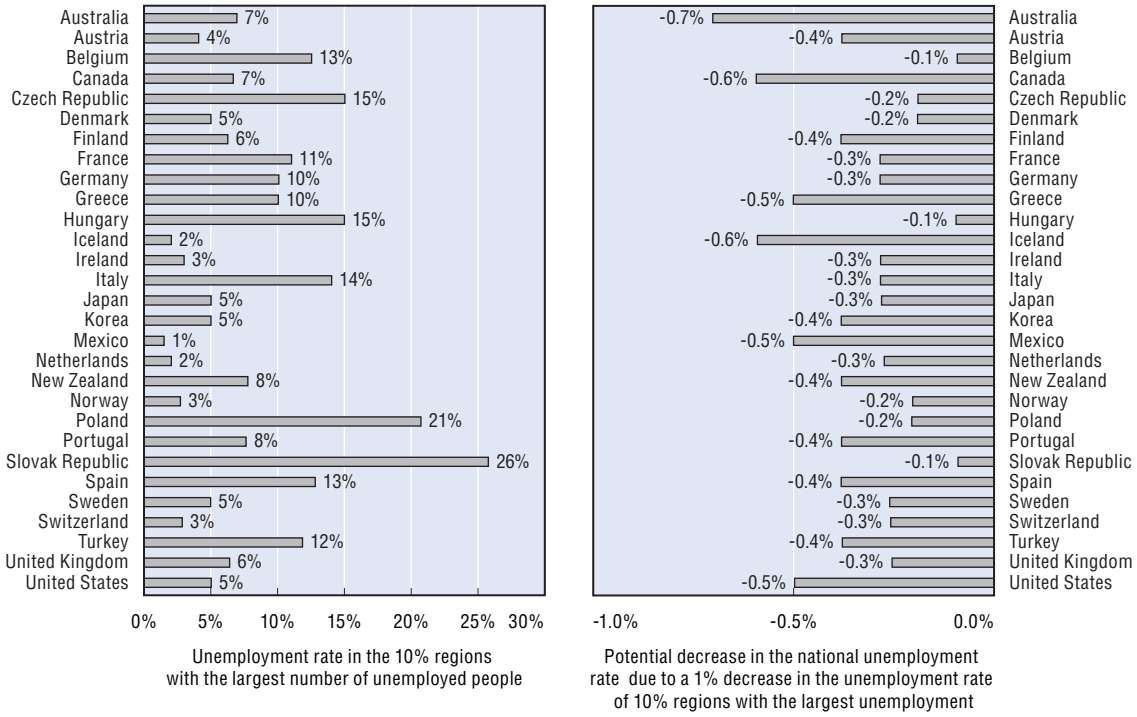
The answer depends on whether concentration of unemployment simply follows the distribution of the labour force or is the result of regional differences in unemployment rates. If concentration of unemployment is only due to the concentration of the labour force, national policies will be sufficient to reduce unemployment rates in all regions, including those where unemployment is highest. However, if unemployment is concentrated in a certain region because of its higher unemployment rate, a specific policy targeted to this region will have the greatest impact on the reduction of total unemployment.

One way to assess the impact of regional policies is ask what would be the reduction in the national unemployment rate that would result from a decrease in the unemployment rate of the regions with the largest number of unemployed. Figure 3.8 suggests that, in many countries, the *potential* impact of a regional policy would be significant.

For instance, a 1% decrease in the unemployment rate of the 10% of regions with the highest concentration of unemployment would decrease the national unemployment rate in Australia by 0.7 percentage point. In Canada, Greece, Mexico and the United States the reduction in the national unemployment rate would be no less than half a percentage point.

The *actual* impact of such a policy, however, would depend on the initial unemployment rates of the targeted regions. For instance, a 1% decrease in the unemployment rate of the high-unemployment regions in Poland and the Slovak Republic would reduce the national unemployment rate by 0.2 and 0.1 percentage points, respectively. Nonetheless, the high unemployment rates of this group of regions (above 20%) suggest that a reduction of more than 1% might be feasible and that the impact of regional policies on national unemployment would be larger. The same consideration would apply to Belgium, the Czech Republic, France, Germany, Greece, Hungary, Italy, Spain and Turkey. However, a further reduction in regional unemployment rates in the Netherlands or Norway, where the unemployment rate of the top 10% regions is already below 5%, might be more difficult to achieve so that the effect of a regional policy on national unemployment would be more limited.

3.8. **Regional policy may make a significant contribution to the reduction of total unemployment**



4. Geographic concentration of the labour force

In 2001, the total labour force in OECD countries was over 500 million, *i.e.* above 70%of the population aged between 15 and 64 years. On average, about 33% of the national labour force was concentrated in only 10% of a country's regions (Figure 4.1).

This average pattern hides a significant difference between countries with a highly concentrated labour force and countries where the labour force is more evenly distributed.

The labour force is most concentrated in Canada and Australia, where the Concentration Index is 0.82 and 0.80, respectively (Figure 4.2). The labour force is also quite concentrated in Mexico (0.56), Portugal (0.54), Sweden (0.53), the United States (0.52) and Korea (0.51).

In many other countries, the labour force seems more evenly distributed across regions, particularly in Hungary, Belgium, Poland and the Slovak Republic, where the Concentration Index is not above 0.15.

About 53% of the labour force in OECD countries is concentrated in urban regions, compared to 28% and 19%, respectively, in intermediate and rural regions (Figure 4.3). The distribution of the labour force by regional type, however, tends to vary considerably among countries.

In Belgium, the Netherlands, the United Kingdom and the United States, at least 60% of the labour force is found in urban regions. In Finland, Ireland and Poland, however, no less than half of the total labour force is located in rural regions. Finally, in France, Hungary, New Zealand, the Slovak Republic and Turkey, unemployment is mostly concentrated in intermediate regions.

Concentration of the labour force is the result of two factors: concentration of the population and regional differences in activity rates (*i.e.* the proportion of total population in the labour force). A comparison of the concentrations indexes for unemployment and the labour force shows that, in most countries, the labour force is more concentrated than population (Figure 4.4). Therefore, activity rates tend to be higher in "core" regions, where population is highly concentrated, than in scarcely populated areas. This pattern is particularly pronounced in Austria, Greece, Hungary, Ireland and Portugal.

Only in Poland, Turkey and, to a lesser extent, Korea is concentration higher for the labour force than for population. This implies that activity rates are lower in areas where there is a higher concentration of population, generally urban regions.

Definition

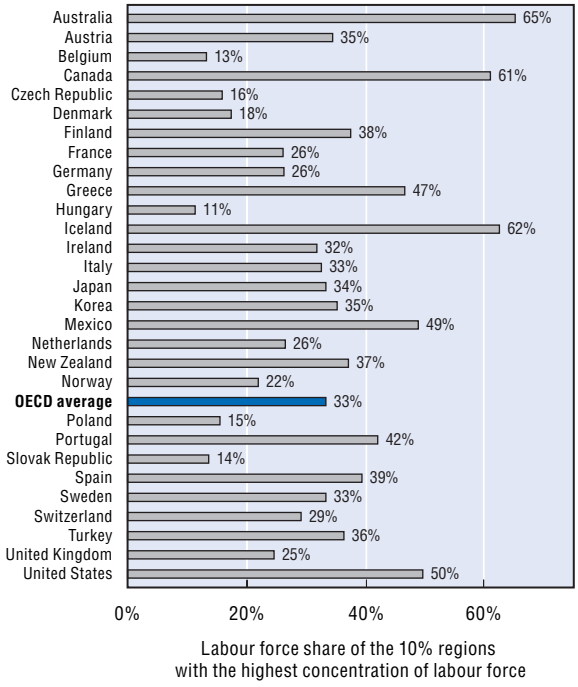
The labour force (active population) is defined as the sum of employed and unemployed persons. Unemployed persons comprise persons who were (all three conditions must be fulfilled simultaneously):

1. without work during the reference week;
2. available for work at the time (*i.e.* were available for paid employment or self-employment before the end of the two weeks following the reference week);
3. actively seeking work (*i.e.* had taken specific steps in the four-week period ending with the reference week to seek paid employment or self-employment).

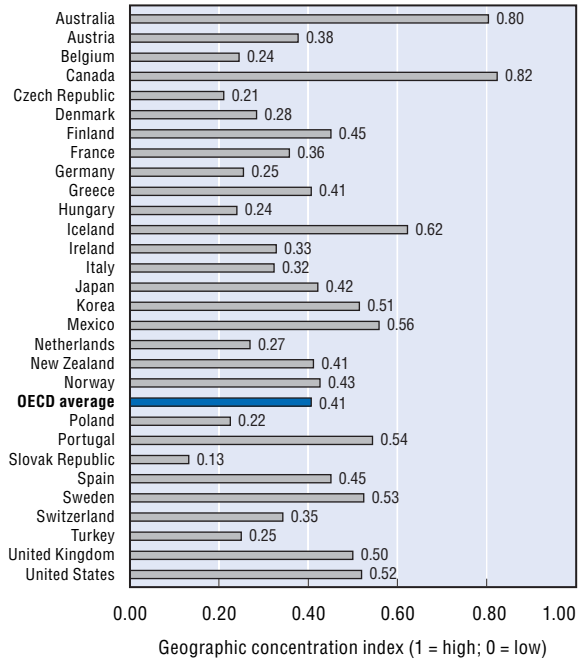
Employed persons are all persons who during the reference week worked at least one hour for pay or profit, or were temporarily absent from such work. Family workers are included.

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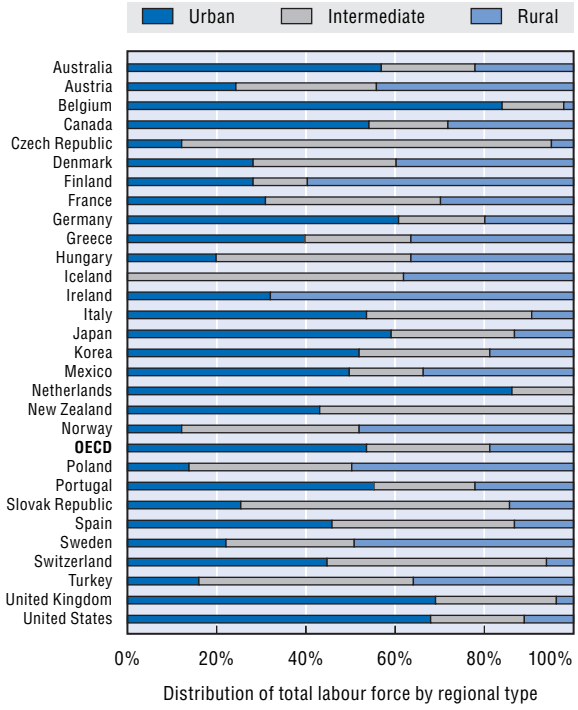
4.1. On average, 33% of the national labour force in 2001 was concentrated in only 10% of regions



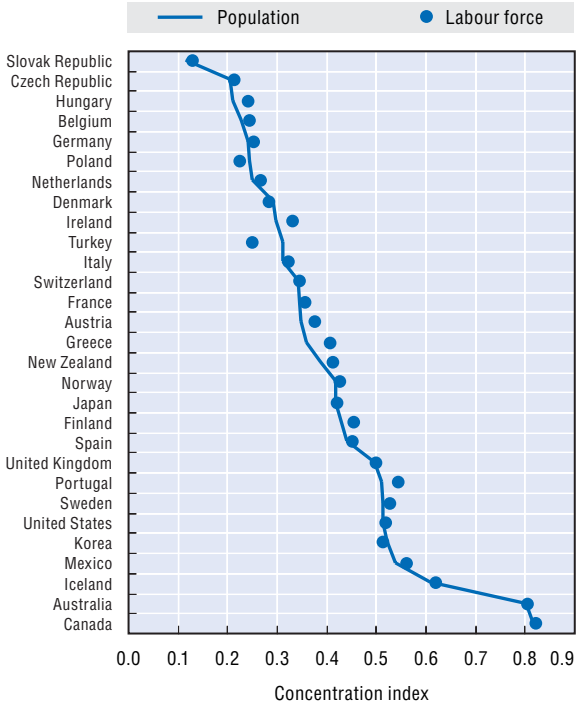
4.2. Concentration of the labour force is highest in Canada and Australia and lowest in the Slovak Republic



4.3. About 53% of the labour force in OECD countries is concentrated in rural regions



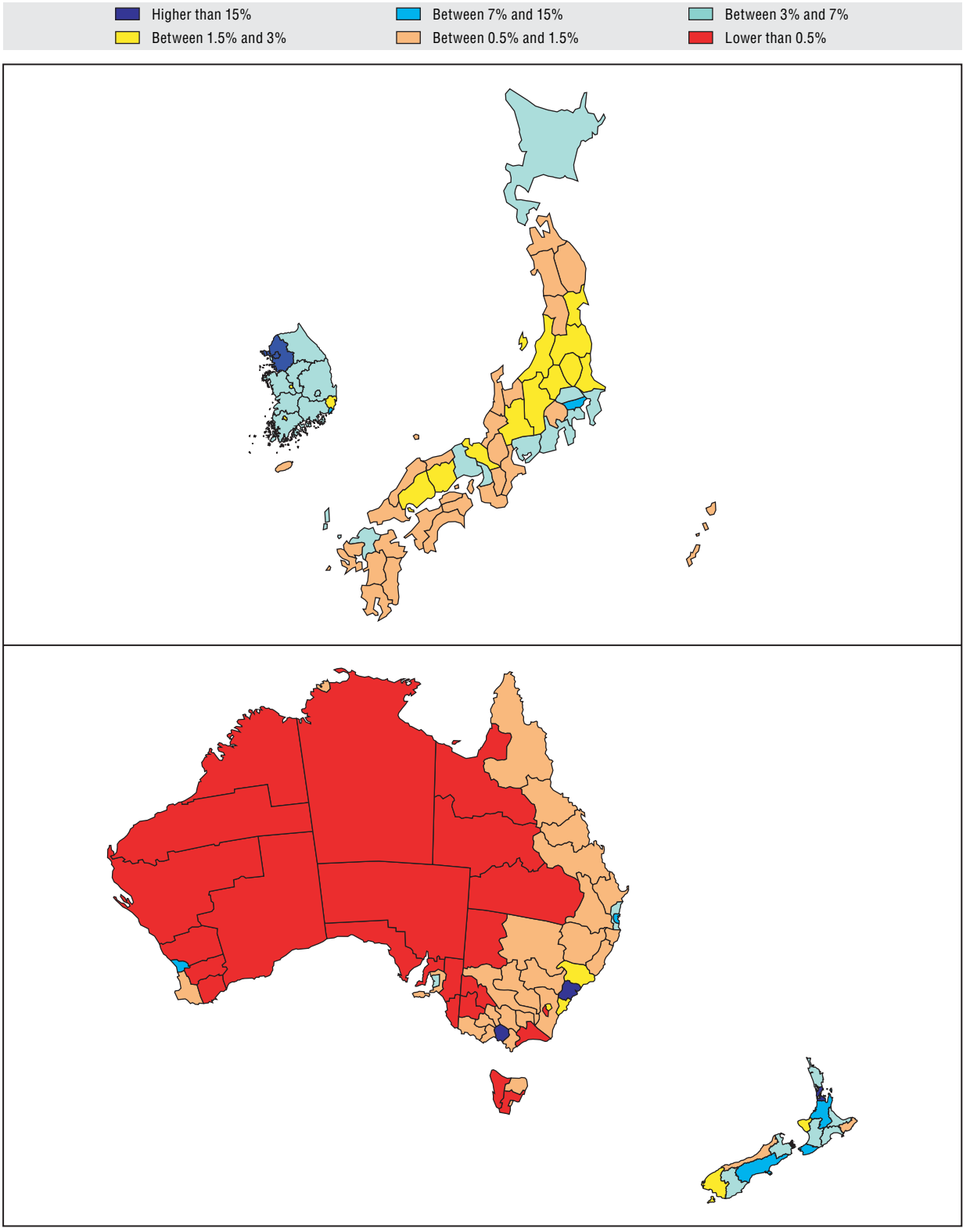
4.4. In most OECD countries, the labour force is more concentrated than population



Statlink: *http://dx.doi.org/10.1787/320311116271*

4.5. **Regional share of the national labour force: Asia and Oceania TL3**

2001

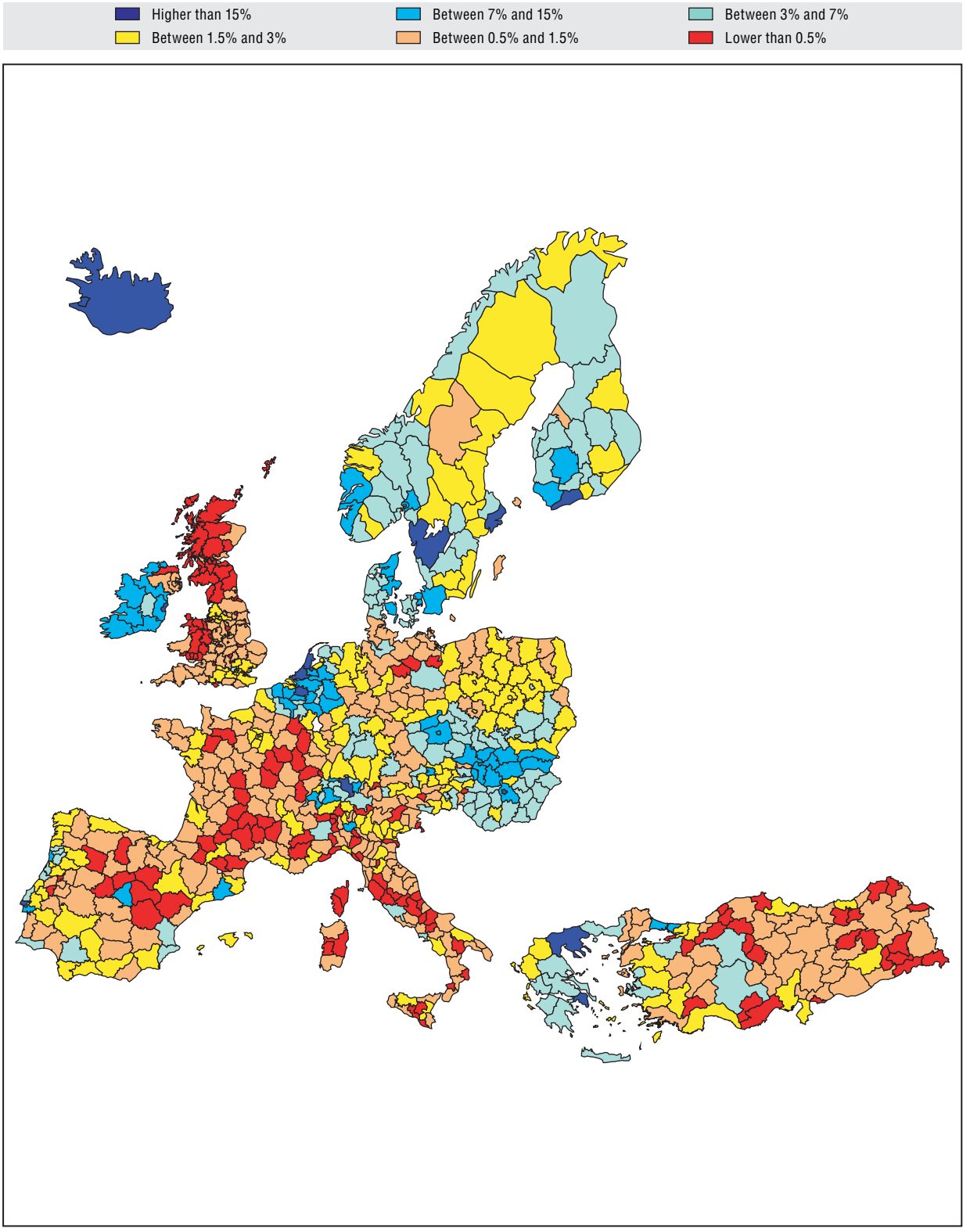


Source: OECD Territorial Database.

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4.6. **Regional share of the national labour force: Europe TL3**

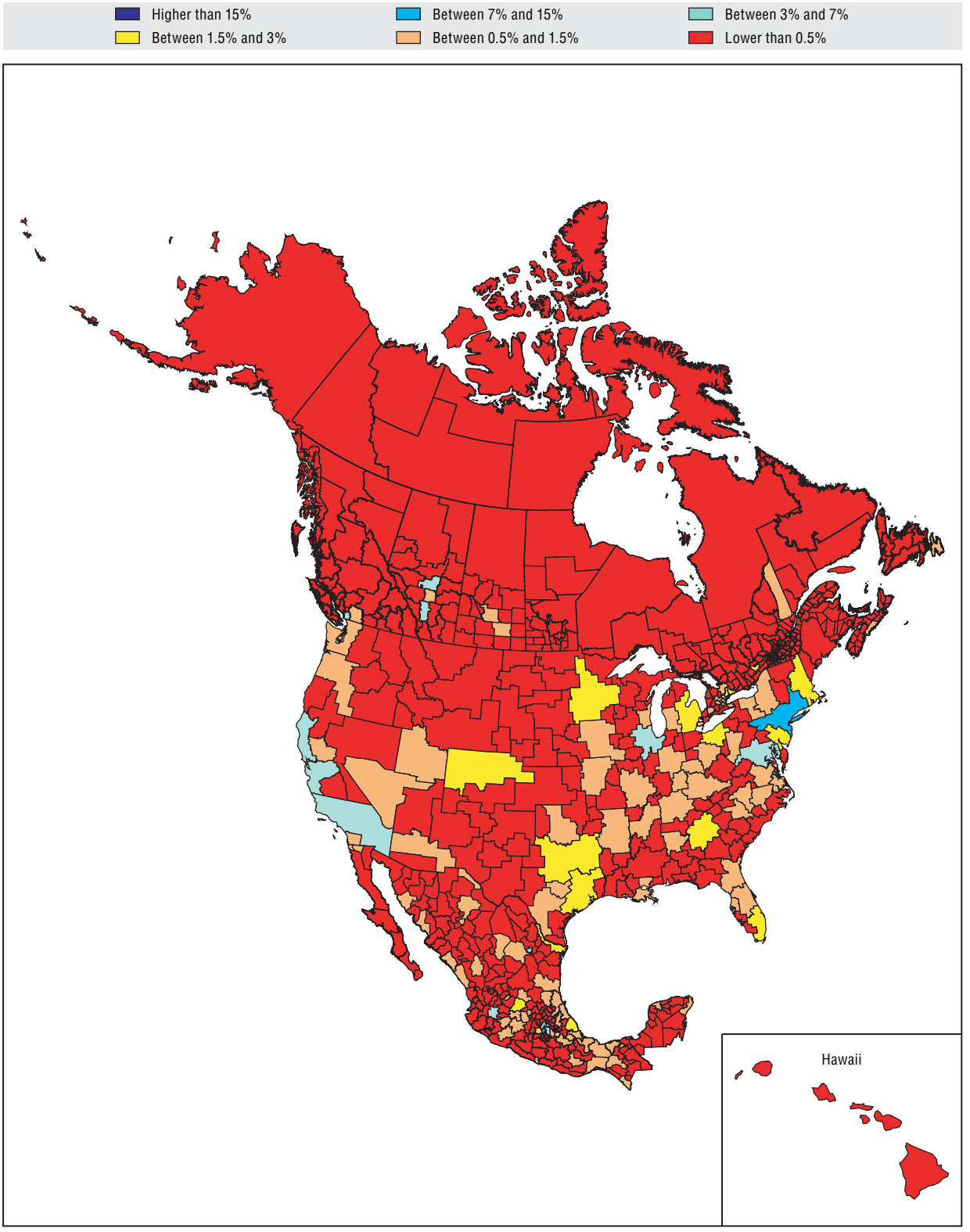
2001



Source: OECD Territorial Database.

4.7. **Regional share of the national labour force: North America TL3**

2001



Source: OECD Territorial Database.

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Increasing labour market participation: what role for regional policies?

In most OECD countries low levels of participation in the labour force tend to be concentrated in a small number of regions. This pattern suggests that an increase in the activity rates of these few regions would have a large impact on total activity rates. The issue, however, is whether an increase in labour market participation should be pursued only through national policies, *i.e.* the same policy for all regions, or whether it would also require a regional approach, *i.e.* a specific policy targeted to the regions with the largest number of people not in the labour force.

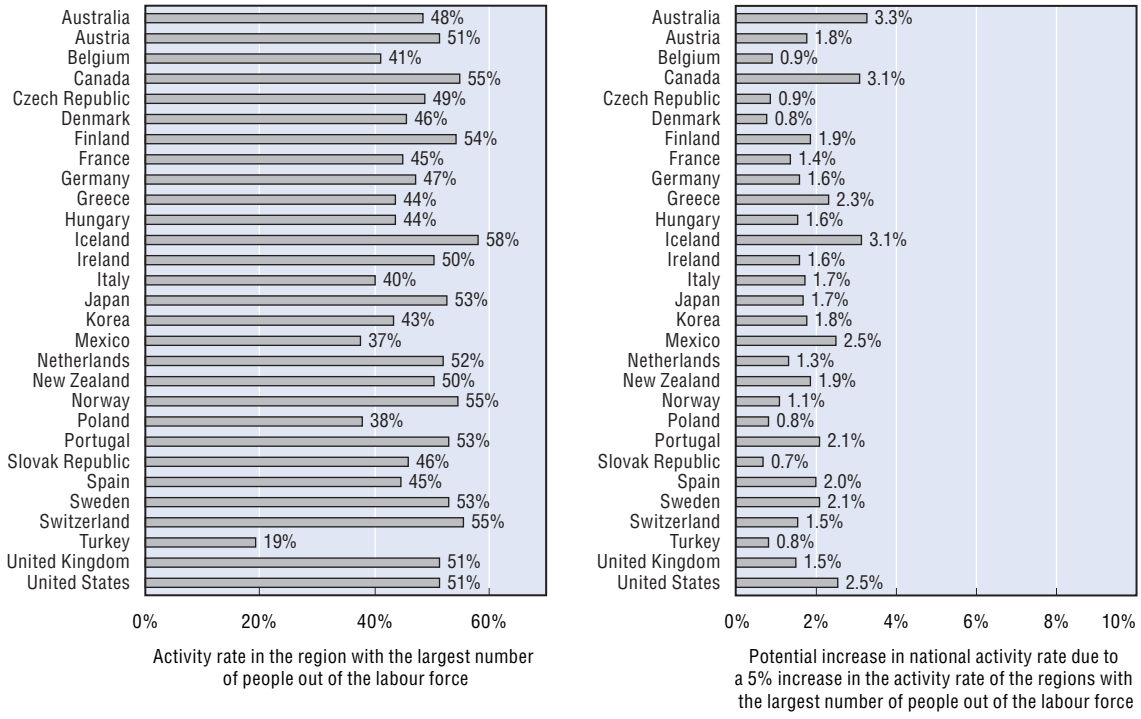
The answer depends on whether the concentration of the inactive population simply follows the distribution of population or is the result of regional differences in activity rates (*i.e.* the ratio of labour force to population). If the concentration of the inactive population is only due to the concentration of population, national policies will be sufficient to increase activity rates in all regions, including those where the inactive population is greatest. On the contrary, if the inactive population is concentrated in a certain region because of its lower activity rate, then a specific policy targeted to this region would have the greatest impact on the increase in the national labour force.

One way to assess the impact of regional policies is to ask what increase in the national activity rate would result from an increase in the activity rate of the regions where the inactive population is the highest. Figure 4.8 suggests that, in many countries, the *potential* impact of a regional policy would be significant.

For instance, a 5% increase in the activity rate of the 10% of regions with the highest concentration of inactive population would increase the national activity rate by more than 3% in Australia, Canada and Iceland. In Greece, Mexico, New Zealand, Portugal, Spain and the United States the increase in the national activity rate would be no less than 2%.

The *actual* impact of such a policy, however, would depend on the initial activity rates of the targeted regions. For instance, a 5% increase in the activity rate of the regions with the largest inactive population in Turkey would reduce the national activity rate by 0.8%. Nonetheless, the low activity rates of this group of regions (below 20%) suggest that a reduction of more than 5% might be feasible and that the impact of regional policies on the national activity rate would be larger. On the contrary, a further increase in regional activity rates in Canada, Iceland, Norway and Switzerland, where activity rates in the top 10% of regions are already high, might be more difficult to achieve so that the effect of a regional policy on the national activity rate would be more limited.

4.8. **Regional policy may make a significant contribution to the increase in labour market participation**



5. Geographic concentration of patents

Patents are an important indicator of innovative activity. They are a measure of the technological progress resulting from innovation in production processes and final products. The geographic distribution of patents is therefore indicative of regional economies' capacity to create new knowledge.

Figure 5.1 suggests that patents are concentrated in a small number of regions within countries. On average, 54% of total patents recorded in OECD member countries in 2001 came from only 10% of their regions.

The Geographic Concentration Index shows that the concentration of patents was the highest in Australia (0.89), Japan (0.79), Portugal (0.73) and Korea (0.72), followed closely by Spain (0.66), Sweden (0.65), Finland (0.64), the United States (0.63) and Greece (0.61) (Figure 5.2). In Norway, the United Kingdom, France, Ireland, Italy, Denmark, Canada and Austria, the concentration index is also above 0.50. Geographic concentration of patents is lowest in Poland (0.35), Belgium (0.39), the Netherlands (0.42) and Germany (0.43), although it remains high.

Predominantly urban regions appear to provide the most fertile ground for innovative activity. More than 81% of OECD patents are filed by applicants located in urban regions (Figure 5.3). Such regions are particularly prominent in the Netherlands (95%), Japan (90%), Belgium (88%), the United States (78%), Portugal (77%), Germany (73%), Spain (72%), Australia (69%), Italy (65%), the United Kingdom (65%), Korea (59%), Ireland (58%), Greece (56%), Denmark (56%) and Finland (50%). Intermediate regions contribute much less to patenting activity (14%). Nevertheless, in Canada (96%) and Poland (55%) at Territorial Level 2 (TL2) or Norway (48%) and Austria (39%) at TL3, intermediate regions are responsible for the largest part of innovative activity. Finally, predominantly rural regions account for only 5% of OECD-area patents. Their participation in this form of knowledge creation is more substantial in Ireland (42%), Poland (37%), Austria (33%) and Sweden (33%).

These results imply that patents are more concentrated by far than population or GDP (see Chapters 1 and 2). Since highly skilled workers are heavily involved in patent production, it is interesting to see whether the patterns of territorial distribution of these two variables are similar.

A comparison of the indexes of geographic concentration for patents and for population with tertiary education shows that in most countries the highly skilled population is less concentrated than patents (Figure 5.4). Only in the United Kingdom does the level of concentration of skilled population exceed that of patents.

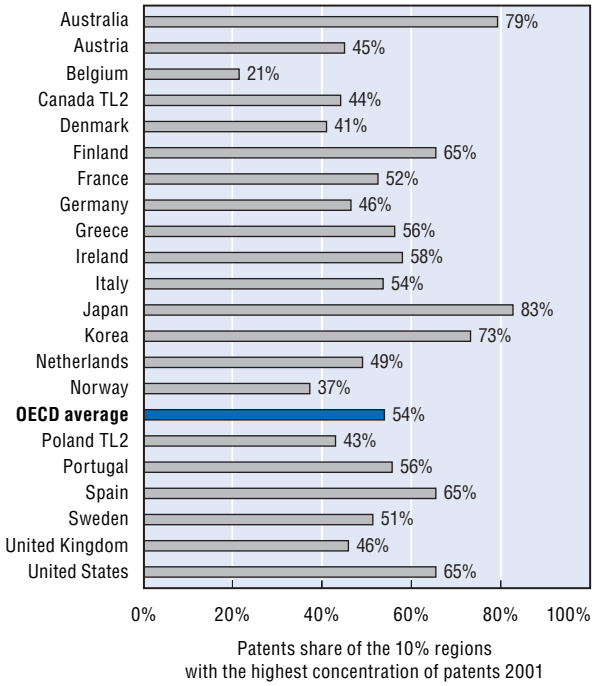
Thus, the geographic pattern of knowledge creation and skilled population is not necessarily the same. Innovation requires inputs (*e.g.* physical capital) and infrastructure (*e.g.* laboratories) that tend to be more geographically concentrated than human capital.

Definition

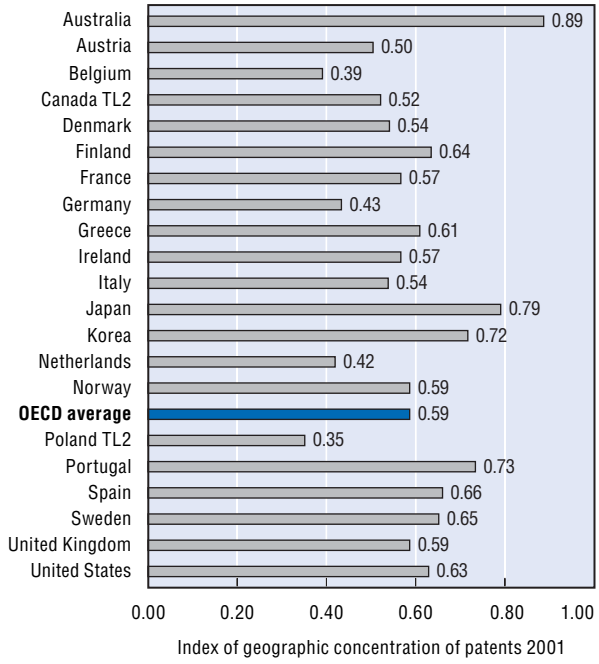
Total number of patent applications to the "main patent office" of the country, by year of filing. "Main patent office" is defined as the office, either national or international, receiving the largest number of applications from that country.

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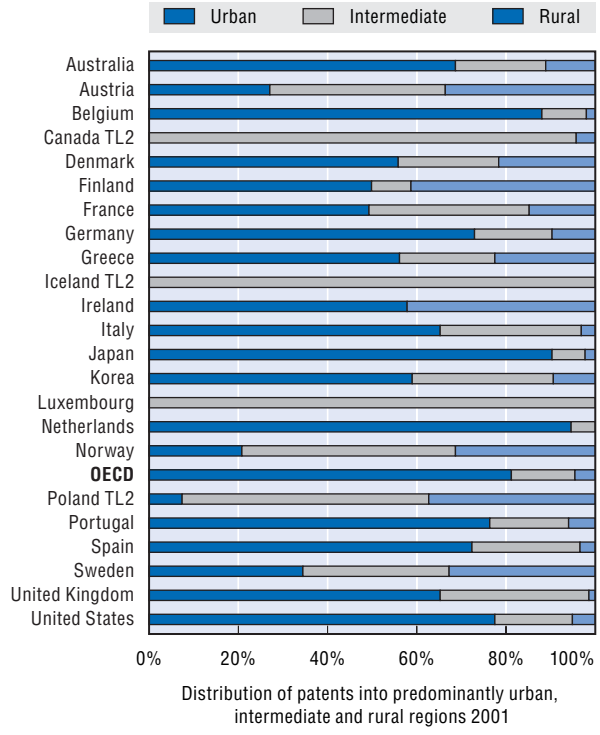
5.1. **On average in 2001, 54% of total patents were concentrated in only 10% of regions**



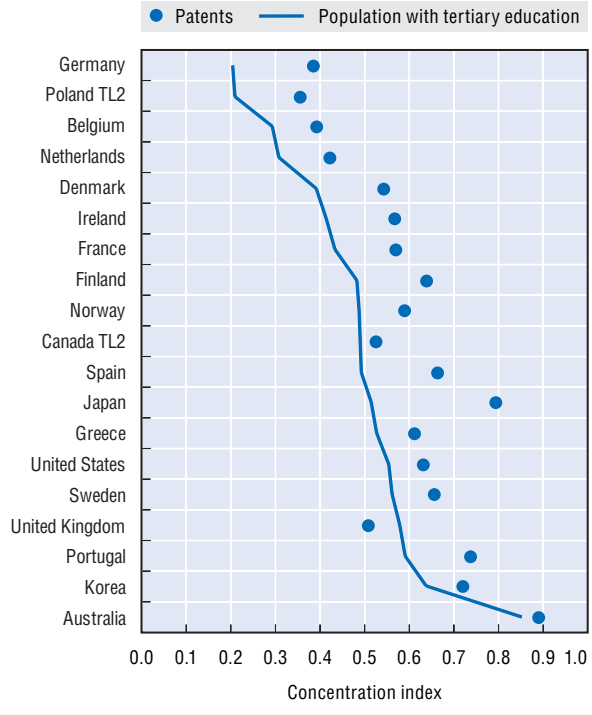
5.2. **In 2001 Australia, Japan, Portugal and Korea had the highest geographic concentration of patents**



5.3. **In 2001 predominantly urban regions accounted for more than 81% of total OECD patents**



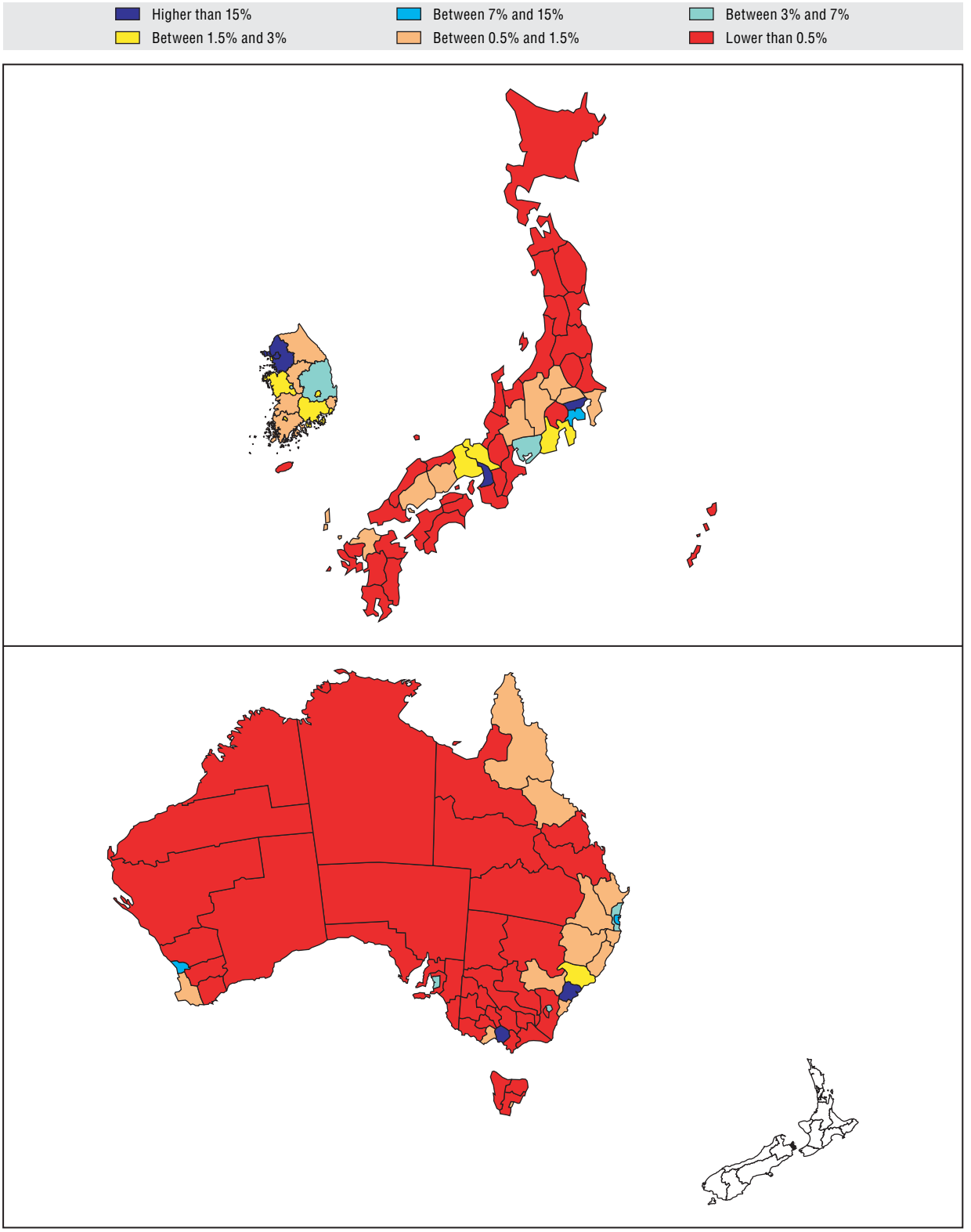
5.4. **Patents are more concentrated than the highly skilled population**



Statlink: *http://dx.doi.org/10.1787/726364310163*

5.5. **Regional share of national patents: Asia and Oceania TL3**

2001

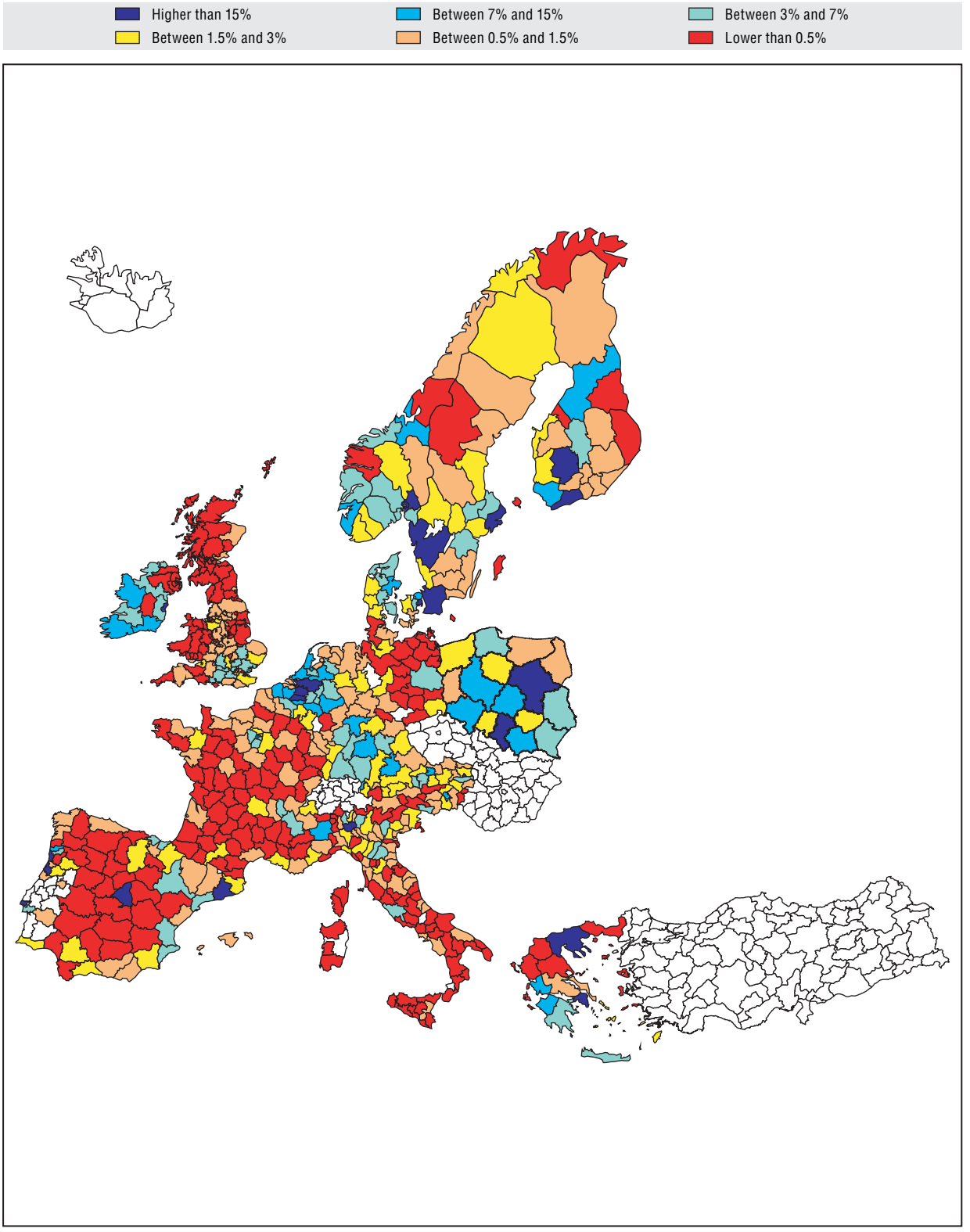


Source: OECD Territorial Database.

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5.6. **Regional share of national patents: Europe TL3 (Poland TL2)**

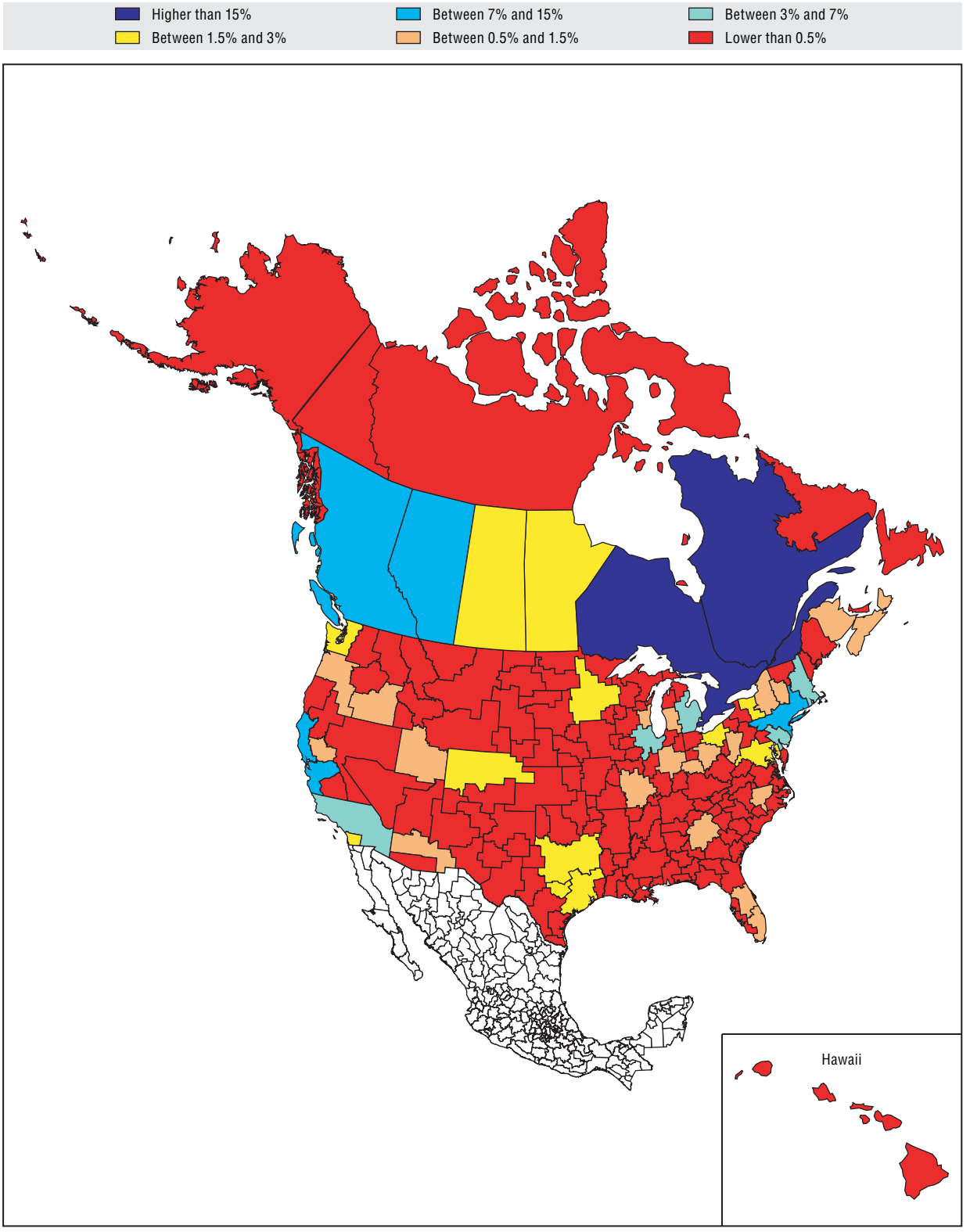
2001



Source: OECD Territorial Database.

5.7. **Regional share of national patents: North America TL3 (Canada TL2)**

2001



Source: OECD Territorial Database.

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Regional poles of national innovation

Innovative activity requires inputs (human capital, infrastructure, funding, etc.) that are not available everywhere. Their formation is a long and costly process, and spatial proximity is important as well, since these inputs can often be used more efficiently when they are gathered in the same location. As a result, patenting is a very geographically concentrated activity, although the intensity and the spatial patterns of concentration vary greatly among OECD countries.

In Ireland, Greece, Finland, Netherlands, Japan, Korea and Canada, a single region is responsible for almost half of the national patenting activity (Table 5.1). In particular, the regions hosting the capital city (Dublin, Attiki, Uusimaa, Tokyo, Seoul and Ontario) are the leading national centres of innovation. Their dominance is not surprising. Institutional networks augment new knowledge creation, since they increase the synergies among the key actors. Capital city regions usually offer thicker institutional networks, as they attract not only the top private enterprises, but also public research centres, universities, government offices, funding organisations and professional associations.

The advantages of capital city regions do not imply that innovation remains necessarily within their borders. In some countries new knowledge creation diffuses across a number of regions surrounding the capital city. For instance, the Southeast, Eastern and London regions in the United Kingdom and Île-de-France in France account for more than 40% of the country's total patent applications. Similarly, the prominence of capital city regions does not exclude the existence of a second regional pole (Table 5.2). Bipolarisation is evident in Canada, Finland, Greece, Japan, Korea, Norway, Poland, Portugal and Spain. Elsewhere a tripolar pattern of concentration may emerge (Sweden), while some regional poles of innovation are not associated with the capital city (Australia and Belgium). Finally, in Germany and the United States, there are several poles, as it is difficult for a single region to dominate national patenting activity.

5.1. **Capital city regions are often the leading national centres of innovation...**

	Leading regions	Share in national patenting activity (%)
Austria	AT131 Wien	18.2
Canada TL2	CA35 Ontario	44.0
	CA24 Quebec	26.1
Denmark	DK012 Københavns Amt	24.6
	DK011 København og Frederiksberg Kommuner	16.3
	DK013 Frederiksborg Amt	14.8
Finland	FI161 Uusimaa	49.8
	FI174 Pirkanmaa	15.6
France TL2	FR10 Ile-de-France	40.1
Greece	GR30 Attiki	56.2
	GR12 Kentriki Makedonia	21.2
Ireland	IE021 Dublin	57.8
Japan	JP13 Tokyo	47.2
	JP27 Osaka	18.0
Korea	KR10 Seoul	44.2
	KR31 Gyeonggi-do	29.0
Norway	NO011 Oslo	20.7
	NO012 Akershus	16.4
Poland TL2	PL07 Mazowieckie	24.5
	PL12 Śląskie	18.4
Portugal	PT132 Grande Lisboa	32.8
	PT114 Grande Porto	22.7
Spain	ES511 Barcelona	32.2
	ES300 Madrid	19.3

5.2. **... nevertheless in Germany and the United States there are several regional poles of innovation**

	Leading regions	Share in national patenting activity (%)
Australia	AU105 Sydney	29.4
	AU205 Melbourne	21.7
Belgium	BE21 Antwerpen	21.2
	BE24 Vlaams Brabant	16.2
Germany	DE81 Stuttgart	11.3
	DE53 Rheinland	11.1
	DE90 Region München-Ingolstadt	11.0
Italy	IT205 Milano	17.6
Netherlands	NL41 Noord-Brabant	49.1
Sweden	SE011 Stockholms län	34.4
	SE0A2 Västra Götalands län	16.8
	SE044 Skåne län	15.9
United Kingdom TL2	UKJ South East	23.6
	UKH Eastern	18.1
	UKI London	10.7
United States	US163 San Francisco-Oakland-San Jose, CA	11.5
	US010 New York-Northern New Jersey-Long Island, NY-NJ-CT-PA-MA-VT	10.8

6. Geographic concentration of skills

The broad consensus on the relevance of human capital to development and growth gives education particular relevance in today's knowledge-based economy. Skills are generally measured in terms of attainment of tertiary-level education, which includes university-level education, from courses of short and medium duration to advanced research qualification. In 2001, out of a working-age population of about 770 million, 150 million, or about 19%, had a tertiary-level qualification.

In 2001, the highly educated were not evenly distributed in countries but tended to be concentrated in a few regions. On average 38% of those with a tertiary-level qualification in 2001 were concentrated in 10% of a country's regions (Figure 6.1).

The tertiary education Concentration Index has very high values in Canada (0.86) and Australia (0.85), but also in Mexico (0.65), Korea (0.64), Portugal (0.59), Sweden (0.56) and the United States (0.55) (Figure 6.2). The OECD average is 0.46 and most of the remaining countries are close to this value. Only in Belgium and in the Slovak Republic are tertiary qualifications evenly distributed among regions.

On average, about 49% of the population with a tertiary-level qualification lives in urban regions, 33% in intermediate regions and 19% in rural ones (Figure 6.3). Poland show the most balanced distribution of skills among the three types of regions, with shares of the highly educated population in urban, intermediate and rural regions of 37%, 34% and 28%, respectively. Denmark, Sweden, France and Hungary also show an even distribution. Belgium is the country where tertiary-level qualifications are more concentrated in urban regions (80%), followed by the United Kingdom (77%), Germany (68%) and Australia (66%).

Concentration of the highly educated is often the result of out-migration from rural areas. The existence of significant differentials in the return to education between rural and urban areas is a major incentive for individuals with higher educational levels to migrate to urban regions.

A comparison of the concentration indexes for higher education and the labour force shows that, in nearly all OECD countries, the highly educated population is more concentrated than the labour force (Figure 6.4). Skills, therefore, tend to be higher in "core" regional labour markets – where the labour force is concentrated – and lower in "peripheral" labour markets, where only a small proportion of the national labour force is located. The difference between the two indexes is particularly pronounced in a number of countries: Turkey (21 percentage points), Poland (15), and Korea, Greece and Hungary (12). Germany and United Kingdom show greater concentration of the labour force.

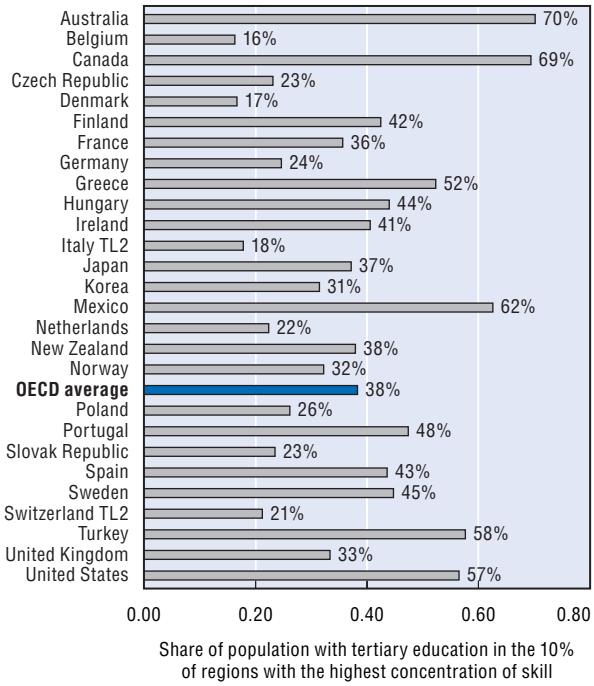
In Finland, Sweden, the United States, Canada, Spain, the Netherlands, Germany, Australia, Belgium and Portugal, the difference between the two indexes ranges from 2 to 4 points, an indication that the difference in skills between core and peripheral labour markets is less pronounced.

Definition

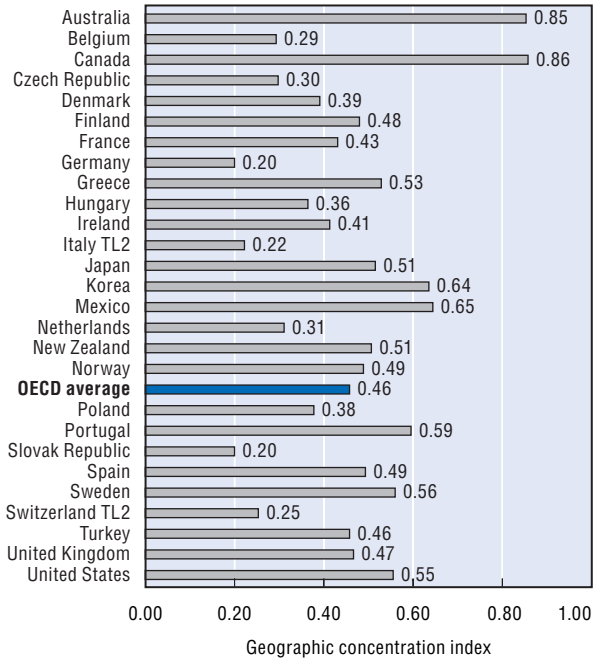
Skills are measured as educational attainments and are classified according to the International Standard Classification for education (ISCED 1997), which includes seven educational levels from 0 to 6. ISCED Levels 5 and 6 refer to university education (see Sources and Methodology, Indicator 6).

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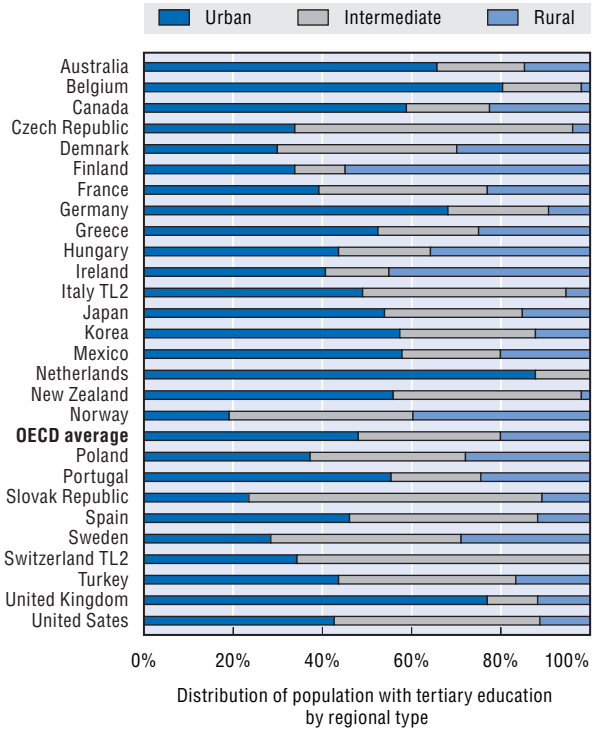
6.1. **On average, 38% of the population with tertiary-level education is concentrated in only 10% of regions**



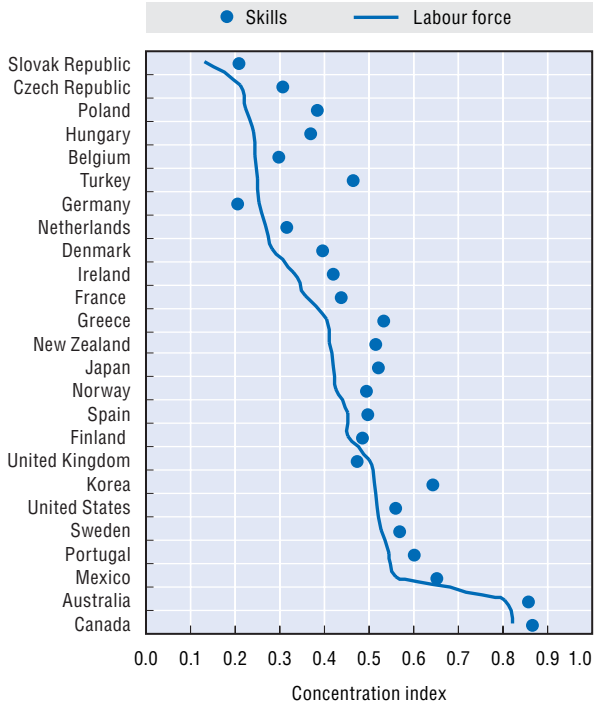
6.2. **Concentration of the population with tertiary education is highest in Australia and Canada and lowest in Belgium and the Slovak Republic**



6.3. **Over 64% of the population with a tertiary-level qualification is concentrated in urban regions**



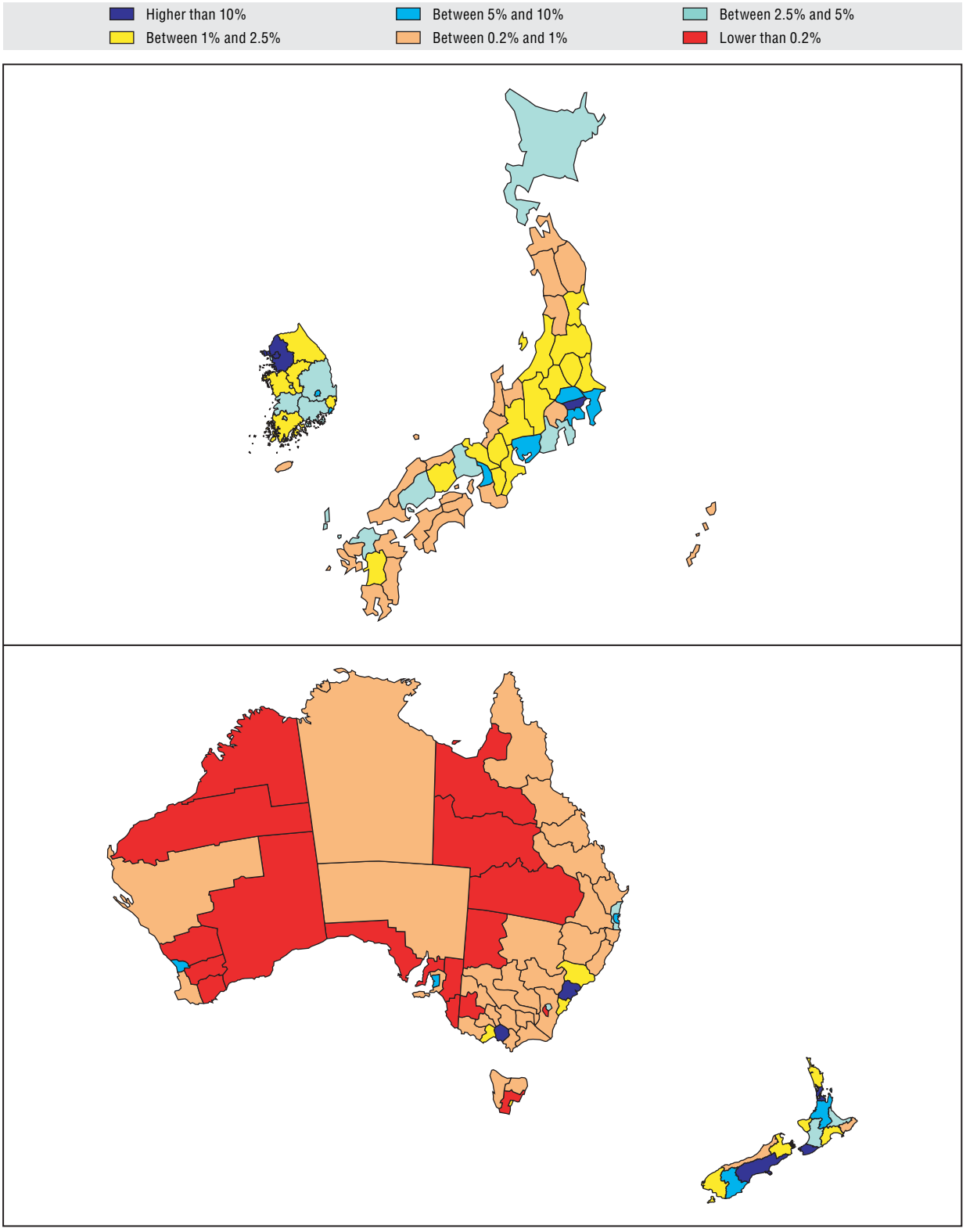
6.4. **In all OECD countries, the highly educated population is more concentrated than the labour force**



Statlink: *http://dx.doi.org/10.1787/025767483504*

6.5. **Advanced educational qualifications: Asia and Oceania TL3**

Regional share 2001

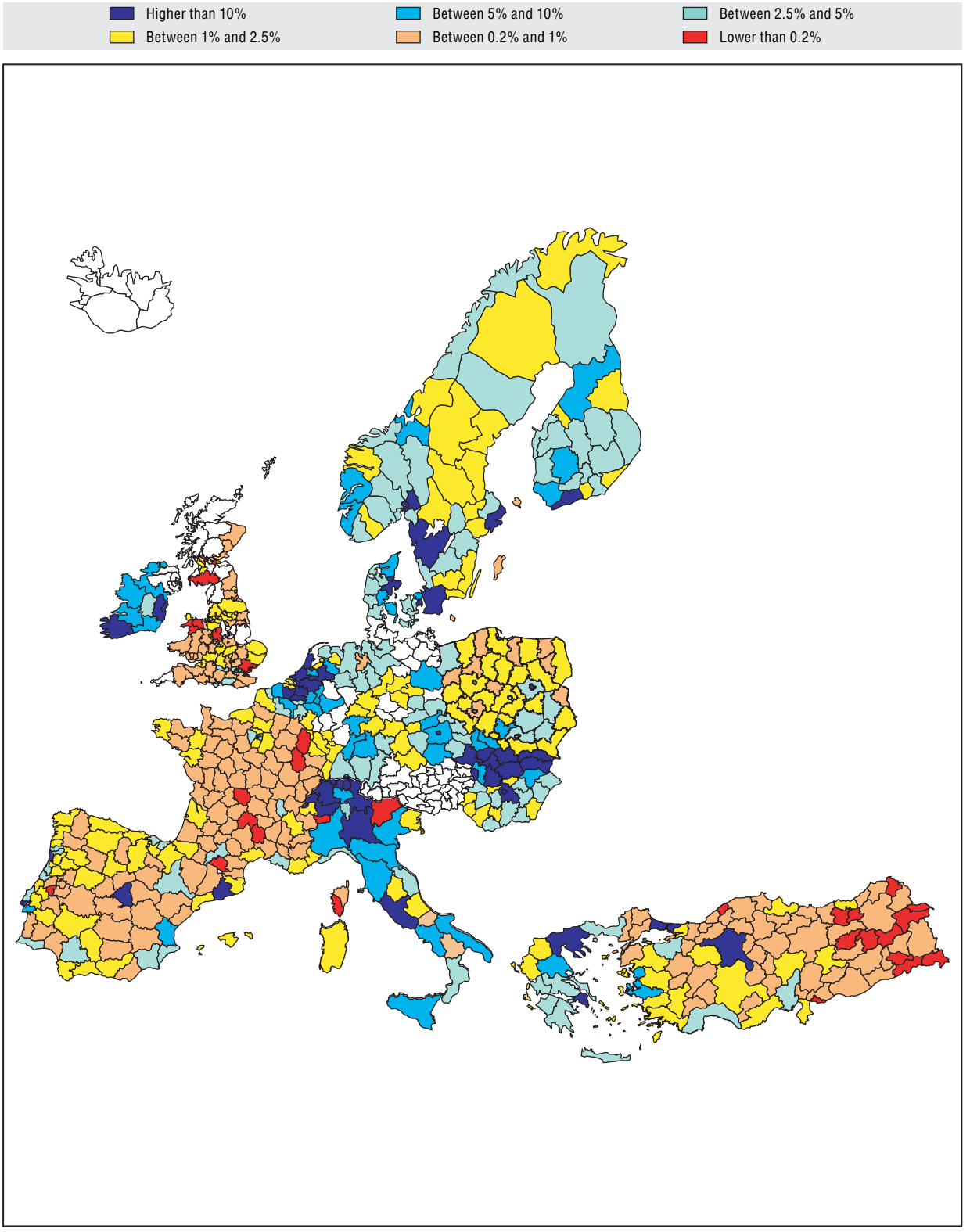


Source: OECD Territorial Database.

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6.6. **Population with advanced education: Europe TL3**

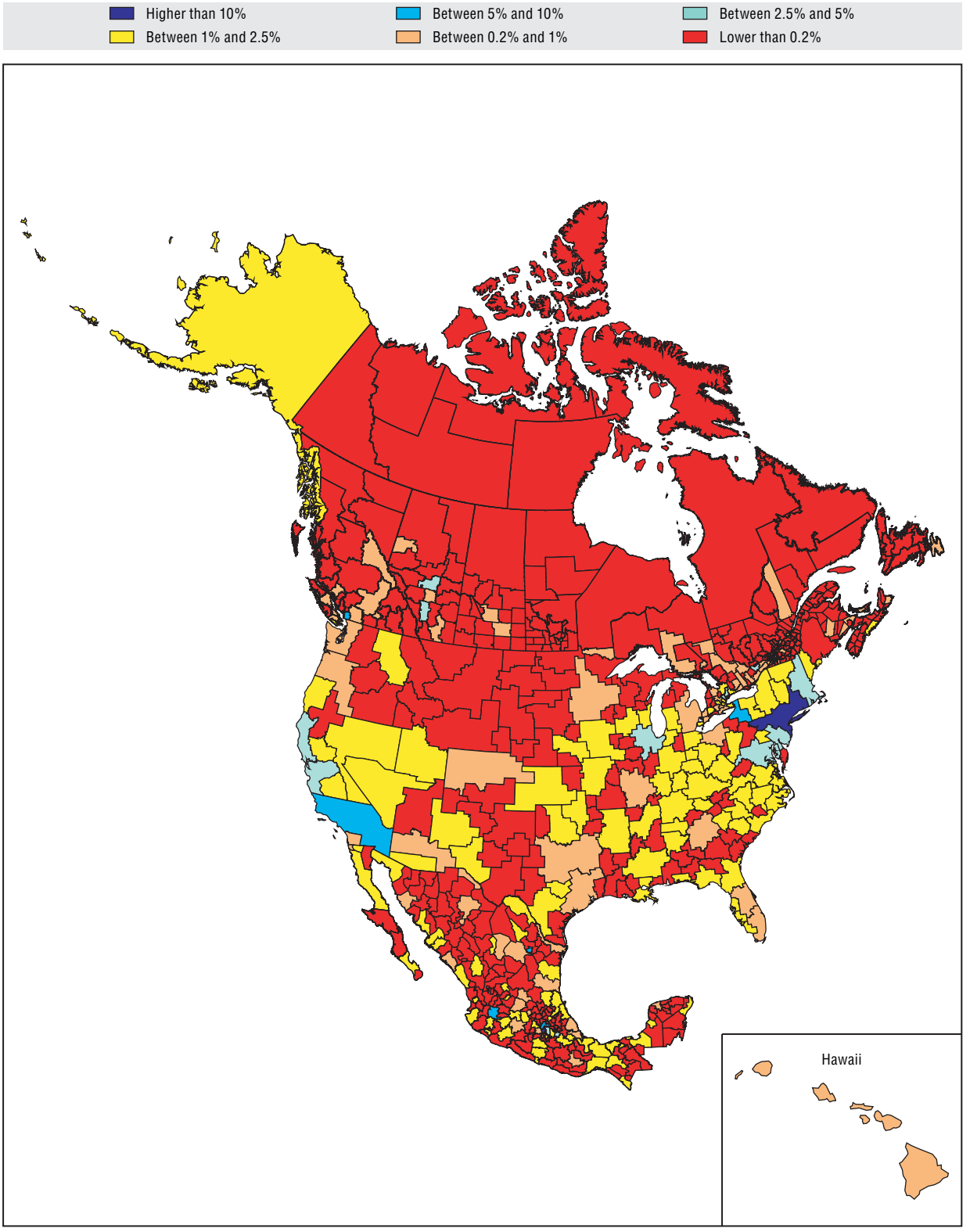
Regional share 2001



Source: OECD Territorial Database.

6.7. **Advanced educational qualifications: North America TL3**

Regional share 2001



Source: OECD Territorial Database.

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Investing in education: what return for rural regions?

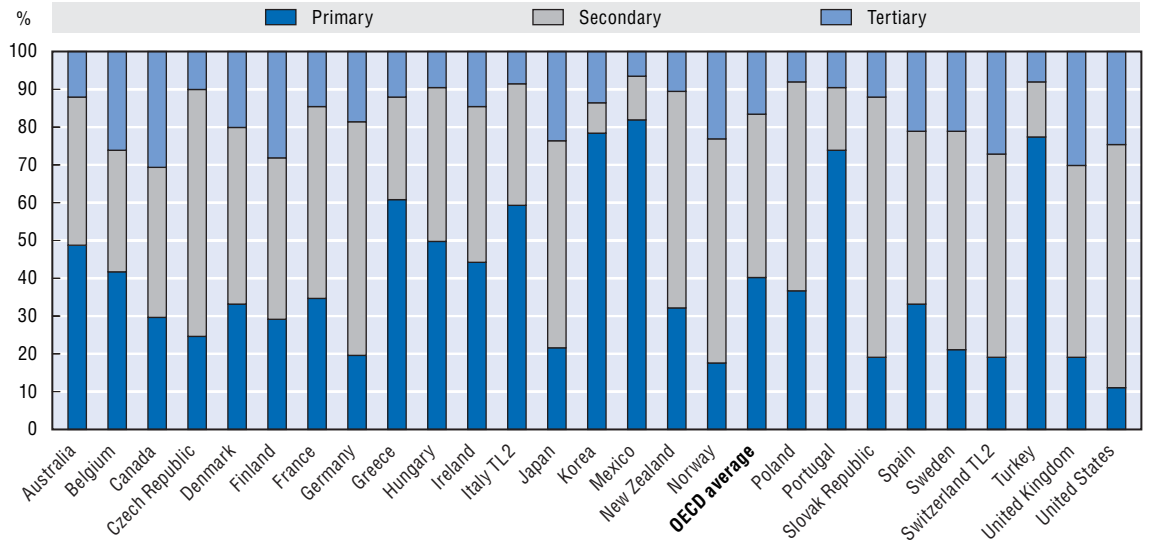
Education is a key factor for development and growth in today's knowledge-based economy. Low educational attainment in rural regions has traditionally been regarded as a major cause of slow growth in these regions. In recent years, skill-biased technical progress seems to have increased the differences in skills between rural and urban regions. Evidence from several OECD countries indicates that the shift towards high-skill jobs has a strong regional dimension, with high-skill jobs concentrating in urban regions and low-skill jobs in rural regions. As a result, the changes in relative wages induced by technological change are likely to have further increased regional disparities in labour income.

Investment in education is generally regarded as a successful way to enhance growth at the national level. Yet, the effective contribution of education to regional development appears more controversial. Quite a number of community and regional studies suggest, in fact, that the relationship between educational attainment and economic performance is not straightforward.

Several factors may reduce the returns to education in rural regions, particularly in small and remote communities. First, poor employment opportunities in rural regions tend to reinforce the tendency to under-invest in education at the level both of individuals and of local institutions. Second, skills acquisition at the individual level is related to the behaviour and characteristics of other community members, so that an individual's incentives to upgrade skills may be reduced in rural areas where the percentage of highly educated people is small (Figure 6.8). Finally, the highly educated have a strong incentive to migrate towards places with a high concentration of people with similar skills. As a result, the return to education in rural areas may be further reduced by the migration of skilled individuals to urban regions.

The weak evidence about the effect of education on economic growth in rural areas suggests that local or national investment in education may be ineffective at the regional level if it is not supported by complementary policies to increase employment opportunities and upgrade the skill content of jobs.

6.8. **Distribution of population by levels of education in rural regions**



7. Regional contribution to national population growth

Population grew slowly in OECD countries over the period 1996-2001 at an annual average rate of 0.6%, but there was considerable variation among countries. The difference between Turkey (1.7%) and Hungary (–0.2%), the countries with the highest and the lowest growth rates, was almost 2% (Figure 7.1).

Although substantial, international differences in population growth are quite small compared to differences among regions within the same country. Population does not grow at the same pace across all regions.

In Mexico, Turkey, Canada, the United States and Australia, the differences in regional growth rates were above 6% (Figure 7.2). In Portugal, Iceland, Korea, Netherlands, Hungary, the United Kingdom, New Zealand, Greece and Spain, the differences were smaller, but still considerable (between 2.6% and 4.2%). Only in Belgium, and to a lesser extent in the Czech Republic, Switzerland, the Slovak Republic, Denmark and Japan, did population change follow a more even pattern of regional growth.

Wider regional differences in growth rates do not seem to be linked to population growth at the national level. For instance, in several countries with high growth rates (Turkey, Mexico, the United States, Australia and Iceland) some regions experienced population decline.

National population growth appears driven by a limited number of regions. On average, 10% of regions accounted for 57% of the overall population increase in the OECD area over the period 1996-2001 (Figure 7.3). This trend is particularly visible in the Czech Republic, Iceland, Canada, Sweden, Australia, Finland, Korea and Hungary, where no less than 70% of national population growth can be attributed to just 10% of regions. In some cases, a single region (Stredoceský, Stockholms län, Uusimaa or Gyeonggi-do) was responsible for more than two-thirds of the country's population increase. In most of the other countries the contribution of the 10% of regions with the largest population increase to the national growth rate was substantial, fluctuating between 30% (Ireland) and 68% (Japan). Belgium and the Netherlands are the only countries where this contribution was below 20%.

The decline in population shows an even stronger regional concentration. On average, almost two-thirds of the total population decrease in OECD countries stemmed from the performance of only 10% of regions (Figure 7.4). The population decrease was particularly localised in Belgium, Denmark, Norway, Hungary, the United States, Mexico, Austria, Turkey, France, Korea, Australia and Portugal. In these countries 10% of regions account for more than 70% of the national decline. Population decline appears less concentrated in some Nordic countries (Sweden, Iceland and Finland) and in New Zealand. Nonetheless, even in these countries certain regions (Vestfiroir, Manawatu-Wanganui Region) account for about one-third of the national decline.

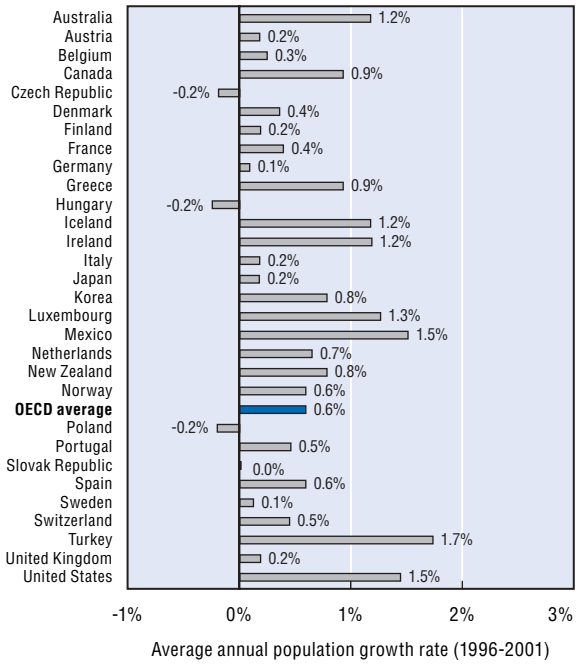
Thus, changes in national population are mainly driven by the population dynamics of a small number of regions. Regional factors may therefore be an important determinant of the growth of national population.

Definition

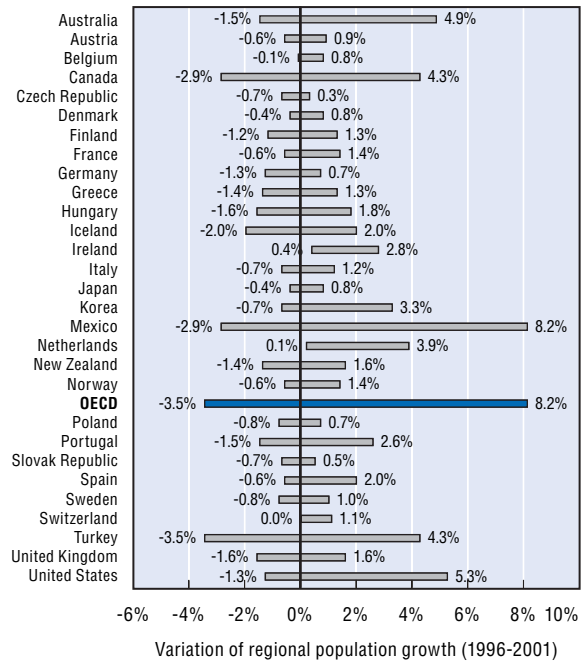
The average annual growth rate of total population over the period under examination. Total population can be either the average annual population or the population at a specific date during the year considered.

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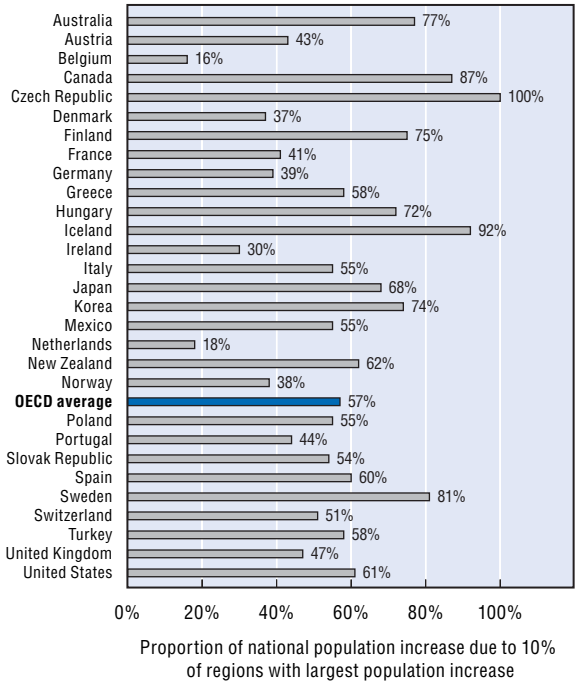
7.1. **From 1996 to 2001, population growth varied significantly among OECD countries...**



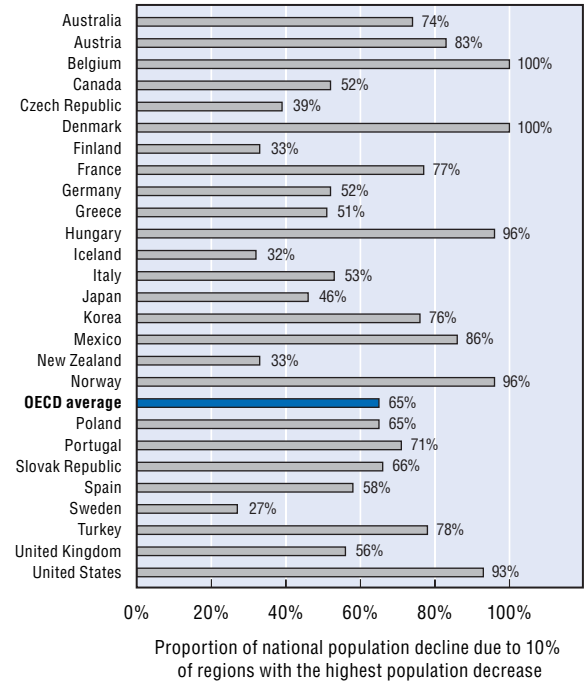
7.2. **... but the variation in population growth rates was even wider among regions within countries**



7.3. **10% of regions accounted for 57% of population increase in OECD countries**



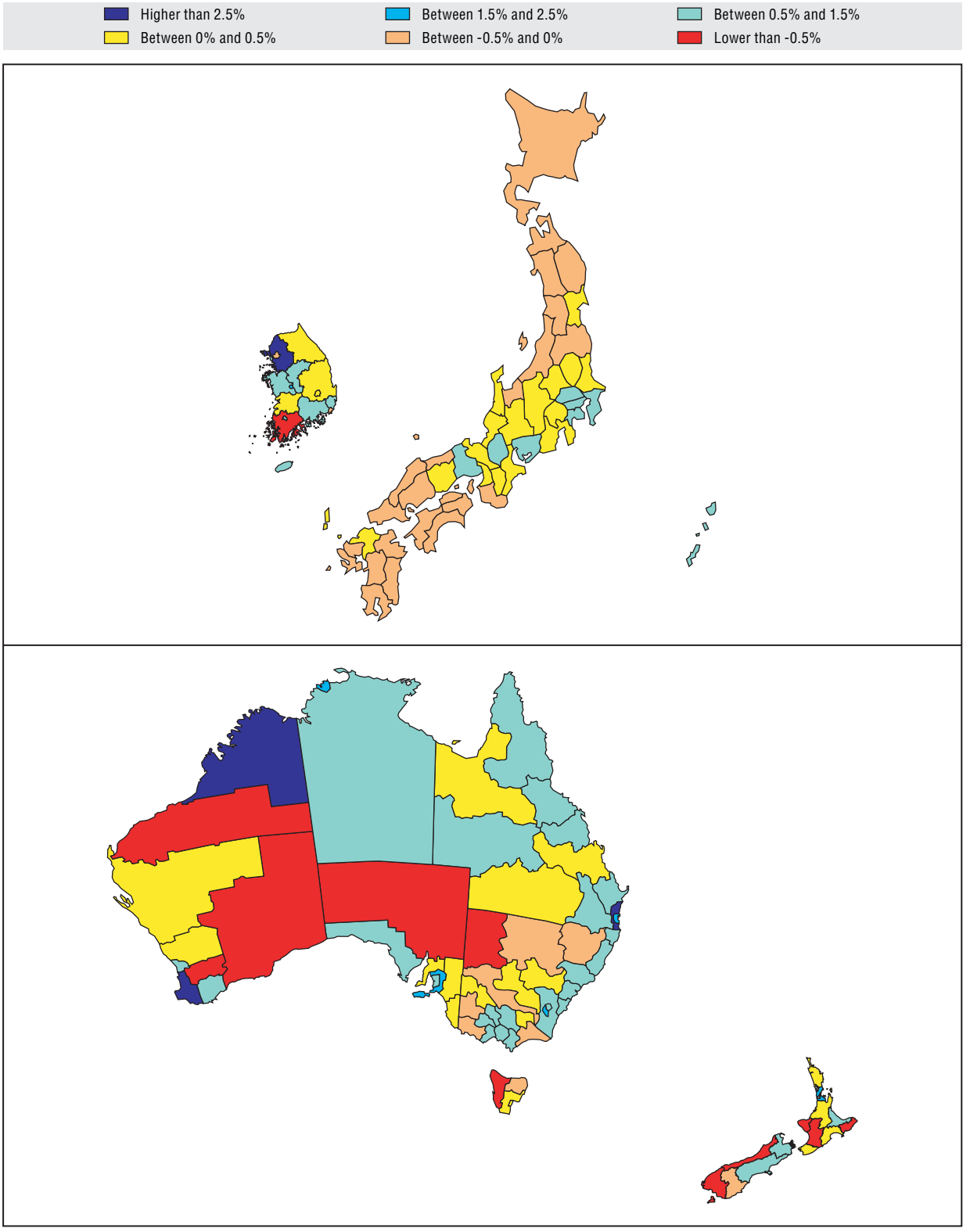
7.4. **65% of population decline in OECD countries occurred in just 10% of regions**



Statlink: *http://dx.doi.org/10.1787/818646804841*

7.5. **Regional population growth: Asia and Oceania TL3**

1996-2001

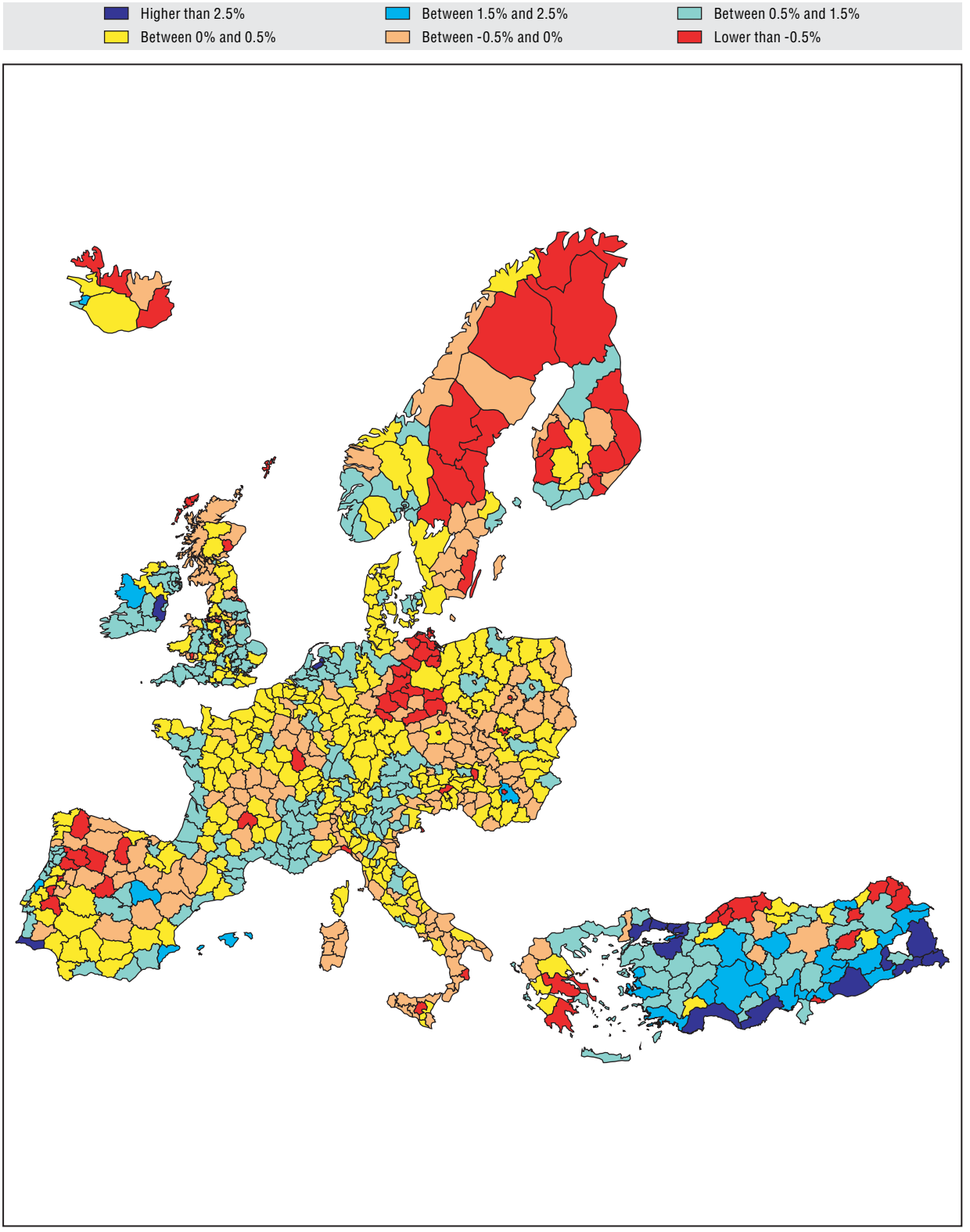


Source: OECD Territorial Database.

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7.6. **Regional population growth: Europe TL3**

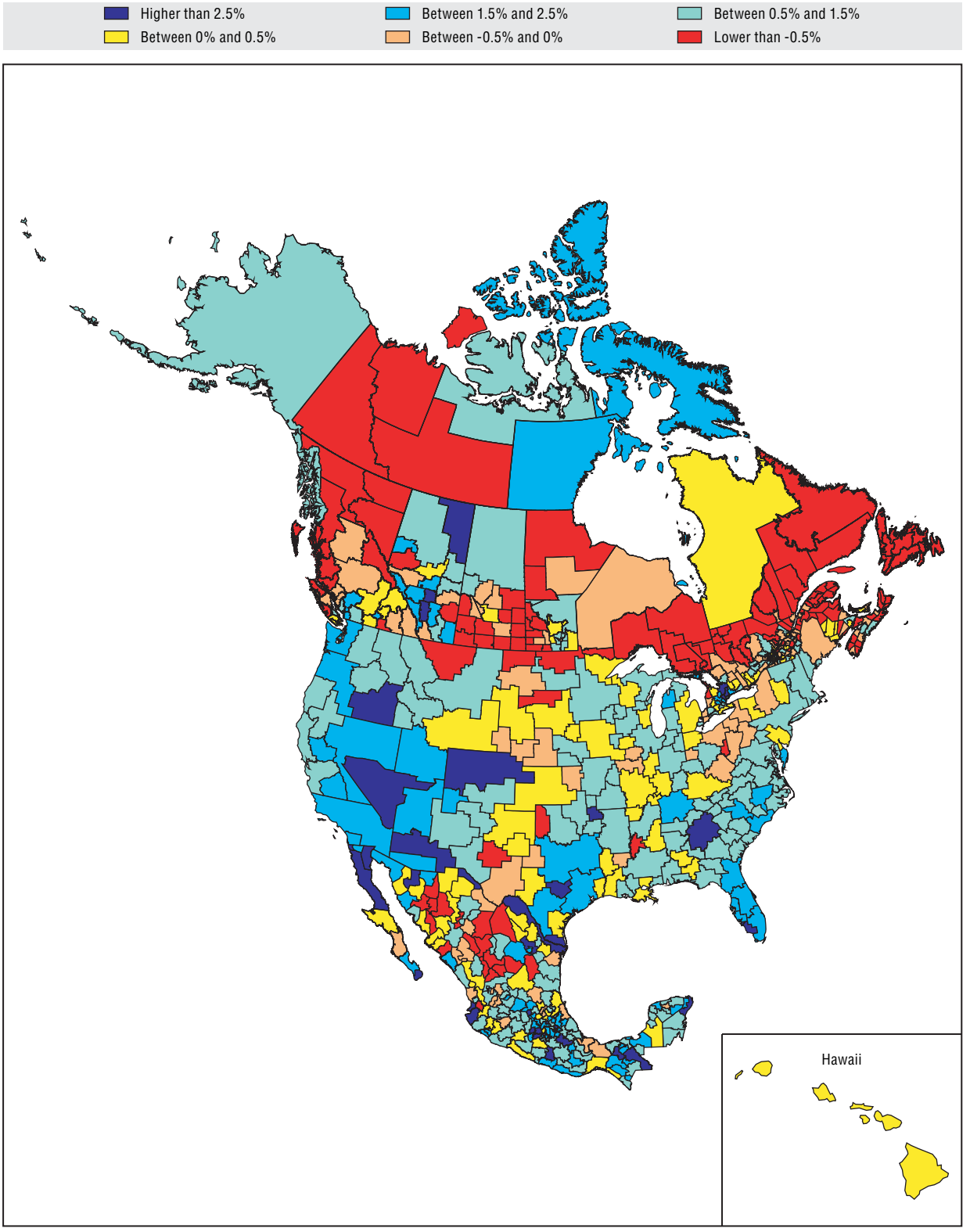
1996-2001



Source: OECD Territorial Database.

7.7. **Regional population growth: North America TL3**

1996-2001



Source: OECD Territorial Database.

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Population growth: towards higher territorial concentration?

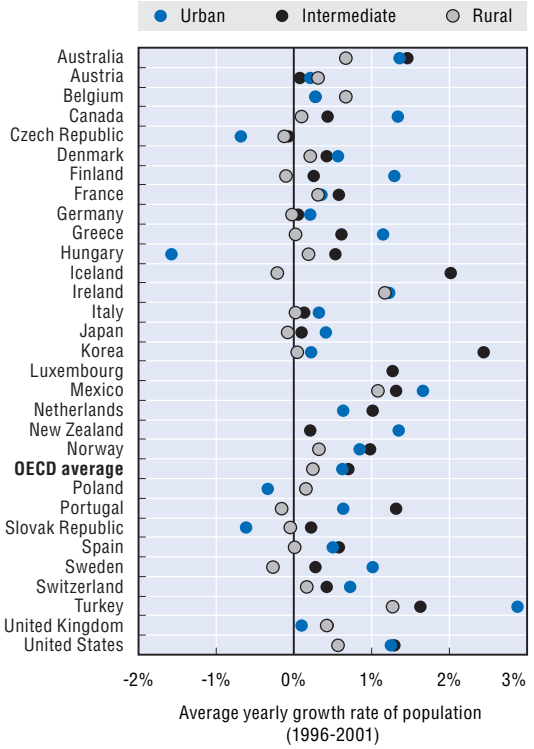
Intermediate and predominantly urban regions appear to drive population growth in OECD member countries (Figure 7.8). During the period 1996-2001 population grew at an average annual rate of 0.7% in intermediate and 0.6% in urban regions. In contrast, average yearly population growth in rural regions was a mere 0.2%. Furthermore, intermediate regions displayed the highest average growth rates in 14 countries, while urban regions performed best in 13. Predominantly rural regions were the fastest-growing areas in only two countries (Belgium and Austria) and demonstrated the lowest (and sometimes negative) growth rates in no less than 20 member countries.

Very few rural regions escaped this general pattern. In Australia, Austria, Germany, Greece, Ireland and Mexico, the region with the highest population growth was a rural region. But in the other member countries the fastest-growing region was either an urban or intermediate region (Figure 7.9).

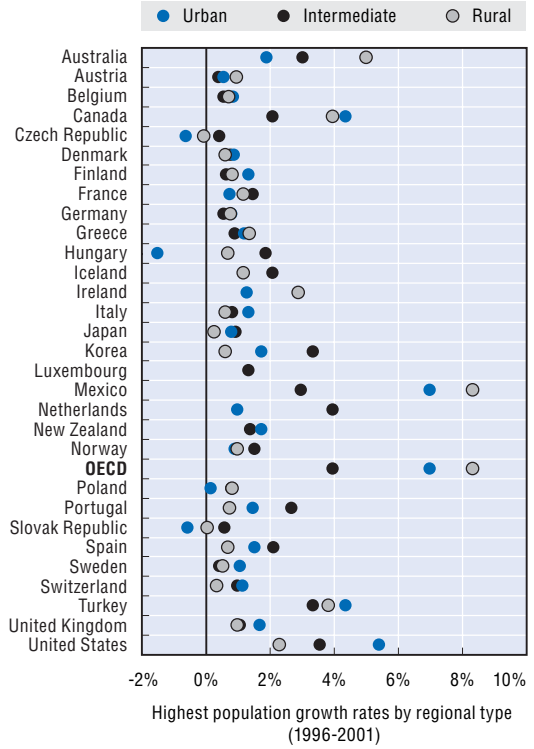
This trend suggests that population in member countries is likely to become more concentrated over the coming years. In 2001, urban regions already accounted for more than half of the OECD population, and intermediate regions hosted another 27%. If this trend continues, the share of rural regions is bound to fall below the 2001 level (20%).

These patterns raise important issues about the long-term sustainability of increasing concentration in urban regions – where congestion due to high population density is already considerable – and depopulation of rural areas, where the small size of communities makes the provision of basic services increasingly costly.

7.8. **On average the population grew much faster in intermediate and urban regions than in rural regions**



7.9. **Nevertheless, the highest population growth rate was recorded in a rural region in six countries**



8. Regional contribution to growth in national GDP

Between 1996 and 2001, gross domestic product (GDP) in OECD countries grew at an average annual rate of 3.4% in real terms[1] (Figure 8.1). International differences in growth rates were as large as 8.6%, ranging from 0.8% in Japan to 9.4% in Ireland. Although significant, international differences are rather small compared to differences among regions within the same country.

In Turkey, the United Kingdom, Korea and Poland, the difference between the fastest- and slowest-growing regions ranged between 9% and 13% (Figure 8.2). In Hungary, the Czech Republic, Portugal, Canada, Norway and Australia, regional differences were smaller but still considerable (7% to 8%). The pattern of GDP growth is more even in the Slovak Republic, Austria, Denmark, Japan and Belgium, but regional differences are still around 3%.

Wider differences in regional growth rates do not seem to be associated with faster national growth. Turkey, for instance, showed the largest regional variation in GDP growth and the second lowest national rate of growth. Ireland, on the other hand, recorded the highest national GDP growth rate, while its regional variation remained below 5%.

Large differences in regional growth rates imply that national performance is driven by the dynamism of a limited number of regions. On average, 10% of regions accounted for 47% of the total increase in GDP in OECD countries between 1996 and 2001 (Figure 8.3). The regional contribution was more pronounced in some countries, where 10% of regions accounted for more than half of national GDP growth. This was the case of Japan (82%), Norway (68%), Turkey (63%), Sweden (61%), Finland (58%), Korea (57%), the Czech Republic (57%), the United Kingdom (57%), Portugal (54%) and Hungary (53%). Elsewhere, the 10% of regions that made the largest contribution to national GDP played a less pronounced but still significant role, ranging between 31% (the Slovak Republic) and 48% (Spain). Only Belgium (19%) and the Netherlands (23%) show a more balanced regional contribution to national GDP growth.

Regional effects are even stronger for the decrease in contributions to total GDP. A decline in regional GDP is a rare occurrence – it was observed in certain regions in only nine countries – and consequently tends to be more localised. Over 84% of overall declines in GDP between 1996 and 2001 can be attributed to only 10% of regions. In Germany, Italy, Portugal and Sweden, the overall decrease in GDP was due to one or two regions.

These trends show that national GDP growth is fuelled by the performances of a few regions. Therefore, factors of growth at the national level are often rooted in the specific assets of regions.

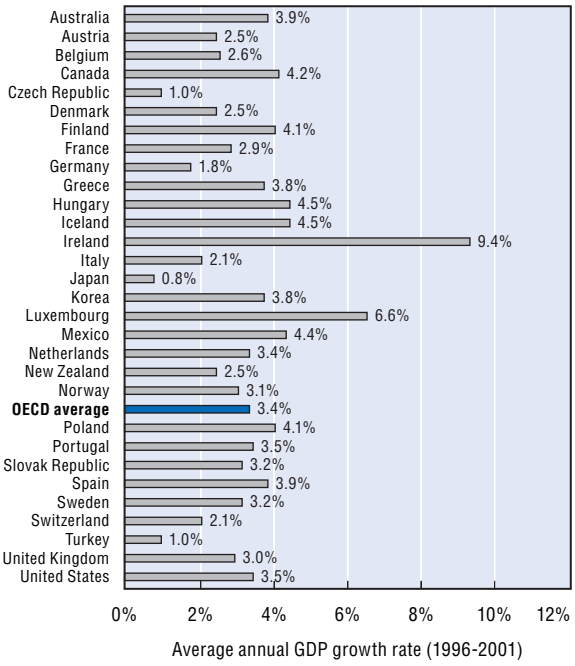
Definition

The average annual growth rate of gross domestic product (GDP) at constant prices over the period under examination. GDP is the final result of the production activity of resident producer units.

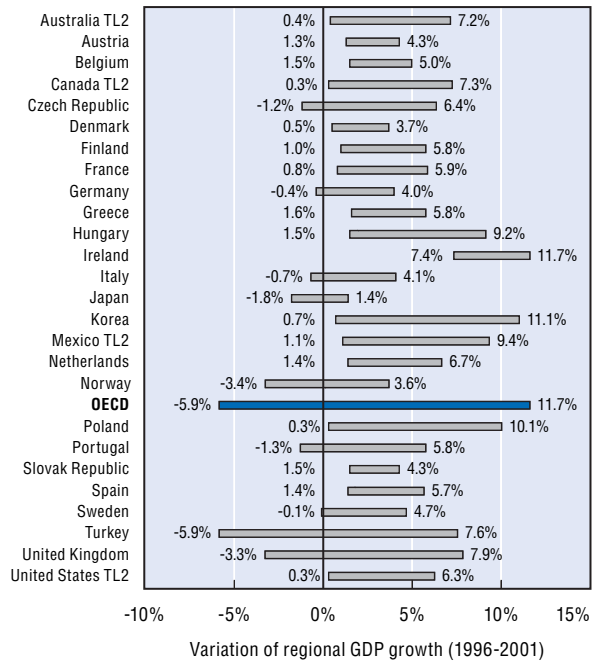
1. GDP at constant 2000 prices.

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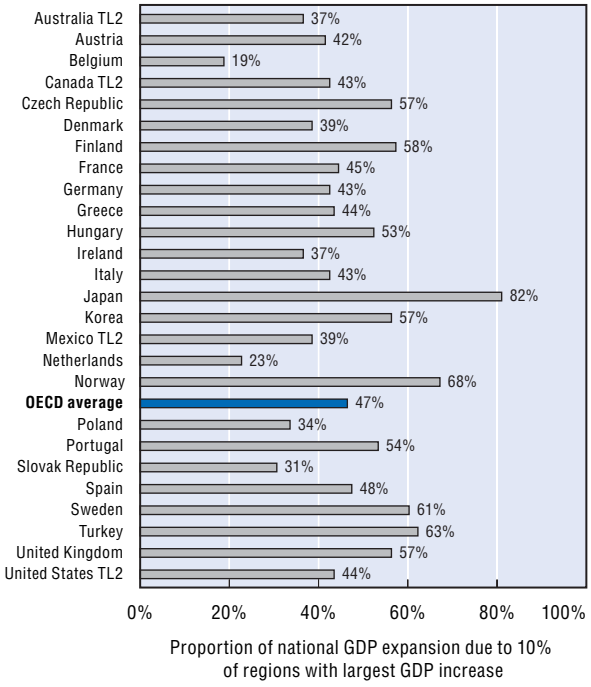
8.1. **From 1996 to 2001, GDP growth varied significantly among OECD countries...**



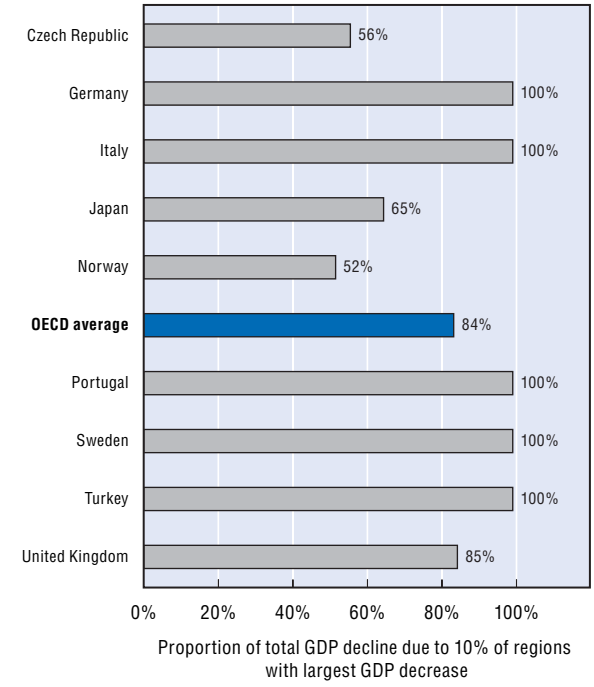
8.2. **... but the variation in GDP growth rates was even wider among regions within countries**



8.3. **10% of regions accounted for 47% of the increase in GDP in OECD countries**



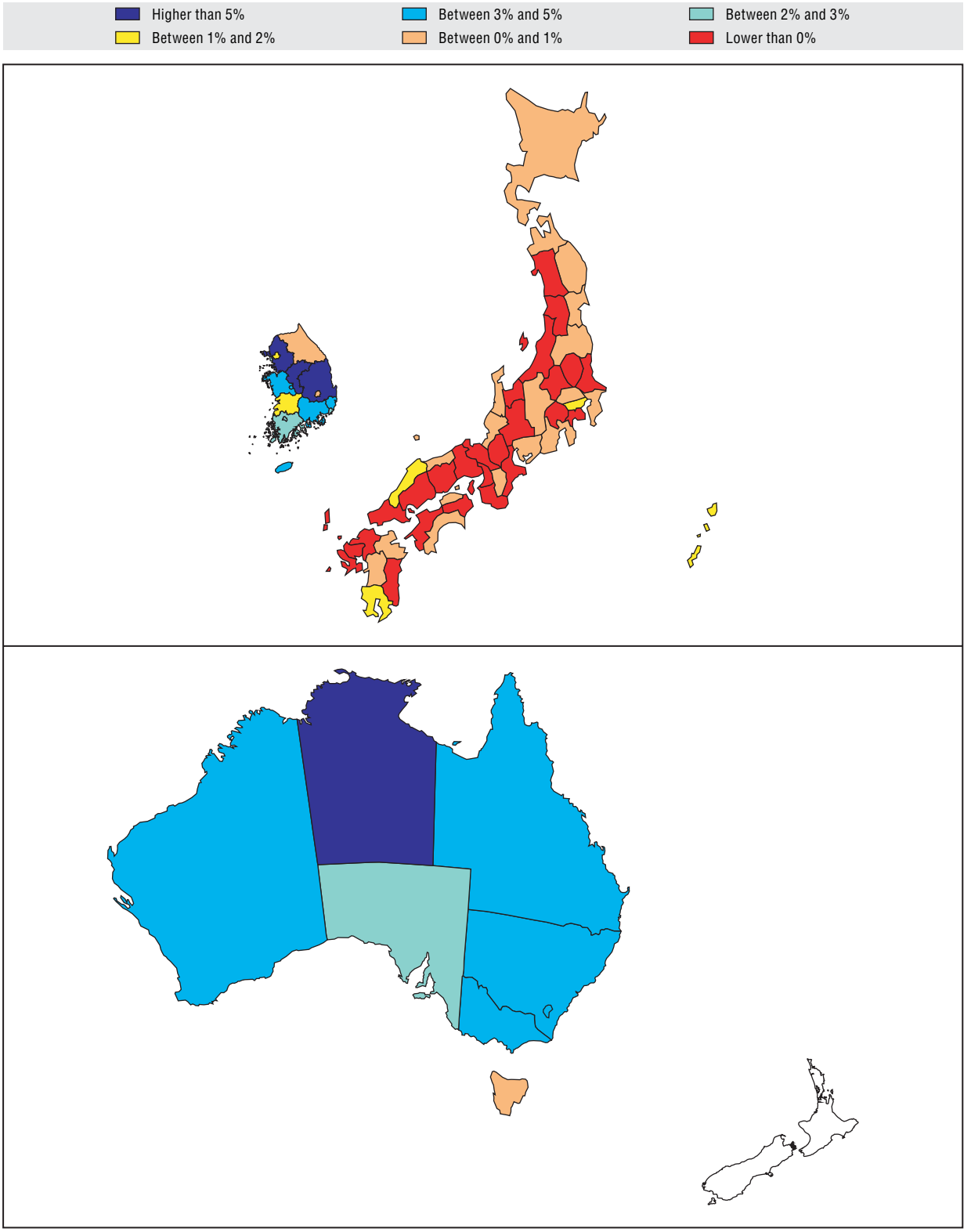
8.4. **84% of the decline in GDP in OECD countries took place in just 10% of regions**



Statlink: *http://dx.doi.org/10.1787/883015017004*

8.5. **Regional GDP growth: Asia TL3 and Oceania TL2**

1996-2001

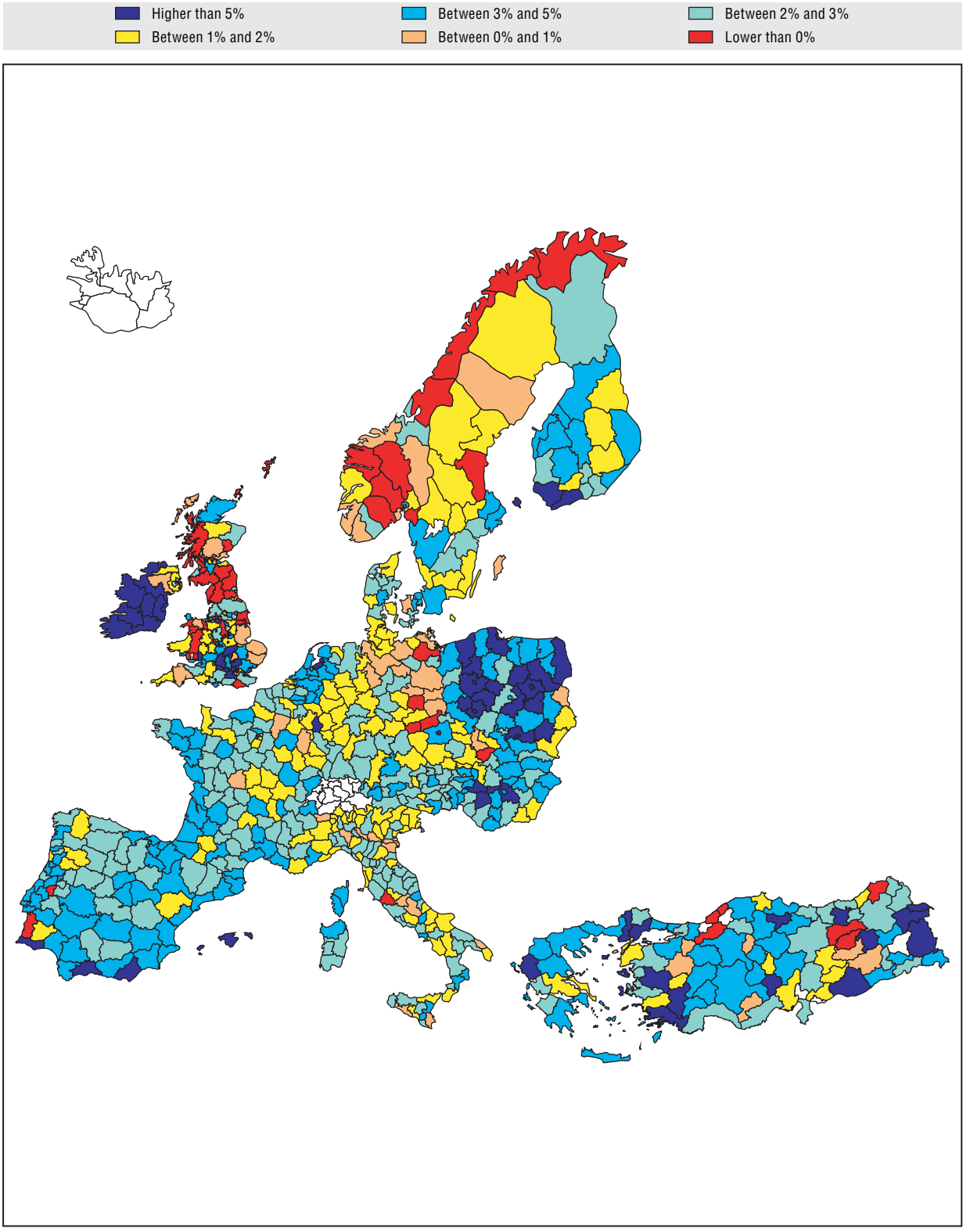


Source: OECD Territorial Database.

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8.6. **Regional GDP growth: Europe TL3**

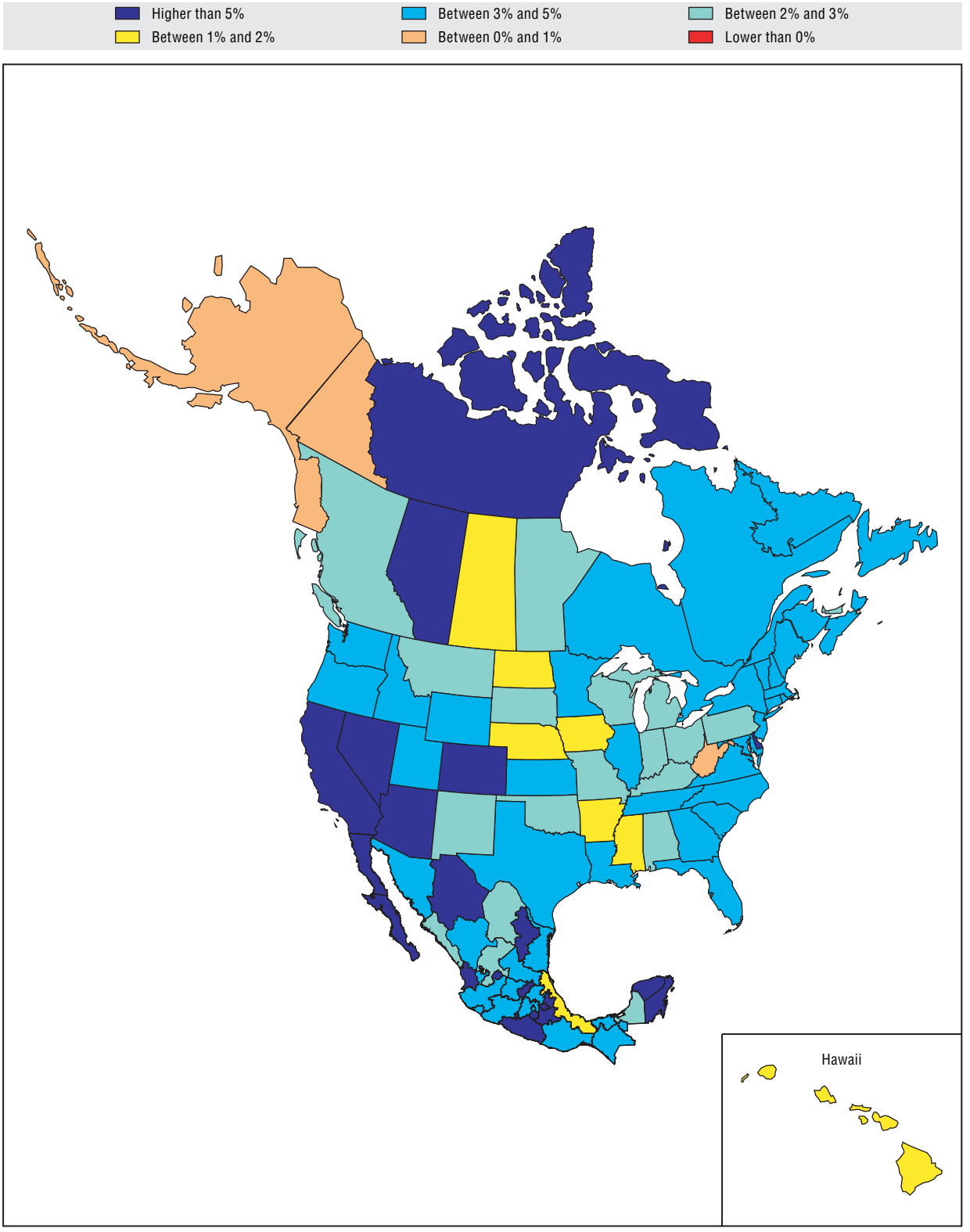
1996-2001



Source: OECD Territorial Database.

8.7. **Regional GDP growth: North America TL2**

1996-2001



Source: OECD Territorial Database.

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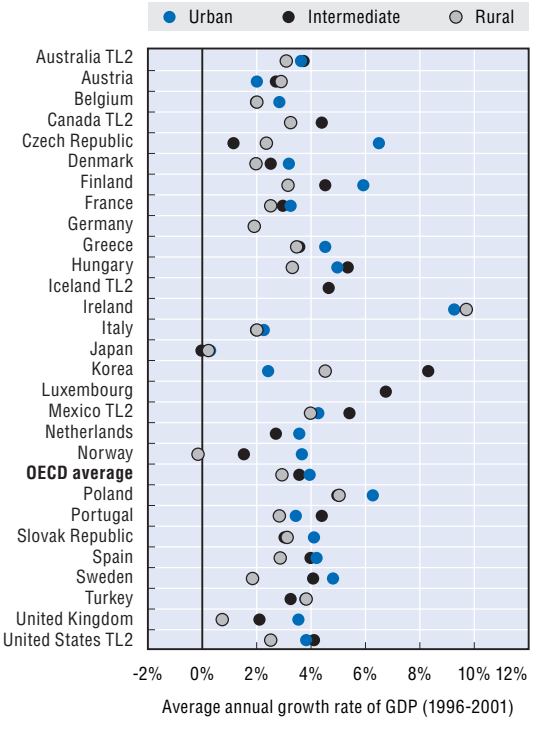
Is concentration good for growth?

Between 1996 and 2001, GDP grew faster in OECD urban regions (3.8% a year) than in intermediate (3.5%) and rural regions (2.8%) (Figure 8.8). Urban regions were the fastest-growing in 15 countries, intermediate regions in eight and rural regions in three (Ireland, Turkey and Austria).

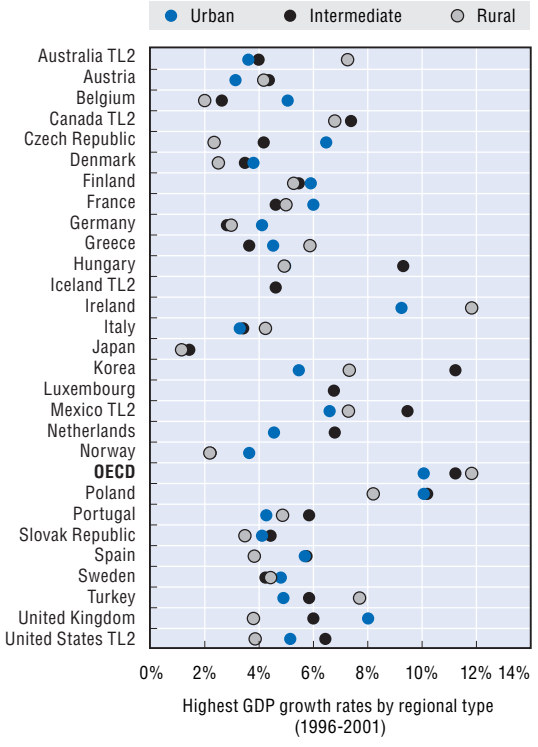
This pattern suggests that growth tends to be higher in regions where economic activity is highly concentrated than in those where it is more dispersed. Several factors explain why concentration has a positive impact on growth and they are commonly known as "agglomeration economies". First, information flows locally more easily than over greater distances so that firms have more opportunities to learn from each other and imitate more efficient methods of production. Second, higher employment opportunities created by the concentration of firms attract skilled workers and the greater availability of specialised skills increases the productivity of firms. Finally, more intensive use of infrastructure by a larger number of firms increases the overall productivity of the regional economic system. As a result, GDP tends to grow faster in urban regions, where economic activity and the workforce are more concentrated, than in rural ones.

The importance of agglomeration economies, nonetheless, does not imply that all intermediate and rural regions are trapped in a low-growth path. Indeed, in no less than 12 countries the region recording the highest GDP growth rate was an intermediate region, while in another five the fastest-growing region was rural (Figure 8.9). Therefore, while agglomeration economies tend to be low in intermediate and rural regions, the growth potential of these regions remains significant.

8.8. **On average GDP grew faster in urban than in intermediate regions and rural regions**



8.9. **Nevertheless, in 12 countries the highest GDP growth rate was recorded in an intermediate region**



9. Regional contribution to national employment growth

Employment growth varies significantly among OECD countries. Over the period 1996-2001, international differences in average growth rates were as large as 7 percentage points, ranging between 5.8% in Ireland and –1.1% in Poland (Figure 9.1).

Significant international differences in employment growth hide even larger differences among regions. In Canada, Mexico, New Zealand, Poland, Spain, Switzerland, Turkey and the United Kingdom, differences in regional growth rates were above 8 percentage points (Figure 9.2). In Australia, France, Greece, Korea and the United States, these differences were smaller but still significant (above 5 percentage points). Only in Austria, Belgium, the Czech Republic, Denmark, Hungary and Japan did national employment growth reflect a more even pattern of regional growth.

Wider differences in regional growth rates do not seem to be associated with faster national growth. For instance, regional differences in Ireland, which had the highest overall employment growth, were as large as in the Slovak Republic, which had one of the largest decreases in employment.

Changes in national employment, therefore, do not result from an even pattern of growth across regions but from the balance between the creation of new jobs in some regions and the decline of employment in others.

Employment creation at the national level appears largely due to a small number of regions. On average, 10% of regions accounted for 56% of overall employment creation in OECD countries between 1996 and 2001 (Figure 9.3).

The regional contribution to national employment creation was particularly pronounced in certain countries. In Greece, for instance, 92% of total employment creation occurred in the region of Athens. In Poland, 75% of new jobs were created in the region of Warsaw. About 70% of employment creation in Korea took place in the region of Gyeonggi-do. In Finland and Sweden, capital regions accounted for above 40% of national employment creation. Employment creation was entirely due to 10% of regions in Japan.

The pattern is similar for job losses. On average, 69% of job losses in OECD countries between 1996 and 2001 were concentrated in only 10% of regions (Figure 9.4). In Australia, Finland, Italy, Mexico, Spain and Switzerland, 10% of regions accounted for the entire reduction in total employment. In Canada, France, Korea, Portugal and the United Kingdom, the proportion of total job losses due to these regions was not less than 60%.

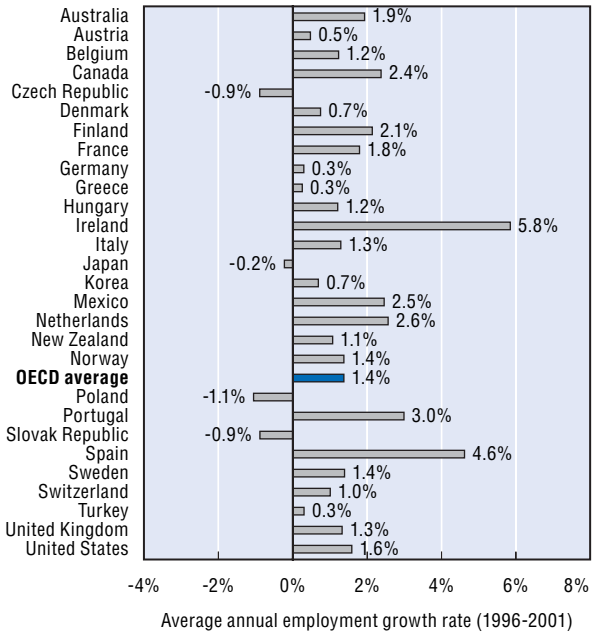
These findings show that changes in national employment are largely determined by a small number of regions. Regional factors, therefore, tend to play a role at least as important as national ones in promoting total employment growth.

Definition

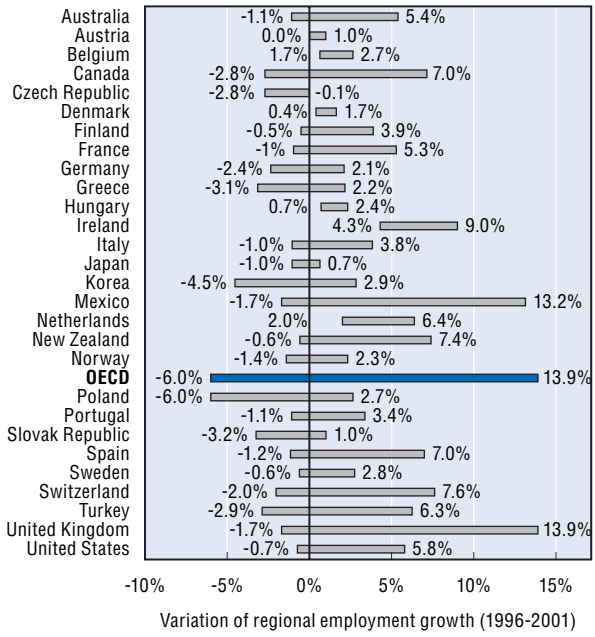
The average annual growth rate of employment over the period under examination. Employed persons are all persons who during the reference week worked at least one hour for pay or profit, or were temporarily absent from such work. Family workers are included.

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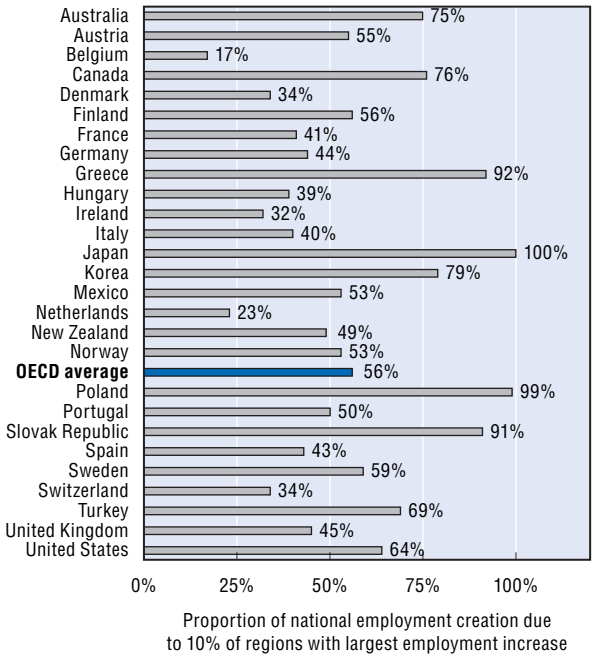
9.1. **From 1996 to 2001, employment growth varied significantly among OECD countries...**



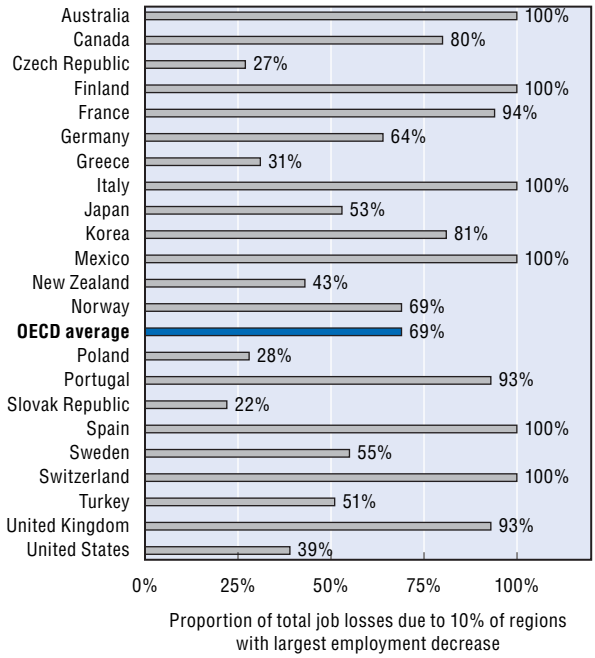
9.2. **... but differences in employment growth were even larger among regions within countries**



9.3. **10% of regions explained 56% of employment creation in OECD countries**[1]



9.4. **69% of job losses in OECD countries were due to only 10% of regions**[2]

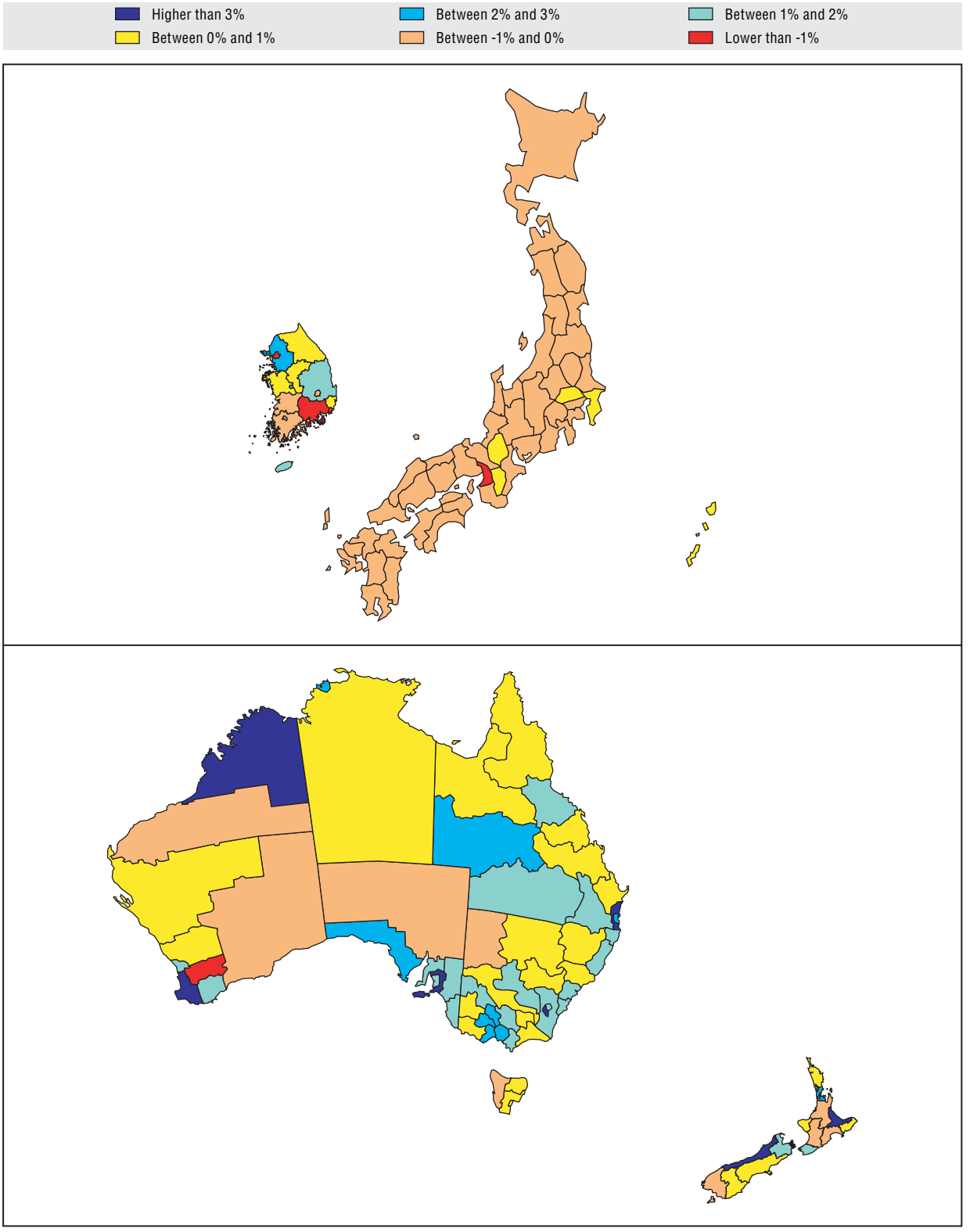


1. Czech Republic not shown as employment growth was negative in all regions.
2. Austria, Belgium, Denmark, Hungary, Ireland and the Netherlands not shown as employment growth was positive in all regions.

Statlink: *http://dx.doi.org/10.1787/644007046885*

9.5. **Regional employment growth: Asia and Oceania TL3**

Annual average rate 1996-2001

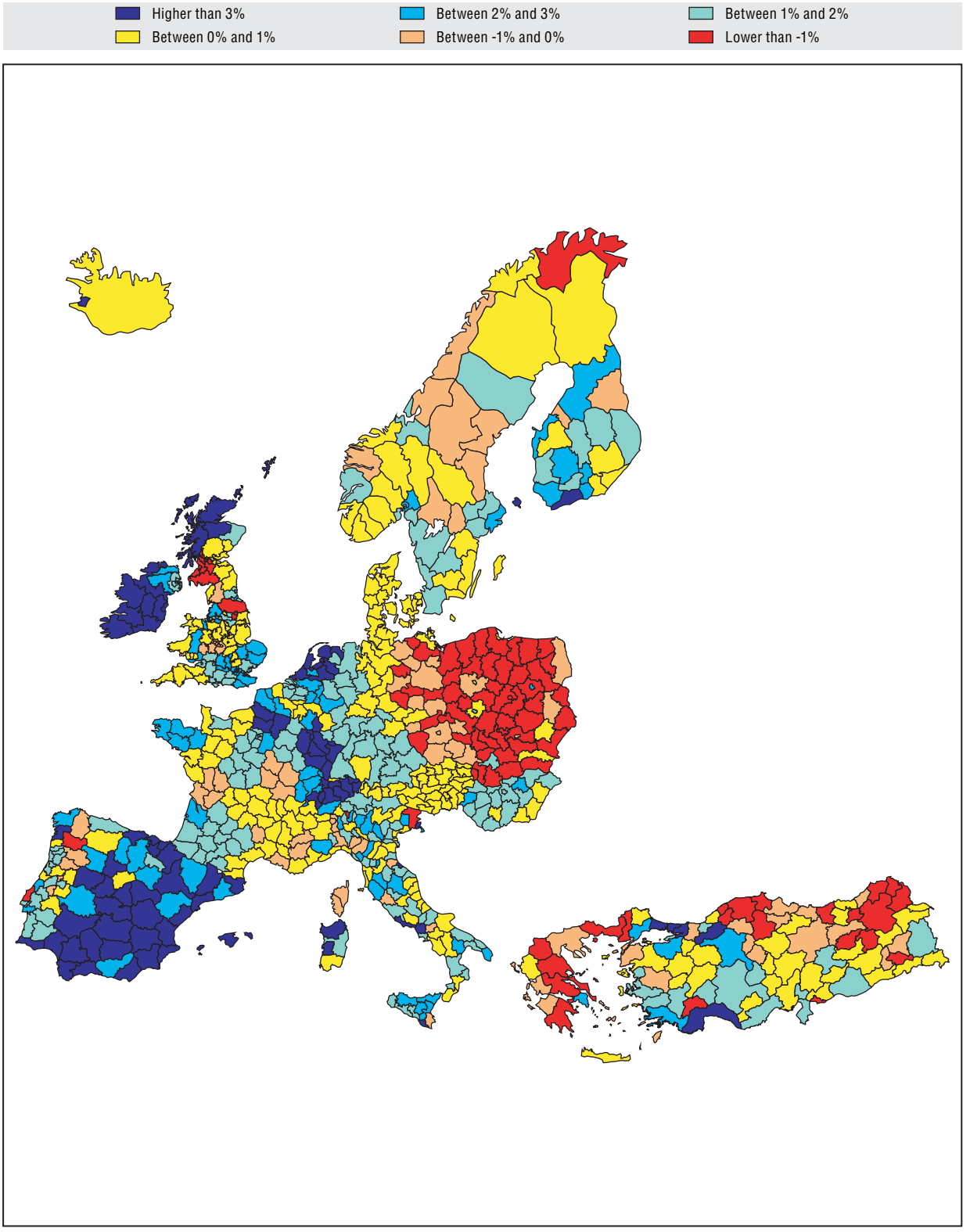


Source: OECD Territorial Database.

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9.6. **Regional employment growth: Europe TL3**

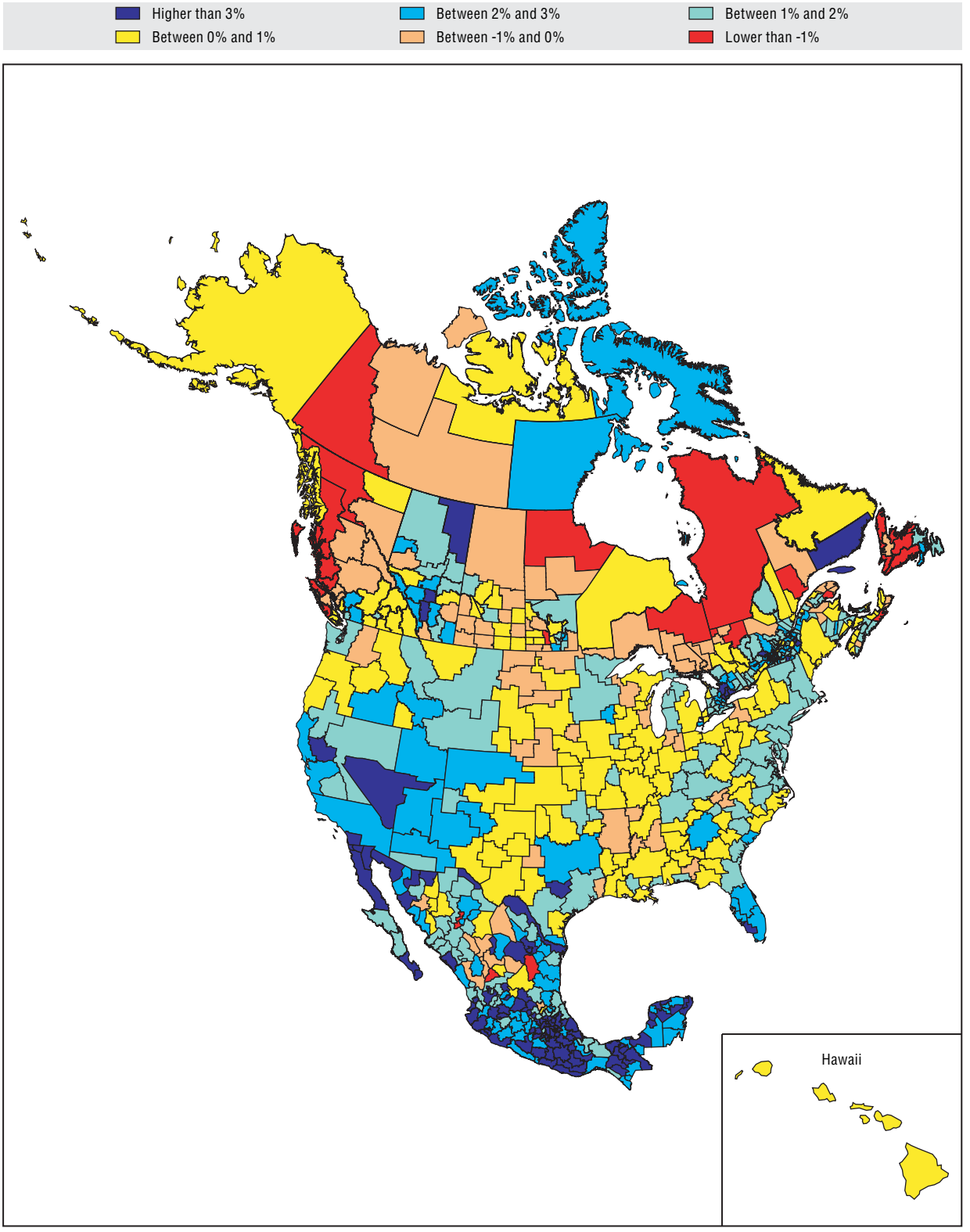
Annual average rate 1996-2001



Source: OECD Territorial Database.

9.7. **Regional employment growth: North America TL3**

Annual average rate 1996-2001



Source: OECD Territorial Database.

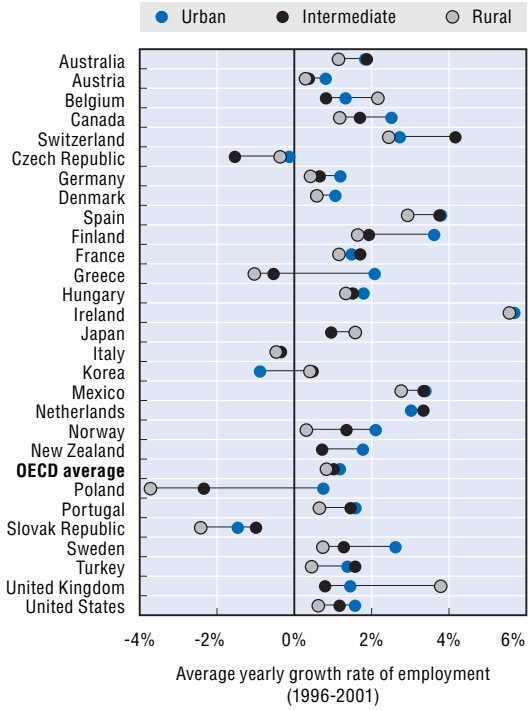
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Fostering employment growth: a role for rural regions?

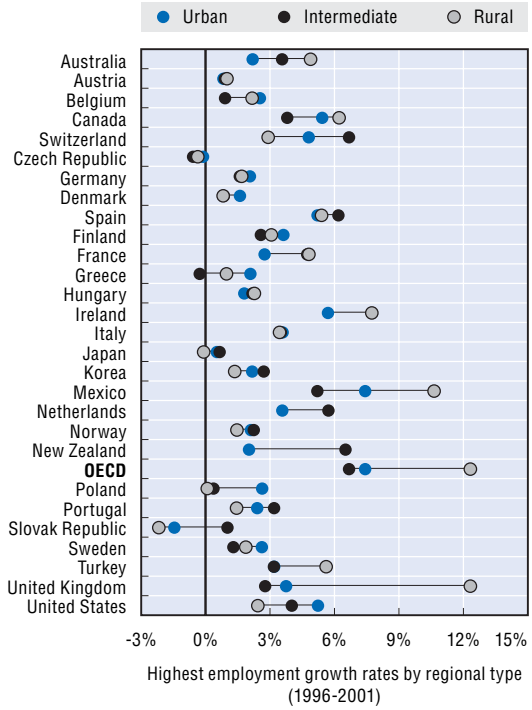
The structural change away from agriculture and manufacturing and towards services has produced uneven effects on regions. Traditionally specialised in primary activities, rural regions have been strongly affected by the secular decline in employment in agriculture. This trend has resulted in sluggish rural employment: on average, over the period 1996-2001, employment growth in OECD rural regions has been lower than in urban and intermediate regions (Figure 9.8). Employment grew faster in rural than in urban regions only in Belgium, Finland, Italy, Korea and the United Kingdom.

This general pattern, however, does not imply that the decline in rural employment is unavoidable. In fact, in quite a number of countries (10 out of 27), the region with the highest rate of growth in employment was a rural region (Figure 9.9). This suggests that "successful" rural regions have been able to generate employment at a faster rate than "successful" urban ones. Therefore, although rural regions may face difficulties in shifting their specialisation towards more dynamic activities, their potential in terms of employment creation remains significant.

9.8. **On average, employment in rural regions grew slower than in urban, but...**



9.9. **... in many countries, growth in employment was highest in a rural region**



10. Regional contribution to national labour force growth

Growth of the labour force varies significantly among OECD countries. Over the period 1996-2001, international differences in average growth rates were as large as 7 percentage points, ranging between 5.8% in Ireland and –1.1% in Poland (Figure 10.1).

Differences among regions are even larger. In Poland, differences in regional growth rates were close to 30 percentage points (Figure 10.2). In Mexico, the Slovak Republic and the United Kingdom, they were above 12%. In Australia, Canada, the Czech Republic, Ireland, Italy, Korea, the Netherlands, New Zealand, Turkey and the United States, regional differences in the growth rate of the labour force were no less than 6 percentage points. Only in Austria, Denmark, and Norway did national employment growth reflect a more even pattern of regional growth.

Wider differences in regional growth rates do not seem to be associated with faster growth of the national labour force. For instance, the national growth rate in Poland, where regional differences were the largest, was as high as in Denmark, one of the countries with the smallest regional differences.

Changes in the total labour force, therefore, do not result from an even pattern of growth across regions but from the balance between the increase in the labour force in some regions and the decrease in others.

Growth of the labour force at the national level appears largely due to a small number of regions. On average, 10% of regions accounted for 46% of the overall increase in the labour force in OECD countries between 1996 and 2001 (Figure 10.3).

The regional contribution to the growth of the total labour force was particularly pronounced in certain countries. In Austria, Korea, Sweden and Turkey, 10% of regions accounted for no less than 60% of the overall increase in the labour force. In Australia and Canada, the fastest-growing 10% of regions accounted for 73%, a share that reached 83% and 87% in Greece and Iceland, respectively.

A similar pattern seems to emerge as regards the decrease in the labour force. On average, 44% of the labour force decrease in OECD countries between 1996 and 2001 was due to only 10% of regions (Figure 10.4). In Belgium and the Czech Republic, this small group of regions accounted for the whole reduction in the total labour force. In Portugal, the proportion of the labour force decrease due to these regions was 89%.

These findings show that changes in the national labour force are largely determined by a small number of regions. Regional factors, therefore, tend to play a role at least as important as national ones in promoting growth of the total labour force.

Definition

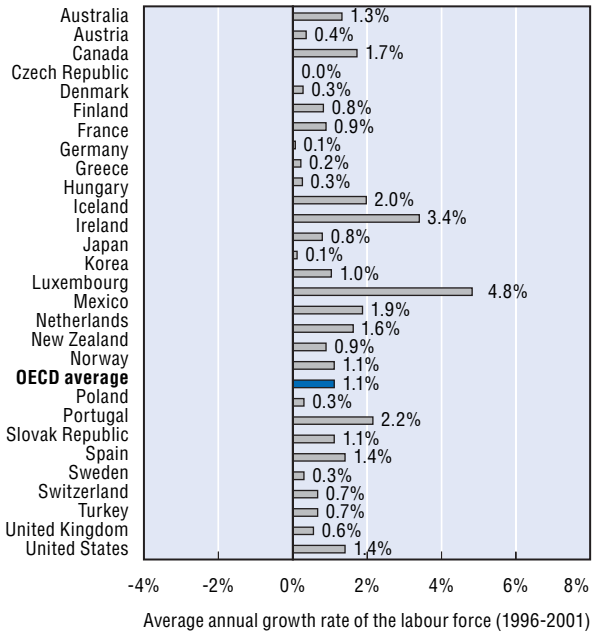
The average annual growth rate of the labour force over the period under examination. The labour force (active population) is defined as the sum of employed and unemployed persons. Unemployed persons comprise persons who were (all three conditions must be fulfilled simultaneously):

1. without work during the reference week;
2. available for work at the time (*i.e.* were available for paid employment or self-employment before the end of the two weeks following the reference week);
3. actively seeking work (*i.e.* had taken specific steps in the four-week period ending with the reference week to seek paid employment or self-employment).

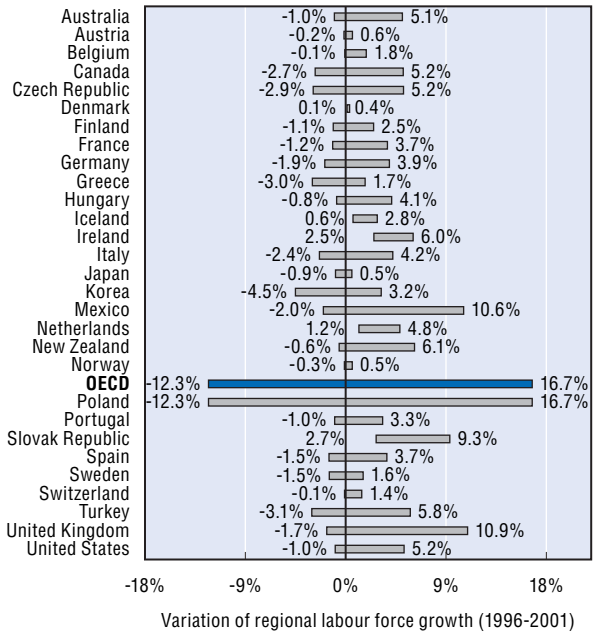
Employed persons are all persons who during the reference week worked at least one hour for pay or profit, or were temporarily absent from such work. Family workers are included.

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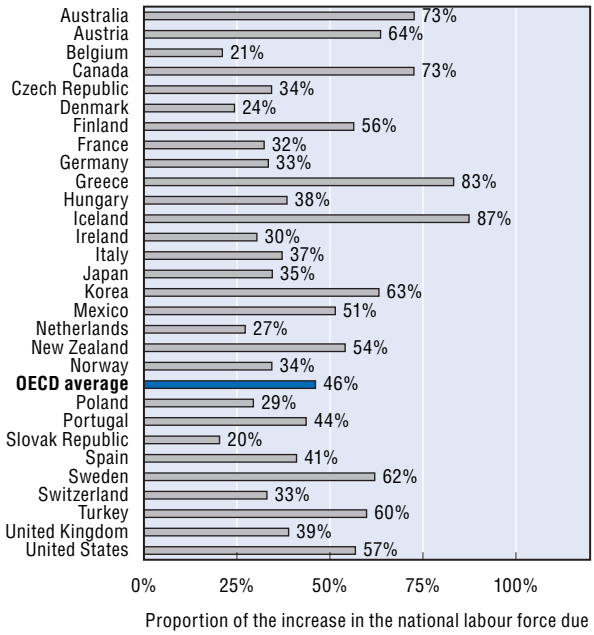
10.1. **From 1996 to 2001, growth of the labour force varied significantly among OECD countries...**



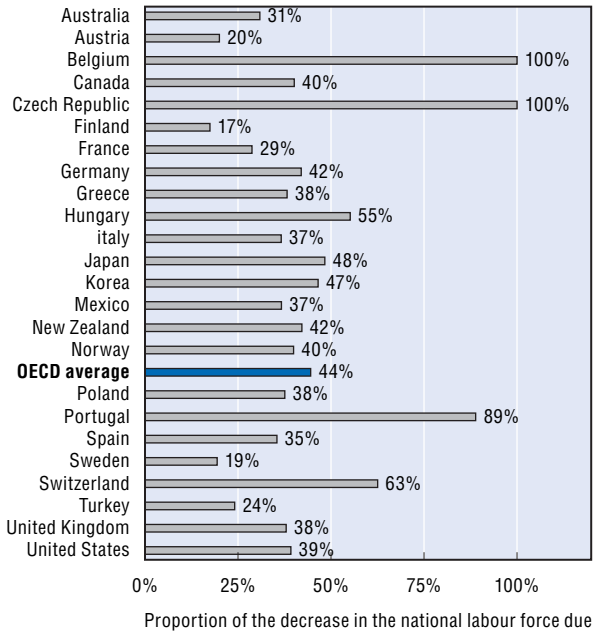
10.2. **... but the differences were even larger among regions within countries**



10.3. **10% of regions explained 46% of the labour force growth in OECD countries**



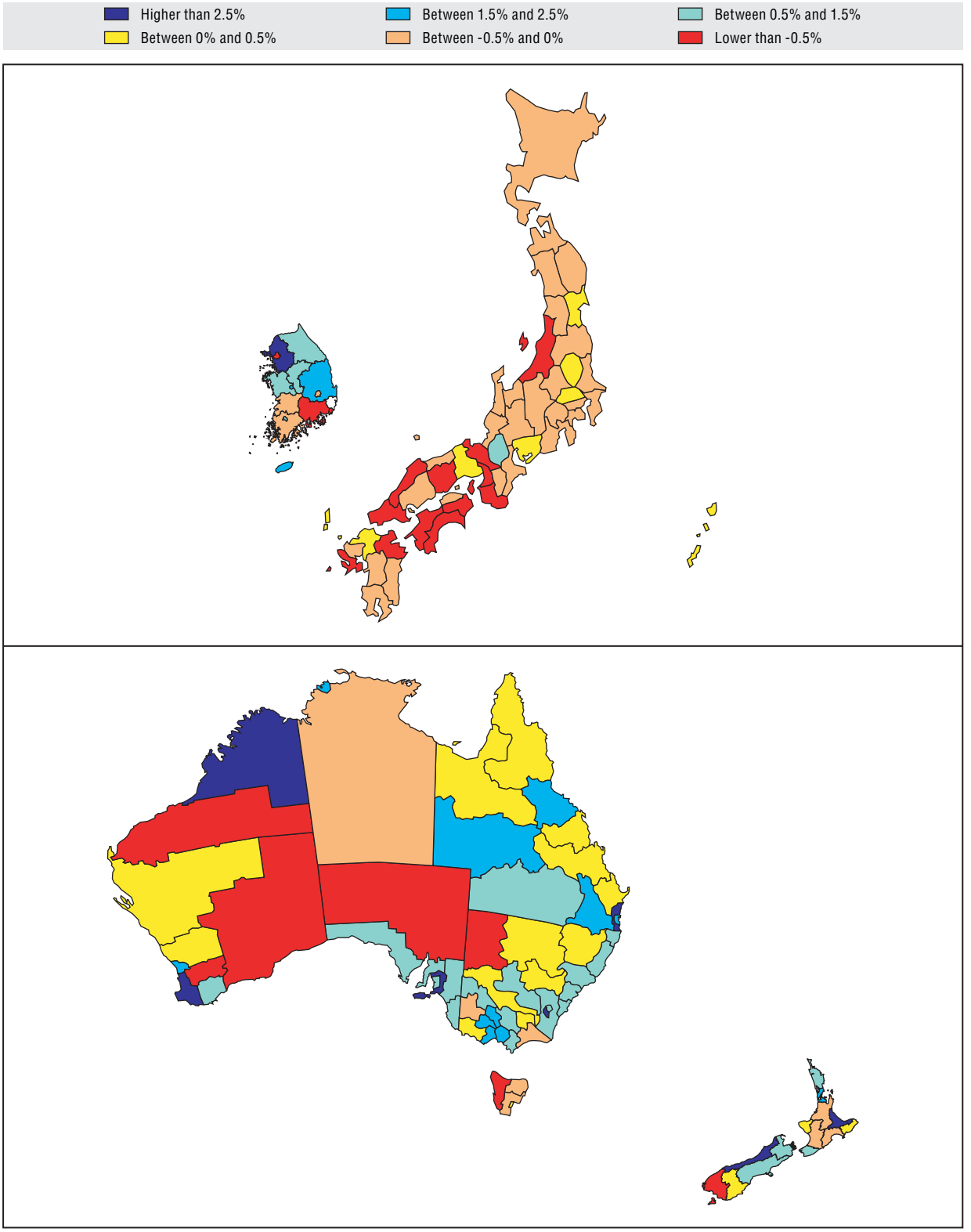
10.4. **44% of the decrease in the labour force in OECD countries was due to only 10% of regions**



Statlink: *http://dx.doi.org/10.1787/745506846450*

10.5. **Regional labour force growth: Asia and Oceania TL3**

1996-2001

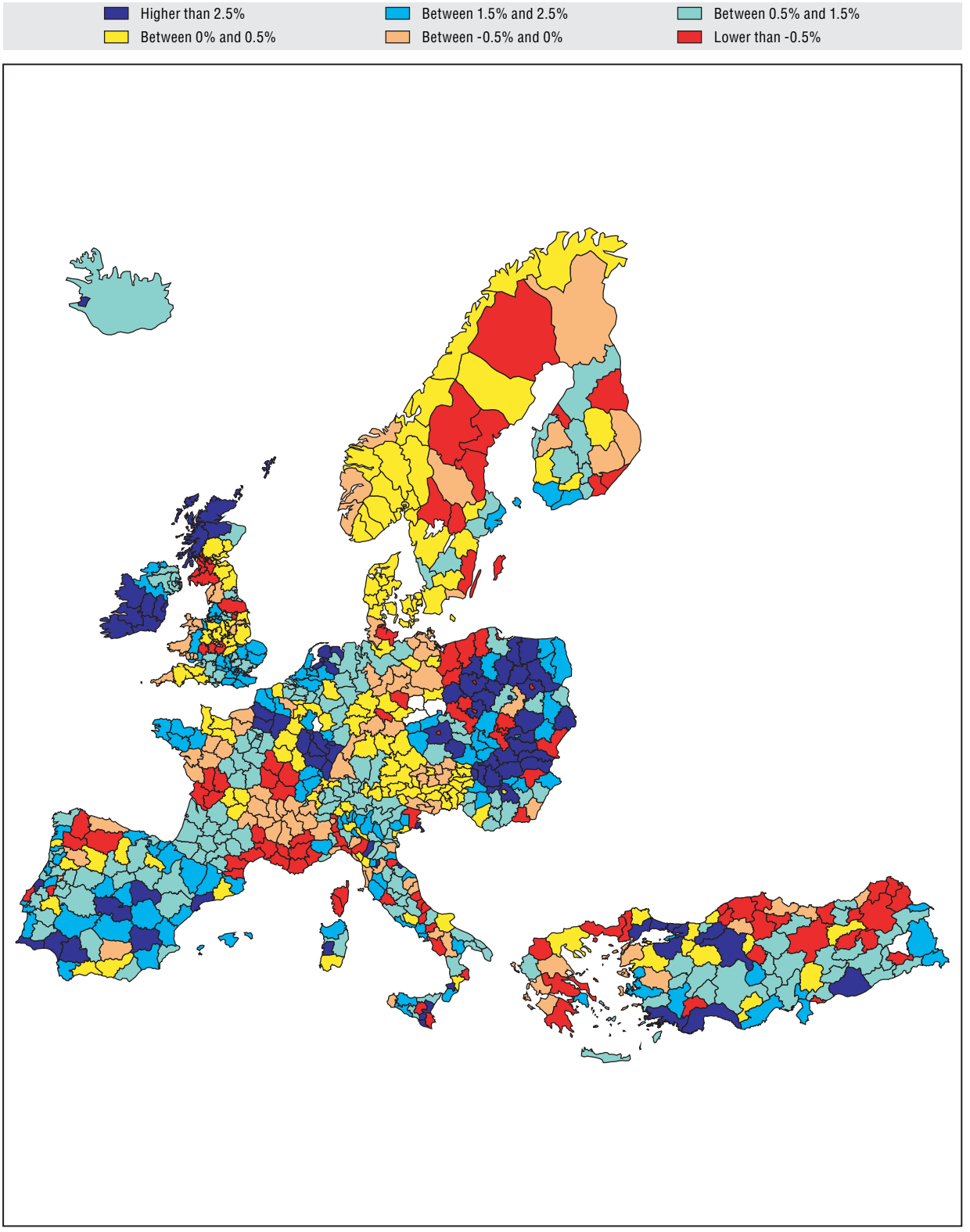


Source: OECD Territorial Database.

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10.6. **Regional labour force growth: Europe TL3**

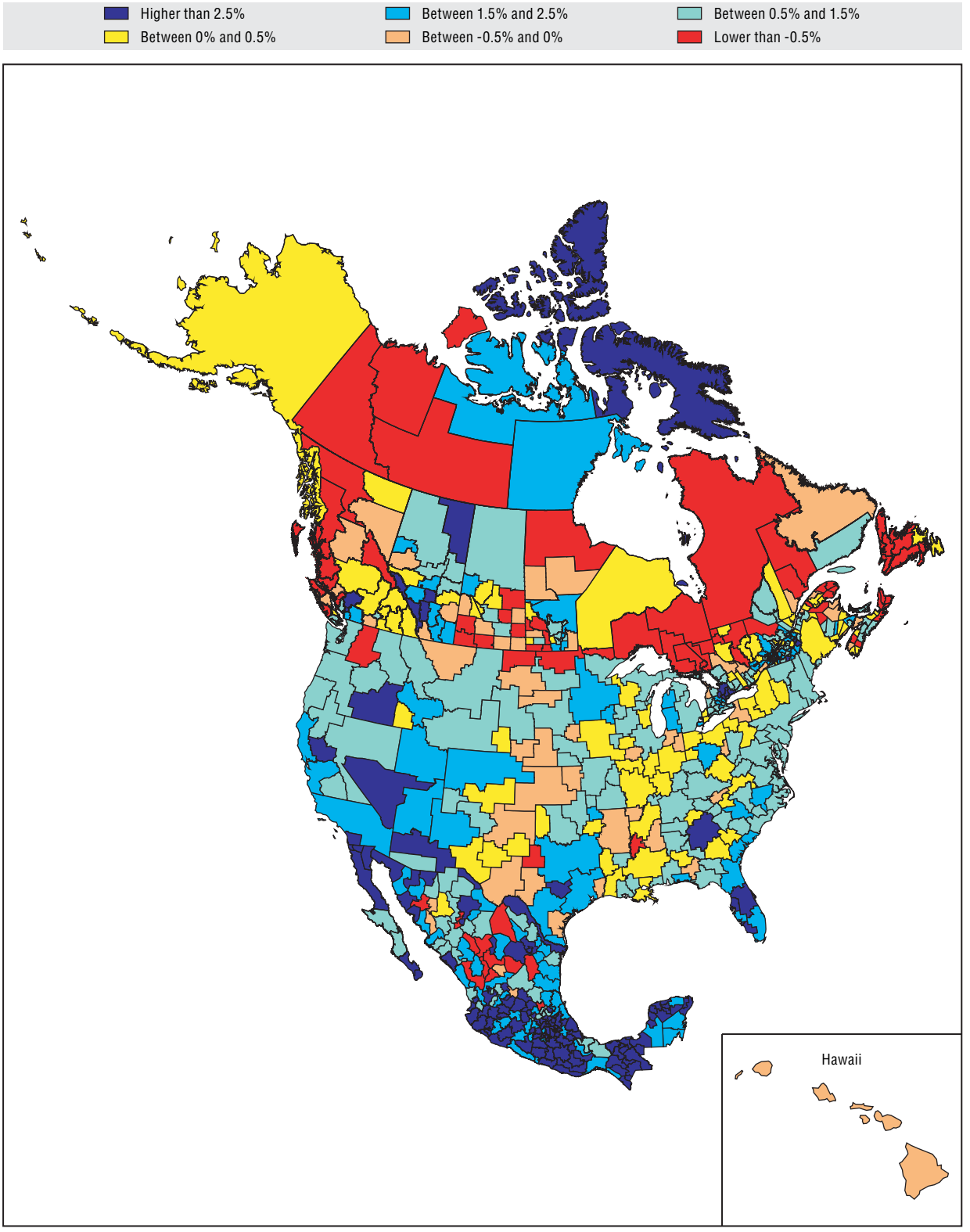
1996-2001



Source: OECD Territorial Database.

10.7. **Regional labour force growth: North America TL3**

1996-2001



Source: OECD Territorial Database.

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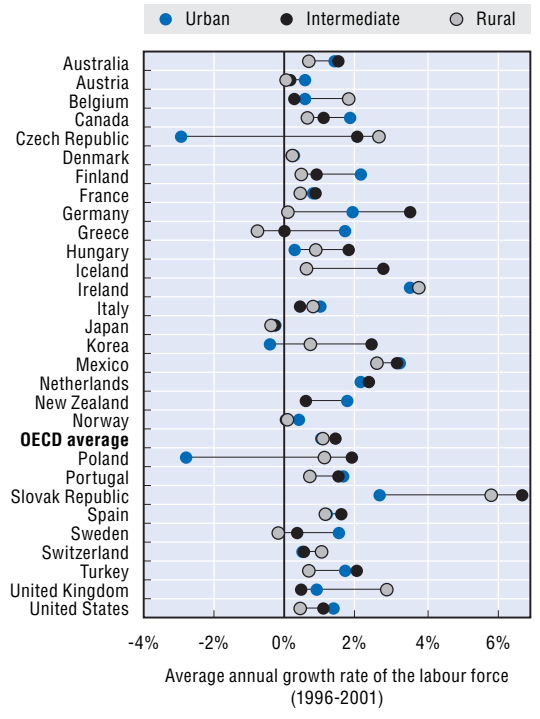
Urbanisation and ageing: what perspectives for the labour force in rural regions?

Regional growth of the labour force in OECD countries has varied. On average, over the period 1996-2001, the labour force grew more slowly in rural than in urban and intermediate regions (Figure 10.8). Only in Belgium, the Czech Republic, Ireland, and the United Kingdom did the labour force grow faster in rural than in urban regions.

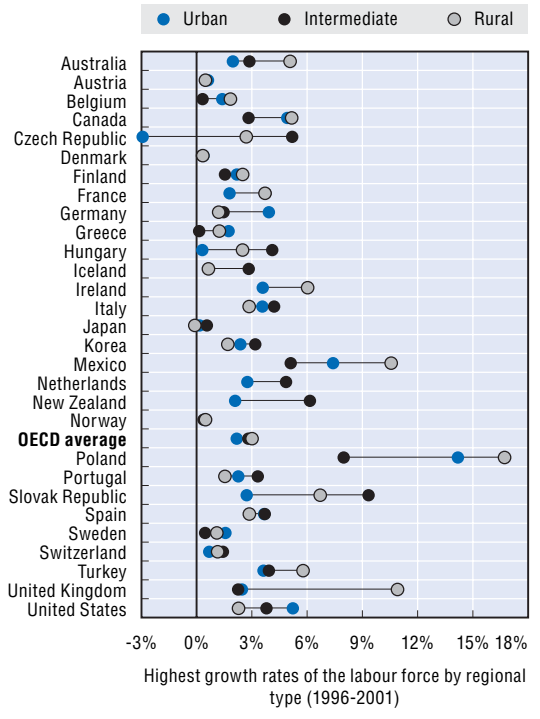
Slow growth of the rural labour force is mainly driven by the secular trend towards urbanisation. Internal migration to urban and intermediate regions, in fact, progressively reduces the population in rural regions. Furthermore, migration is concentrated among young people so that the average age of the rural population has increased. As elderly individuals tend to have lower participation rates than younger ones, this further reduced the labour force in rural regions.

This general pattern, however, does not imply an unavoidable decline of the labour force in rural regions. In fact, in 11 out of 28 countries, a rural region had the highest rate of growth in the labour force (Figure 10.9). This suggests that "successful" rural regions have been able to increase the labour force at a faster rate than "successful" urban ones. Therefore, although the processes of urbanisation and ageing are putting pressure on rural regions, their potential to attract workers into the labour market – either from other regions or from the resident population – should not be underestimated.

10.8. **On average, the labour force grew more slowly in rural regions than in urban ones, but...**



10.9. **... in many countries, the labour force grew fastest in a rural region**



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PART II

Making the Best of Local Assets

11. Regional disparities in GDP per capita

GDP per capita varies significantly among OECD countries (Figure 11.1). In 2001, it was more than eight times higher in Luxembourg (USD 49 194)[1] than in Turkey (USD 6 046).

Although substantial, international disparities in GDP per capita are often smaller than differences among regions of the same country. In Turkey, for instance, GDP per capita in the region of Kocaeli is almost 13 times higher than in Hakkari (Figure 11.2). In the United Kingdom, GDP per capita in Inner London – West is more than nine times higher than in the Isle of Anglesey.

These are by no means isolated examples. Significant territorial disparities are also observed in Mexico, Poland, the United States, France, the Slovak Republic, Hungary, Korea, Portugal and Belgium. In all these countries, in 2001 GDP per capita in the "richest" region was at least three times higher than in the "poorest".

In other countries the difference between the most and least prosperous region is smaller. However, with the exception of Australia, the range of variation does not fall below 50% of the national GDP per capita figure.

Part of the observed differences in regional GDP per capita may be due to commuting. By working in one area and living in another, commuters tend to increase GDP per capita in the region where they are employed and decrease GDP per capita in the region where they reside. In several urban regions (*e.g.* Inner London – West, District of Columbia, Paris) GDP per capita appears significantly "oversized" owing to commuting.

The Gini index offers a more precise picture of regional disparities. It looks not only at the regions with the highest and the lowest GDP per capita but also at the differences among all regions. The index ranges between 0 and 1: the higher its value, the larger the regional disparities (Figure 11.3).[2]

In 2001 Turkey (0.32), Mexico (0.27), the Slovak Republic (0.23), Poland (0.21), Belgium (0.19), Korea (0.18), the United Kingdom (0.18) and Hungary (0.17) showed the largest regional inequalities in GDP per capita. In Canada (0.15), Portugal (0.15), Austria (0.15), Italy (0.14) and Germany (0.14), the Gini index was close to the OECD average (0.15). Sweden (0.06), Japan (0.09), Greece (0.09) and the Netherlands (0.10) had the most equal regional distribution of GDP per capita.

To appreciate the economic implications of this pattern, Figure 11.4 shows the percentage of population living in regions where GDP per capita is below the national average. This statistic provides information about the portion of the national population affected by regional disparities in GDP per capita. More than half of the population in OECD countries (59%) resides in region with a level of GDP per capita below the national average. In the Czech Republic (89%), France (80%), Norway (80%), Sweden (79%), the Slovak Republic (79%) and Denmark (78%), a large majority of the population lives in regions with low GDP per capita. In contrast, less than half of the total population resides in regions of low GDP in Australia (29%), Italy (44%), Austria (46%) and the United States (48%).

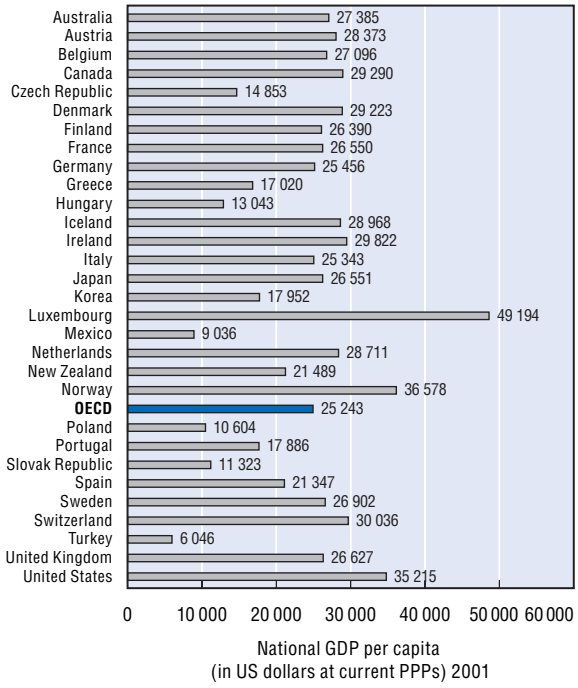
Definition

GDP per capita is calculated by dividing the GDP of a country or region by the population (number of inhabitants) living there.

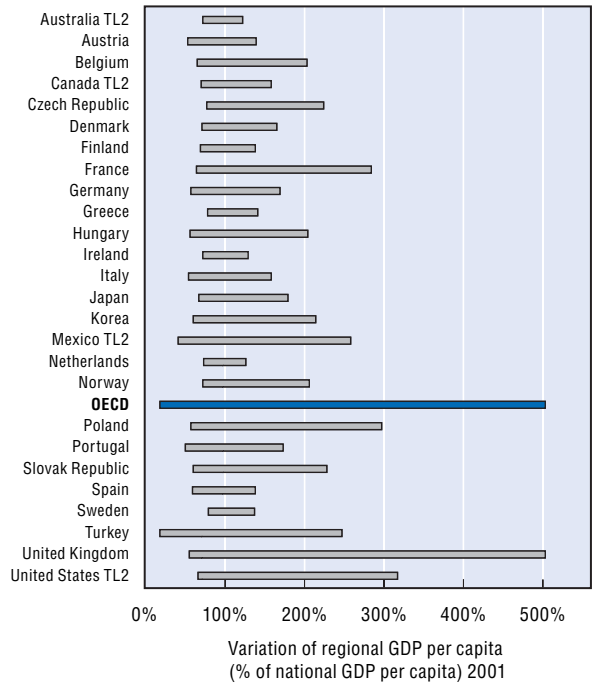
1. In 2000 USD PPPs (purchasing power parities). These convert national currencies to a common currency (USD) and eliminate differences in price levels among countries.
2. Regional disparities tend to be underestimated when the size of regions is large. This *may* be the case for Australia, Canada, Mexico and the United States where GDP figures are only available for TL2 regions.

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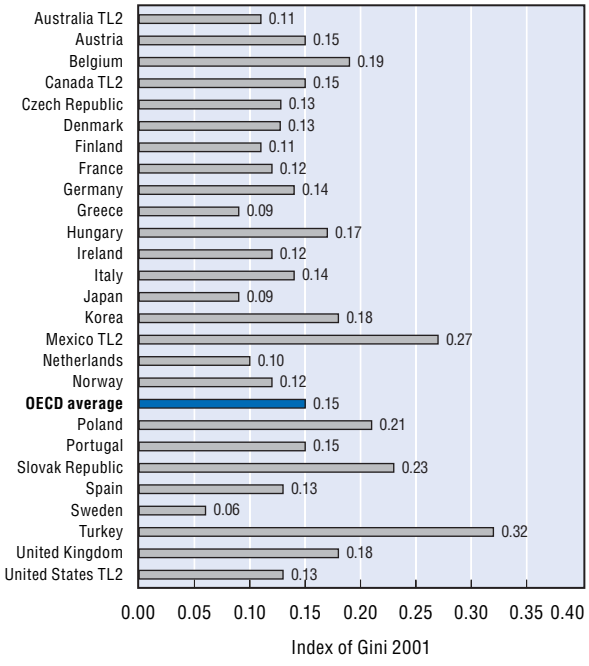
11.1. **GDP per capita is not equally distributed among OECD countries...**



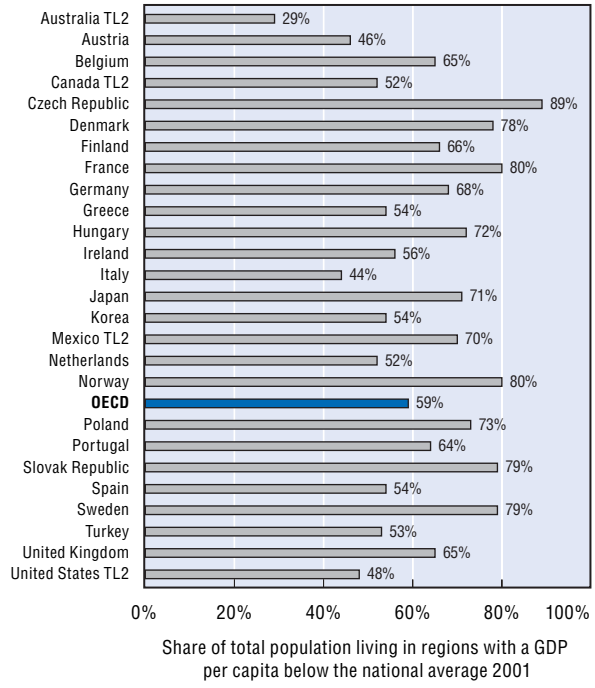
11.2. **... but disparities are even greater among regions within countries**



11.3. **In 2001 Turkey, Mexico and the Slovak Republic displayed the highest values for the Gini index**



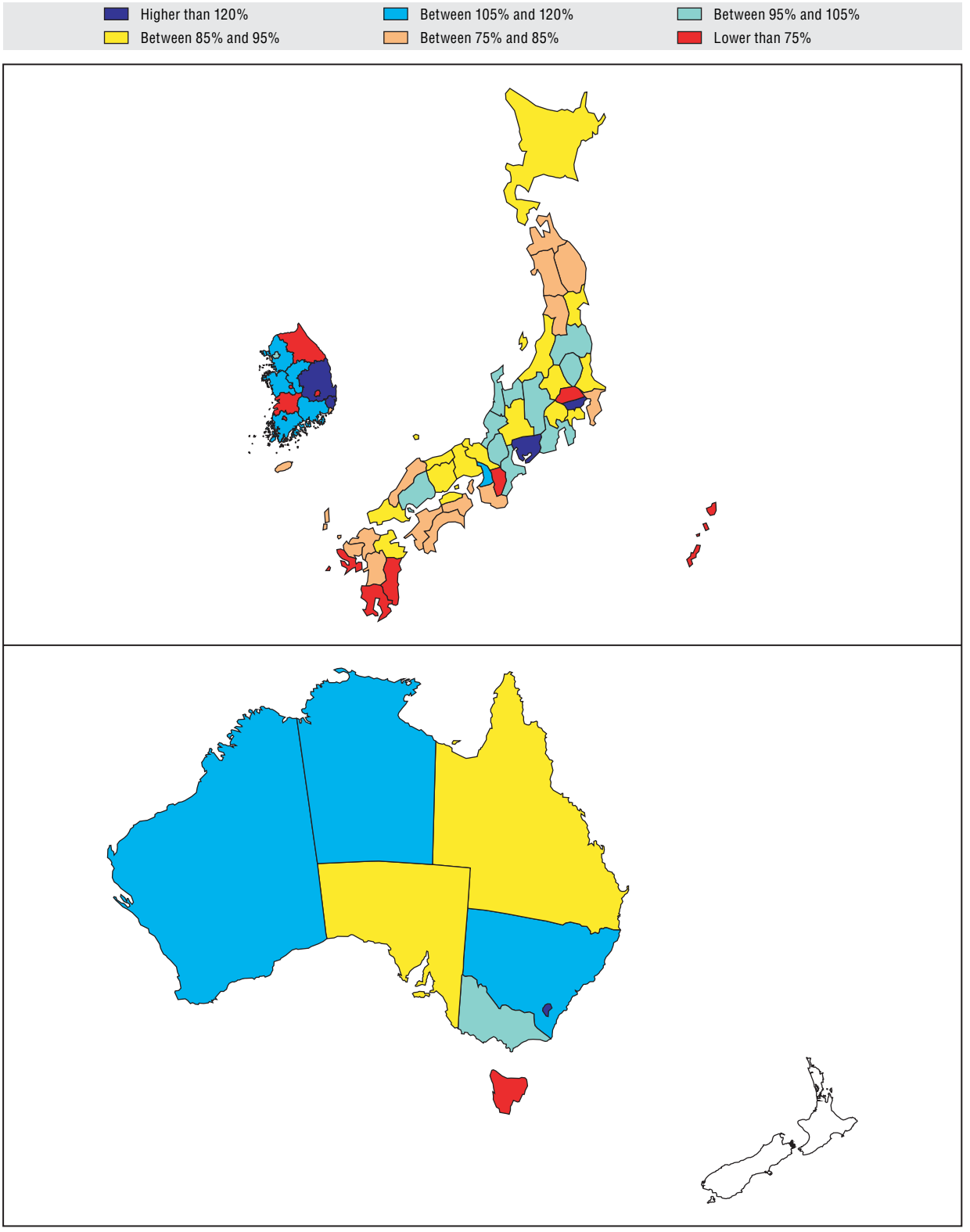
11.4. **59% of the population in OECD countries resides in regions with a GDP per capita below the national average**



Statlink: *http://dx.doi.org/10.1787/524343852388*

11.5. **Regional GDP per capita: Asia TL3 and Oceania TL2**

Percentage of national GDP per capita 2001

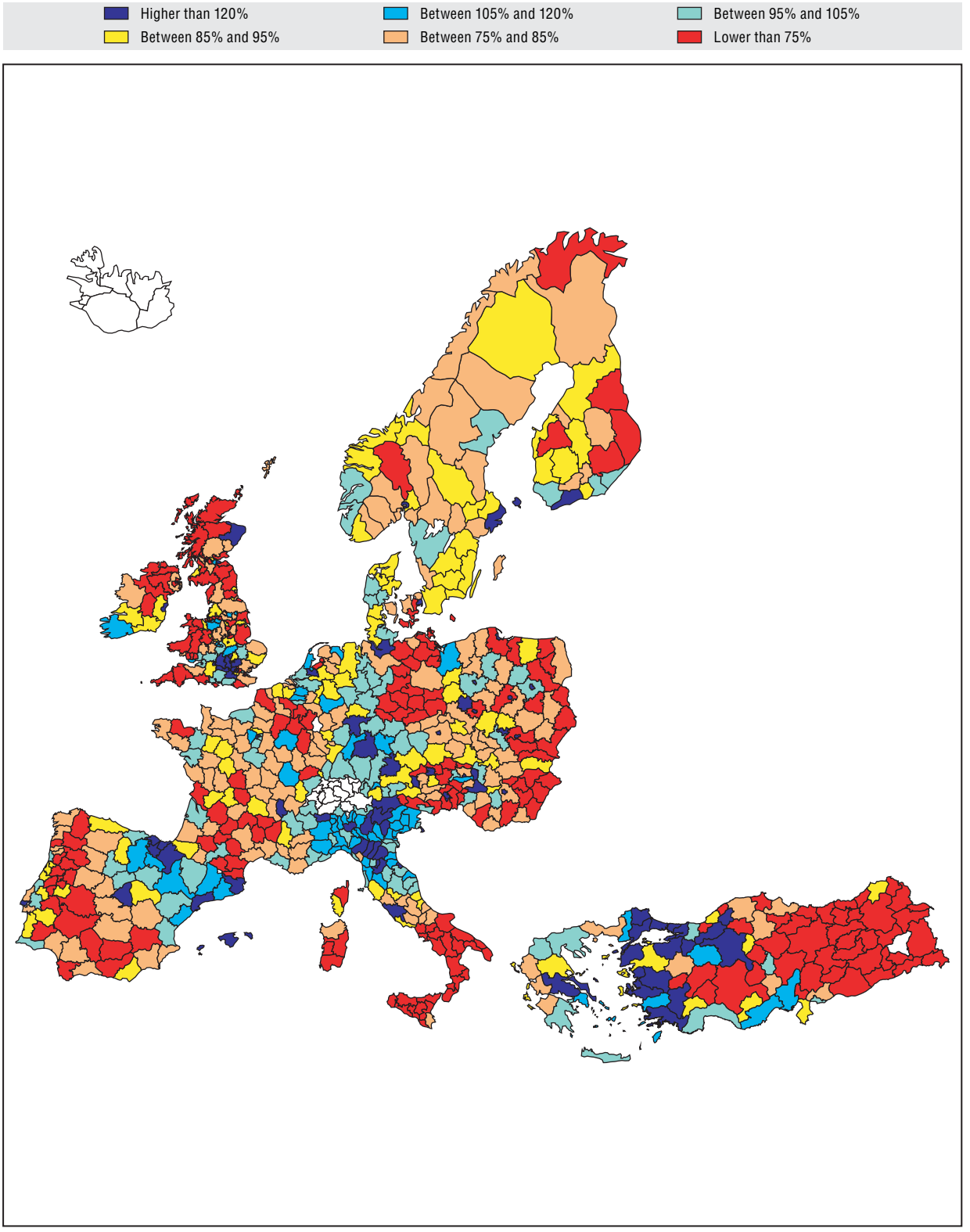


Source: OECD Territorial Database.

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11.6. **Regional GDP per capita: Europe TL3**

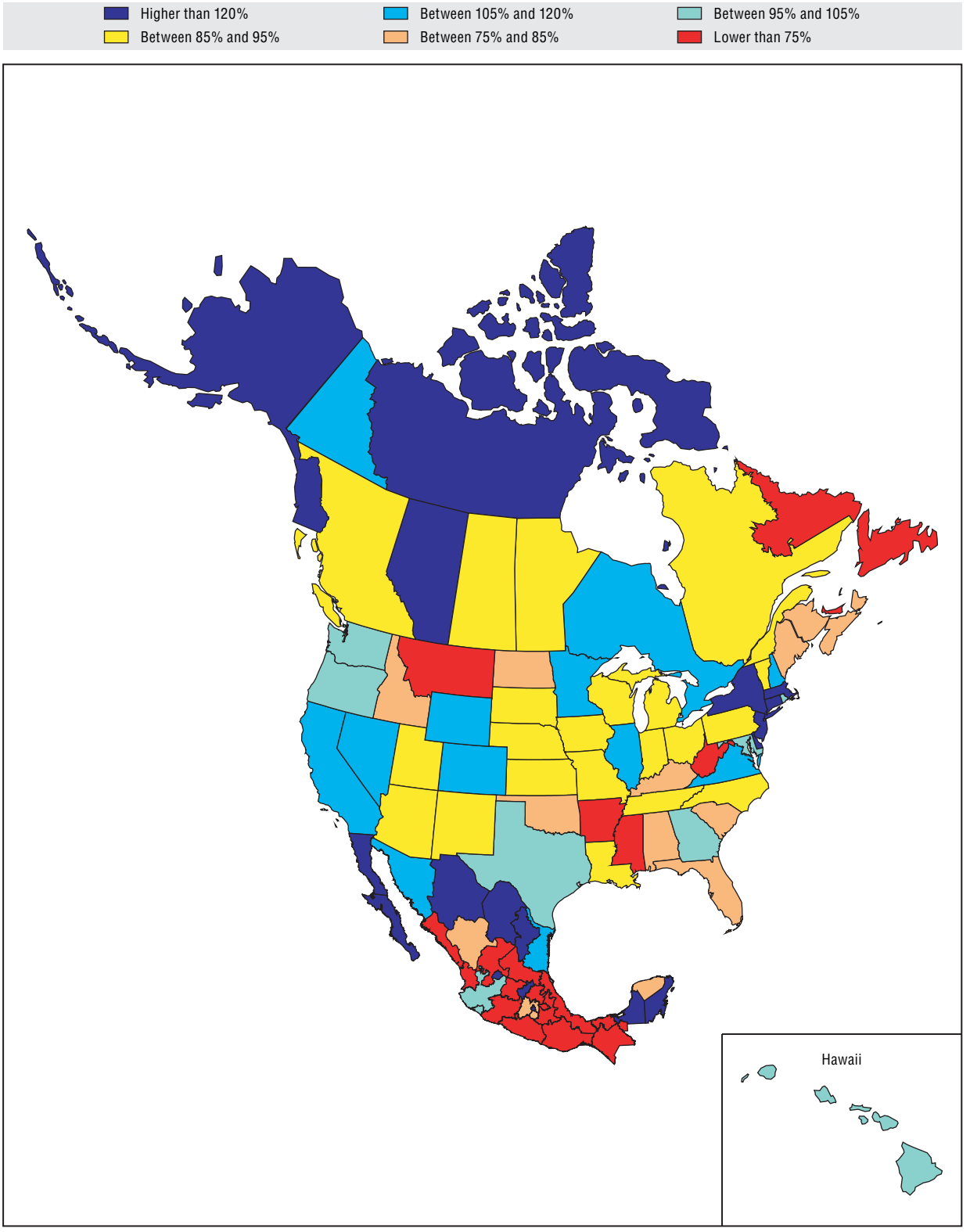
Percentage of national GDP per capita 2001



Source: OECD Territorial Database.

11.7. **Regional GDP per capita: North America TL2**

Percentage of national GDP per capita 2001



Source: OECD Territorial Database.

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GDP per capita: urban dwellers enjoy the most

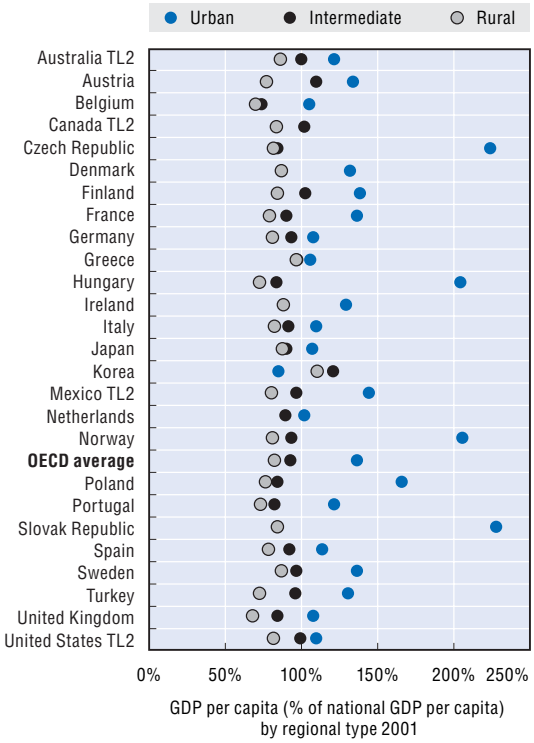
As Figure 11.8 shows, the inhabitants of urban regions enjoy the highest level of GDP per capita. In 2001, GDP per capita in predominantly urban regions in OECD countries was on average 36% higher than the national average. In contrast, intermediate and predominantly rural regions had a GDP per capita that was 93% and 82%, respectively, of the national average.

Urban regions display the highest values for GDP per capita in no less than 24 countries. Only in Canada (which does not have urban regions at Territorial Level 2) and Korea are intermediate regions the most prosperous areas. Rural regions lag behind in 22 out of 25 countries.

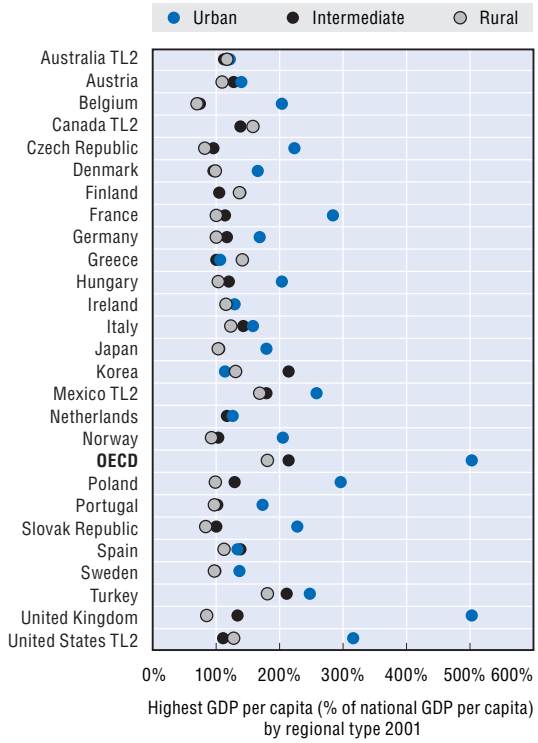
These findings hold even if the focus shifts from the averages to the best performers by regional type (Figure 11.9). Once more the highest GDP per capita is recorded in an urban region in 22 countries, while only in four is the best performer an intermediate or rural region.

The disparities in the levels of GDP per capita among the three regional types might become larger in the future if GDP continues to grow faster in urban regions and population growth (which is already slow) remains divided between intermediate and urban areas (see Chapters 7 and 8). Agglomeration economies are likely to further increase GDP growth and prosperity in urban regions.

11.8. **Urban regions enjoy higher GDP per capita than intermediate and rural regions almost everywhere**



11.9. **An intermediate or rural region recorded the highest GDP per capita in only four countries**



12. Regional disparities in productivity

Productivity is the main factor behind the economic performances of countries and regions. Labour productivity varies significantly among OECD countries. In 2001, GDP per worker[1] in Luxembourg was 44% higher than the OECD average while it was only 37% of the average in Turkey (Figure 12.1).

Such differences are even larger among regions (Figure 12.2). In the United States, for instance, GDP per worker was 2.5 times higher than the national average in the District of Columbia and only a half of the national average in Montana. In Turkey, labour productivity in the region of Mus was 25% of the national GDP per worker but almost 2.5 times higher than the national average in the region of Kocaeli.

A similar pattern is apparent in most countries, in particular Mexico, Korea and, to a lesser extent, Canada, France, the Czech Republic, Poland and the United Kingdom. Denmark, Finland, the Netherlands and Norway show a narrower regional range between highest and lowest GDP per worker.

The Gini index offers a more precise picture of regional disparities. It looks not only at the regions with the highest and the lowest GDP per worker but also at the differences among all regions. The index ranges between 0 and 1: the higher its value, the larger the regional disparities.

Turkey, Mexico and the United States show the largest regional disparities in labour productivity, with a Gini index equal to 0.26, 0.23 and 0.20, respectively (Figure 12.3). Regional disparities are also above the OECD average (0.11) in Poland (0.18), Korea (0.17), Canada (0.13), Greece and Austria (0.12).

Sweden (0.04), the Netherlands and Denmark (0.05) appear to be the OECD countries with the smallest disparities in labour productivity.

To appreciate the economic implications of this pattern, Figure 12.4 shows the percentage of workers employed in regions where productivity is below the national average. This statistic provides information about the share of the national workforce that is affected by regional disparities in productivity. In 2001, more than 60% of OECD workers worked in regions with productivity below the national average.

The percentage was particularly high in the Czech Republic and Greece (85%), the Slovak Republic (73%) and Sweden (70%). In Australia, Austria, Ireland and Italy, instead, less than half of the workforce is employed in regions with low productivity.

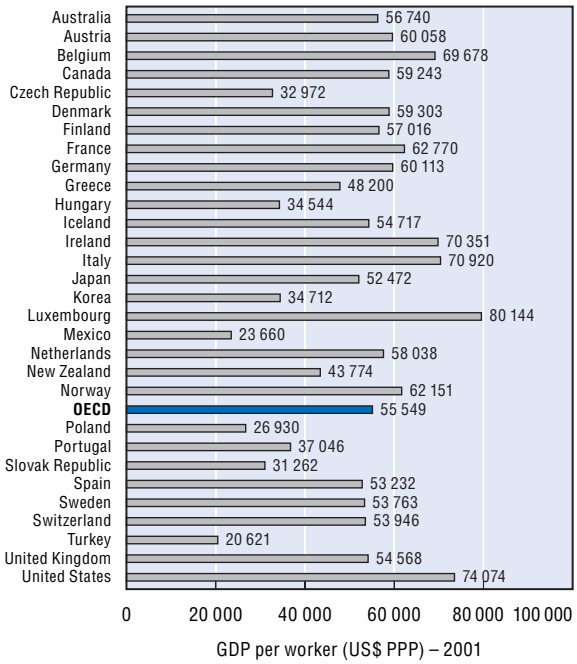
Definition

Average labour productivity is defined as the ratio between GDP and employment, where the latter is measured at the place of work.

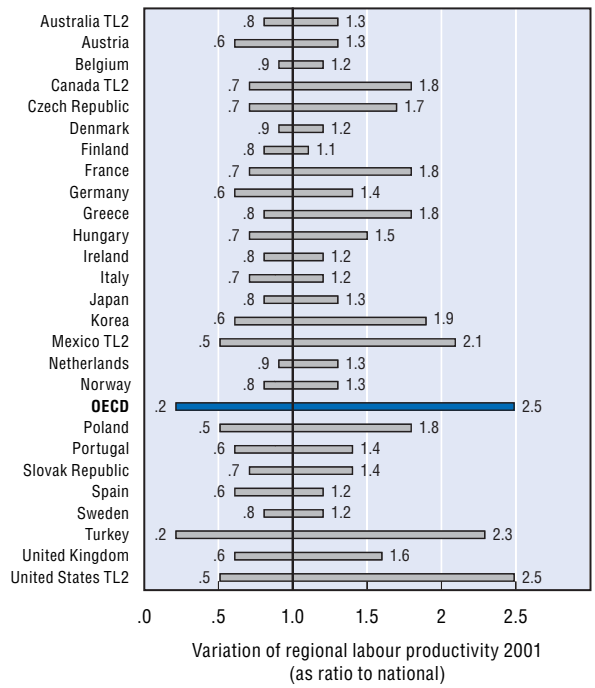
1. At 2000 USD PPPs (purchasing power parities). PPPs convert national currencies to a common currency (USD) and eliminate differences in price levels among countries.

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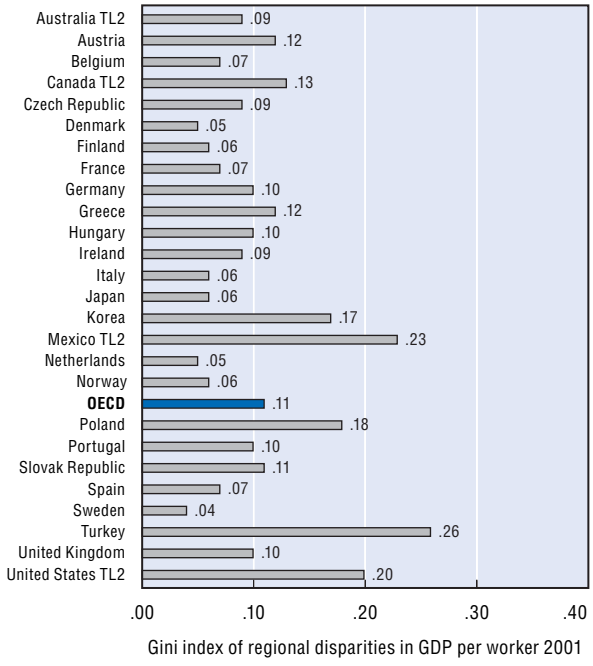
12.1. **Labour productivity varies significantly among OECD countries...**



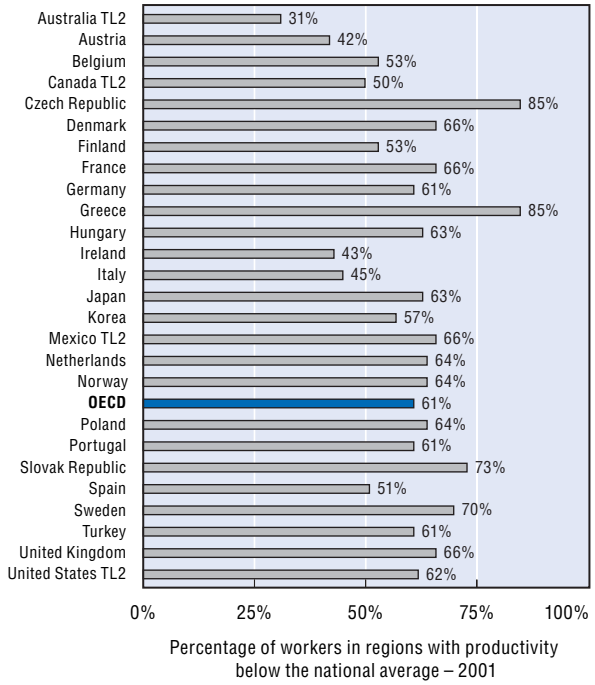
12.2. **... but disparities in productivity are even larger among regions**



12.3. **In 2001, Mexico, Turkey and the United States showed the largest regional disparities in labour productivity**



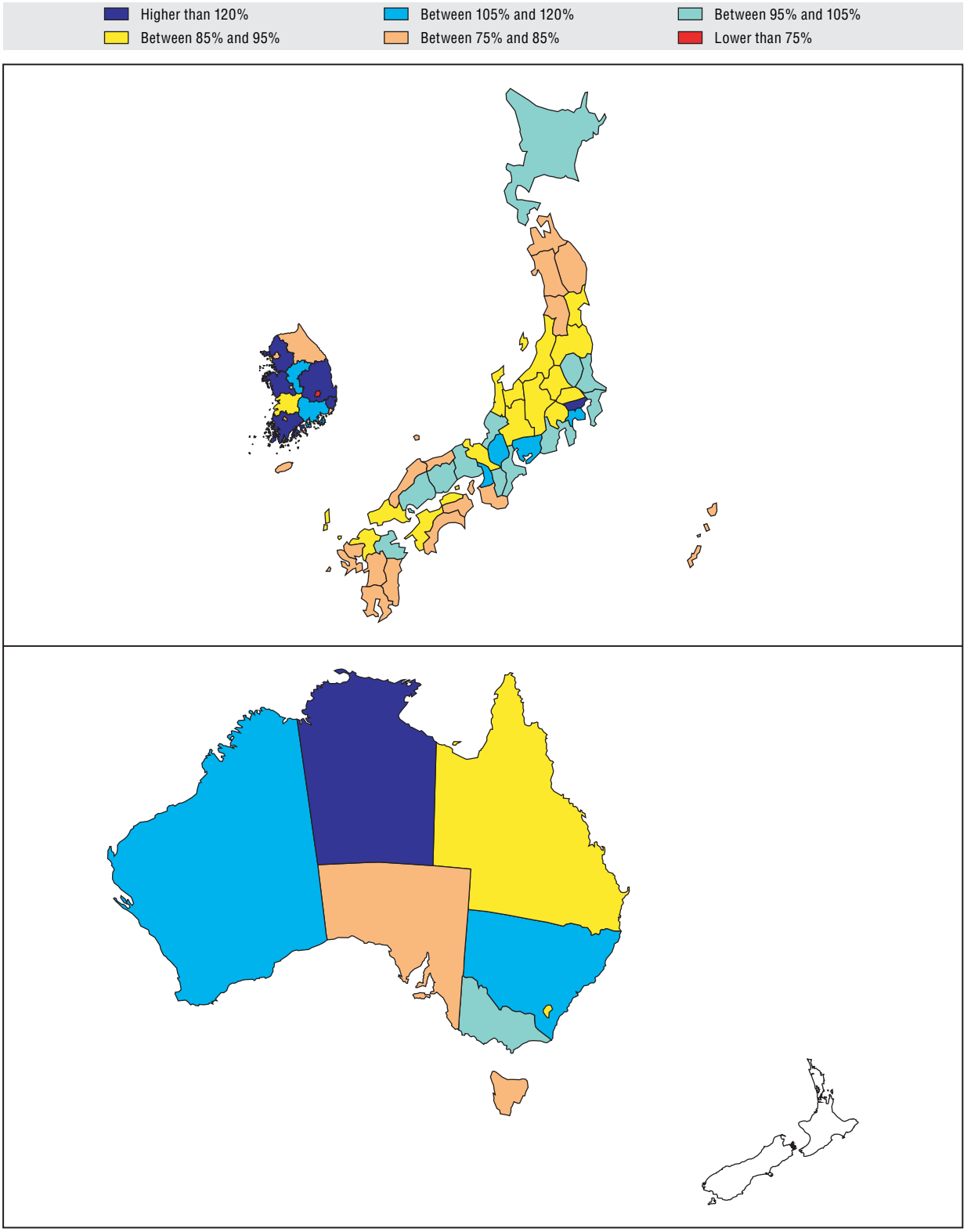
12.4. **On average, 61% of workers are employed in regions of low productivity**



Statlink: *http://dx.doi.org/10.1787/076243322002*

12.5. **Regional productivity: Asia TL3 and Oceania TL2**

Percentage of national productivity (GDP per worker) 2001

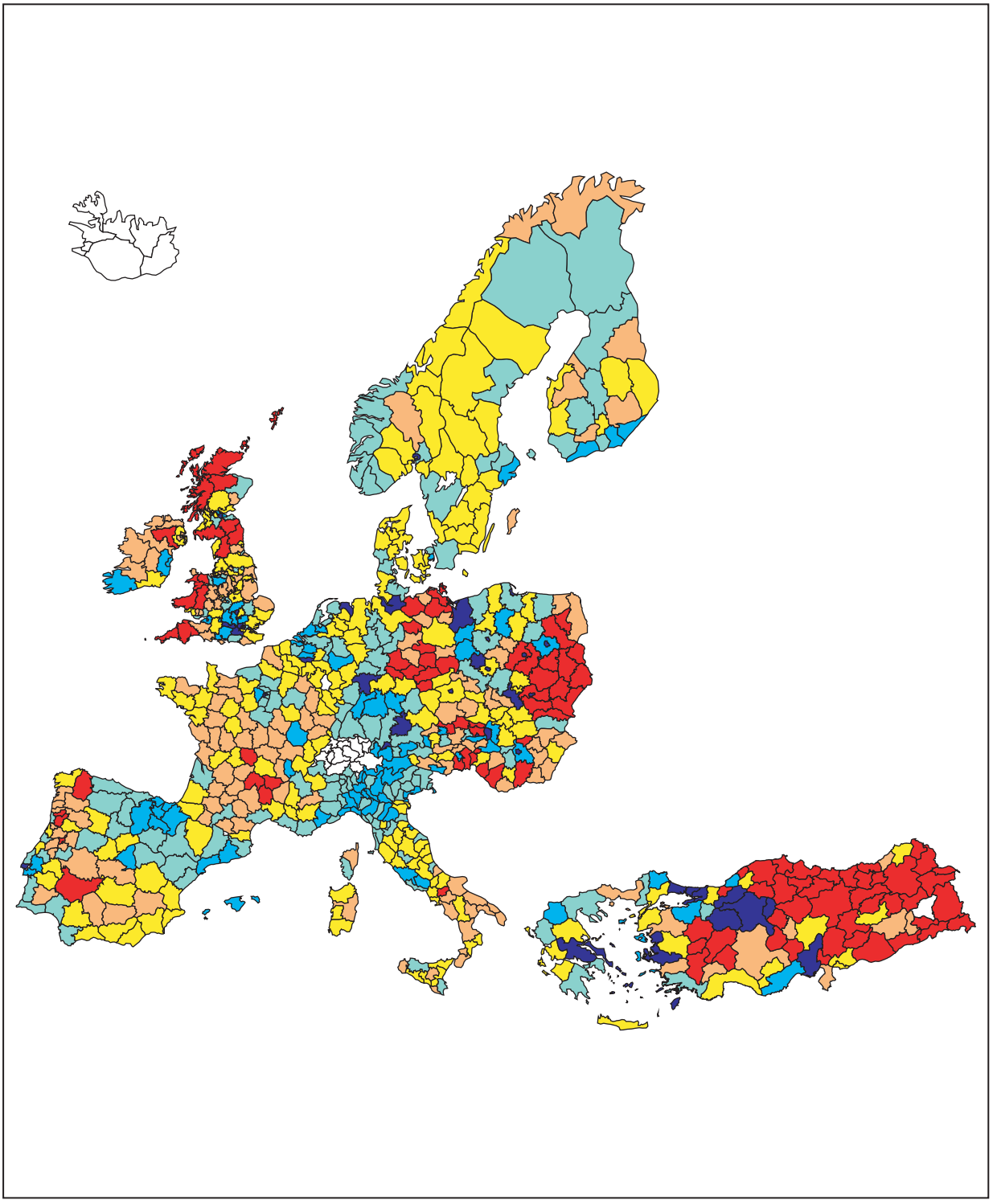


Source: OECD Territorial Database.

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12.6. **Regional productivity: Europe TL3**

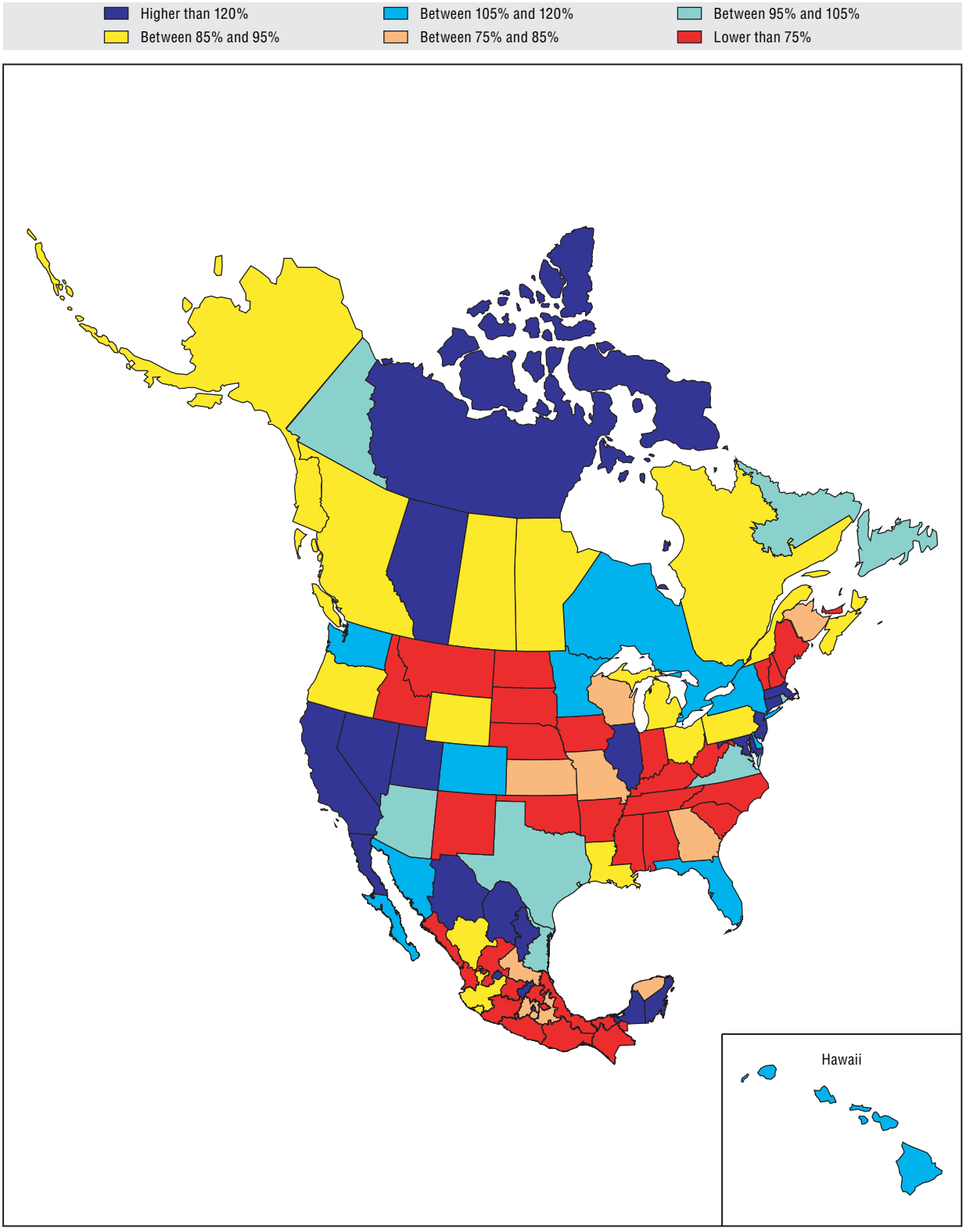
Percentage of national productivity (GDP per worker) 2001



Source: OECD Territorial Database.

12.7. **Regional productivity: North America TL2**

Percentage of national productivity (GDP per worker) 2001



Source: OECD Territorial Database.

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Regional productivity: better skills or more infrastructure?

In a large majority of OECD countries, productivity tends to be higher in regions with a high concentration of economic activity. As Figure 12.8 reveals, 21 out of 26 countries show a positive correlation between GDP per worker and the employment density, *i.e.* the ratio between employment and regional area, and the correlation is statistically significant in 17 of these countries.

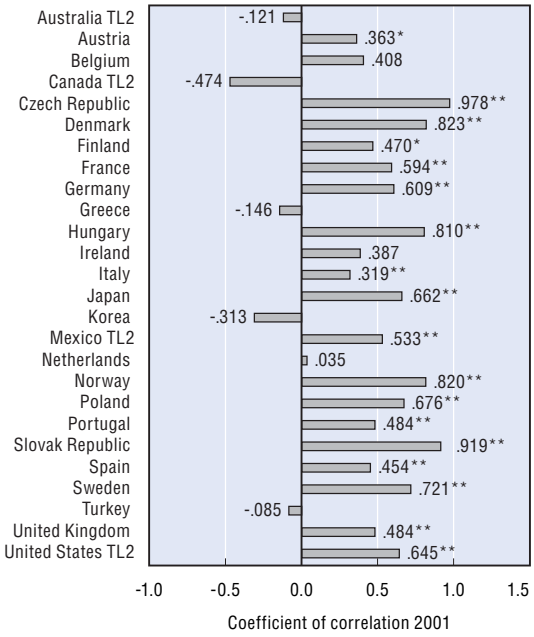
This finding might be regarded as an evidence of some economies of agglomeration, *i.e.* that spatial concentration of economic activity results in higher productivity. There are at least three reasons why one might expect this. First, concentration of firms in the same place would allow a pooled labour market for skilled workers and facilitate the match between demand and supply of skills. Second, concentration permits a greater variety of non-traded inputs at a lower cost. Finally, proximity of economic agents (firms, consumers and workers) facilitates information flows and generates positive knowledge spillovers.

An alternative explanation is that regions with a higher concentration of economic activity tend to have higher endowments in infrastructure. According to this hypothesis, higher productivity would not stem from agglomeration economies but from the higher stock of capital per worker.

Figure 12.9 illustrates one way to assess the importance of these two explanations, by showing the correlation between productivity and employment density but controlling for the share of the highly educated population (with a university degree or higher). If the correlation between productivity and employment density is not confirmed, one could argue that high productivity is due to agglomeration economies, *i.e.* the concentration of skilled individuals. On the contrary, the persistence of a positive correlation would indicate that high productivity is the result of a larger stock of infrastructure.

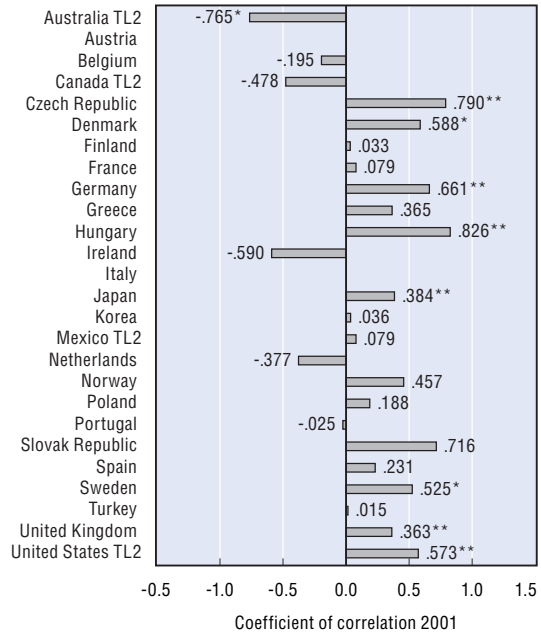
A positive and significant correlation is confirmed in eight out of 15 countries (the Czech Republic, Denmark, Germany, Hungary, Japan, Sweden, the United Kingdom and the United States). The correlation is still positive although not significant in Norway, Poland, the Slovak Republic and Spain. In this group of countries, therefore, higher regional productivity seems mainly explained by a higher level of infrastructure. In other countries, the correlation tends to disappear (Finland, France and Mexico) or becomes negative (Belgium, Ireland, Korea, Netherlands, and Portugal), suggesting that high regional productivity in this group of countries is mainly due to concentration of skills.

12.8. **In most countries, productivity is high in regions with high employment density...**



* Indicates significant at 95%.
** Indicates significant at 99%.

12.9. **... but skills concentration explains high productivity only in some**



* Indicates significant at 95%.
** Indicates significant at 99%.

13. Regional disparities in unemployment rates

Unemployment rates vary significantly among OECD countries. In 2001, international differences in unemployment rates were as large as 17 percentage points, ranging from 1.7% in Luxembourg to 19.2% in the Slovak Republic (Figure 13.1).

Significant international differences in unemployment rates hide even larger differences among regions. In Canada, Italy, Poland and Spain, differences in regional unemployment rates were over 20 percentage points (Figure 13.2). In Belgium, the Czech Republic, Finland, France, Germany, Greece, Hungary, the Slovak Republic, Turkey, the United Kingdom and the United States, these differences were smaller but still large (above 10 percentage points). Only in Iceland, Ireland, Mexico, the Netherlands and Switzerland, did unemployment rates reflect a more even regional pattern.

The Gini index offers a more precise picture of regional disparities. It looks not only at the regions with the highest and the lowest unemployment rates but also at the differences among regions. The index ranges between 0 and 1: the higher its value, the larger the regional disparities.

In 2001, Italy was the country with the largest disparity in unemployment rates; the Gini index was 0.42 (Figure 13.3). Regional disparities were also large in Canada (0.32), Belgium (0.31), Germany (0.28), Hungary (0.28) and the United Kingdom (0.27). In most other countries, regional disparities were close to the OECD average (0.19). Japan was the country with the lowest disparity in the unemployment rate (0.11).

To appreciate the economic implication of this pattern, Figure 13.4 shows the percentages of the labour force located in regions where unemployment rates are above the national average. This statistic provides information about the share of the national workforce that is affected by regional disparities in unemployment rates. In 2001, more than 40% of the OECD labour force was based in regions with unemployment rates above the national rate.

The percentage was particularly high in Greece (73%) and New Zealand (63%). In Denmark, Finland, Poland, Portugal, the Slovak Republic and Switzerland, the percentage of the labour force in regions of high unemployment was significantly above the OECD average. Canada and the Netherlands appear to be the countries where the largest majority of the labour force is based in regions of low unemployment (73% and 74%, respectively).

Definition

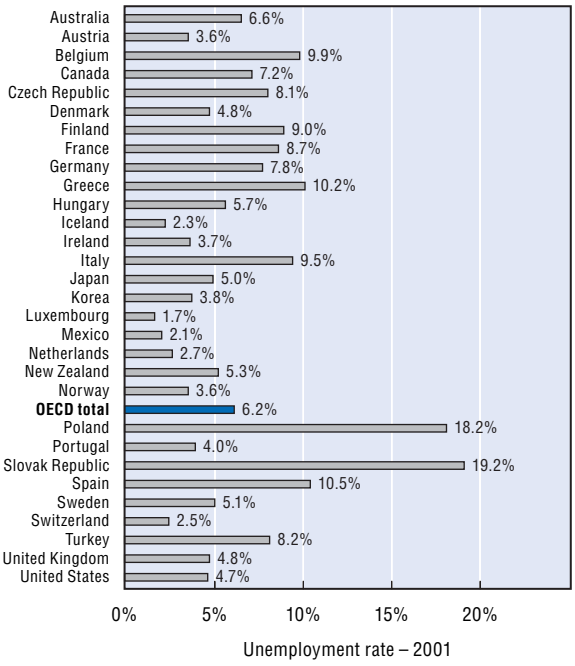
Unemployment rate is computed as the ratio of unemployment and labour force, where the latter is defined as the sum of employed and unemployed persons.

Unemployed persons comprise persons who were (all three conditions must be fulfilled simultaneously):

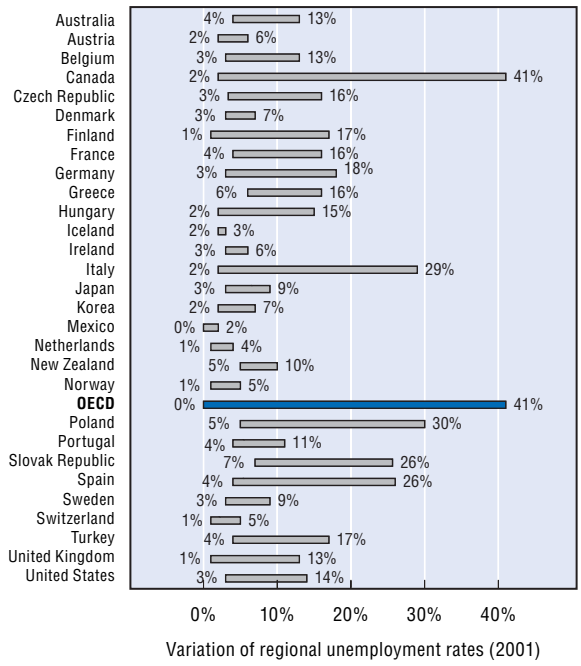
1. without work during the reference week;
2. available for work at the time (*i.e.* were available for paid employment or self-employment before the end of the two weeks following the reference week);
3. actively seeking work (*i.e.* had taken specific steps in the four-week period ending with the reference week to seek paid employment or self-employment).

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.

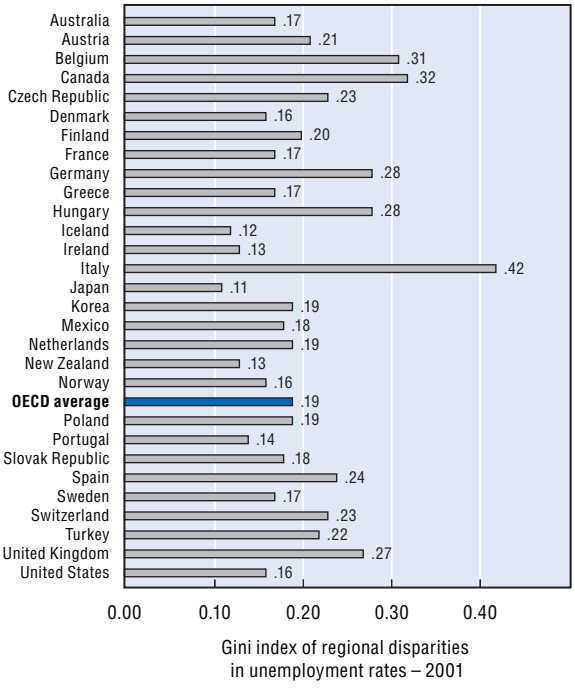
13.1. **Unemployment rates vary significantly among OECD countries...**



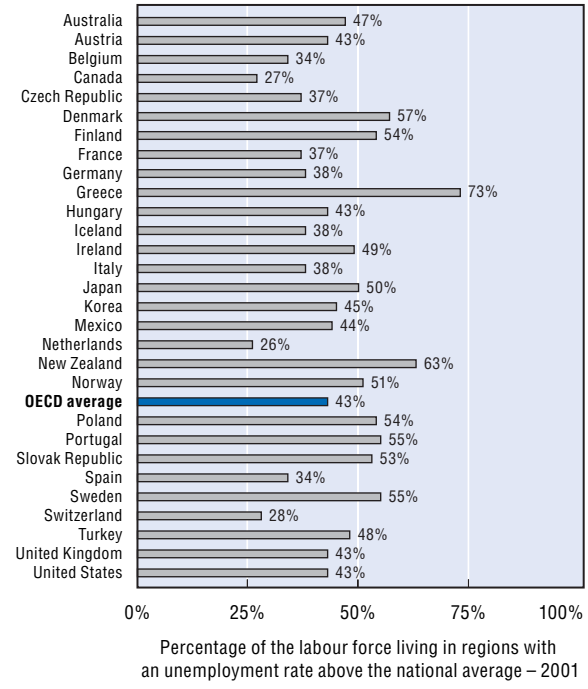
13.2. **... but disparities in unemployment rates are even larger among regions**



13.3. **In 2001, Italy, Belgium and Canada showed the largest regional disparities in unemployment rates**



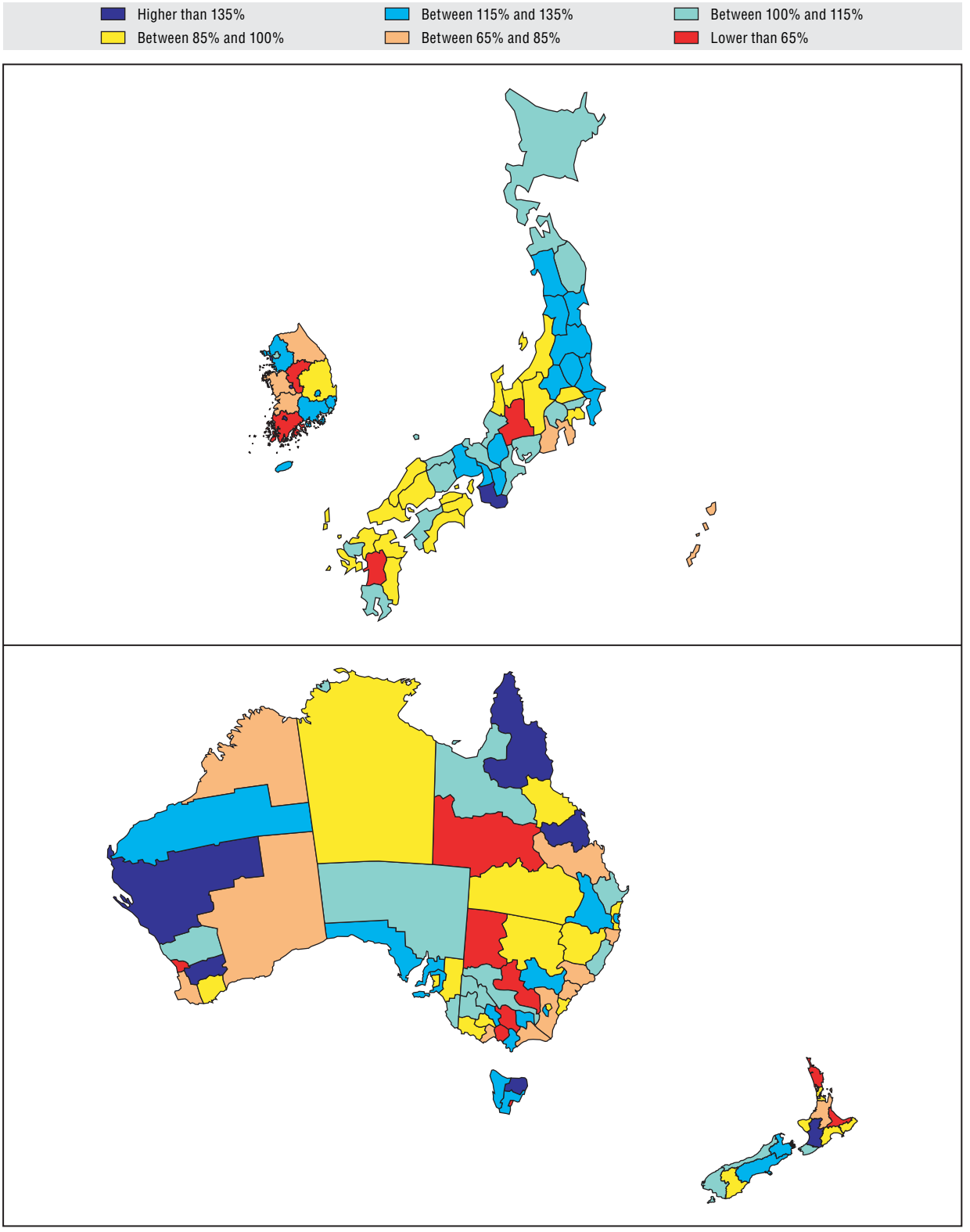
13.4. **In 2001, one-third of the OECD labour force lived in regions with high unemployment rates**



Statlink: *http://dx.doi.org/10.1787/160435268758*

13.5. **Regional unemployment rate: Asia and Oceania TL3**

Percentage of national unemployment rate 2001

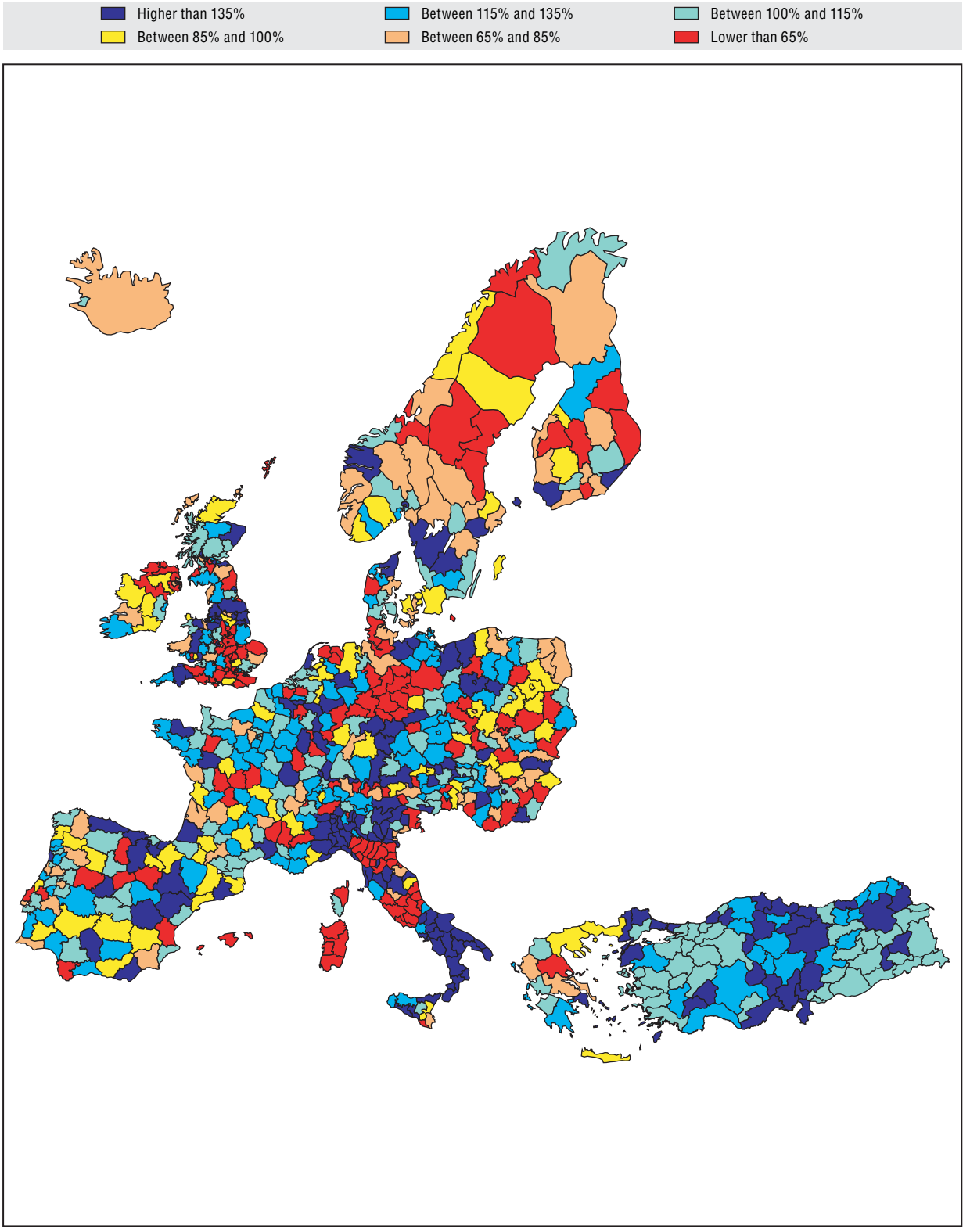


Source: OECD Territorial Database.

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13.6. **Regional unemployment rate: Europe TL3**

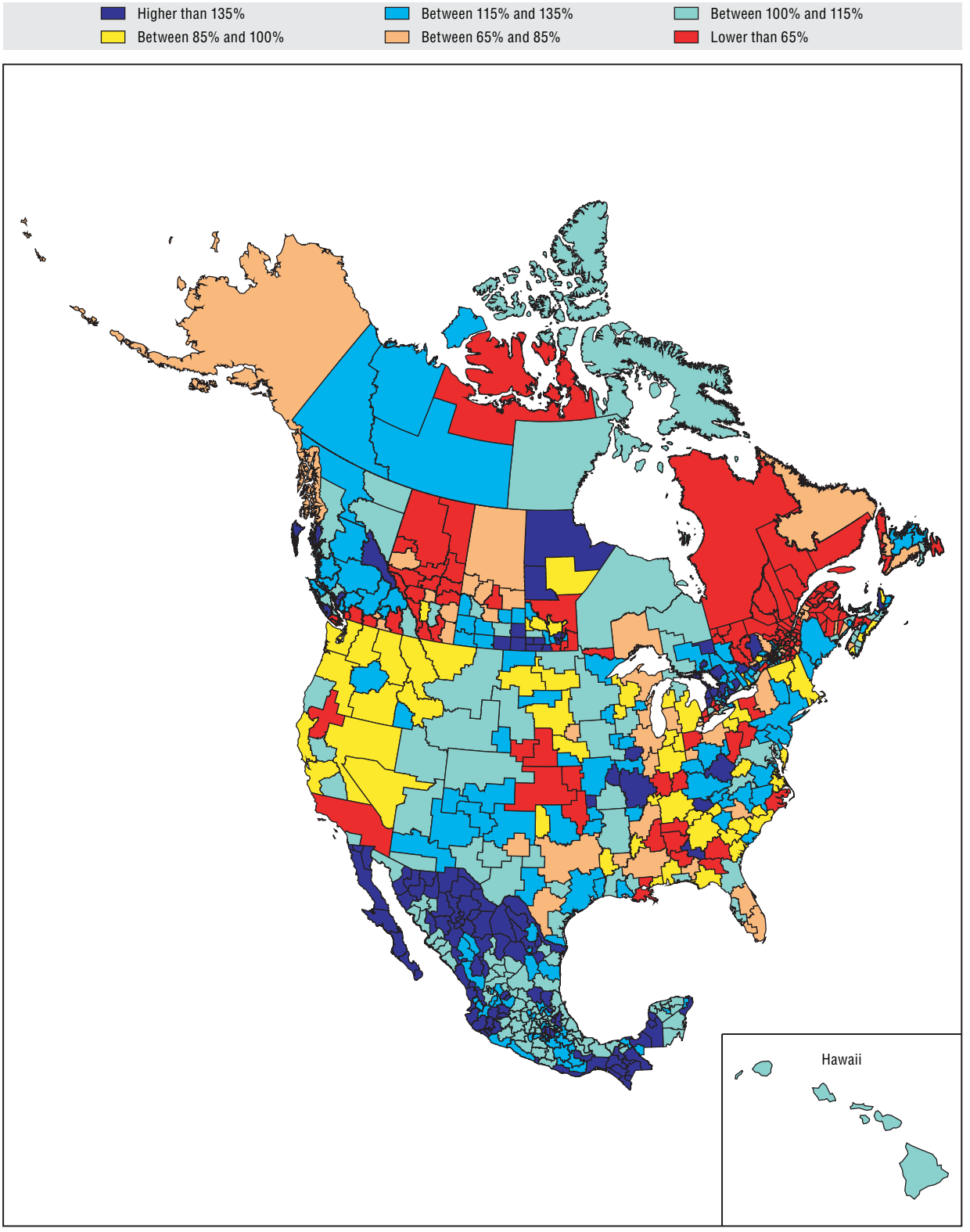
Percentage of national unemployment rate 2001



Source: OECD Territorial Database.

13.7. **Regional unemployment rate: North America TL3**

Percentage of national unemployment rate 2001



Source: OECD Territorial Database.

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Regional unemployment: market failure or wage inflexibility?

Unemployment rates vary significantly among sub-national regions, and, in many countries, regional disparities have persisted over a long period of time. Persistent disparities in unemployment should provide individuals with the incentive to move from regions with high unemployment to regions with low unemployment in order to exploit higher job opportunities. Mobility, however, is not without cost, and even if in the long run the return to moving to another region would exceed the costs, imperfect capital markets, risk aversion or social ties could make mobility insufficient to reabsorb unemployment.

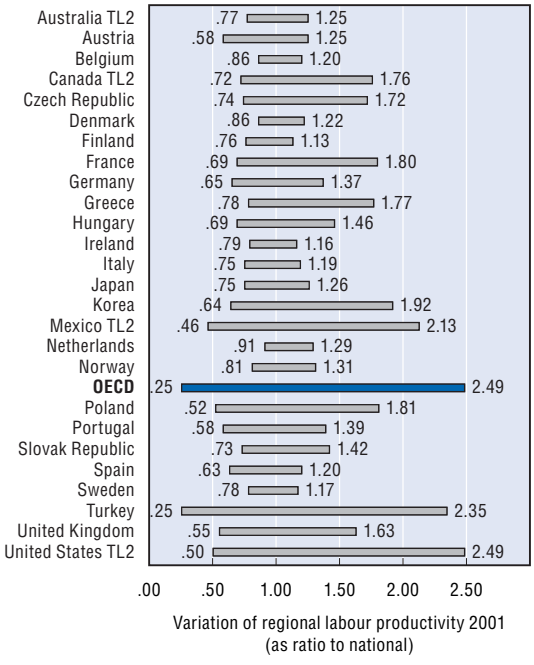
If some "market failure" prevents adjustment *between regions*, wage flexibility should ensure labour market clearing *within regions*. For as long as wages are set according to marginal labour productivity, the demand for labour will always adjust to the supply. This is why wage inflexibility is often considered the main cause for regional disparities in unemployment rates. For instance, if wages are set at the national level, regional differences in productivity (Figure 13.8) would necessarily be translated into higher unemployment rates in regions with low productivity.

Figure 13.9 shows the correlation coefficients between unemployment rates and productivity in each country. A negative coefficient – indicating that unemployment is high in regions with low productivity – would be consistent with the hypothesis that wage inflexibility is a significant explanation for regional disparities. In 18 out of 26 countries, the correlation is negative; in 6 of these 18 countries (Germany, Hungary, Italy, Poland, the Slovak Republic and Spain) the coefficient is also statistically significant (at 95% confidence). In the remaining 8 countries, the correlation is positive, although it is significant only for the United States.

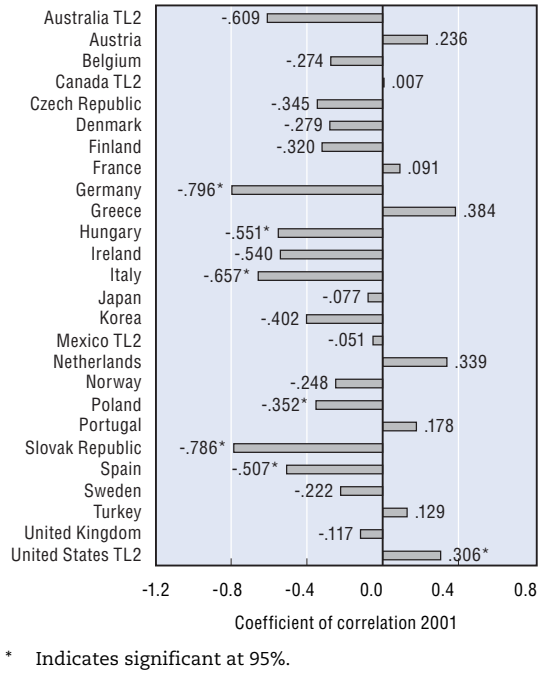
These results should be interpreted with caution for at least two reasons. First, there are considerable differences in price levels among regions but, owing to lack of data, regional productivity is measured at national prices. Second, economic theory predicts a relationship between marginal productivity and wages whereas the correlation is based on average productivity.

Notwithstanding these caveats, the observed patterns of regional unemployment do not seem inconsistent with the hypothesis that unemployment disparities are a result of wage inflexibility.

13.8. **There are significant differences in labour productivity among regions**



13.9. **In several countries, low-productivity regions tend to have higher unemployment rates**



* Indicates significant at 95%.

14. Regional disparities in participation rates

Labour force participation varies significantly among OECD countries. In 2001, international differences in participation rates were as large as 35 percentage points, ranging from 87% in Iceland to 52% in Turkey (Figure 14.1).

Significant international differences in participation rates hide even larger differences among regions. In Germany and Poland, differences in regional participation rates were above 50 percentage points (Figure 14.2). In Canada, Denmark, Mexico, Turkey and the United States, they were no smaller than 30 percentage points. Only in Belgium, the Czech Republic, Ireland, the Netherlands, Norway and Sweden were regional differences in participation rates smaller than 10 percentage points.

The Gini index offers a more precise picture of regional disparities. It looks not only at the regions with the highest and the lowest participation rates but also at the differences among regions. The index ranges between 0 and 1: the higher its value, the larger the regional disparities.

In 2001, Spain and Poland had the largest disparities in participation rates, with a Gini index of 0.17 and 0.09, respectively (Figure 14.3). In the other countries, regional disparities in participation rates were much smaller than disparities in GDP per capita and unemployment, as the OECD average Gini index was 0.04.

To appreciate the economic implications of this pattern, Figure 14.4 shows the percentage of the working-age population (15-64 years old) living in regions where participation rates are below the national average. This statistic provides information about the share of the working-age population that tends to have a low level of participation in the labour market. In 2001, almost half (48%) of the OECD working-age population was located in regions with a participation rate below the national rate.

This percentage was particularly high in Korea (76%), Japan (73%) and Turkey (70%). In Belgium, the Czech Republic, Sweden and the United Kingdom, the percentage of the working-age population in regions with low participation was significantly above the OECD average. In Canada, Greece, the Netherlands and Portugal a large majority of the working-age population is based in regions with high participation rates.

Definition

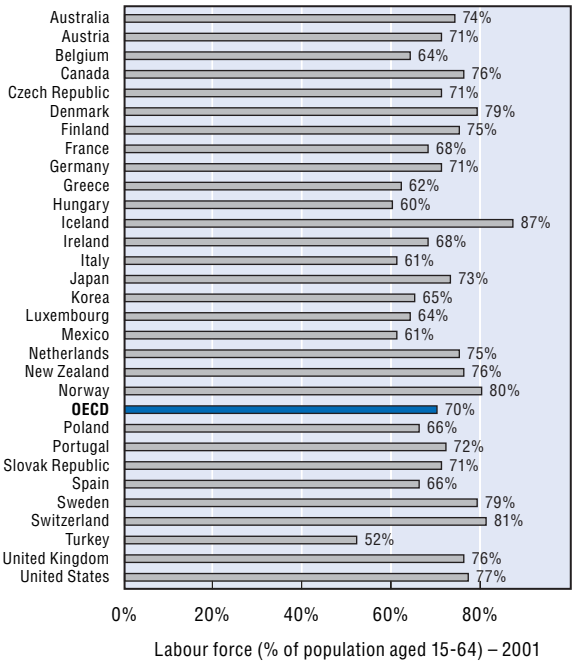
The participation rate is defined as the ratio of the labour force to the population aged 15-64 years. The labour force is defined as the sum of employed and unemployed persons.

Unemployed persons comprise persons who were (all three conditions must be fulfilled simultaneously):

1. without work during the reference week;
2. available for work at the time (*i.e.* were available for paid employment or self-employment before the end of the two weeks following the reference week);
3. actively seeking work (*i.e.* had taken specific steps in the four-week period ending with the reference week to seek paid employment or self-employment).

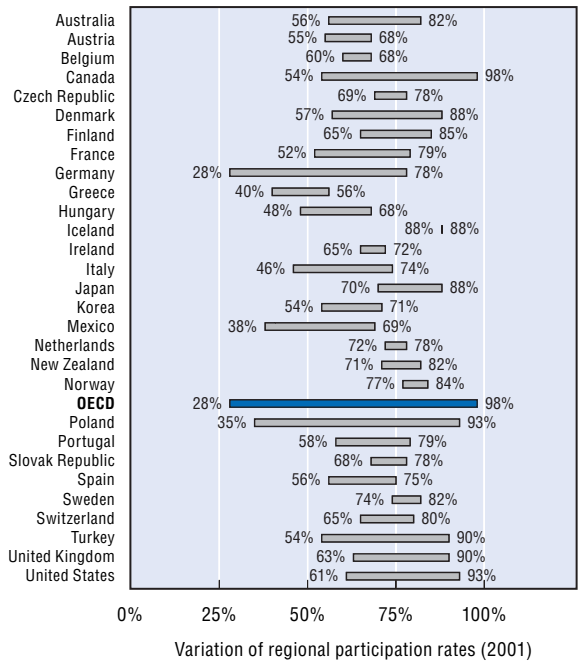
Employed persons are all persons who during the reference week worked at least one hour for pay or profit, or were temporarily absent from such work. Family workers are included.

14.1. **Participation rates vary significantly among OECD countries...**



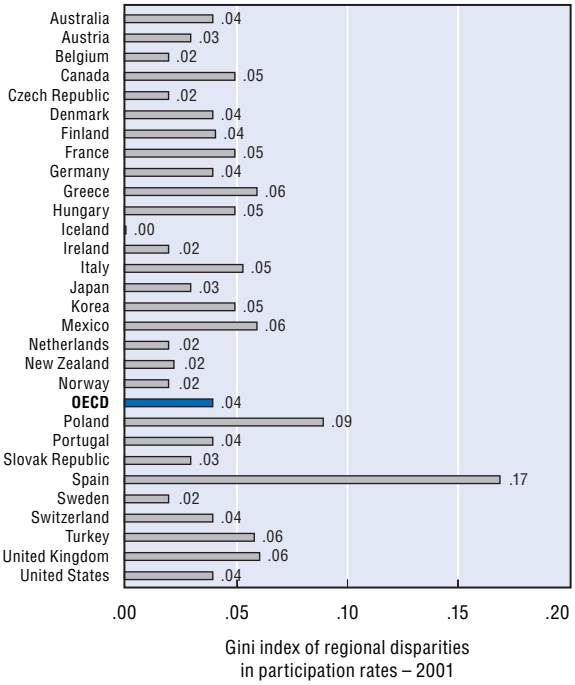
Labour force (% of population aged 15-64) – 2001

14.2. **... but disparities in participation rates are even larger among regions**



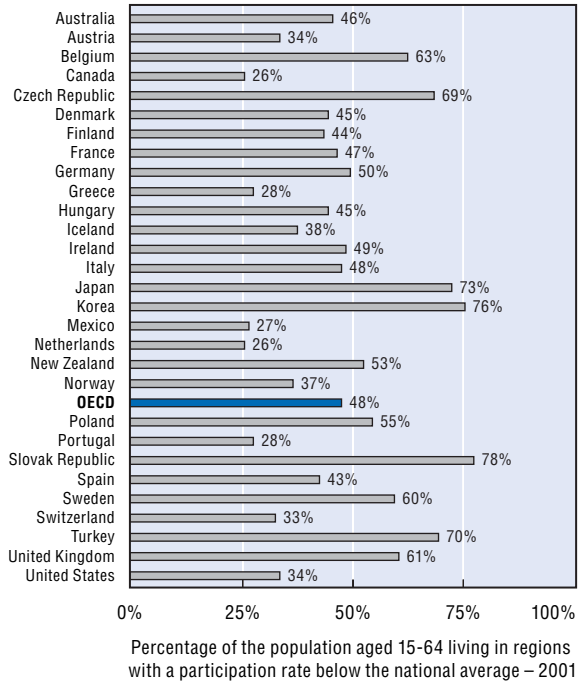
Variation of regional participation rates (2001)

14.3. **In 2001, Spain showed the largest regional disparities in participation rates**



Gini index of regional disparities in participation rates – 2001

14.4. **In 2001, about half of the OECD working-age population lived in regions with low participation rates**

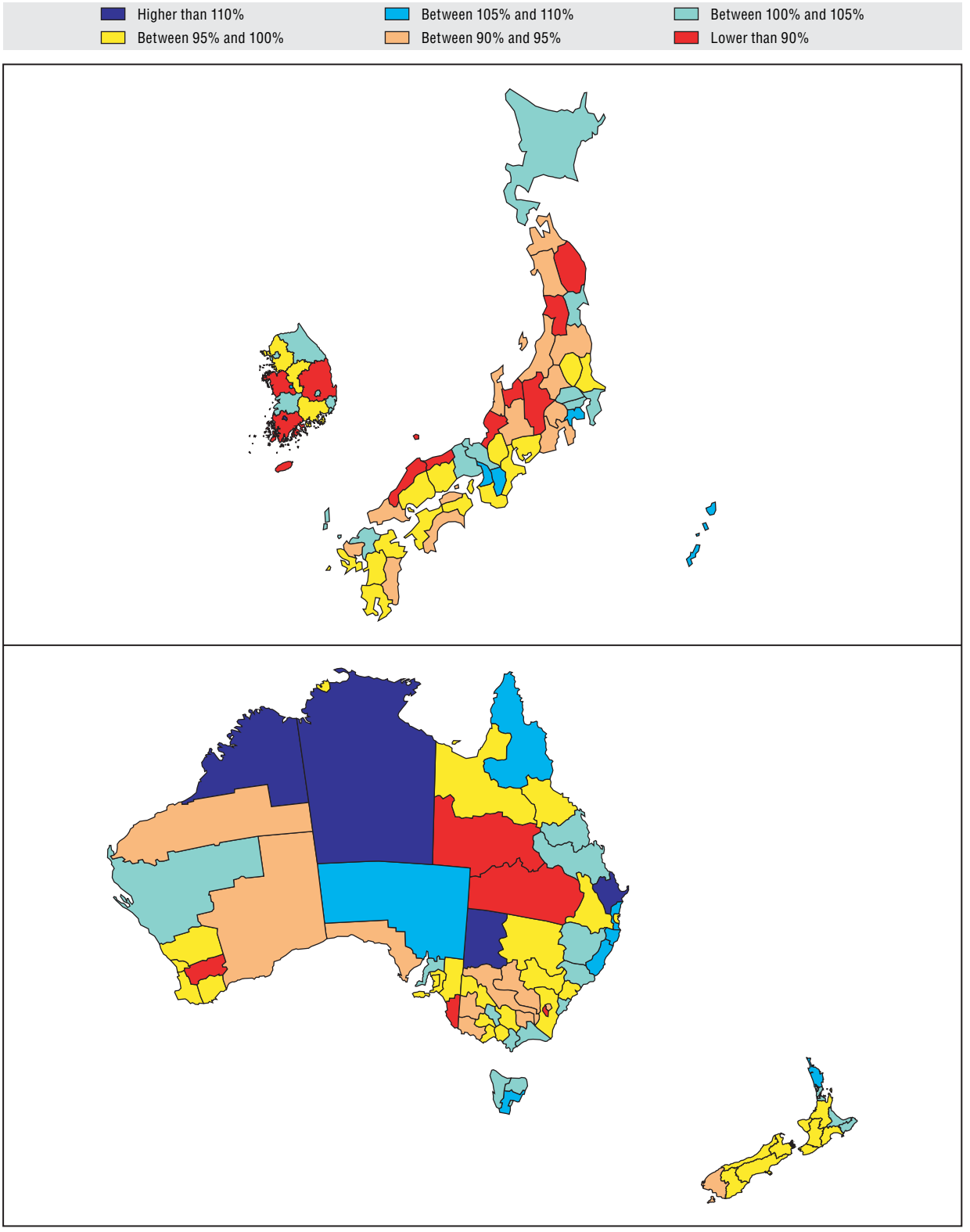


Percentage of the population aged 15-64 living in regions with a participation rate below the national average – 2001

Statlink: *http://dx.doi.org/10.1787/483764636872*

14.5. **Regional activity rate: Asia and Oceania TL3**

Percentage of national activity rate 2001

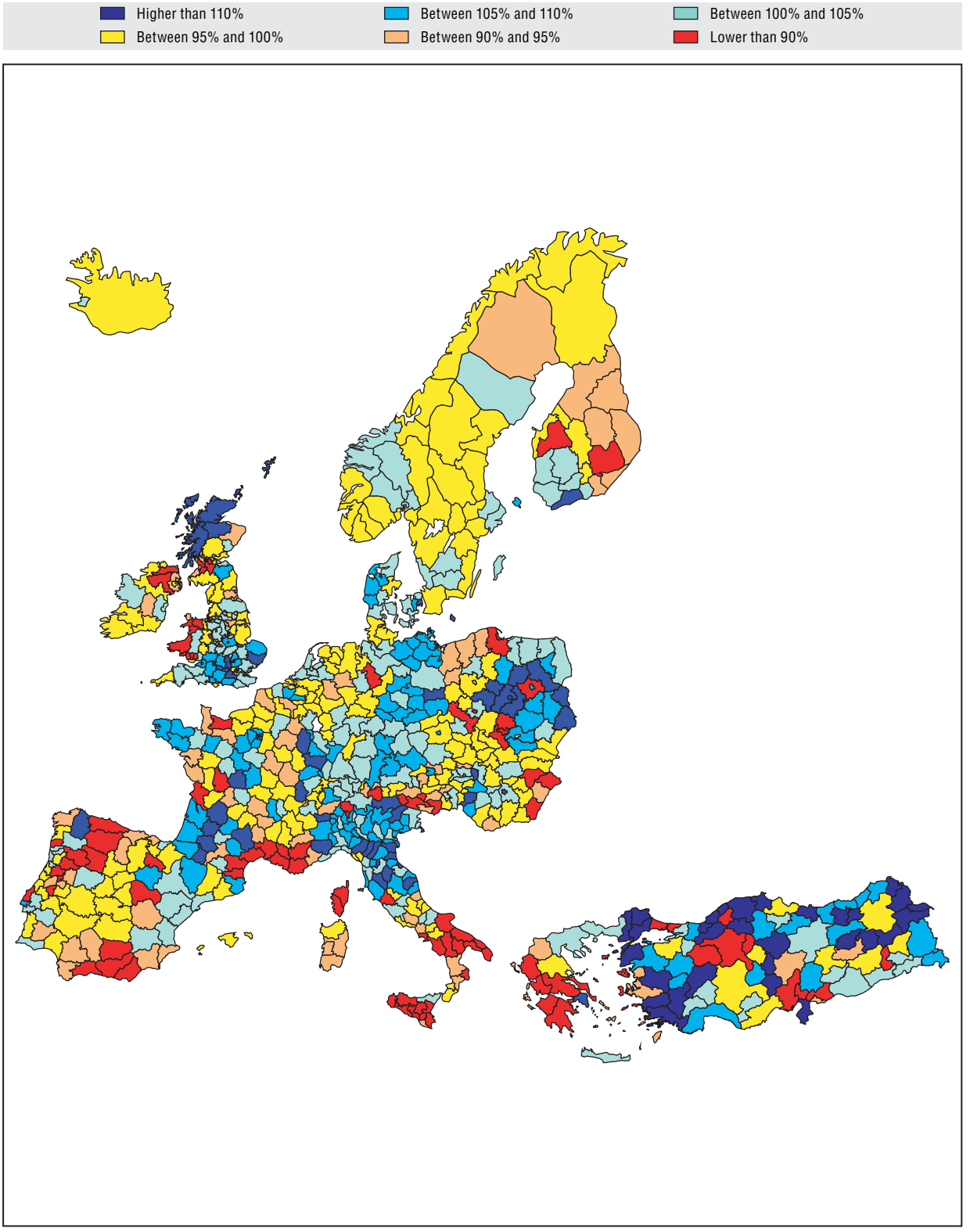


Source: OECD Territorial Database.

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14.6. **Regional activity rate: Europe TL3**

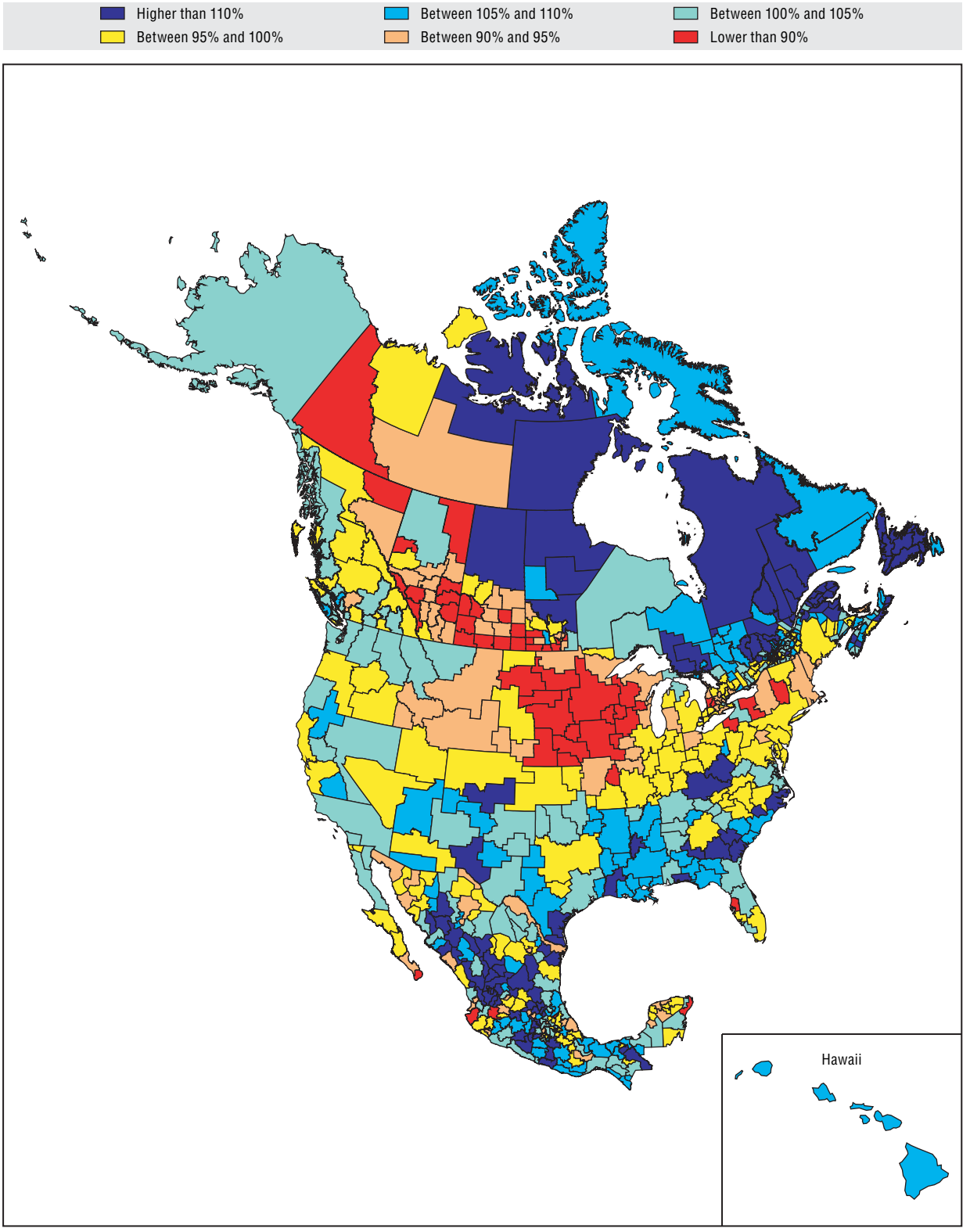
Percentage of national activity rate 2001



Source: OECD Territorial Database.

14.7. **Regional activity rate: North America TL3**

Percentage of national activity rate 2001



Source: OECD Territorial Database.

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Entering the labour market: job opportunities and regional disparities

Activity rates, *i.e.* the ratio between the labour force and population, vary significantly among regions. These differences may be the result of three factors: demographic trends, social behaviour and economic opportunities.

The propensity to participate in the labour market tends to change with age: it is low for young people during education; it increases for adults and it decreases again for elderly people because of retirement. Therefore, the larger the percentages of young or elderly people in the population, the lower the activity rates.

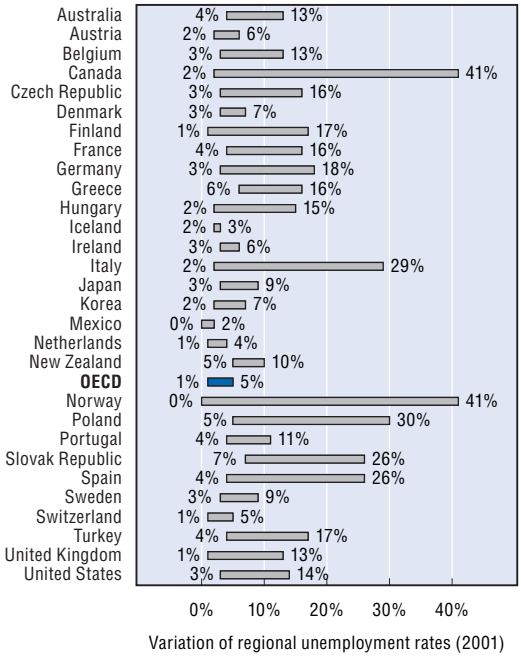
Activity rates are also affected by the sex composition of the population. Owing to social customs, labour market participation tends to be lower for women than for men so that the larger the share of women in a region the lower its activity rate.

The third factor affecting activity rates is the degree of economic opportunity. In fact, the higher a region's unemployment rate, the lower the probability for an individual to find a job and, therefore, his incentive to enter the labour market.

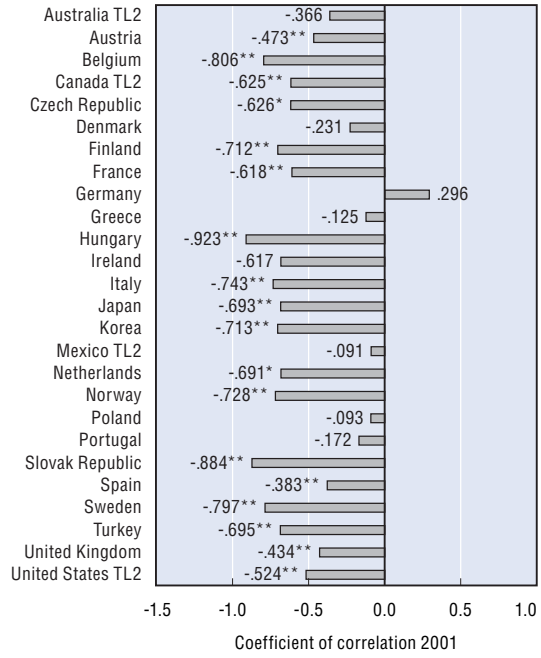
While the first two factors are exogenous – ageing is a demographic trend and low female participation rates depend on social customs – economic opportunities are endogenous and can be modified by opportune policies. Marked regional disparities in unemployment rates (Figure 14.8) suggest that job opportunities may vary significantly among regions. Figure 14.9 shows the correlation coefficients between regional participation rates and unemployment rates.

In 21 out of 28 countries, the correlation is negative and statistically significant, indicating that participation rates are low in regions of high unemployment. This general pattern suggests that regional differences in job opportunities are a major explanation for the observed differences in labour market participation.

14.8. **Unemployment rates vary significantly among regions**



14.9. **Participation rates are low in high-unemployment regions**



* Indicates significant at 95%.
** Indicates significant at 99%.

Germany is the only country where participation rates are higher in regions of high unemployment, a result probably driven by the eastern regions.

15. The factors of regional competitiveness

Economic performance varies significantly among OECD regions. But why are some regions more competitive than others? Regional benchmarking makes it possible to identify the factors of success in certain regions and assess the existence of unused resources in others.

Economic performance can be measured as the difference between the level of GDP per capita in a region and the national average, *i.e.* the benchmark. This difference is the result of one or more of the following factors: average labour productivity, industry specialisation, skills, employment rate, commuting, ageing and activity rates (see "Sources and Methodology, Indicator 15").

Each of these factors can be interpreted as an indicator of the determinants of economic performance at the regional level. Average labour productivity is a proxy for the productivity of the regional production system, specialisation measures the impact of high value added activities on GDP, the employment rate is a measure of the efficient functioning of the local labour market, skills are a proxy for the stock of human capital, activity rates summarise the characteristics of the regional labour force, ageing the impact of age on participation rates, and commuting rates are a proxy for the effects of geographic location.

The benchmarking results (Table 15.1) make it possible to identify the main factors explaining high GDP per capita in certain regions (comparative advantage) and low GDP per capita in others (comparative disadvantage).

Productivity appears to be the main comparative advantage in a majority of regions with high GDP per capita (43%). It is also the most frequent comparative disadvantage in an even larger majority of regions with low GDP per capita (62%).

High participation in the labour market appears to be the second most frequent comparative advantage in regions with high GDP per capita (20%). However, labour force participation is the main explanation of low competitiveness in only 8% of regions with a level of GDP per capita below the national average.

The importance of commuting, specialisation and employment rates seem to be similar in regions with low and high GDP per capita at about 15% for commuting, 7% for specialisation and 6% for the employment rate (7% in regions with low GDP per capita).

Finally, skills seem more often to be a comparative advantage than an explanation of poor performance. They are the main comparative advantage in 6% of regions with high GDP per capita against only 1% of regions with low GDP per capita.

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15.1. **Main factors of regional competitiveness**[1]

	GDP per capita above the national average								GDP per capita below the national average								Total number of regions
	Number of regions	Specialisation	Productivity	Skills	Employment rate	Commuting	Age	Activity rate	Number of regions	Specialisation	Productivity	Skills	Employment rate	Commuting	Age	Activity rate	
Australia	5	0	3	1	0	0	0	1	3	0	3	0	0	0	0	0	8
Austria	12	8	4	0	0	0	0	0	23	15	8	0	0	0	0	0	35
Belgium	3	0	1	0	0	2	0	0	8	0	3	0	0	5	0	0	11
Canada	4	0	3	0	0	0	0	1	8	0	6	0	0	0	1	1	12
Czech Republic	1	0	1	0	0	0	0	0	13	0	12	0	0	1	0	0	14
Denmark	2	0	1	0	0	1	0	0	13	0	6	0	0	7	0	0	15
Finland	3	0	2	0	0	1	0	0	17	0	9	0	1	2	0	5	20
France	10	0	3	0	1	4	1	1	86	0	58	1	0	15	0	12	96
Germany	8	0	7	0	0	0	0	1	41	1	29	0	3	6	0	2	49
Greece	4	1	3	0	0	0	0	0	9	4	0	0	0	0	0	5	13
Hungary	4	0	2	0	0	0	0	2	16	0	14	0	0	2	0	0	20
Ireland	2	0	1	1	0	0	0	0	6	0	4	0	1	1	0	0	8
Italy	53	0	10	0	11	4	0	28	50	0	20	0	11	12	0	7	103
Japan	8	0	1	6	0	1	0	0	39	0	18	0	17	4	0	0	47
Korea	7	1	6	0	0	0	0	0	9	1	7	0	0	1	0	0	16
Mexico	12	0	10	0	0	0	0	2	20	2	17	0	0	0	0	1	32
Netherlands	4	0	2	0	0	2	0	0	8	0	4	0	0	4	0	0	12
Norway	2	1	0	0	0	1	0	0	17	0	15	0	0	2	0	0	19
Poland	10	6	3	0	0	0	0	1	34	14	3	0	3	10	0	4	44
Portugal	3	1	1	0	0	0	0	1	25	9	13	0	0	1	0	2	28
Slovak Republic	2	0	2	0	0	0	0	0	6	0	4	0	1	1	0	0	8
Spain	18	0	9	1	2	2	1	3	30	0	13	3	2	2	4	6	48
Sweden	1	0	1	0	0	0	0	0	20	0	15	0	1	2	0	2	21
Turkey	20	0	10	0	1	0	1	8	61	0	54	0	0	0	2	5	81
United Kingdom	37	0	10	10	0	15	0	2	96	0	62	0	9	20	0	5	133
United States	20	0	14	0	0	6	0	0	31	0	27	0	0	3	0	1	51
OECD	**144**	**8**	**60**	**6**	**8**	**13**	**1**	**26**	**386**	**6**	**60**	**0**	**9**	**16**	**0**	**9**	**530**

1. The table summarises the main explanation for GDP per capita (columns) in each of the OECD regions (rows). In Australia, for example, GDP per capita in 2001 was above the national average in 5 regions and below the national average in 3 regions. The main explanation for high GDP per capita was: high productivity (in 3 regions); high skills (in 1 region), and high activity rate (in 1 region). The main explanation for low GDP per capita was: low productivity (in all 3 regions).

16. Labour productivity

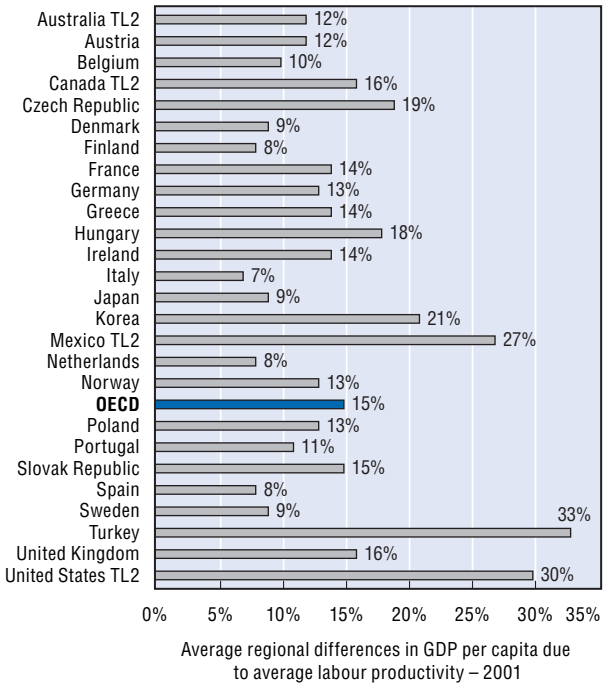
A large part of regional differences in GDP per capita is due to differences in productivity, *i.e.* the value of GDP per worker. Differences in productivity may be due to specialisation in industries with low productivity, inadequate infrastructure or inefficient production technology, which includes intra-firm organisation and inter-firm linkages.

Figure 16.1 shows the extent to which regional differences in GDP per capita are due to productivity. Average labour productivity generally accounts for a difference of more than 15 percentage points among regions.

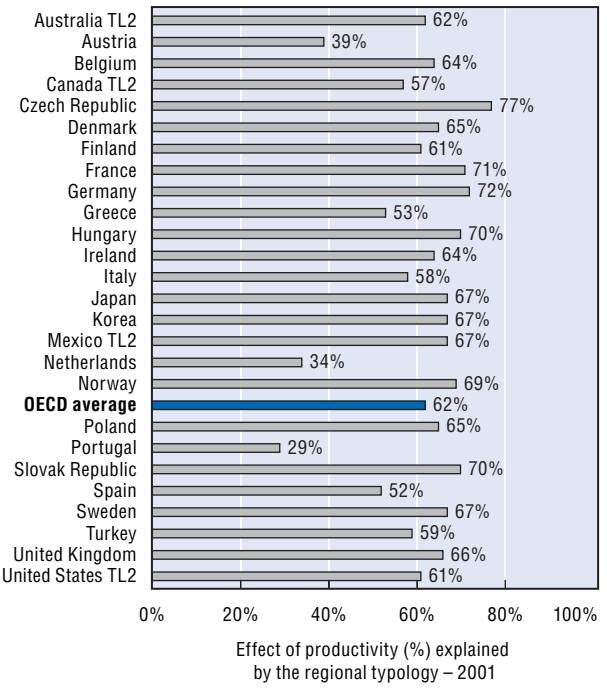
This effect is considerably larger in Turkey and the United States, where regional differences in GDP per capita due to productivity are above 30 percentage points. The effect of productivity is also large in Mexico (27%), Korea (21%) and the Czech Republic (19%). It is smaller but still significant in Italy (7%) and the Netherlands (8%).

As productivity depends on physical infrastructure, technology and skills, urban regions tend to have higher productivity than rural and intermediate regions. On average, the distinction between urban, rural and intermediate regions explains over 60% of the regional differences in GDP per capita due to productivity (Figure 16.2).

16.1. **In 2001, regional differences in GDP per capita due to productivity were over 15%**



16.2. **On average, about half of the effect of specialisation on regional performances is accounted by regional type**



Statlink: *http://dx.doi.org/10.1787/825720177605*

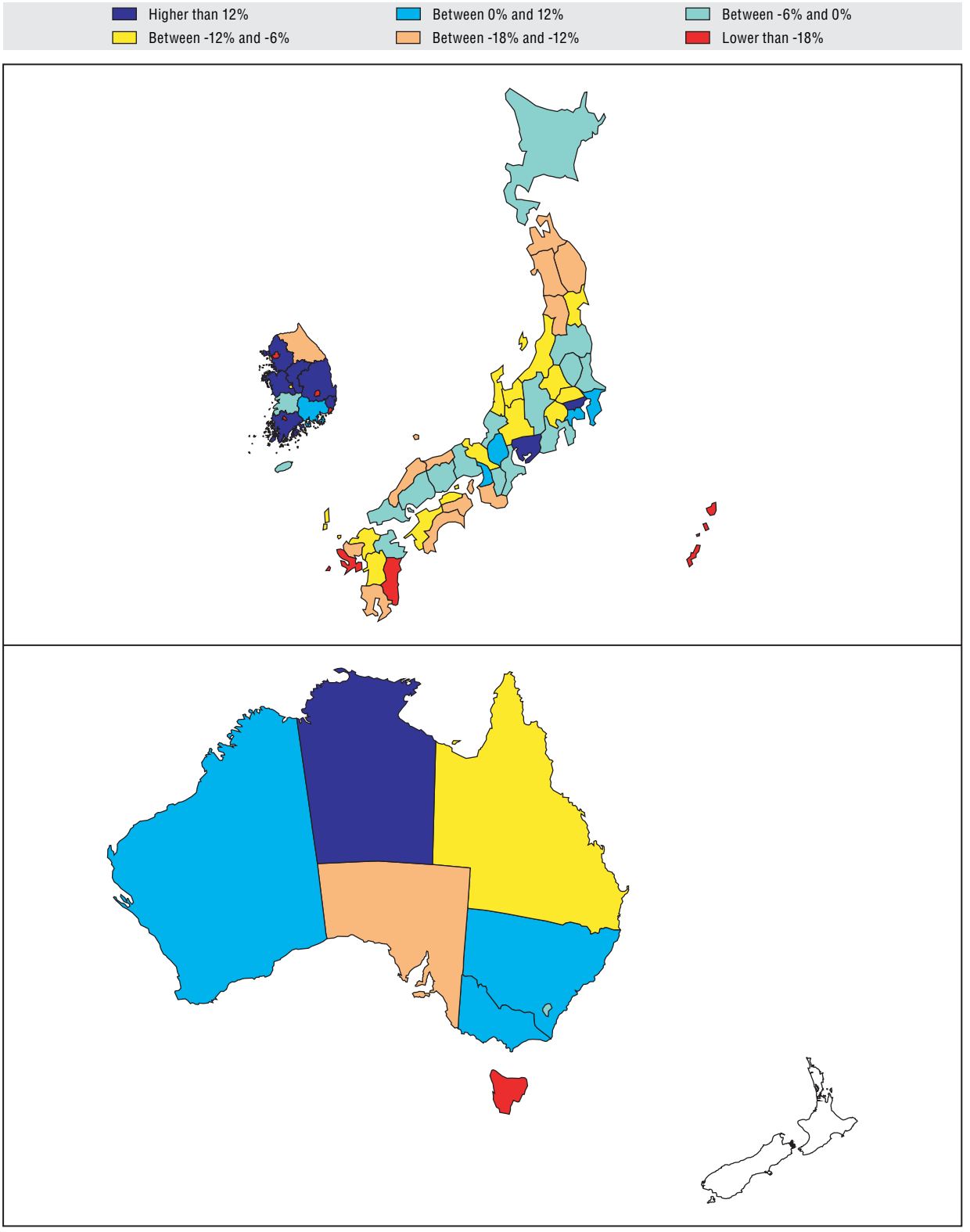
Definition

The indicators shown in this chapter measure the percentage of regional differences in GDP per capita that is accounted by regional differences in average labour productivity. Average labour productivity is defined as the ratio between GDP and employment – measured at the place of work – and is adjusted for differences in industry specialisation.

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16.3. **Differences in GDP per capita due to productivity: Asia TL3 and Oceania TL2**

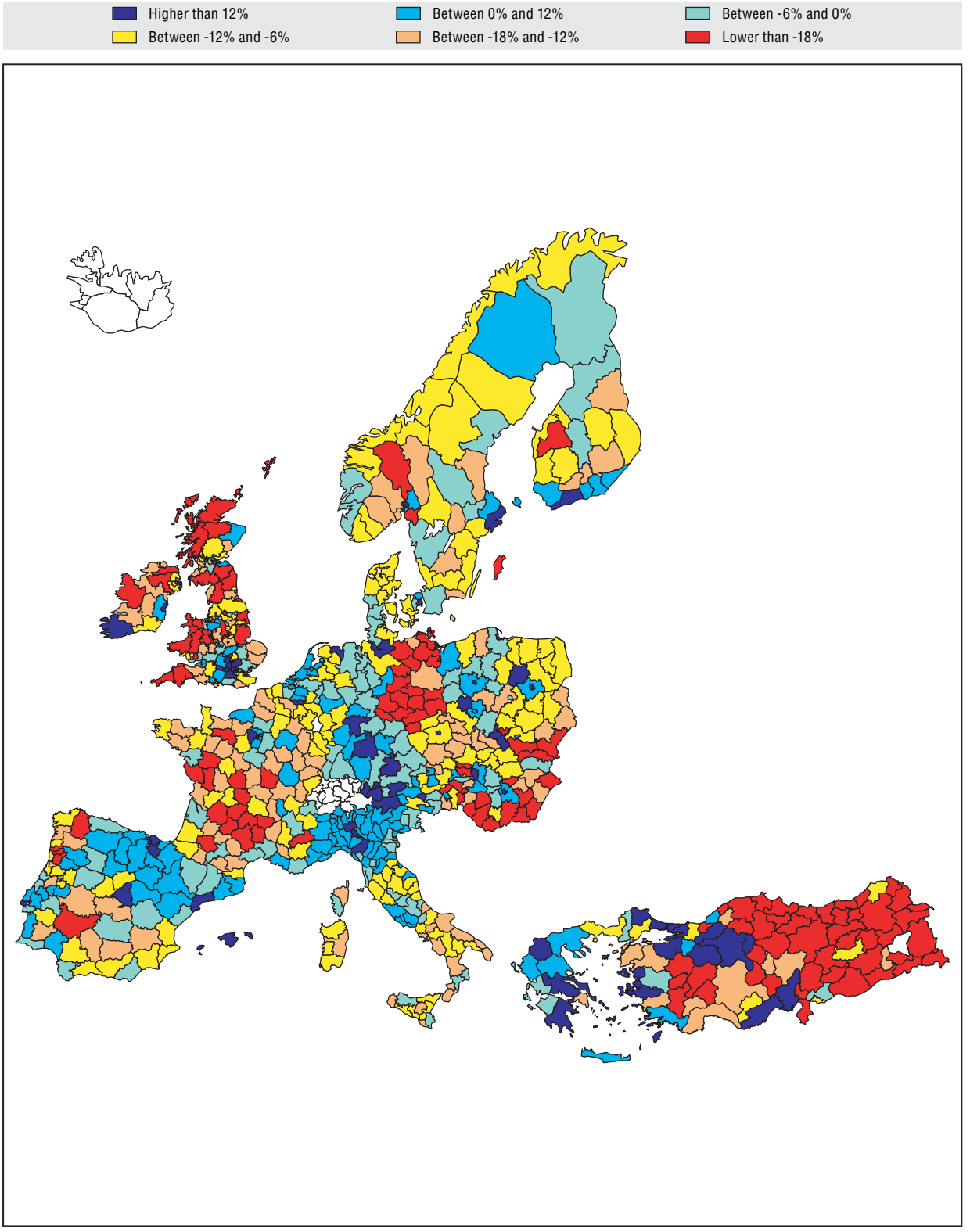
Percentage difference from national GDP per capita 2001



Source: OECD Territorial Database.

16.4. **Differences in GDP per capita due to productivity: Europe TL3**

Percentage difference from national GDP per capita 2001

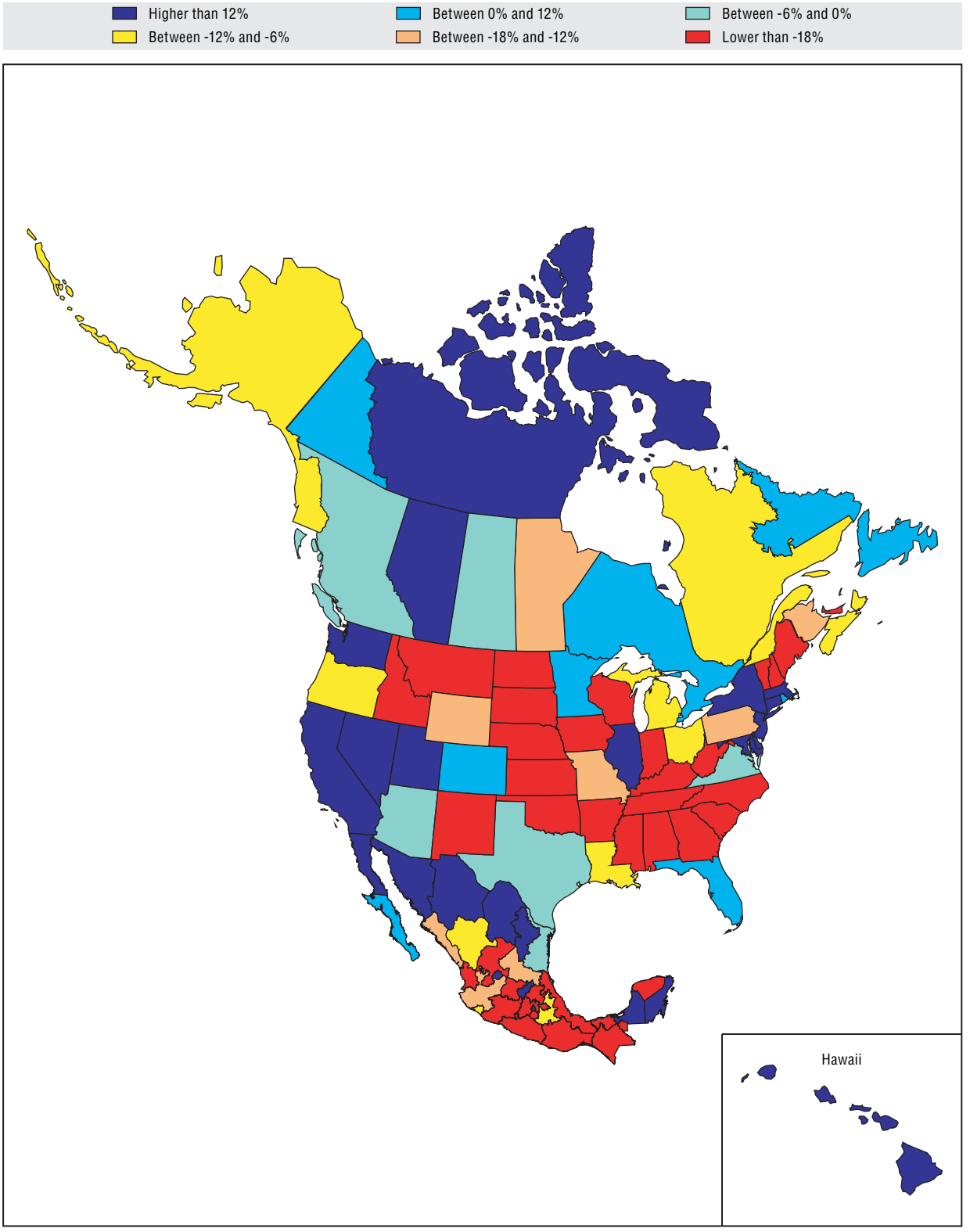


Source: OECD Territorial Database.

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16.5. **Differences in GDP per capita due to productivity: North America TL2**

Percentage difference from national GDP per capita 2001



Source: OECD Territorial Database.

17. Industry specialisation

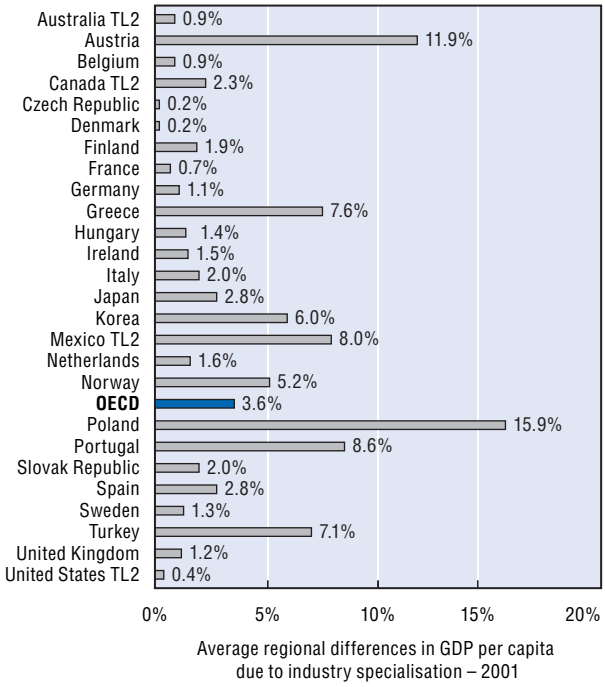
Regional differences in GDP per capita may be the result of specialisation in activities with low value added. In general, GDP per worker tends to be higher in manufacturing and services than in agriculture. Therefore, the larger the share of industries with a low level of GDP per worker, the lower the region's level of GDP per capita.

Figure 17.1 shows of the extent to which regional differences in GDP per capita are due to industry specialisation. On average, specialisation accounts for a difference of 3.6 percentage points among regions but it is considerably larger in some countries. In Poland and Austria, regional differences in GDP per capita due to specialisation are of the order of 16 and 12 percentage points, respectively.

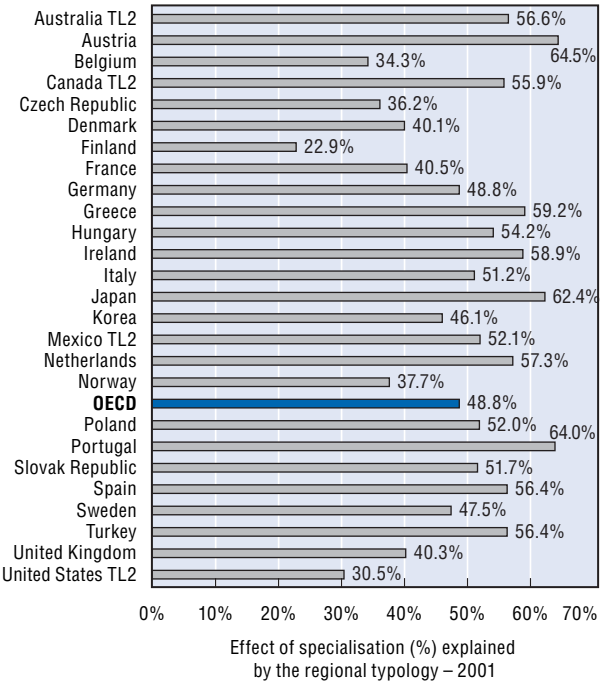
In Greece, Mexico, Portugal and Turkey, the average difference in GDP per capita due to specialisation is no less than 7%. On the other hand, the effect of specialisation on regional differences appears very small in the Czech Republic and Denmark (0.02%).

Specialisation is the result of natural endowments and geographic location. Urban regions tend to specialise in different activities than rural or intermediate regions. On average, the distinction between urban, rural and intermediate regions explains almost half of regional differences in GDP per capita due to specialisation (Figure 17.2). Therefore, natural endowments and geography seem to be a major reason for differences in regional specialisation.

17.1. **In 2001, regional differences of close to 4% in GDP per capita were due to specialisation**



17.2. **On average, about half of the effect of specialisation on regional performances is due to regional type**



Statlink: *http://dx.doi.org/10.1787/878245172867*

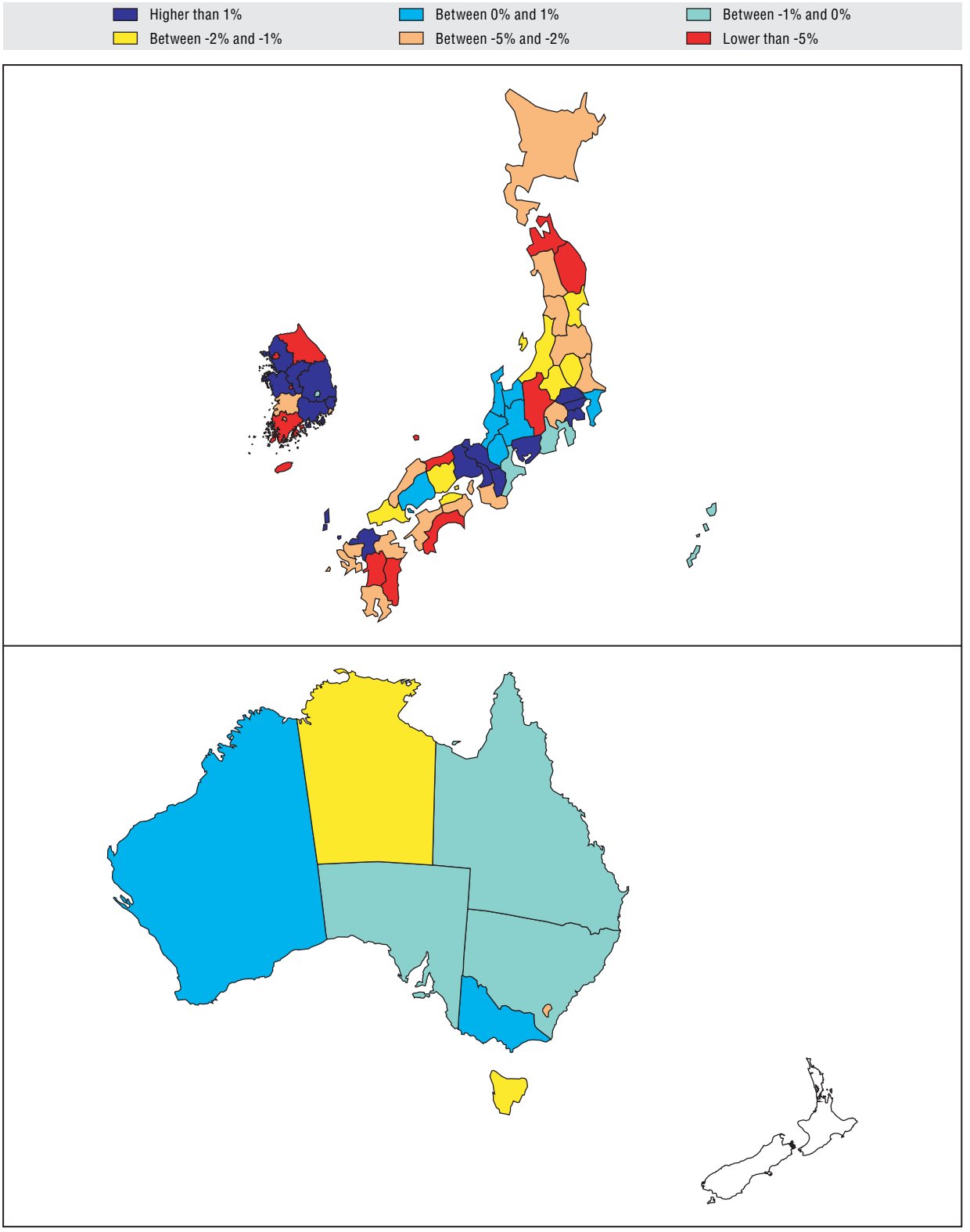
Definition

The indicators shown in this chapter measure the percentage of regional differences in GDP per capita that is accounted by regional differences in industry specialisation. Industry specialisation is measured by the distribution of employment across 3 sectors: Agriculture, Forestry and Fishery; Industry and Construction; and Services.

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17.3. **Differences in GDP per capita due to specialisation: Asia TL3 and Oceania TL2**

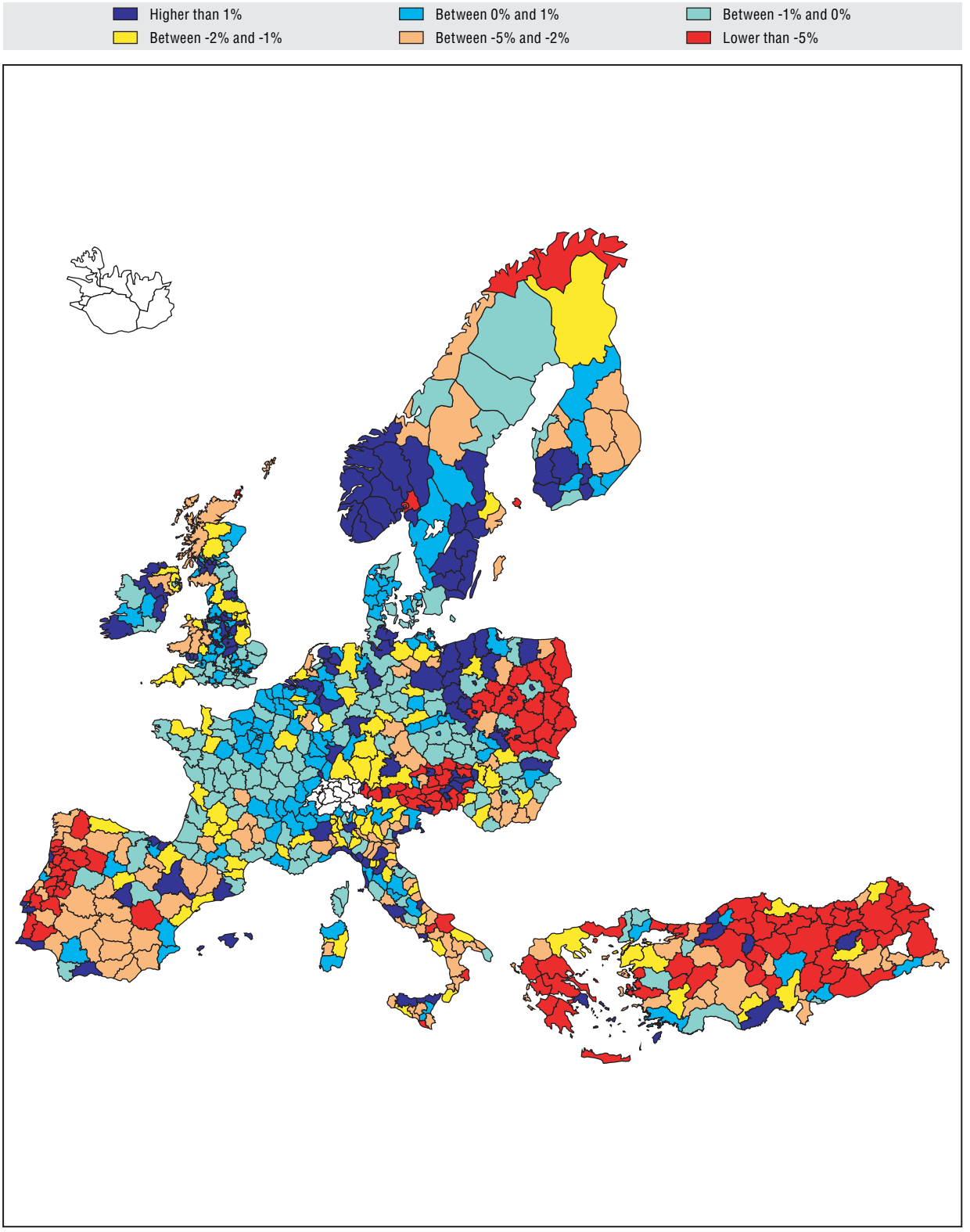
Percentage difference from national GDP per capita 2001



Source: OECD Territorial Database.

17.4. **Differences in GDP per capita due to specialisation: Europe TL3**

Percentage difference from national GDP per capita 2001

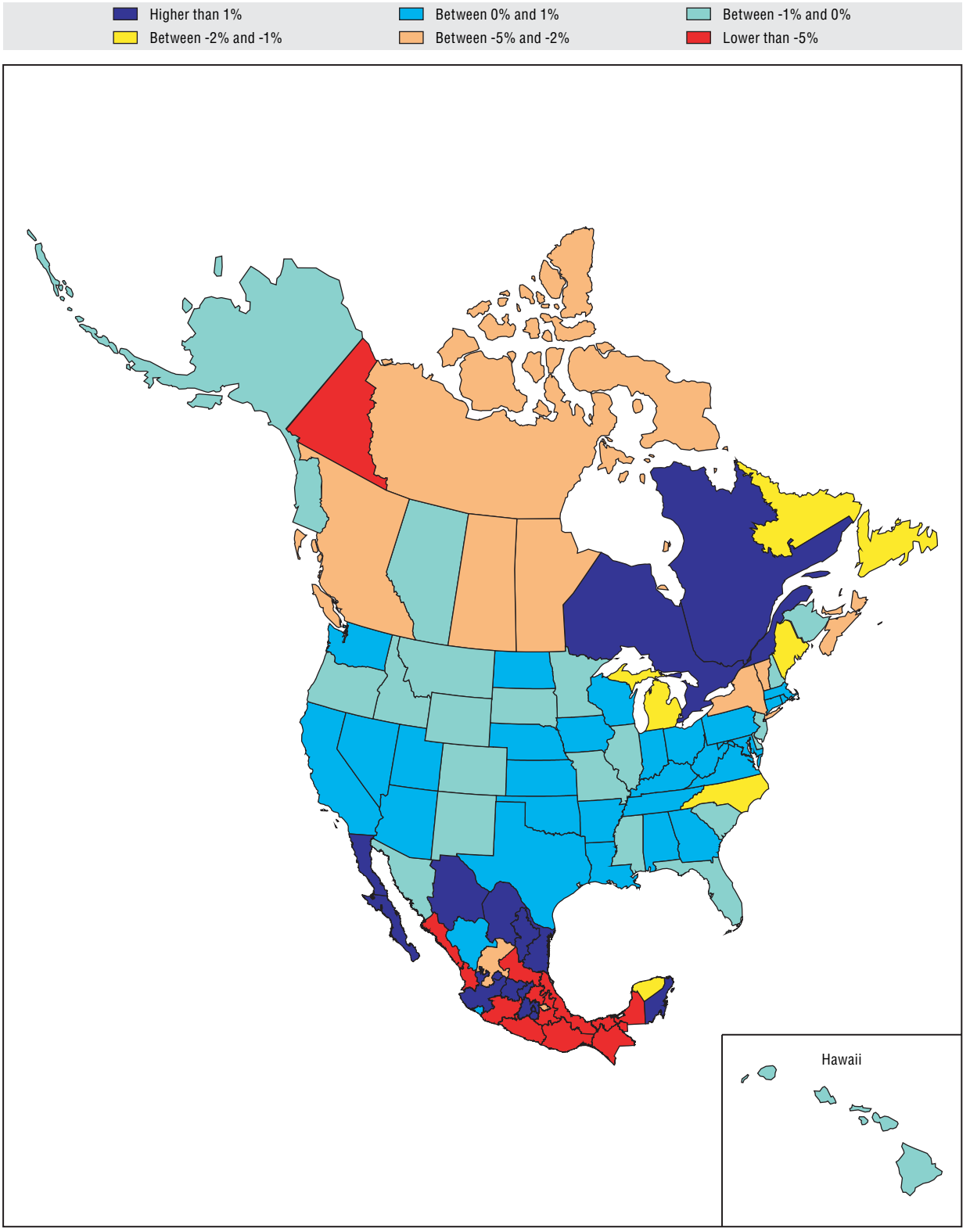


Source: OECD Territorial Database.

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17.5. **Differences in GDP per capita due to specialisation: North America TL2**

Percentage difference from national GDP per capita 2001



Source: OECD Territorial Database.

18. Skills

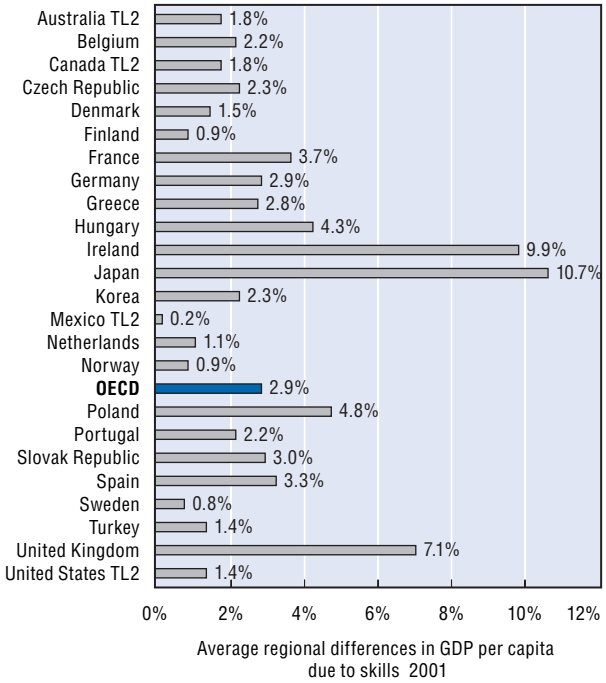
Regional differences in GDP per capita may be due to the skills profile of the labour force. In general, highly skilled individuals tend to have higher employment rates than those with low skills. Therefore, the larger the share of highly skilled individuals in a region, the higher its employment rate, other things being equal.

Figure 18.1 shows the extent to which regional differences in GDP per capita are due to differences in skills. On average, skills account for a difference of 3 percentage points among regions.

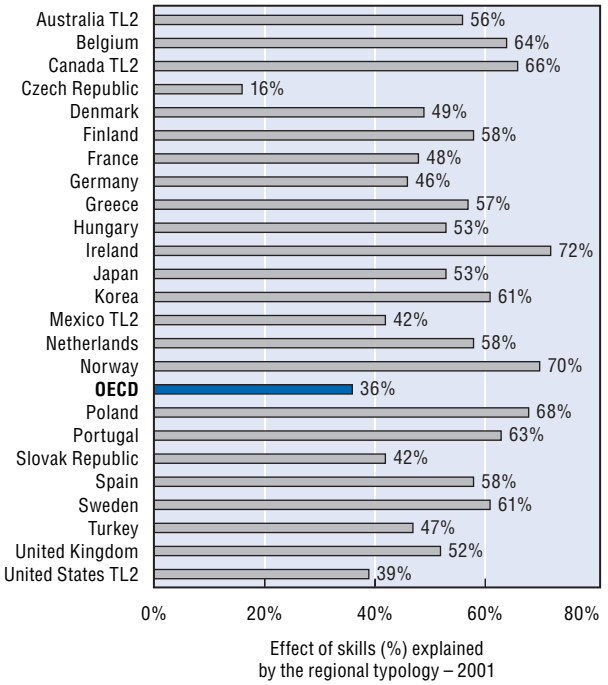
The difference is considerably larger in Ireland and Japan, where regional differences in GDP per capita due to skills are above 10 percentage points. It is also large in the United Kingdom (7%) and Poland (5%) but very small in Mexico (close to 0).

As the skilled population tends to concentrate in urban centres, the impact of skills tends to be greater in urban than in rural and intermediate regions. On average, the distinction between urban, rural and intermediate regions explains more than 60% of the regional differences in GDP per capita due to productivity (Figure 18.2).

18.1. **In 2001, regional differences in GDP per capita due to skills were about 3%**



18.2. **On average, 36% of the effect of skills on regional performance is explained by the regional type**



Statlink: *http://dx.doi.org/10.1787/615787615686*

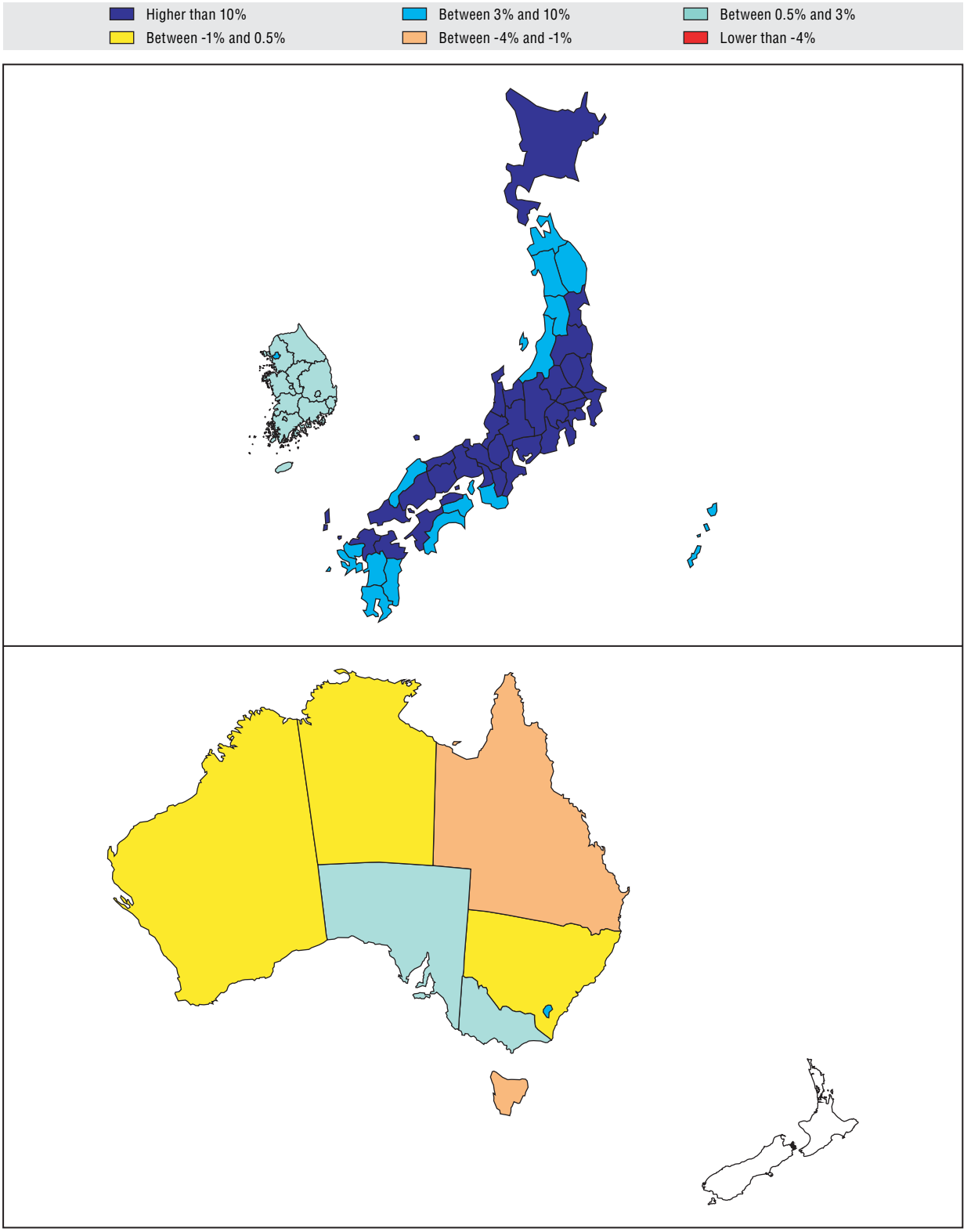
Definition

The indicators shown in this chapter measure the percentage of regional differences in GDP per capita that is explained by regional differences in the skills profile of the population. Skills are proxied by educational attainments according to the *International Standard Classification of Education* (ISCED).

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18.3. **Differences in GDP per capita due to skills: Asia TL3 and Oceania TL2**

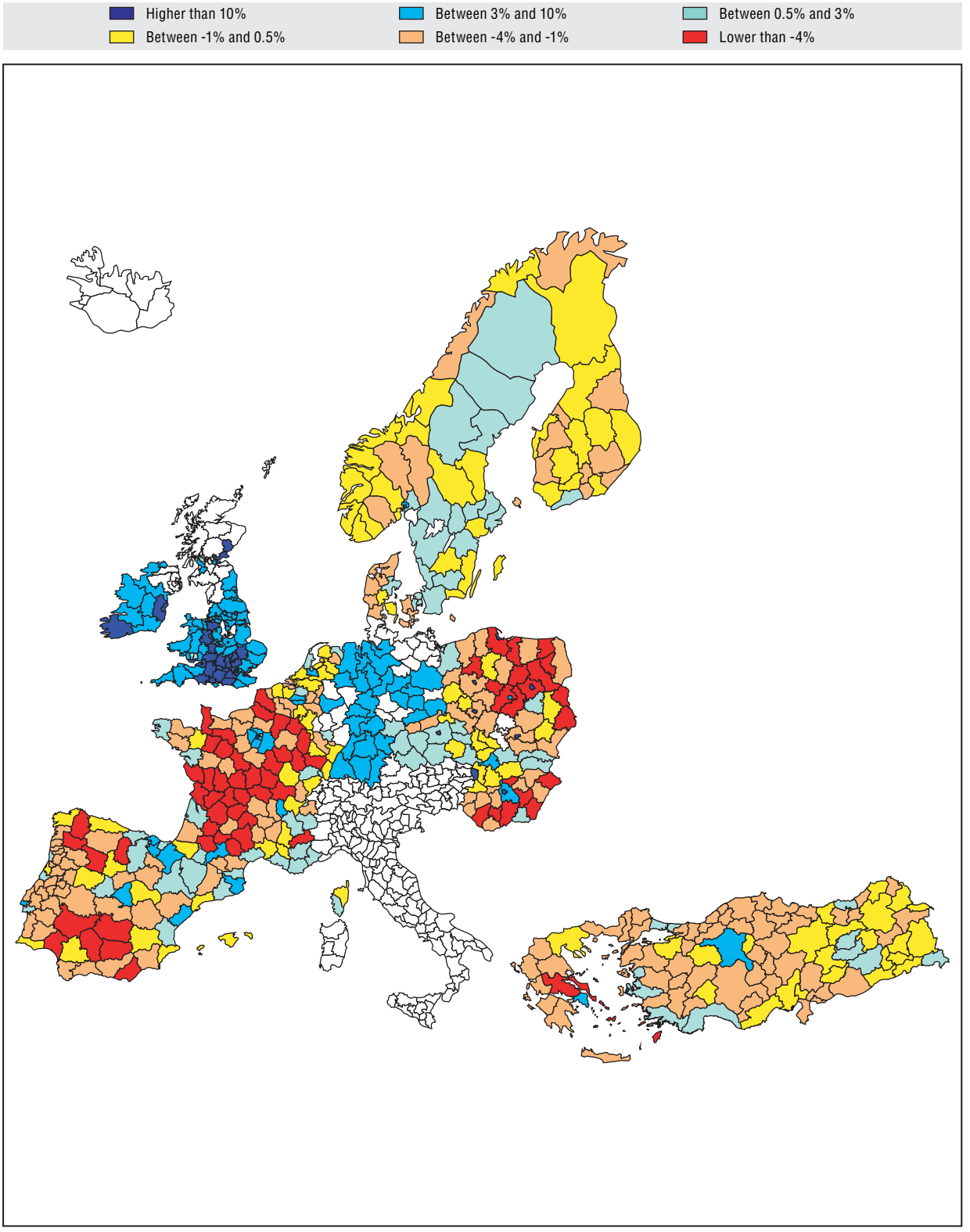
Percentage difference from national GDP per capita 2001



Source: OECD Territorial Database.

18.4. **Differences in GDP per capita due to skills: Europe TL3**

Percentage difference from national GDP per capita 2001

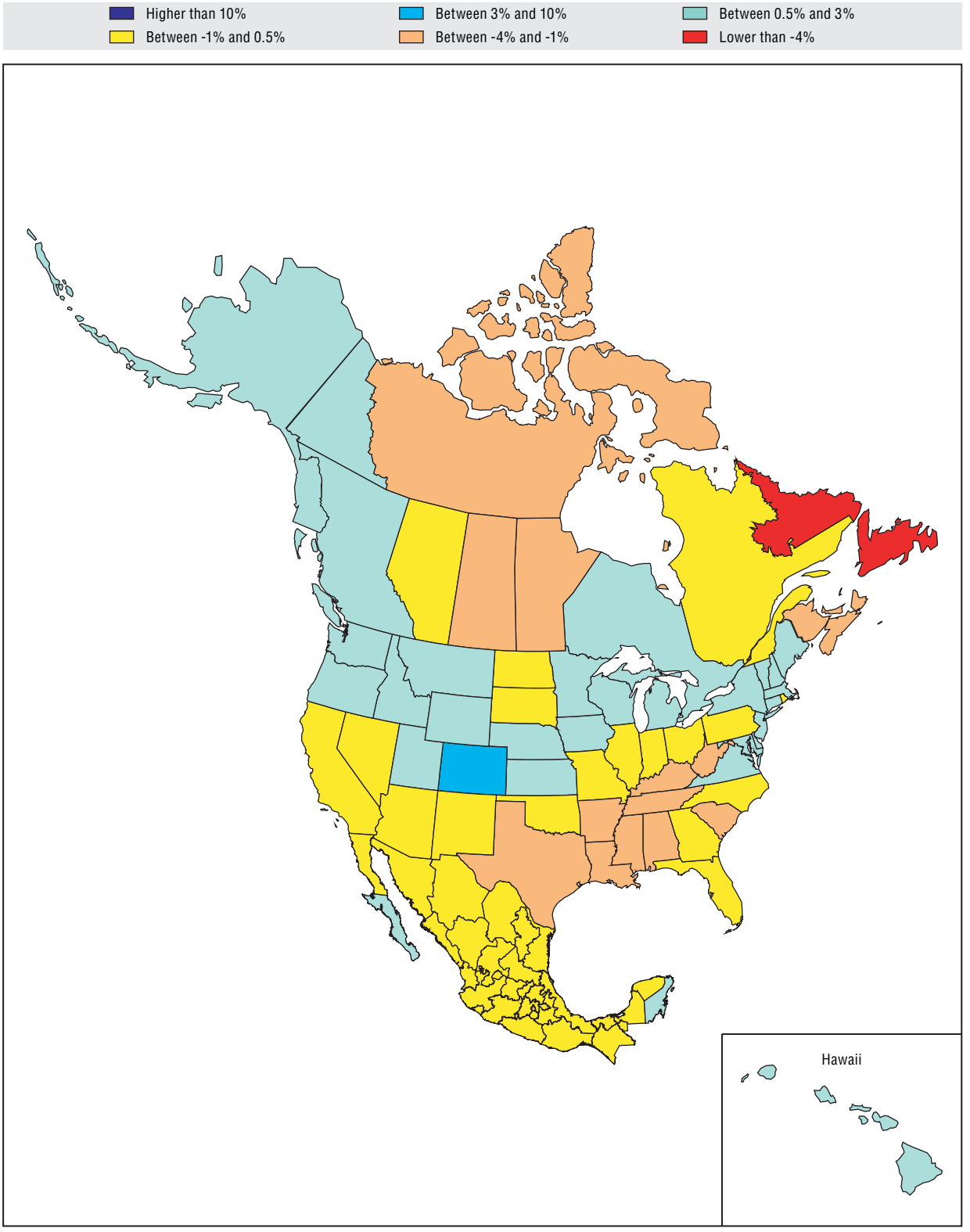


Source: OECD Territorial Database.

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18.5. **Differences in GDP per capita due to skills: North America TL2**

Percentage difference from national GDP per capita 2001



Source: OECD Territorial Database.

19. The labour market

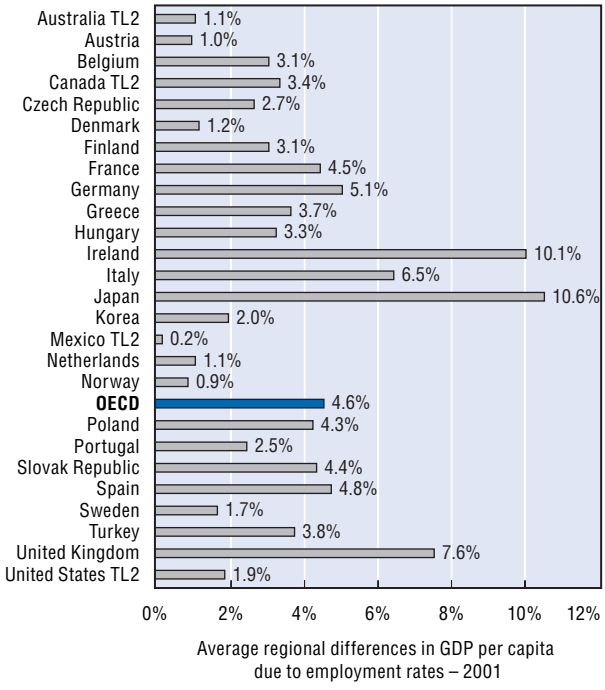
A significant share of regional differences in GDP per capita is due to differences in employment rates. Higher employment rates are a measure of the capability of the regional labour market to match labour demand and supply. Therefore, the greater the flexibility of the regional labour market, the higher its employment rate, other things being equal.

Figure 19.1 shows the extent to which regional differences in GDP per capita are due to differences in employment rates. On average in 2001, employment rates accounted for a difference of 5 percentage points among regions.

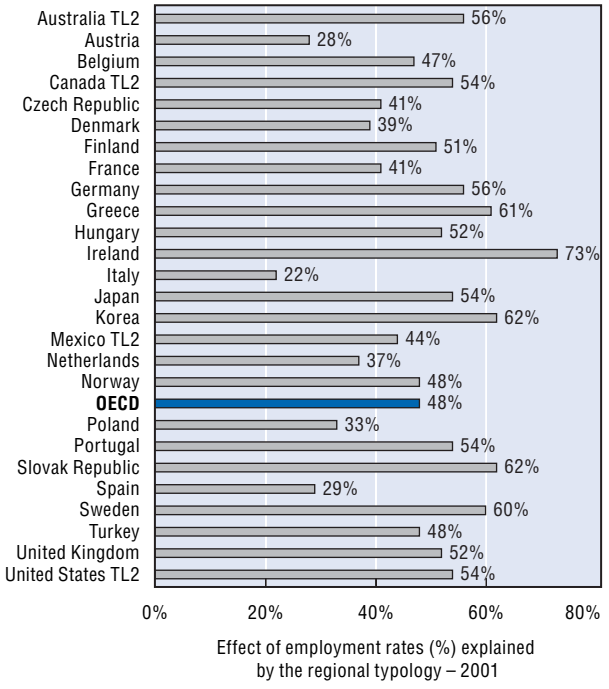
The difference was considerably larger in Ireland and Japan, where it was above 10 percentage points. The effect of the labour market was also large in the United Kingdom (8%) and Italy (7%) but very small in Mexico (close to 0).

The functioning and institutions of the labour market tend to be quite different in urban, intermediate and rural regions. On average, the distinction between these three types of regions explains about half of the regional differences in GDP per capita due to employment rates (Figure 19.2).

19.1. **In 2001, there were regional differences of 5% in GDP per capita due to employment rates**



19.2. **On average, about half of the effect of employment rates on performance is due to the regional type**



Statlink: *http://dx.doi.org/10.1787/482211746485*

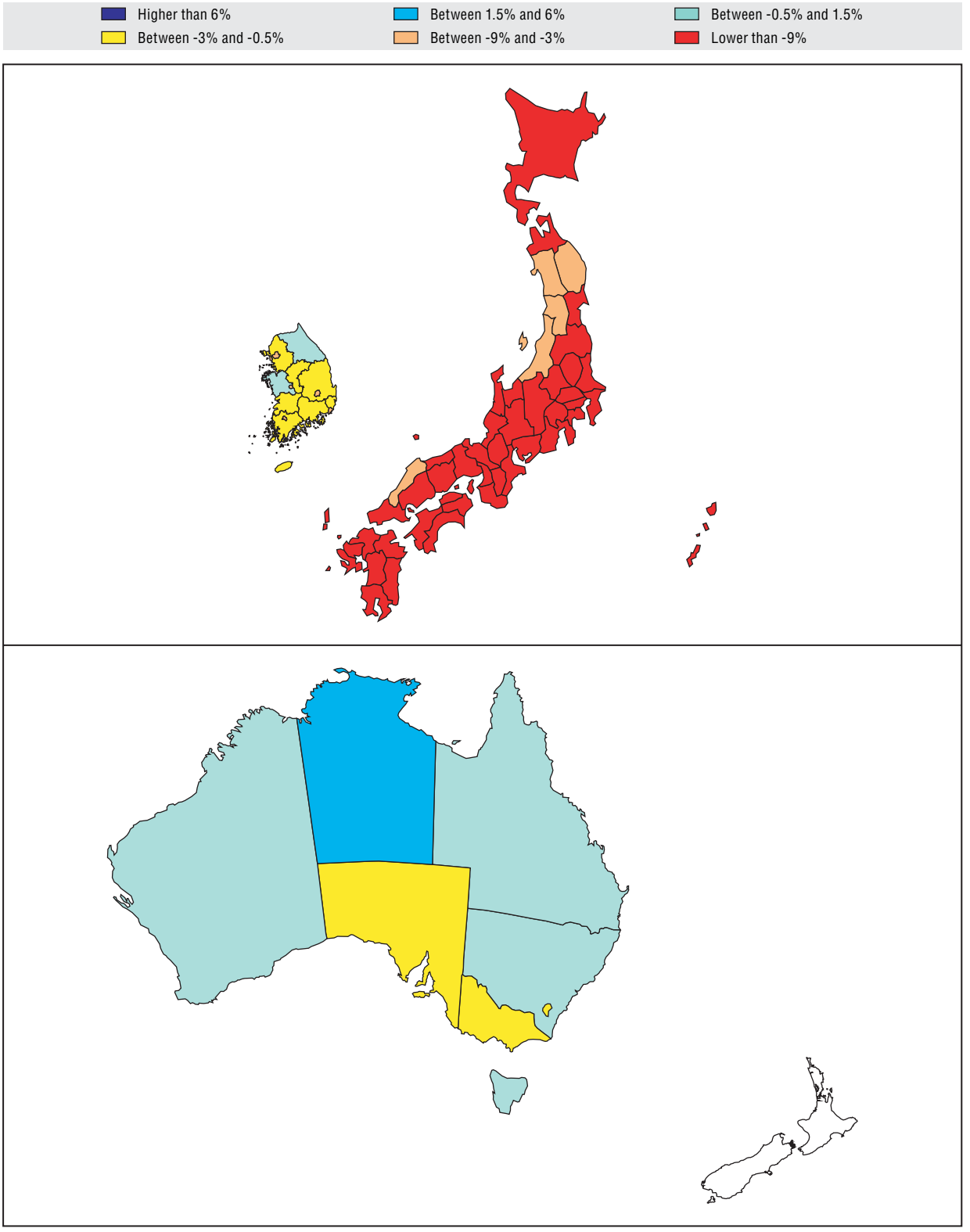
Definition

The indicators shown in this chapter measure the percentage of regional differences in GDP per capita that is accounted by regional differences in employment rates. Employment rate is defined as the ratio of employment at the place of work and the labour force. Employment rates are adjusted for differences in the educational attainments of the labour force.

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19.3. **Differences in GDP per capita due to employment rate: Asia TL3 and Oceania TL2**

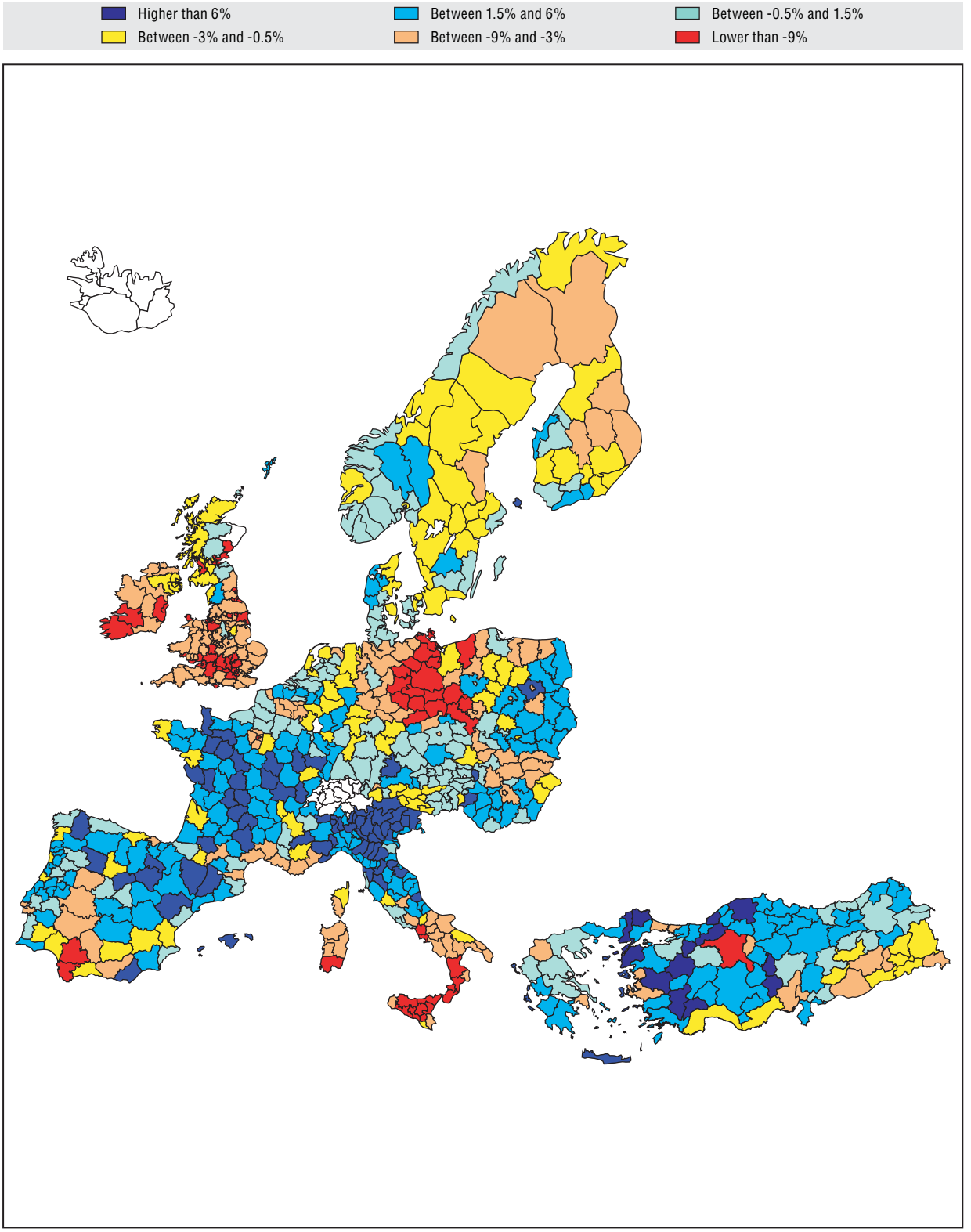
Percentage difference from national GDP per capita 2001



Source: OECD Territorial Database.

19.4. **Differences in GDP per capita due to employment rate: Europe TL3**

Percentage difference from national GDP per capita 2001

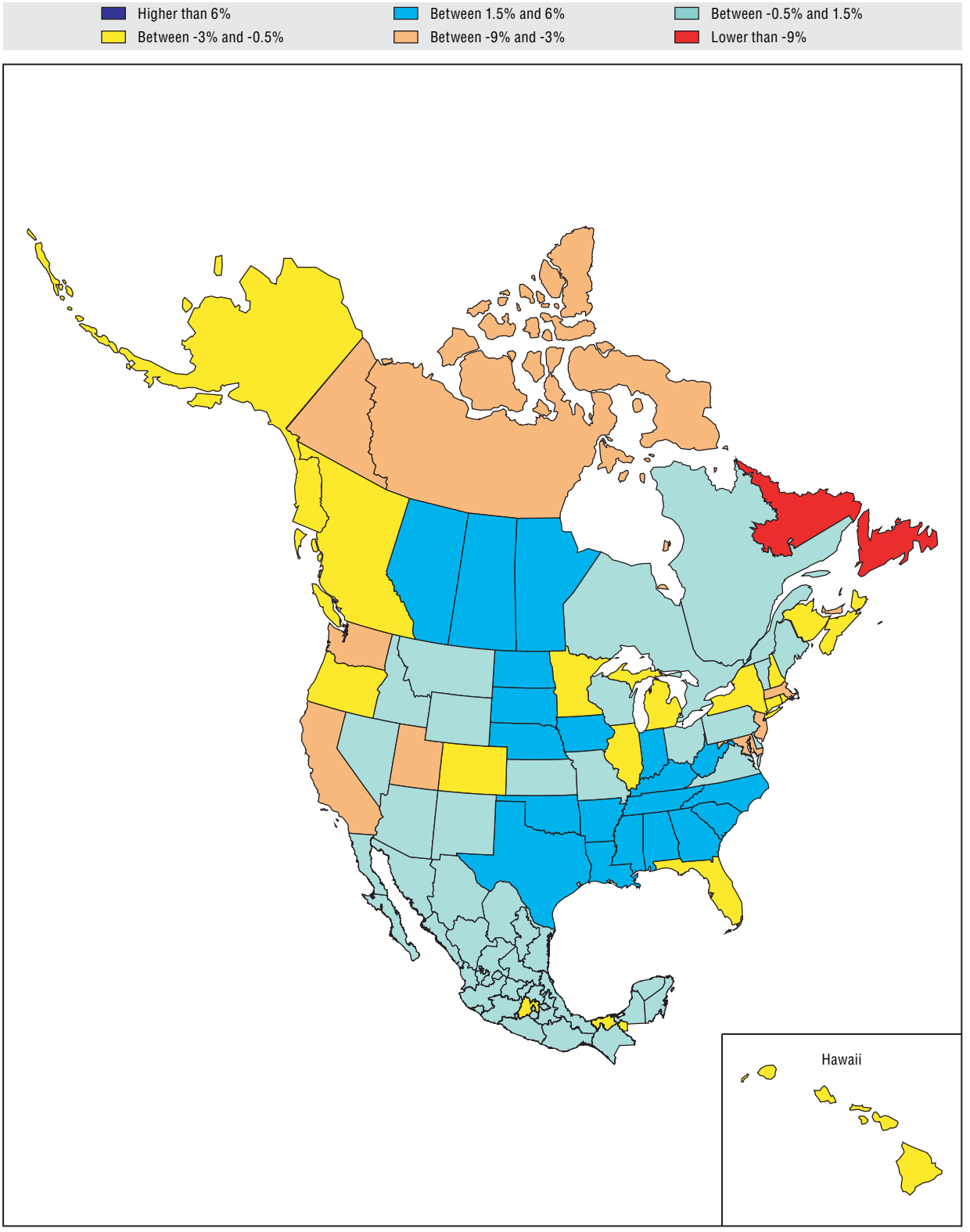


Source: OECD Territorial Database.

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19.5. **Differences in GDP per capita due to employment rate: North America TL2**

Percentage difference from national GDP per capita 2001



Source: OECD Territorial Database.

20. Commuting flows

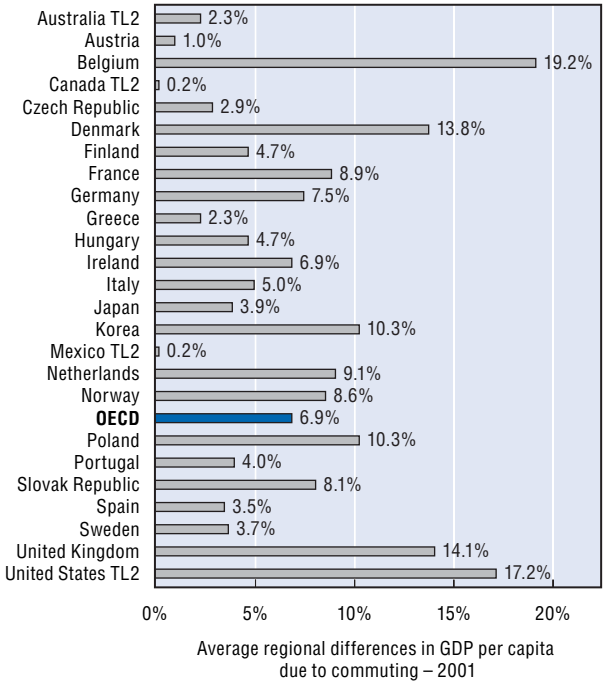
A significant part of regional differences in GDP per capita is due to the commuting of workers between regions. When commuters reside in one region and work in another, GDP per capita is reduced in the region where they live and augmented in the region where they work.

Figure 20.1 shows the extent to which regional differences in GDP per capita are due to commuting flows between regions. On average in 2001, commuting accounted for regional differences of 7 percentage points.

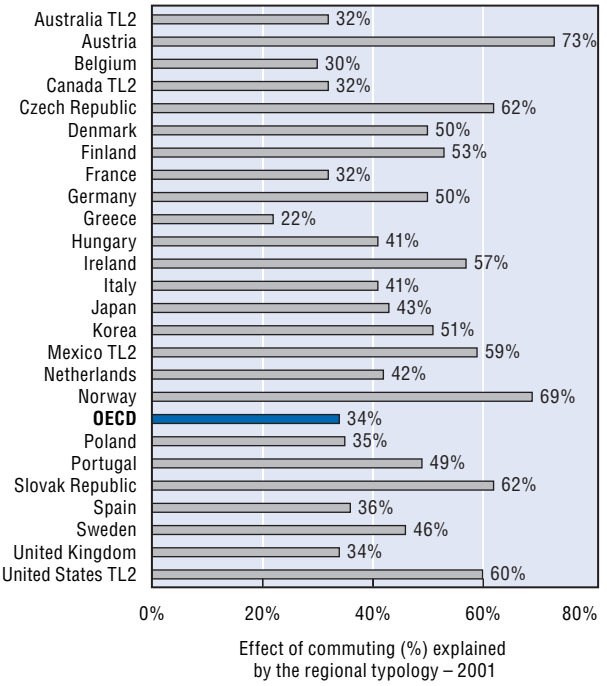
The difference was considerably larger in Belgium (19%), the United States (17%), Denmark and the United Kingdom (14%). The effect of commuting was also large in Korea and Poland (10%) but very small in Canada and Mexico (close to 0).

As urban centres are major attractors of commuters, one may expect the effect of commuting to vary with the type of region. On average, the distinction between urban, intermediate and rural regions explains about 34% of regional differences in GDP per capita due to commuting (Figure 20.2).

20.1. **In 2001, there were regional differences in GDP per capita of 7% due to commuting**



20.2. **On average, 34% of the effect of commuting on GDP per capita is due to the regional type**



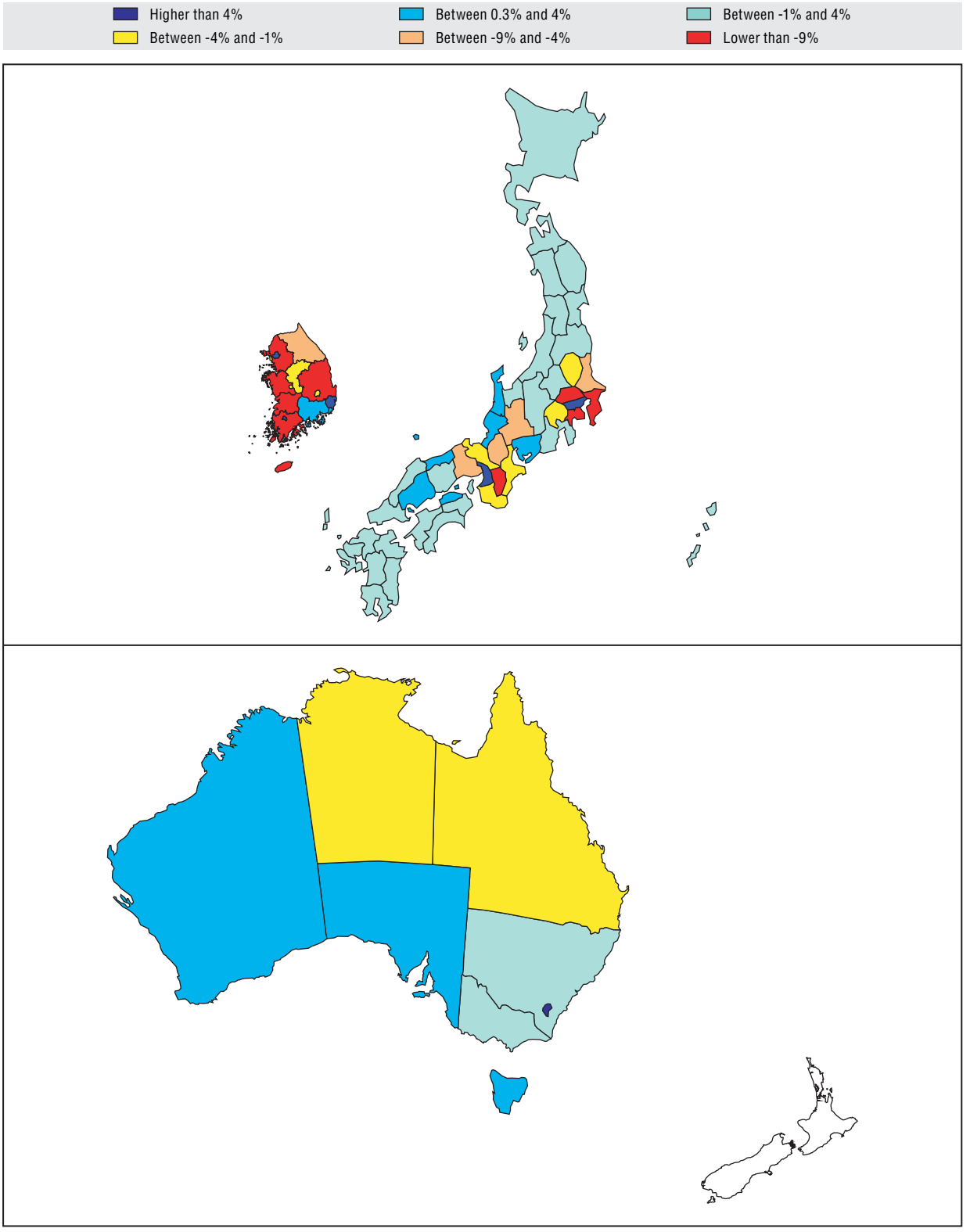
Statlink: http://dx.doi.org/10.1787/343772246115

Definition

The indicators shown in this chapter measure the percentage of regional differences in GDP per capita that is accounted by net commuting inflows. Net commuting inflows are defined as the number of non-resident workers minus the number of residents working in other regions. Net commuting inflows are measured as the difference between employment at the place of work and employment at the place of residence.

20.3. **Differences in GDP per capita due to commuting: Asia TL3 and Oceania TL2**

Percentage difference from national GDP per capita 2001



Source: OECD Territorial Database.

20.4. **Differences in GDP per capita due to commuting: Europe TL3**

Percentage difference from national GDP per capita 2001

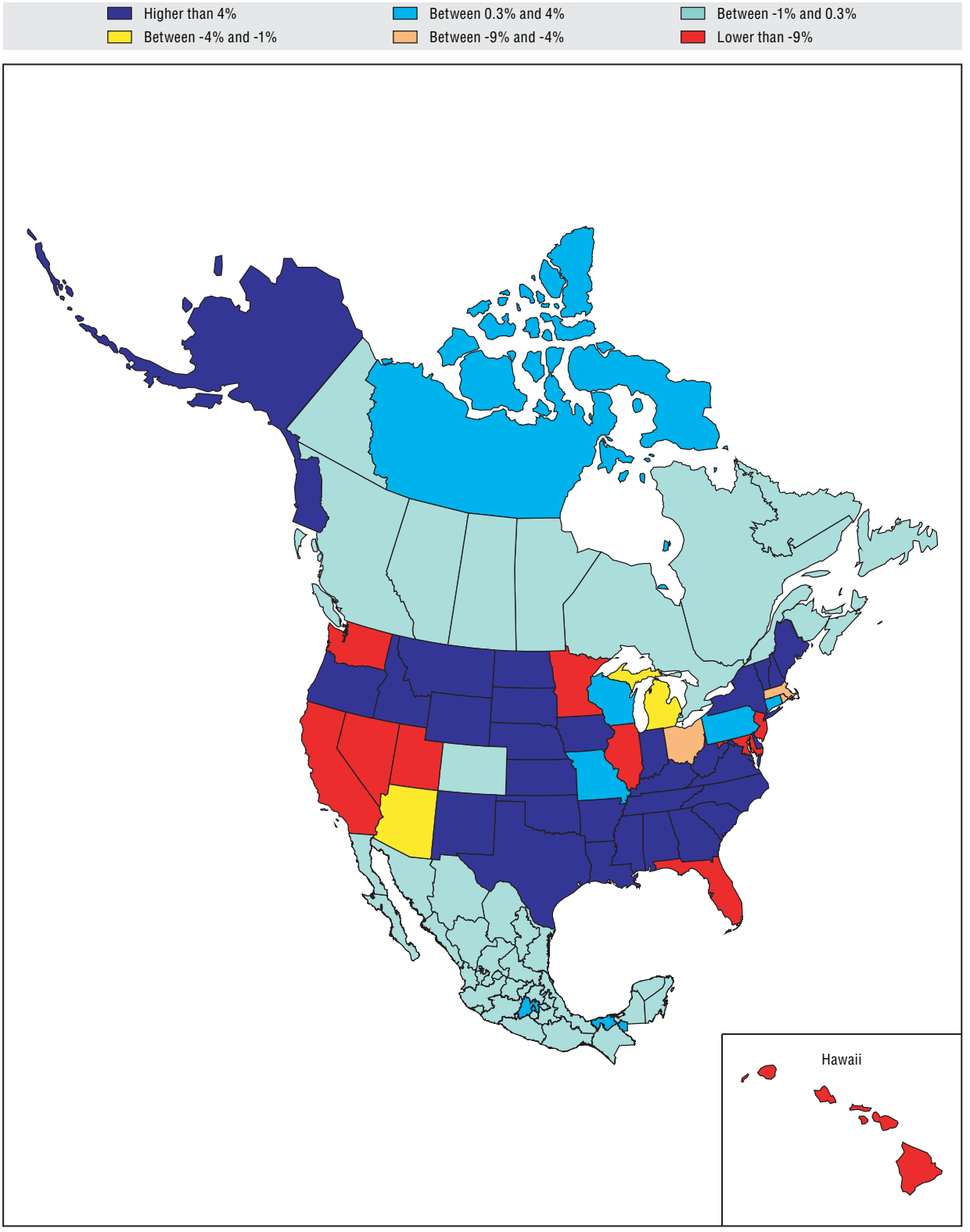


Source: OECD Territorial Database.

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20.5. **Differences in GDP per capita due to commuting: North America TL2**

Percentage difference from national GDP per capita 2001



Source: OECD Territorial Database.

21. Labour force participation

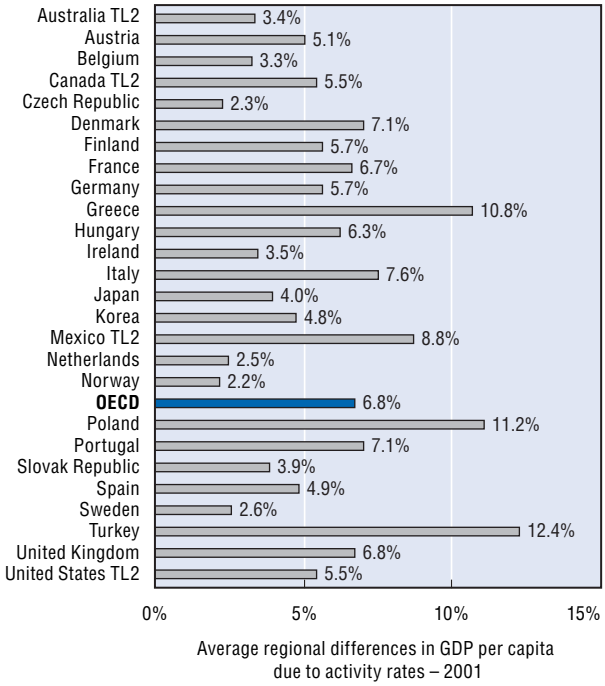
A significant part of regional differences in GDP per capita is due to differences in activity rates, *i.e.* the ratio of the labour force to the population. Differences in activity rates may be due to age as well as to the opportunity costs of entering the local labour market. Therefore, the stronger the incentives provided by the regional labour market, the higher the activity rate, other things being equal.

Figure 21.1 shows the extent to which regional differences in GDP per capita are due to activity rates. On average in 2001, activity rates accounted for regional differences of 7 percentage points.

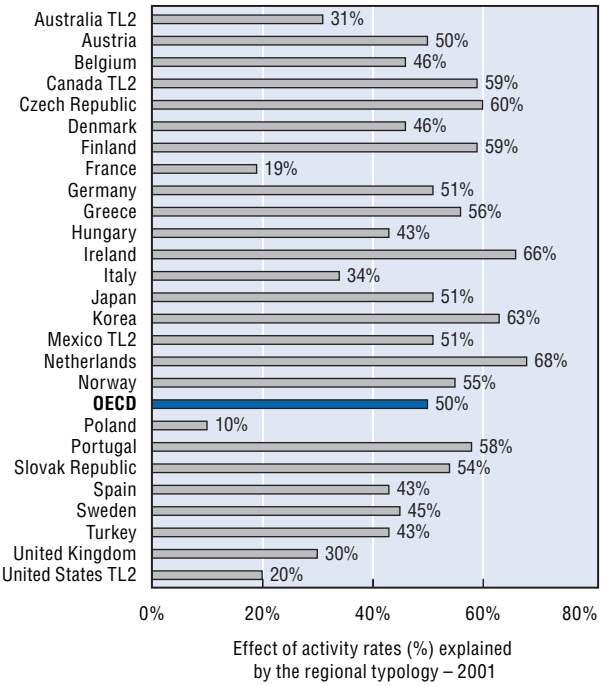
The difference was considerably larger in Greece, Poland and Turkey, where it was above 10 percentage points. The effect of activity rates was much smaller in the Czech Republic and Norway (2%).

Labour force participation is very much affected by the economic incentives provided by the local labour market, and activity rates tend to vary with the type of regions. On average, the distinction between urban, rural and intermediate regions explains half of the regional differences in GDP per capita due to labour force participation (Figure 21.2).

21.1. **In 2001, there were differences of 7% in GDP per capita due to activity rates**



21.2. **On average, about half of the effect of specialisation on regional performances is due to the regional type**



Statlink: *http://dx.doi.org/10.1787/434457356746*

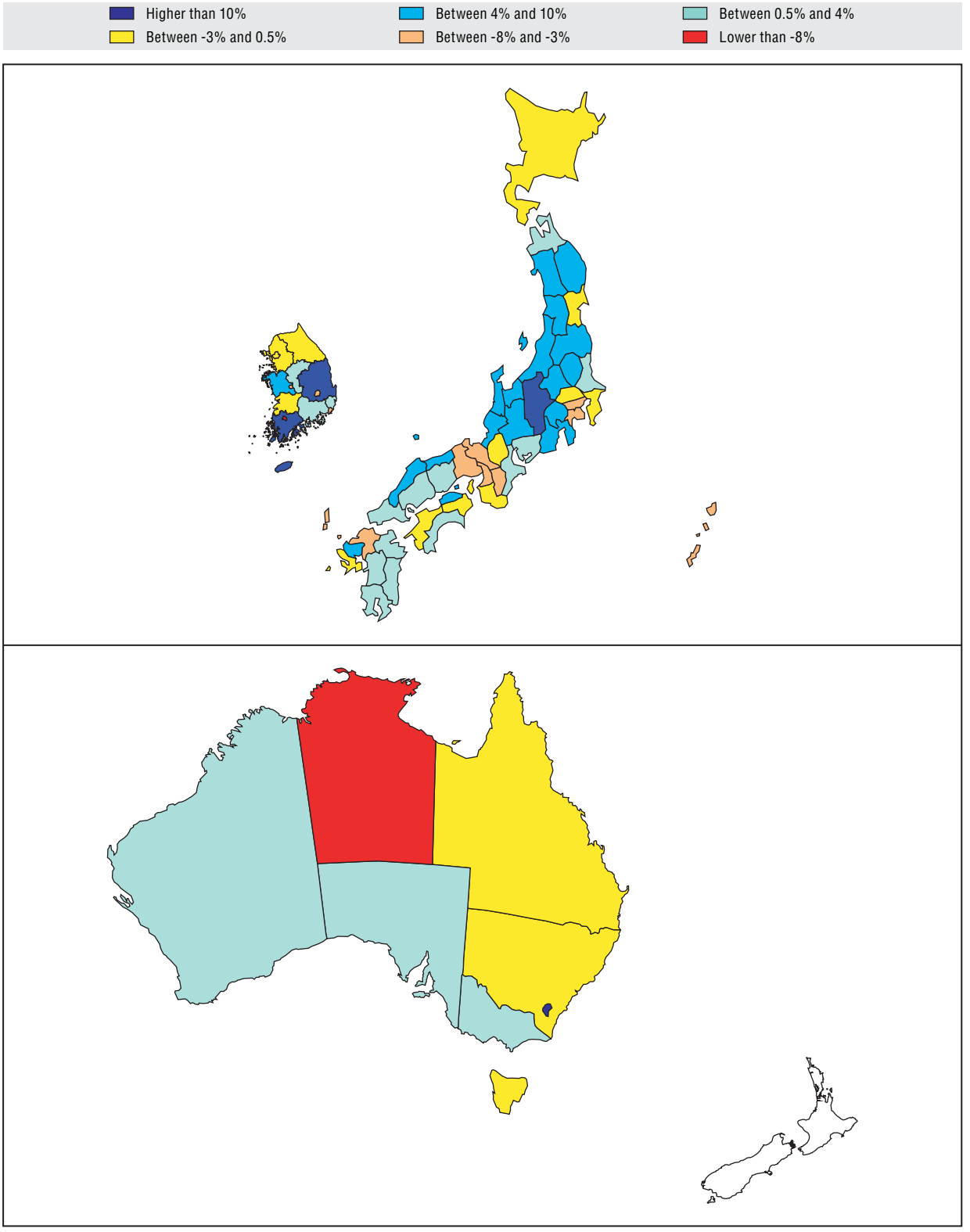
Definition

The indicators shown in this chapter measure the percentage of regional differences in GDP per capita that is accounted by differences in activity rates. Activity rate is defined as the ratio between the labour force and the population. The labour force is defined as the sum of employed and unemployed persons.

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21.3. **Differences in GDP per capita due to activity rate: Asia TL3 and Oceania TL2**

Percentage difference from national GDP per capita 2001



Source: OECD Territorial Database.

21.4. **Differences in GDP per capita due to activity rate: Europe TL3**

Percentage difference from national GDP per capita 2001

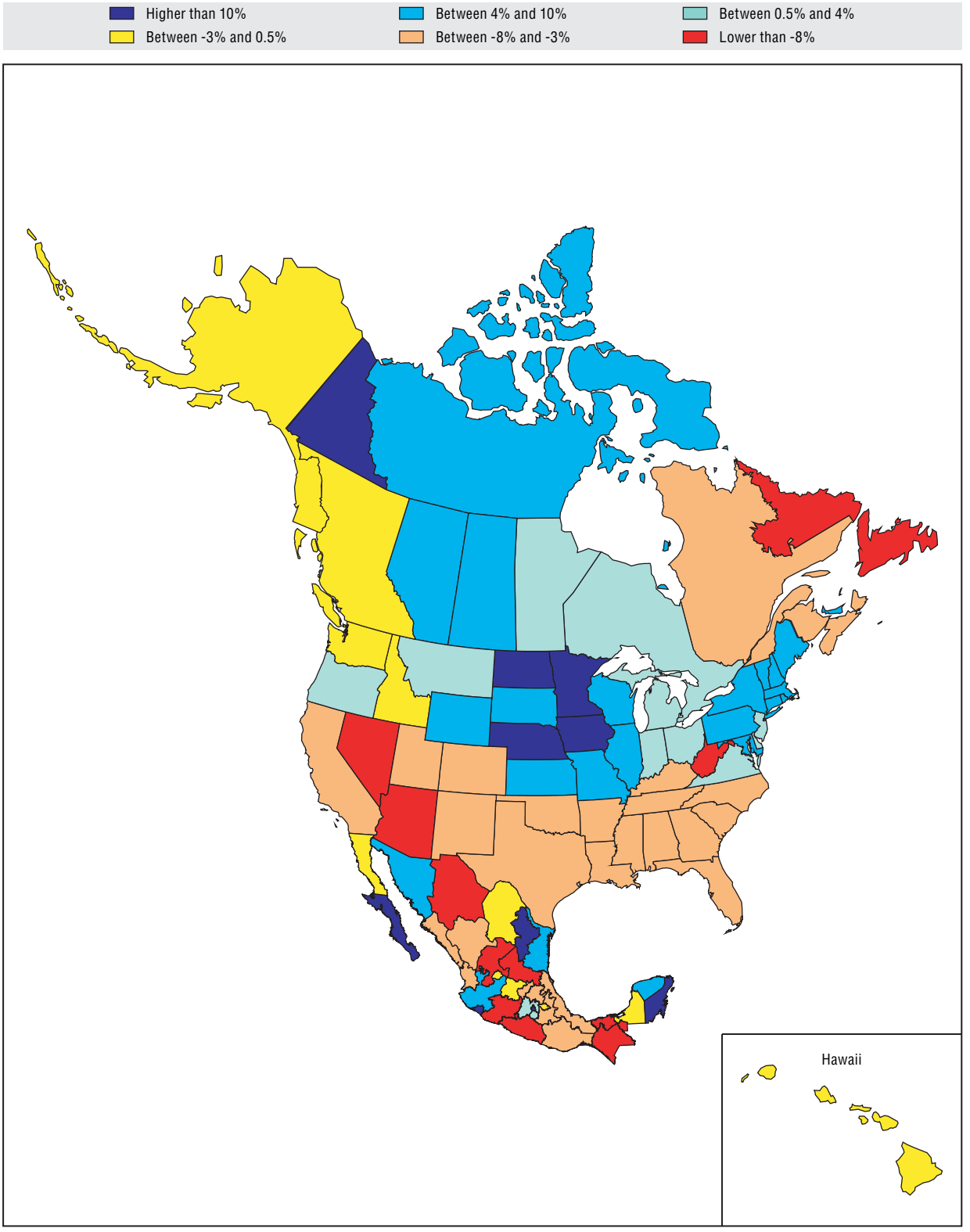


Source: OECD Territorial Database.

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21.5. **Differences in GDP per capita due to activity rate: North America TL2**

Percentage difference from national GDP per capita 2001



Source: OECD Territorial Database.

22. Ageing

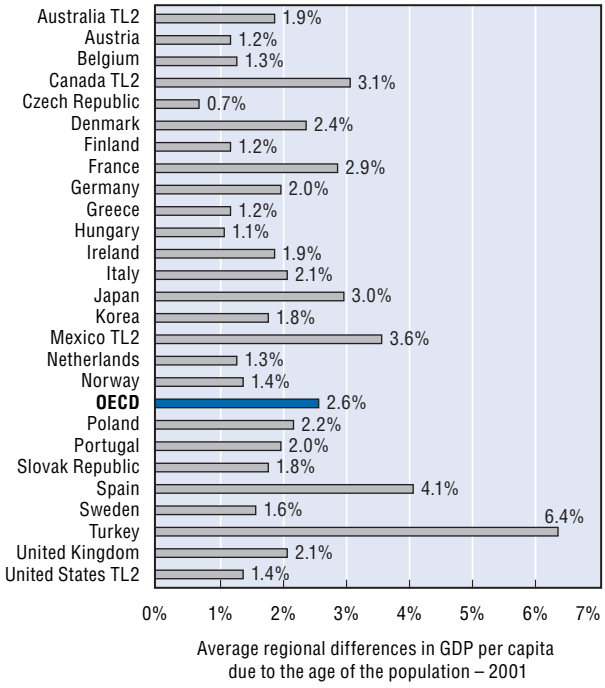
Regional differences in GDP per capita may be due to differences in the age profile of the population. As activity rates tend to be higher for young individuals than for elderly ones, the larger the proportion of young people in a region, the higher its activity rate, other things being equal.

Figure 22.1 shows the extent to which regional differences in GDP per capita are due to differences in the age profile of the population. On average in 2001, age accounted for regional differences of 2.6 percentage points.

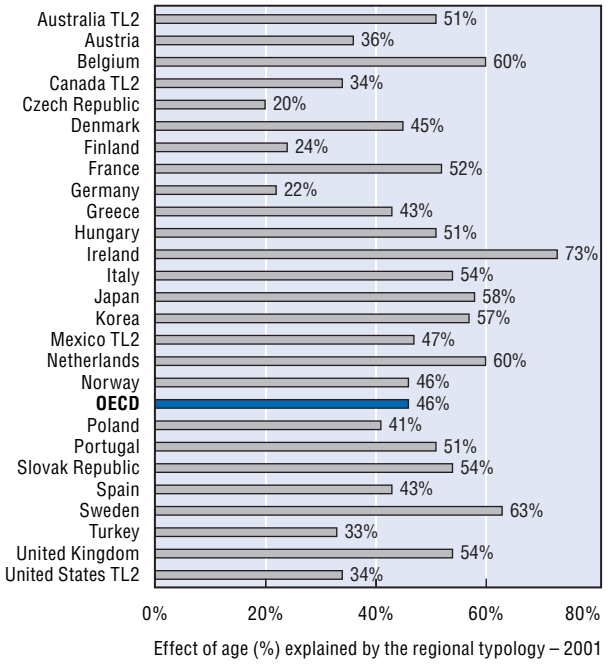
The difference was larger in Turkey (6.4%), Spain (4.1%) and Mexico (3.6%) but much smaller in the Czech Republic (0.7%).

As the elderly population tends to concentrate in rural and peripheral areas, the impact of age is likely to be more favourable in urban and intermediate regions than in rural ones. On average, the distinction between urban, rural and intermediate regions explains 46% of the regional differences in GDP per capita due to the age profile of the population (Figure 22.2).

22.1. **In 2001, there were regional differences of close to 3% in GDP per capita due to age**



22.2. **On average, 46% of the effect of age on regional performance is due to the regional type**



Statlink: *http://dx.doi.org/10.1787/621687837016*

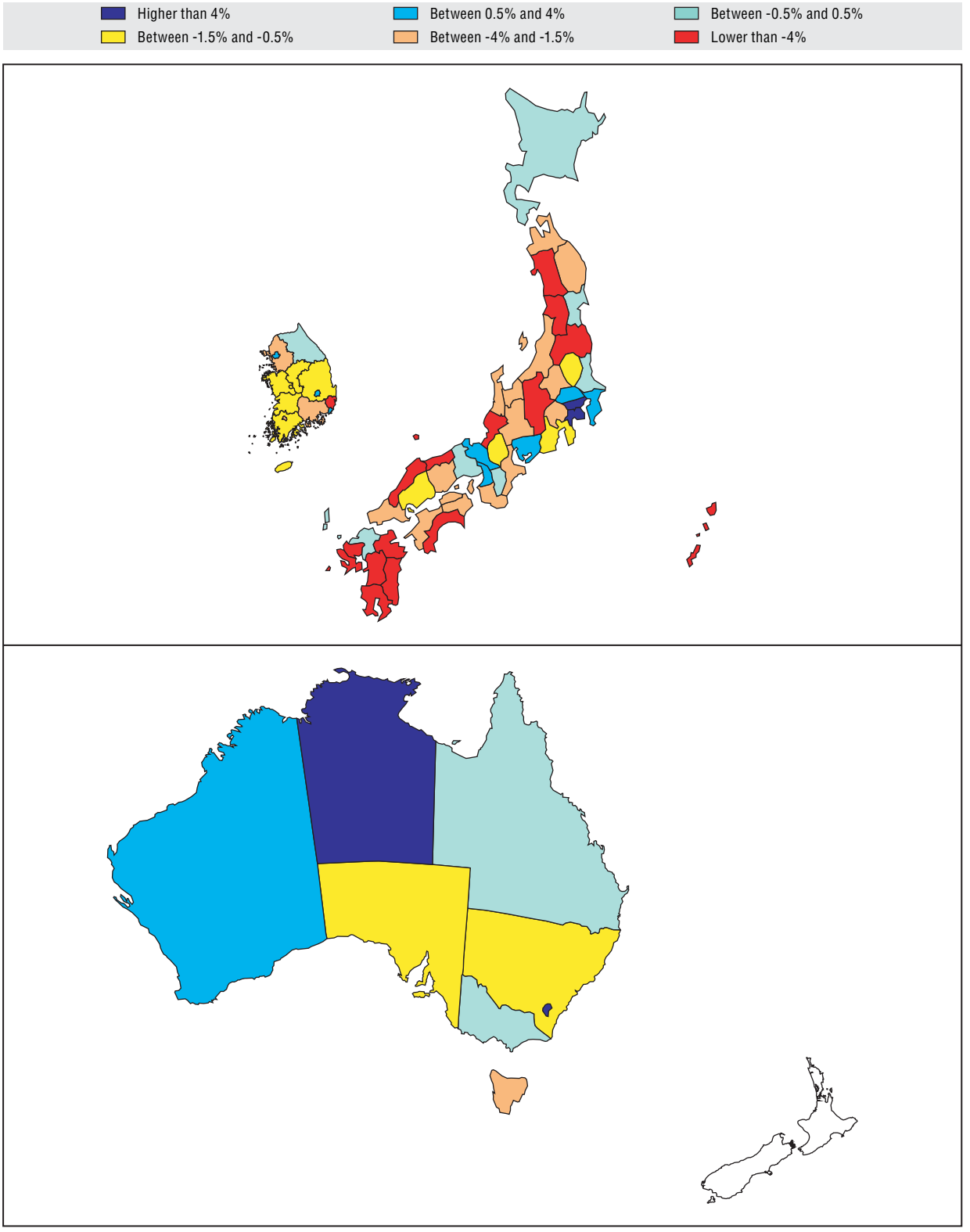
Definition

The indicators shown in this chapter measure the percentage of regional differences in GDP per capita that is accounted by differences in the age profile of the population. The age groups considered are 0-14, 15-64 and 65 years and over.

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22.3. **Differences in GDP per capita due to ageing: Asia TL3 and Oceania TL2**

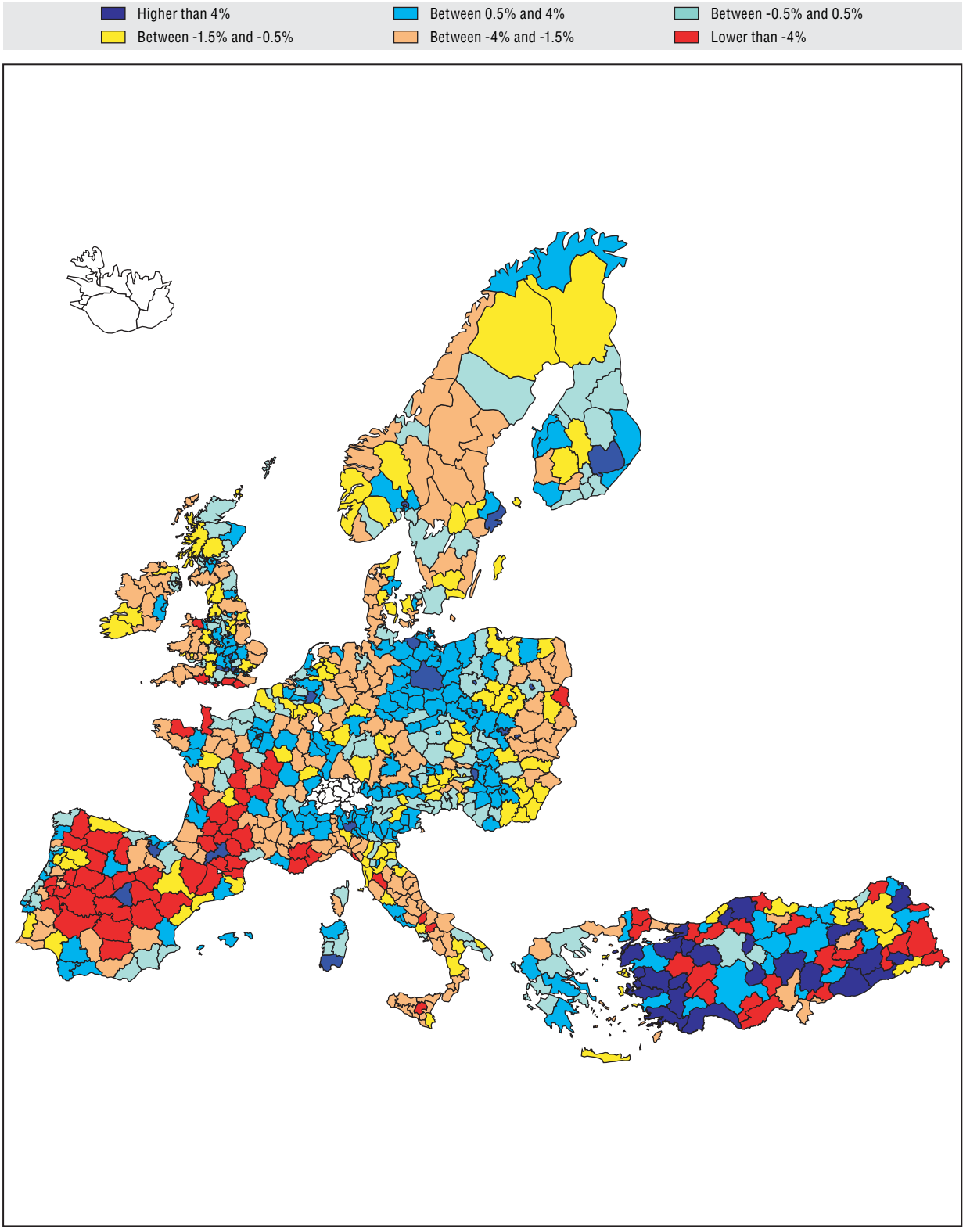
Percentage difference from national GDP per capita 2001



Source: OECD Territorial Database.

22.4. **Differences in GDP per capita due to ageing: Europe TL3**

Percentage difference from national GDP per capita 2001

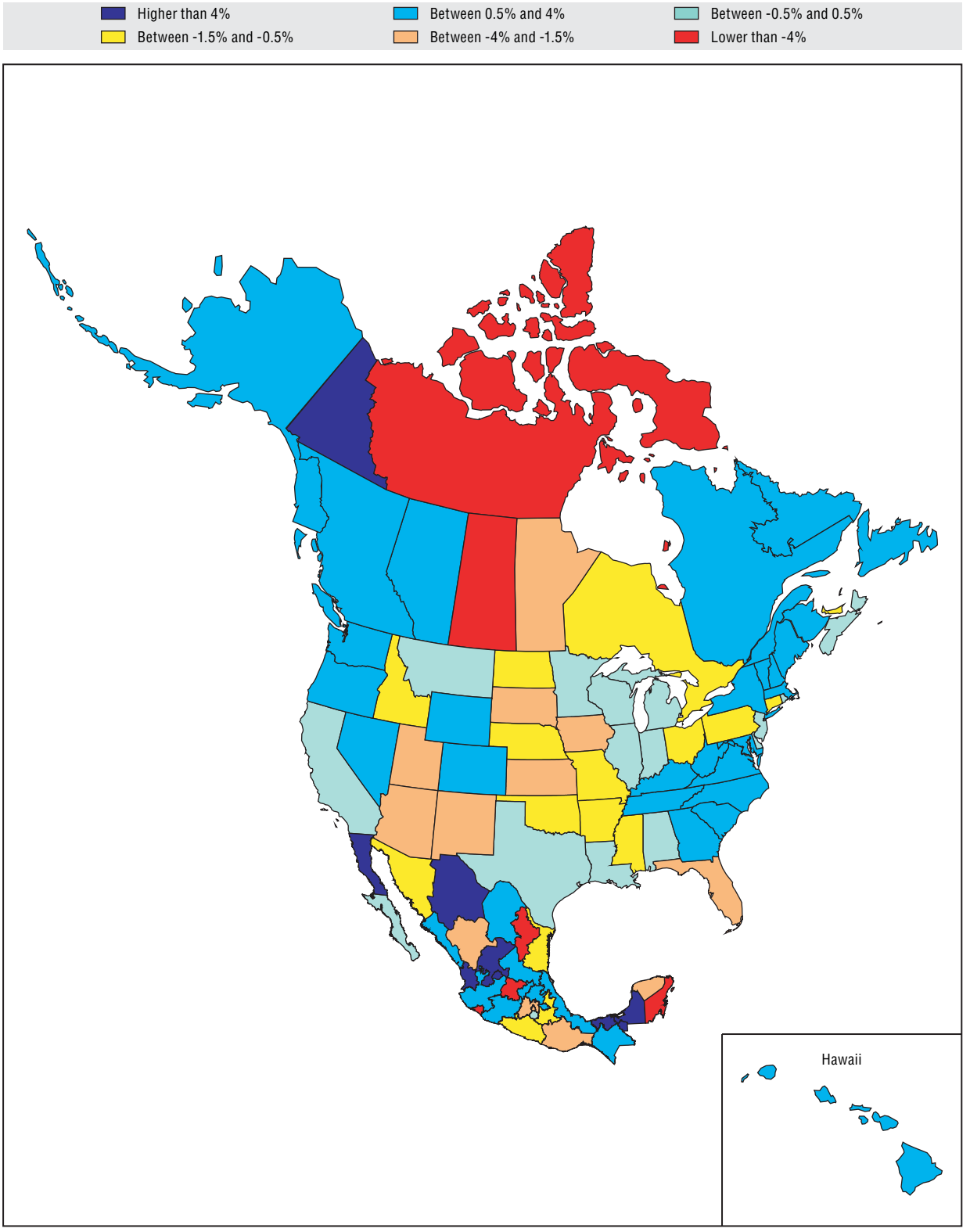


Source: OECD Territorial Database.

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22.5. **Differences in GDP per capita due to ageing: North America TL2**

Percentage difference from national GDP per capita 2001



Source: OECD Territorial Database.

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PART III

Competing on the Basis of Regional Well-being

23. Accessibility: distance in time from a major centre

The well-being of the inhabitants of a region crucially depends on the ability to access resources and services that are often available only in large economic centres. A region's accessibility can thus be measured as the time necessary to travel to the closer centre.

Centres have been identified on the basis of a population threshold generally established at 300 000 inhabitants for a city and 500 000 for an urban agglomeration (see "Sources and Methodology").

The travelling time necessary to reach the closer centre varies widely among OECD countries (Figure 23.1). Sparsely populated countries, such as Australia, the United States and Canada, show the largest ranges.

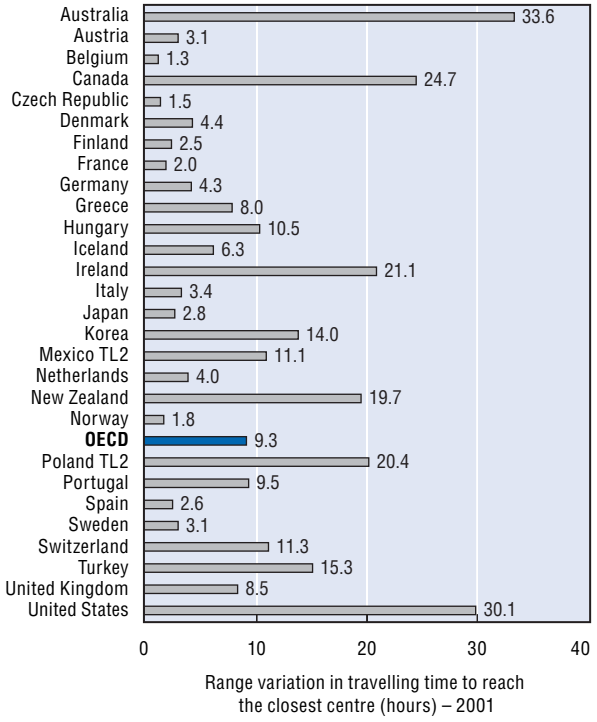
Differences in travelling time in most European countries are much narrower. This is particularly true of Belgium, the Czech Republic, France and Norway, where no region is located more than two hours from the closest centre.

On average, the time an OECD citizen has to travel to reach the closest centre is 39 minutes in an urban region, 2 hours and 8 minutes in an intermediate region, and 3 hours and 10 minutes in a rural region (Figure 23.2).

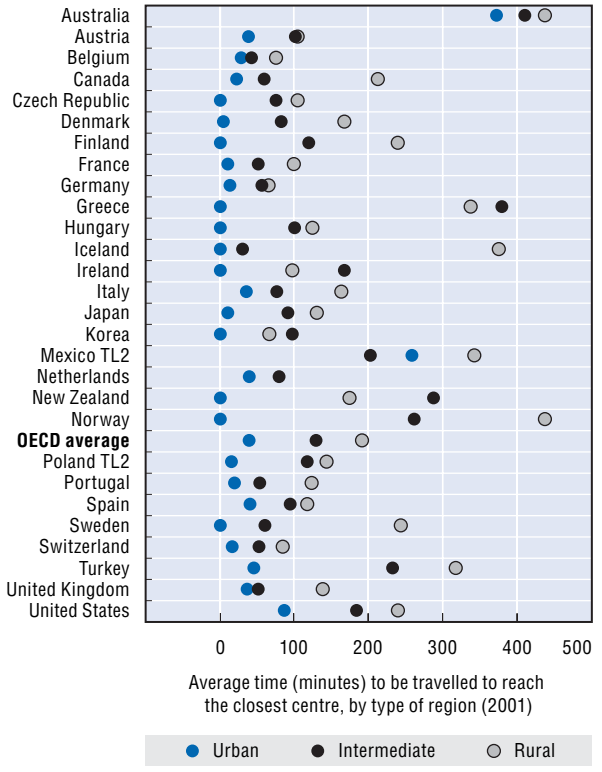
This general pattern, however, does not apply in all countries. In Greece, Ireland, Korea and New Zealand, the distance in terms of time is higher in intermediate than in rural regions.

Thus, low accessibility need not be synonymous with rurality. In fact, despite their closer location to urban centres, intermediate regions may face longer travelling times owing to high traffic flows (*e.g.* commuting) and/or to inadequate transport infrastructure.

23.1. **Regional accessibility varies most in Australia and United States**



23.2. **On average, accessibility is higher for urban than for rural and intermediate regions**



Statlink: *http://dx.doi.org/10.1787/440033847753*

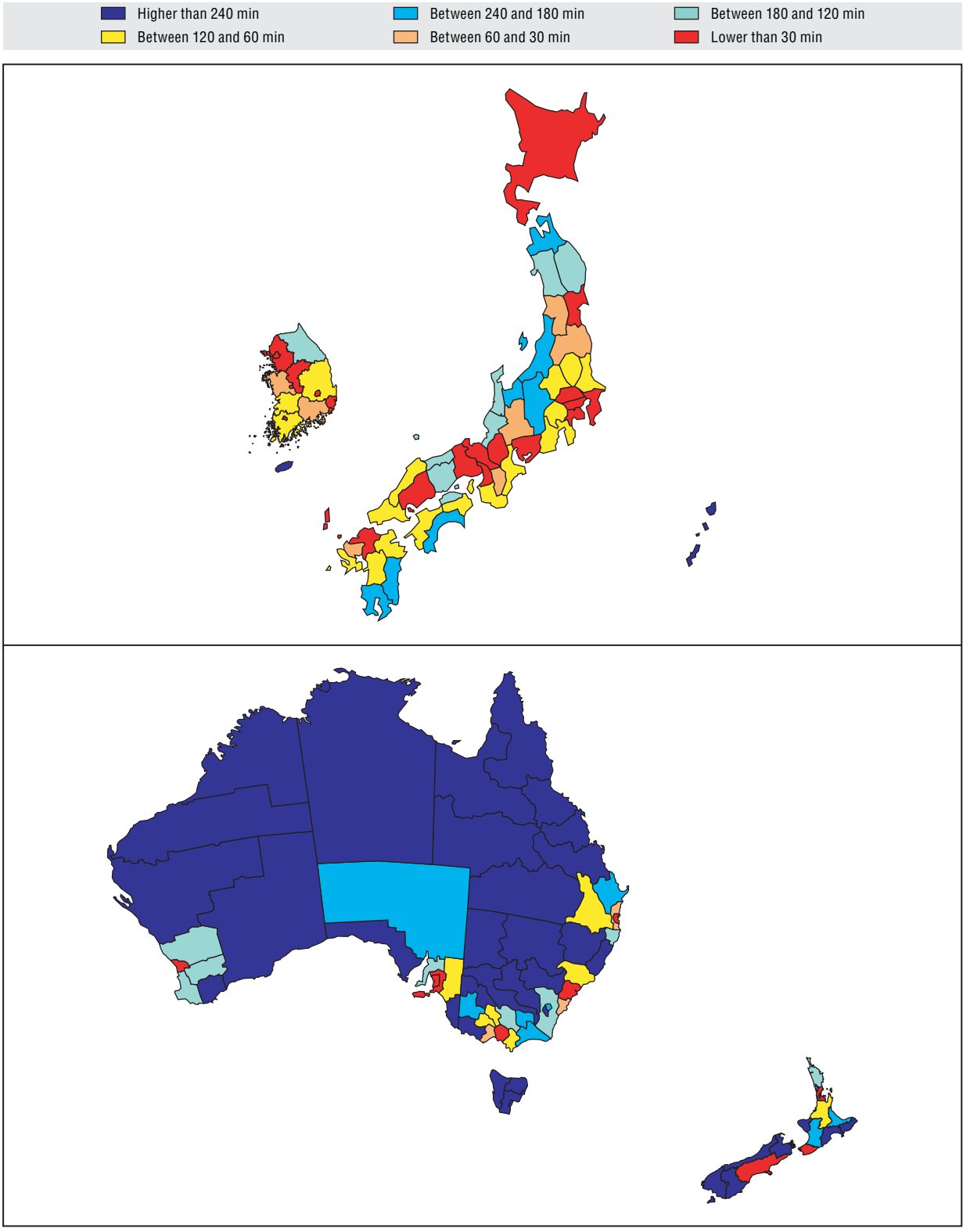
Definition

City is defined as a large locality of a country, urban Agglomeration comprises the city or town and also the suburban fringe or thickly settled territory lying outside, but adjacent to, its boundaries. A single large urban agglomeration may comprise several cities or towns and their suburban fringes (see *Sources and Methodology*).

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23.3. **Accessibility: road distances in minutes – Asia and Oceania TL3**

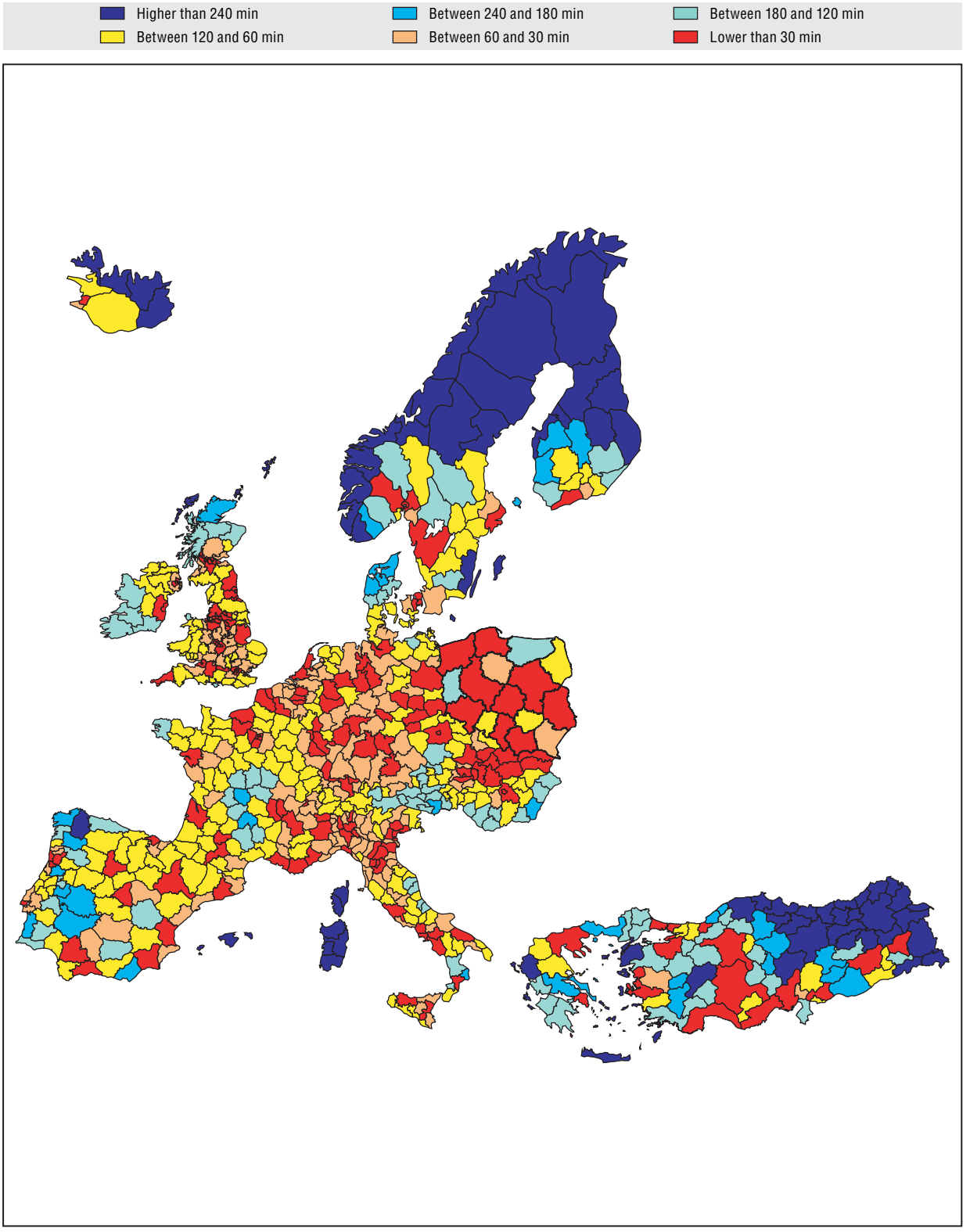
2001



Source: OECD Territorial Database.

23.4. **Accessibility: road distances in minutes – Europe TL3 (Poland TL2)**

2001

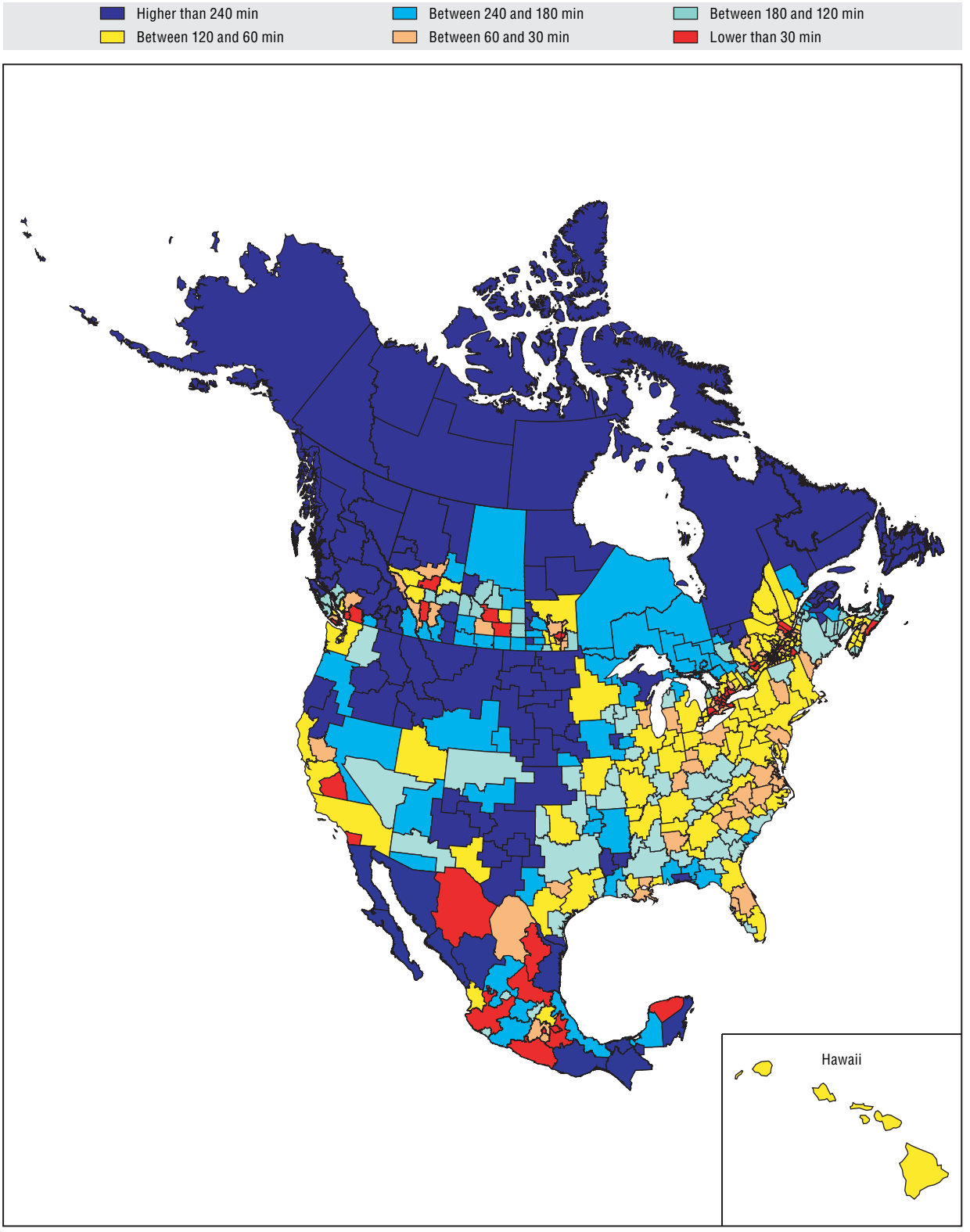


Source: OECD Territorial Database.

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23.5. **Accessibility: road distances in minutes – North America TL3 (Mexico TL2)**

2001



Source: OECD Territorial Database.

24. Home ownership

Home ownership contributes to well-being by providing owners with secure and affordable housing. Equity accumulated in homes represents the main source of wealth for households in most OECD countries and provides them with benefits such as collateral for loans.

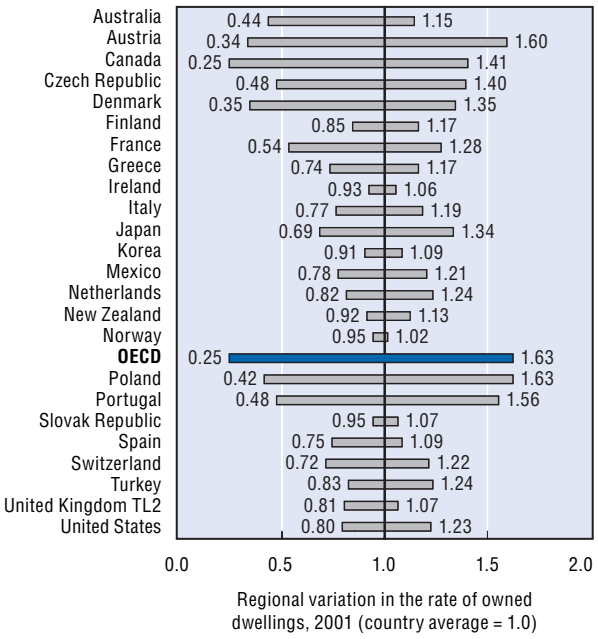
Home ownership varies significantly among OECD countries depending on the level of subsidies for rental housing, the existence of high-quality social housing and deductibility of interest payments on loans from taxable income.

In 2001, the share of owned accommodation showed significant regional variation (Figure 24.1). In Canada, for instance, the region with the highest percentage of owned accommodation had five times the percentage of the lowest. In Austria it was more than four times higher and in Denmark, Poland and Portugal it was more than three times higher.

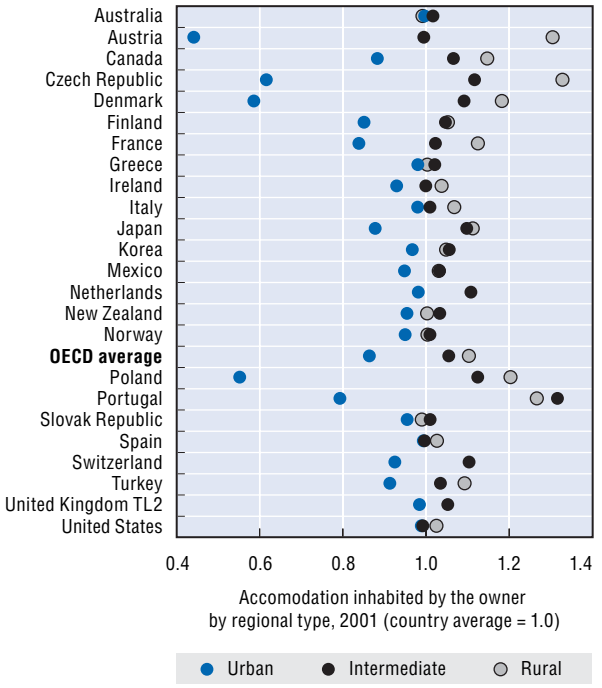
The percentage of owned accommodation is associated with the dwelling's location. It is higher in regions where values tend to be low, *i.e.* rural and suburban regions than where the cost of dwellings is high, *i.e.* urban regions. In 12 out of 22 OECD countries the region with the lowest rate of owned accommodation was the capital region; it was a rural region only in Canada, Turkey, Australia and Mexico.

In all countries considered, rural and intermediate regions have rates of home ownership higher than the national average, while the opposite holds for urban regions. Austria, the Czech Republic, Denmark and Poland have the lowest rates of owned accommodation in urban areas as compared to the national average, while Australia has the lowest rate in rural areas (Figure 24.2).

24.1. **In 2001 the proportion of owned accommodation varied significantly among regions**



24.2. **In all countries rural and intermediate regions have higher rates of home ownership than the national average**



Statlink: *http://dx.doi.org/10.1787/102101154142*

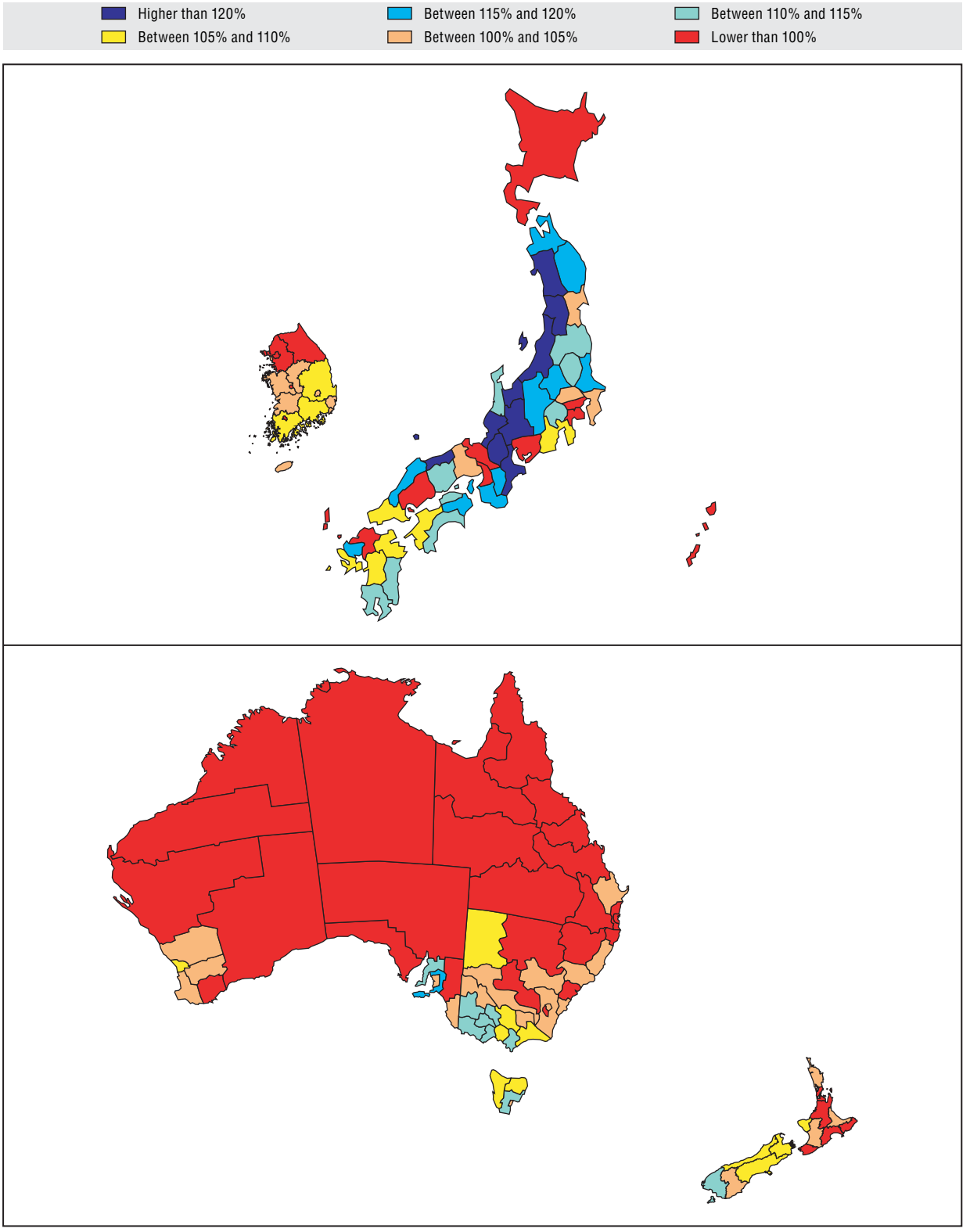
Definition

The person whose name figures in the real property taxation register is considered the owner. In the population register, the address of the owner has to correspond with the address of the dwelling owned. In this case, the dwelling is considered to be occupied by the owner. A dwelling is considered owned either if it is fully owned or being purchased.

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24.3. **Home ownership by region: Asia and Oceania TL3**

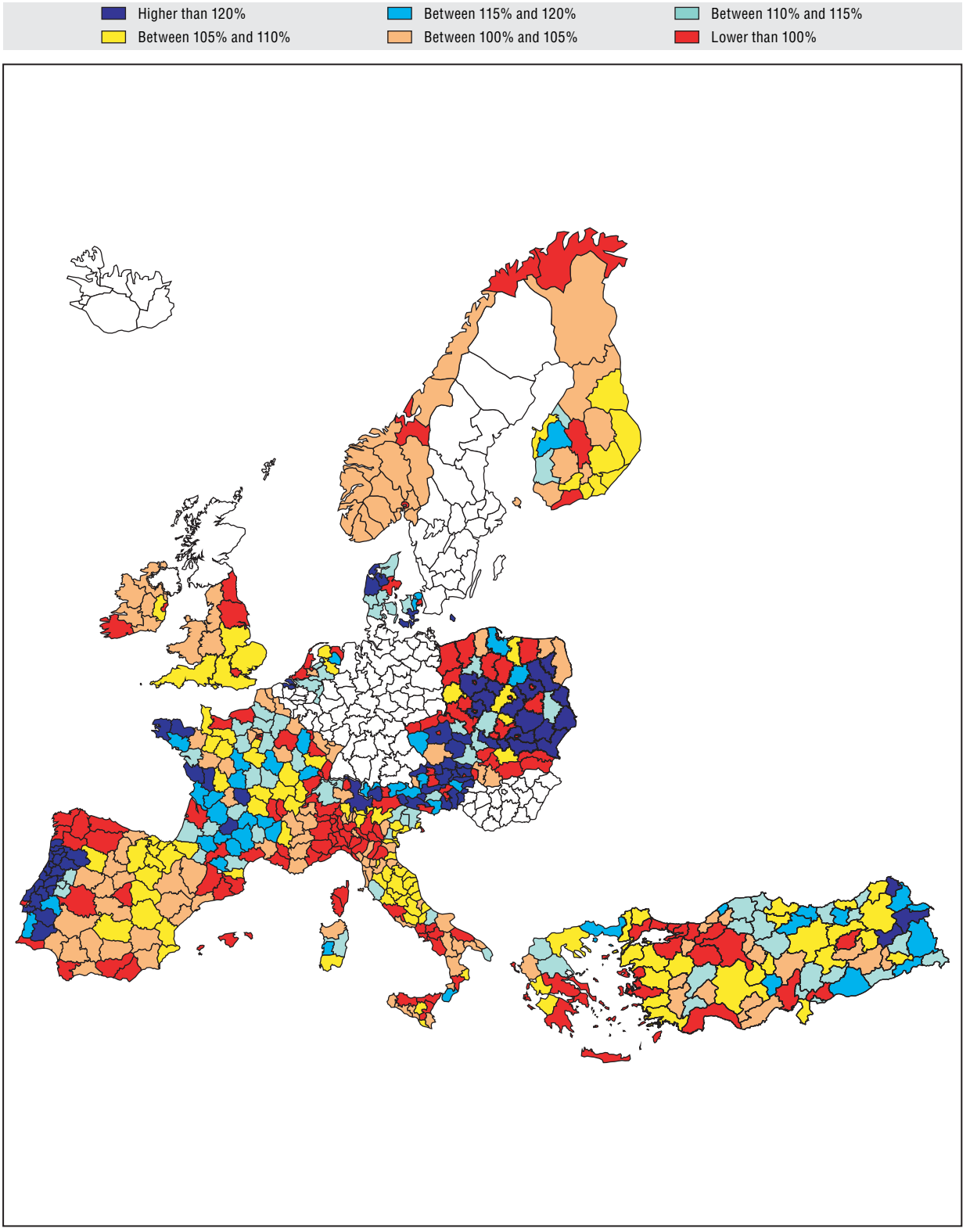
Percentage of the national home ownership rate 2001



Source: OECD Territorial Database.

24.4. **Home ownership by region: Europe TL3**

Percentage of the national home ownership rate 2001

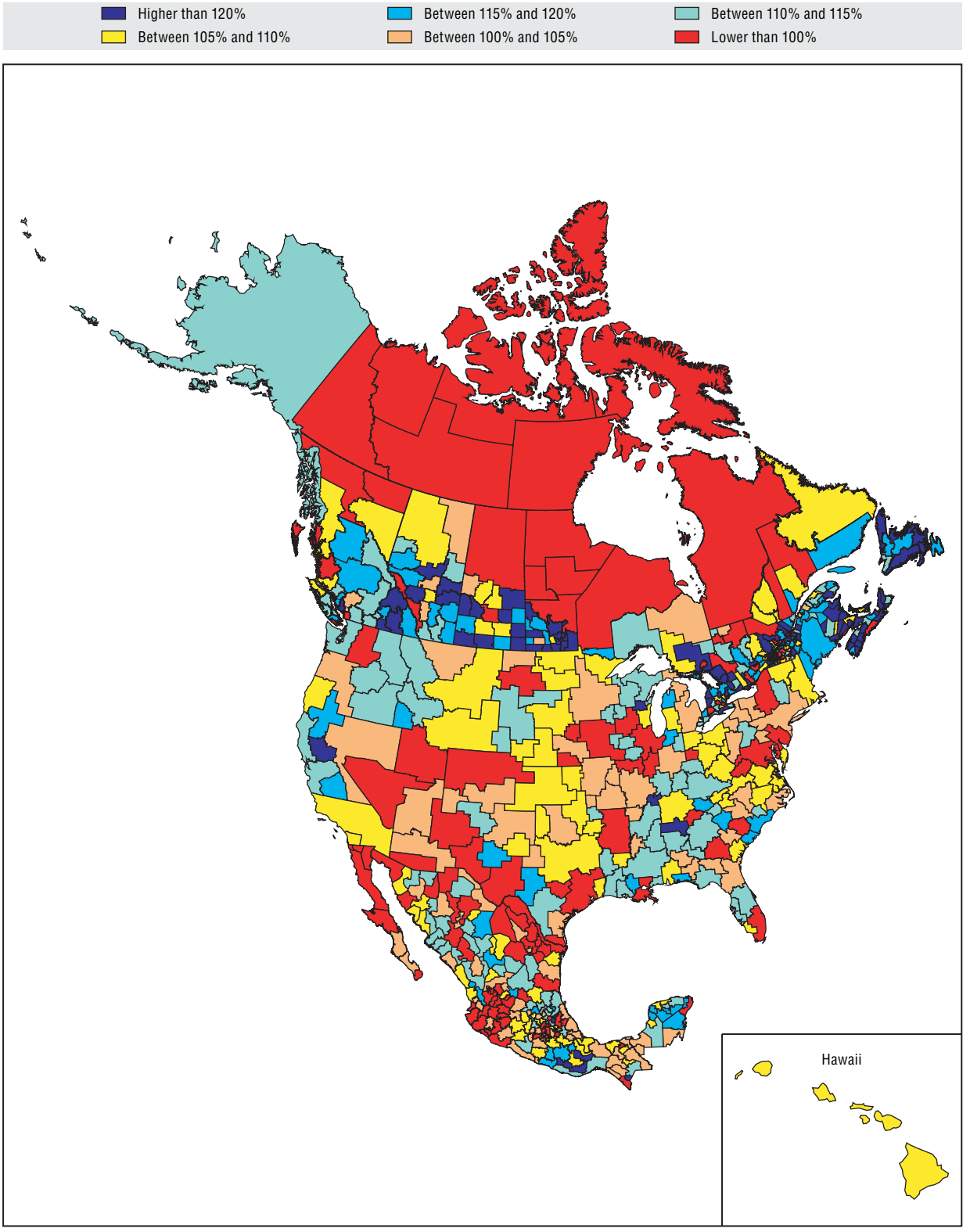


Source: OECD Territorial Database.

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24.5. **Home ownership by region: North America TL3**

Percentage of the national home ownership rate 2001



Source: OECD Territorial Database.

25. Education: student enrolment in tertiary education

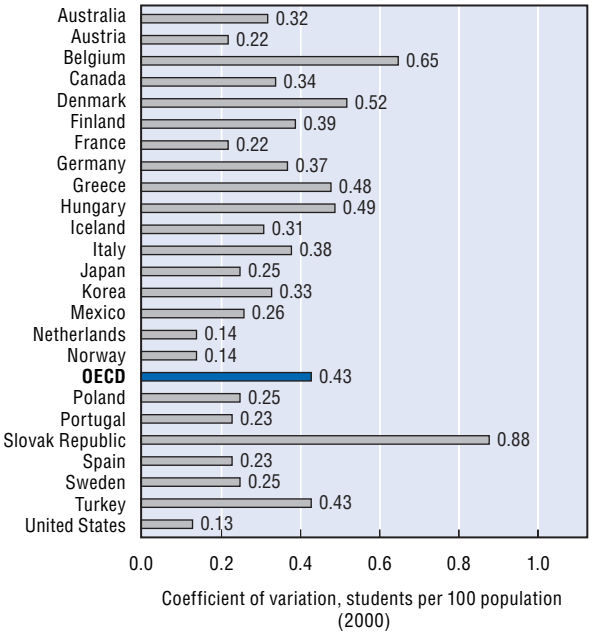
Human capital is a major factor of growth for both countries and regions. A region's ability to invest in education and increase the skills profile of its labour force is an important factor of competitiveness.

The enrolment ratio is a common measure of the level of participation in tertiary-level education. It indicates the capability of the education system to attract students, on the one hand, and the propensity of the population to obtain advanced qualifications, on the other. The ratio is defined as the total enrolment in tertiary-level education, regardless of age, as a percentage of the total population.

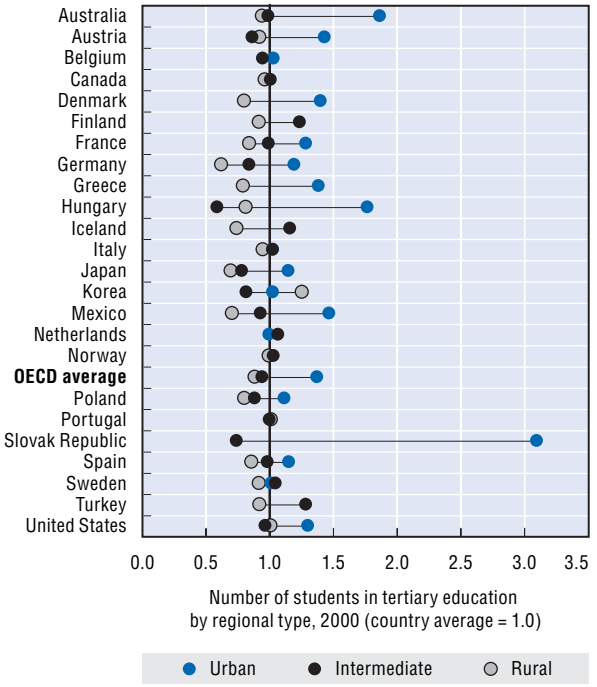
Enrolment in tertiary education is not evenly distributed among regions (Figure 25.1). In 2001 the Slovak Republic had the largest regional variation in enrolment in tertiary education, with a coefficient of variation of 0.88. The United States, the Netherlands and Norway show very small variations in regional enrolment rates. In other countries, the coefficient of variation is close to the OECD average (0.43).

In a large majority of OECD countries, urban regions tend to have the highest percentage of people enrolled in tertiary education, although the three types of regions do not differ greatly (Figure 25.2). In particular, in the Slovak Republic tertiary enrolment rates in urban areas are three times the national average, while in Australia and Hungary urban regions almost double the country average. In Portugal, Norway, Canada, the Netherlands and Italy, tertiary enrolment ratios are more evenly distributed among urban, rural and intermediate regions.

25.1. **In 2001, enrolment in tertiary education varied significantly among regions**



25.2. **The Slovak Republic had the highest density of students in urban regions**



Source: Statlink: *http://dx.doi.org/10.1787/547704101783*

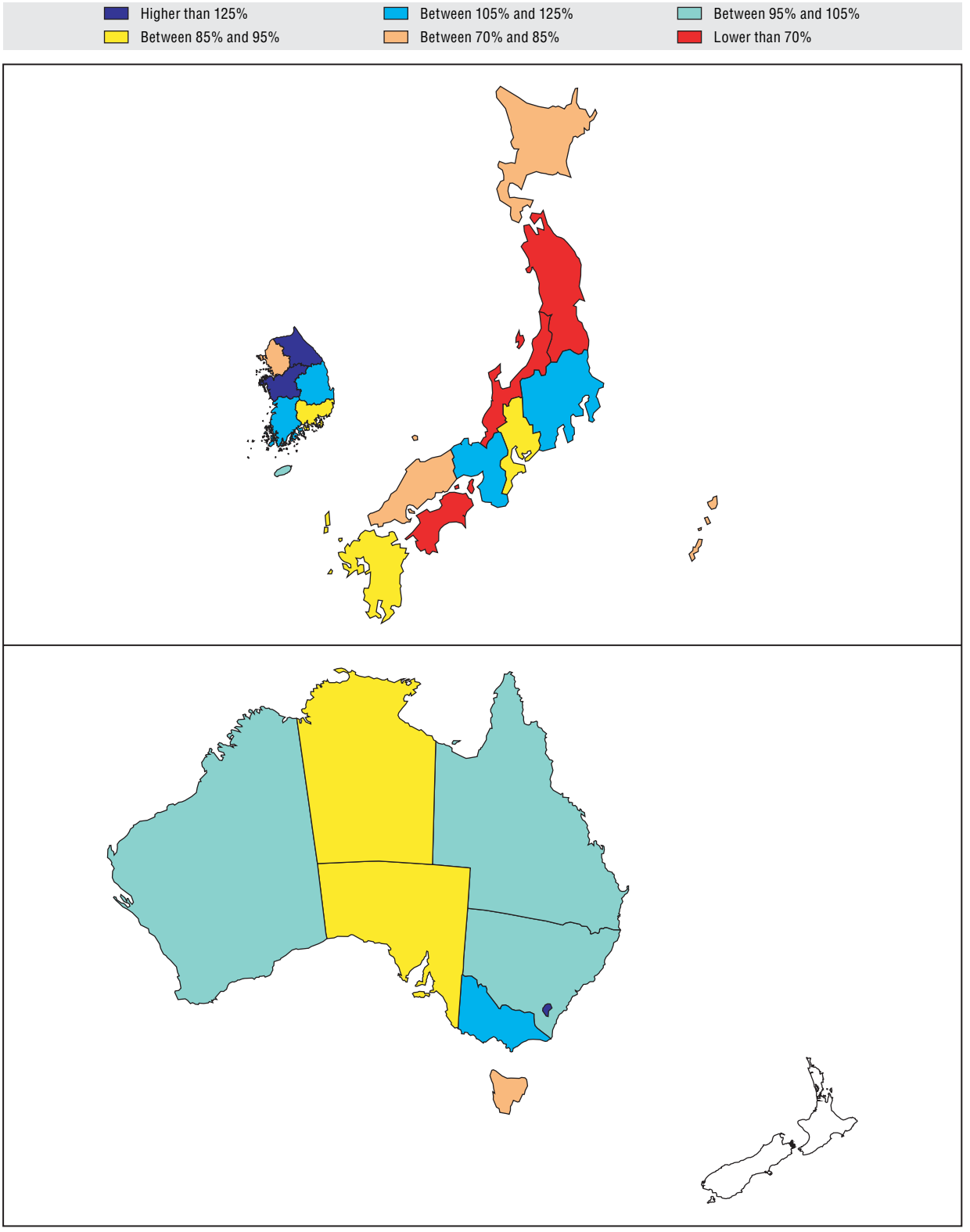
Definition

Total enrolment in all types of schools and education institutions, including public, private and all other institutions that provide advanced (tertiary-level) organised educational programmes (ISCED 5-6; see OECD, *Classifying Educational Programmes, ISCED Implementation in OECD Countries*, OECD, 1999) regardless of age.

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25.3. **Students in tertiary education per inhabitant by region: Asia and Oceania TL2**

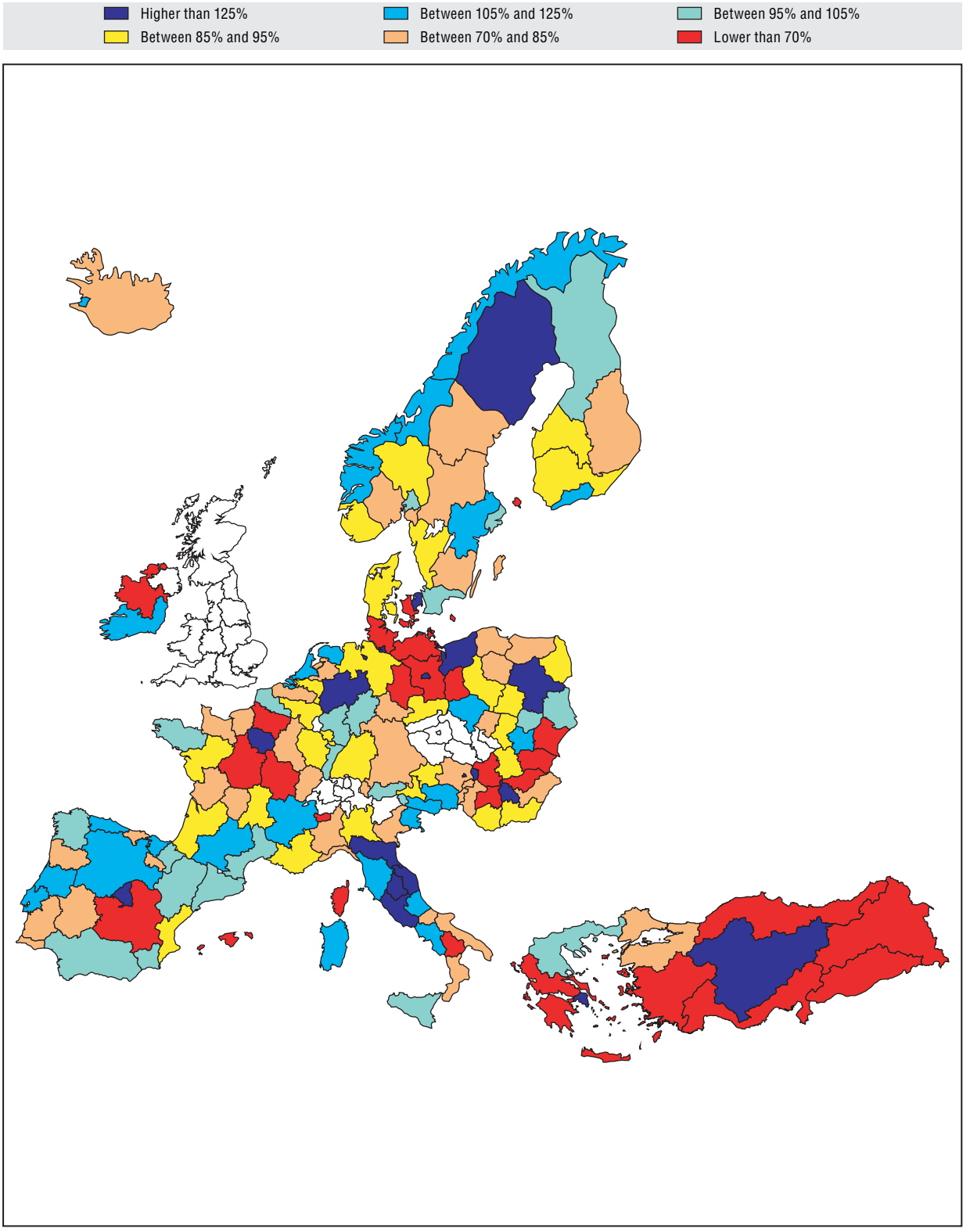
Percentage of national number of students in tertiary education per inhabitant 2001



Source: OECD Territorial Database.

25.4. **Students in tertiary education per inhabitant by region: Europe TL2**

Percentage of national number of students in tertiary education per inhabitant 2001

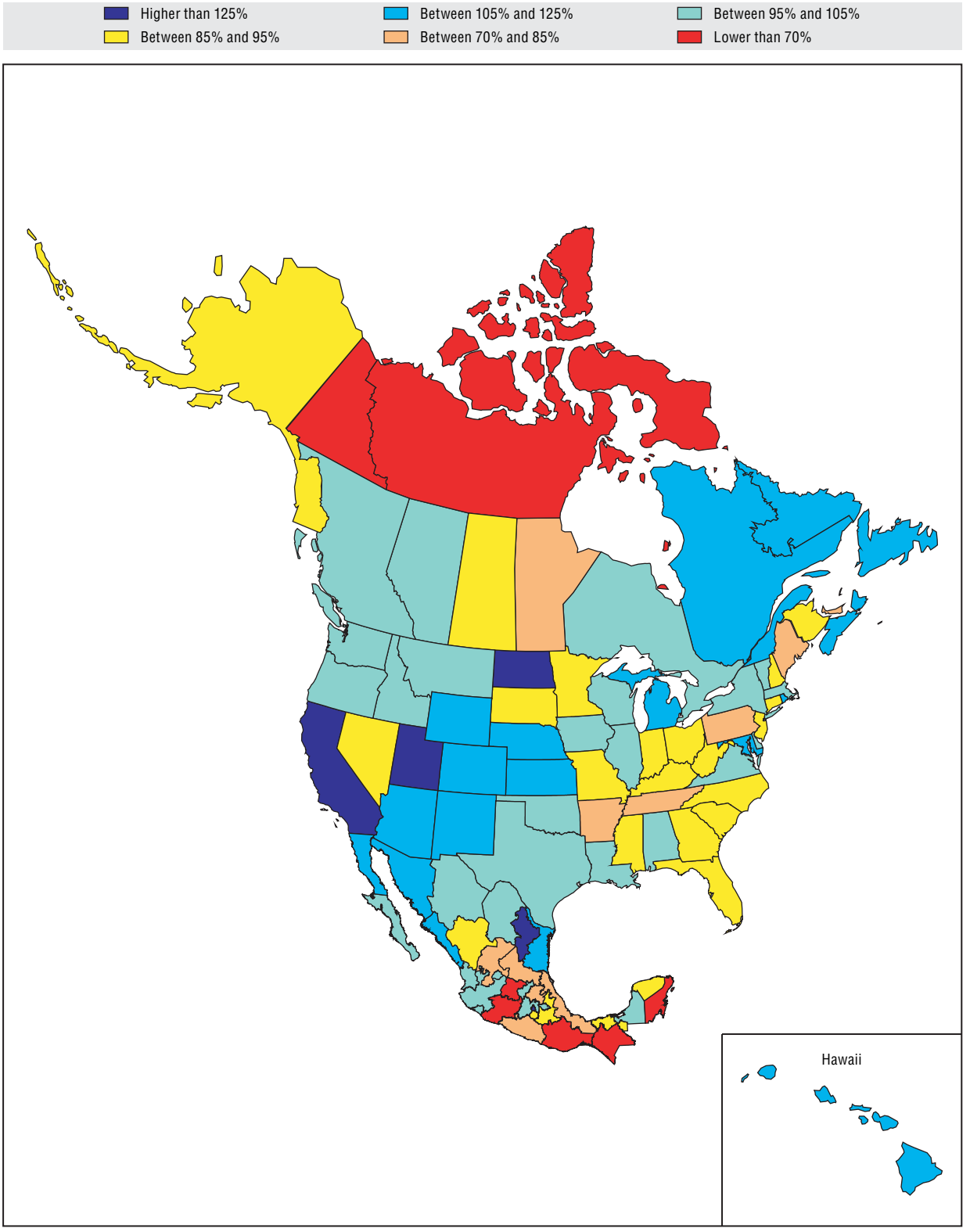


Source: OECD Territorial Database.

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25.5. **Students in tertiary education per inhabitant by region: North America TL2**

Percentage of national number of students in tertiary education per inhabitant 2001



Source: OECD Territorial Database.

26. Health: age-adjusted mortality rate

The age-adjusted mortality rate is a basic indicator of the health status of population. It is expressed as the ratio between observed and expected deaths, *i.e.* the number of deaths that would occur in a certain region if the age profile of the regional population was the same as that of the country. A value of the age-adjusted mortality rate greater than 1 indicates that, even taking into account differences in age, the mortality rate of the region is higher than the country average.

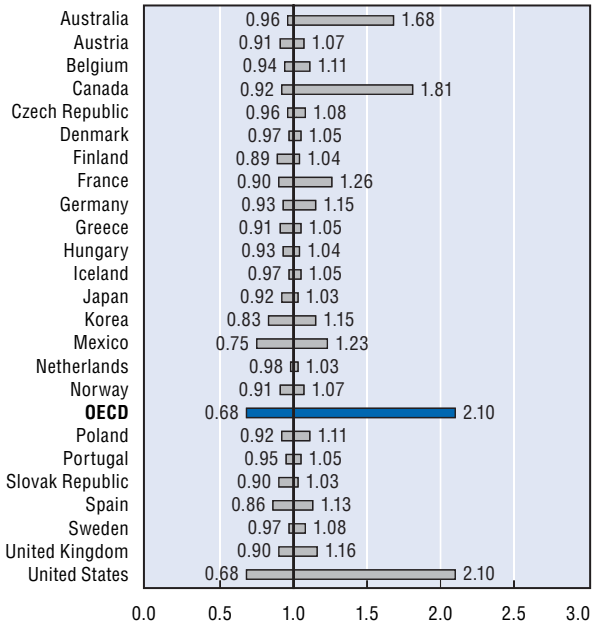
Mortality rates show large differences among regions within each country (Figure 26.1). In the United States, for instance, the mortality rate in the District of Columbia in 2001 was twice that of the rest of the country, while in Hawaii it was half the rate.

In Australia, the extreme values were recorded in the Northern Territories, where the mortality rate was 50% higher than the national rate.

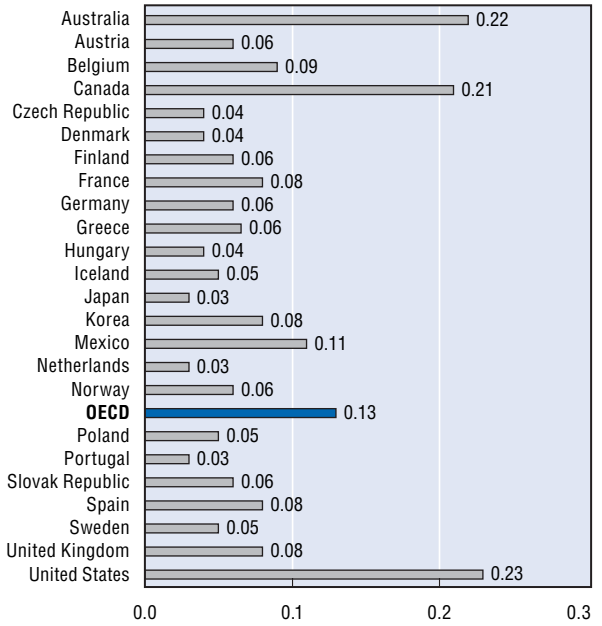
The coefficient of variation shows that the largest regional differences were recorded in the United States (0.23), Australia (0.22) and Canada (0.21). All the other countries show a relatively low coefficient of variation, with Japan, the Netherlands and Portugal scoring the lowest (0.03).

There is no clear pattern as regards differences between urban and rural regions. In about half of the countries considered (Austria, Denmark, Finland, France, Greece, Mexico, Netherlands, Norway, Portugal and the United States), mortality rates in urban regions are higher than in rural ones, although the differences are not very large (between 1% and 9%).

26.1. **The United States shows the highest and the lowest rates of observed deaths**



26.2. **The coefficient of variation reveals the largest regional differences in United States and Australia**



Statlink: *http://dx.doi.org/10.1787/051440678532*

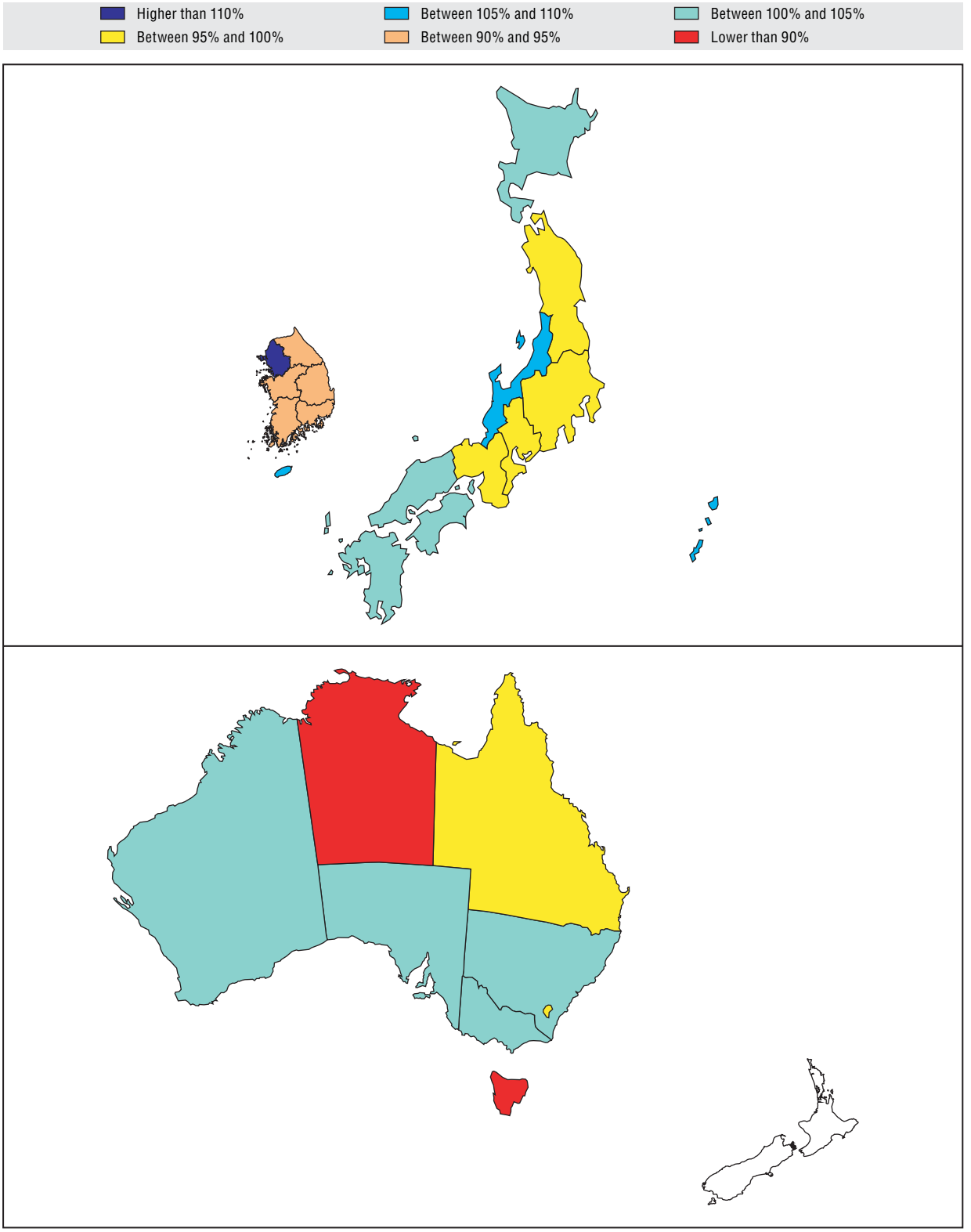
Definition

Crude mortality rate has been adjusted for age, which is a primary factor of mortality. Age-adjusted rates eliminate the age bias due to the age profile of the population, thereby providing a much more reliable rate for comparison purposes.

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26.3. **Age-adjusted mortality rate: Asia and Oceania TL2**

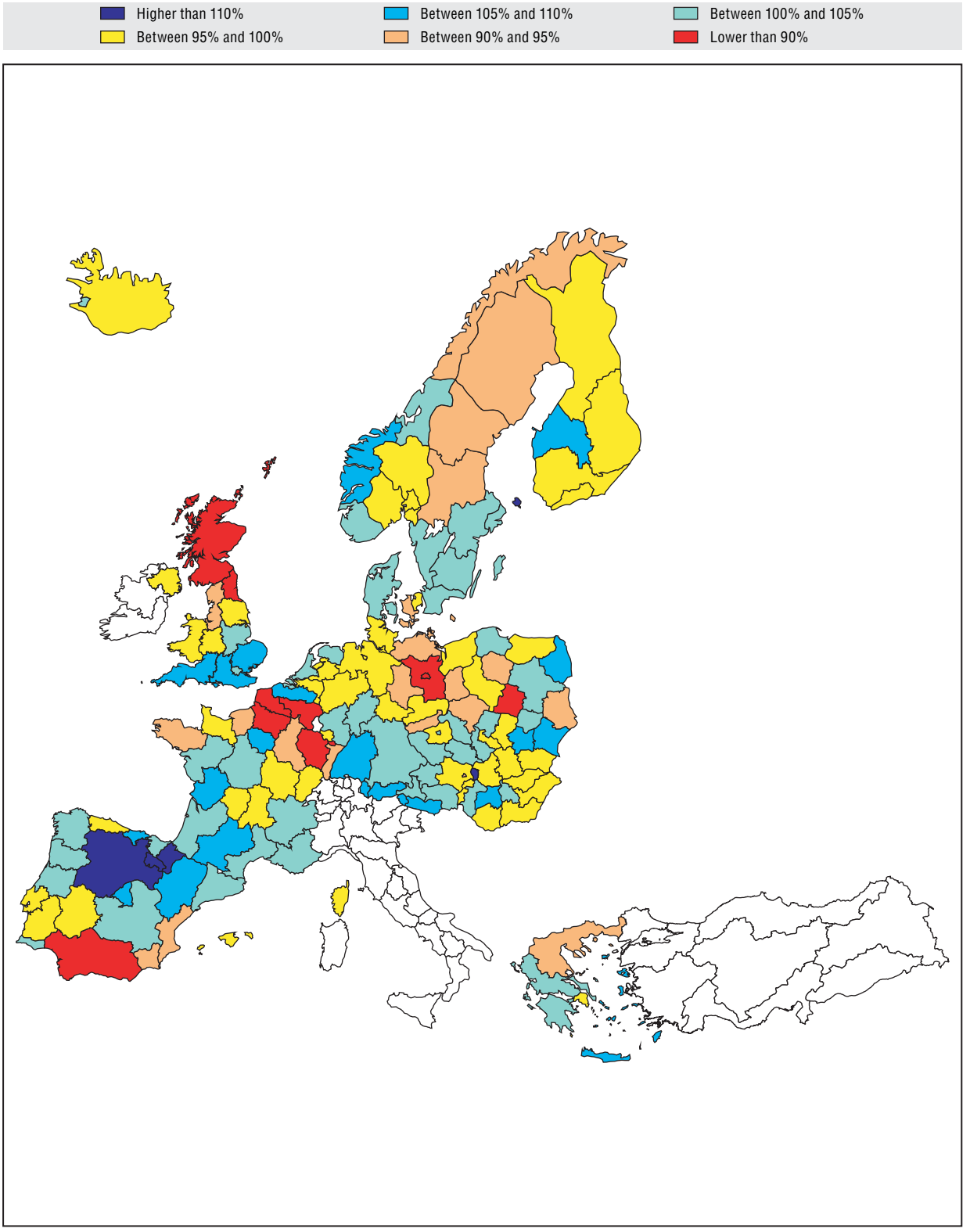
Percentage of the expected number of deaths 2002



Source: OECD Territorial Database.

26.4. **Age-adjusted mortality rate: Europe TL2**

Percentage of the expected number of deaths 2000

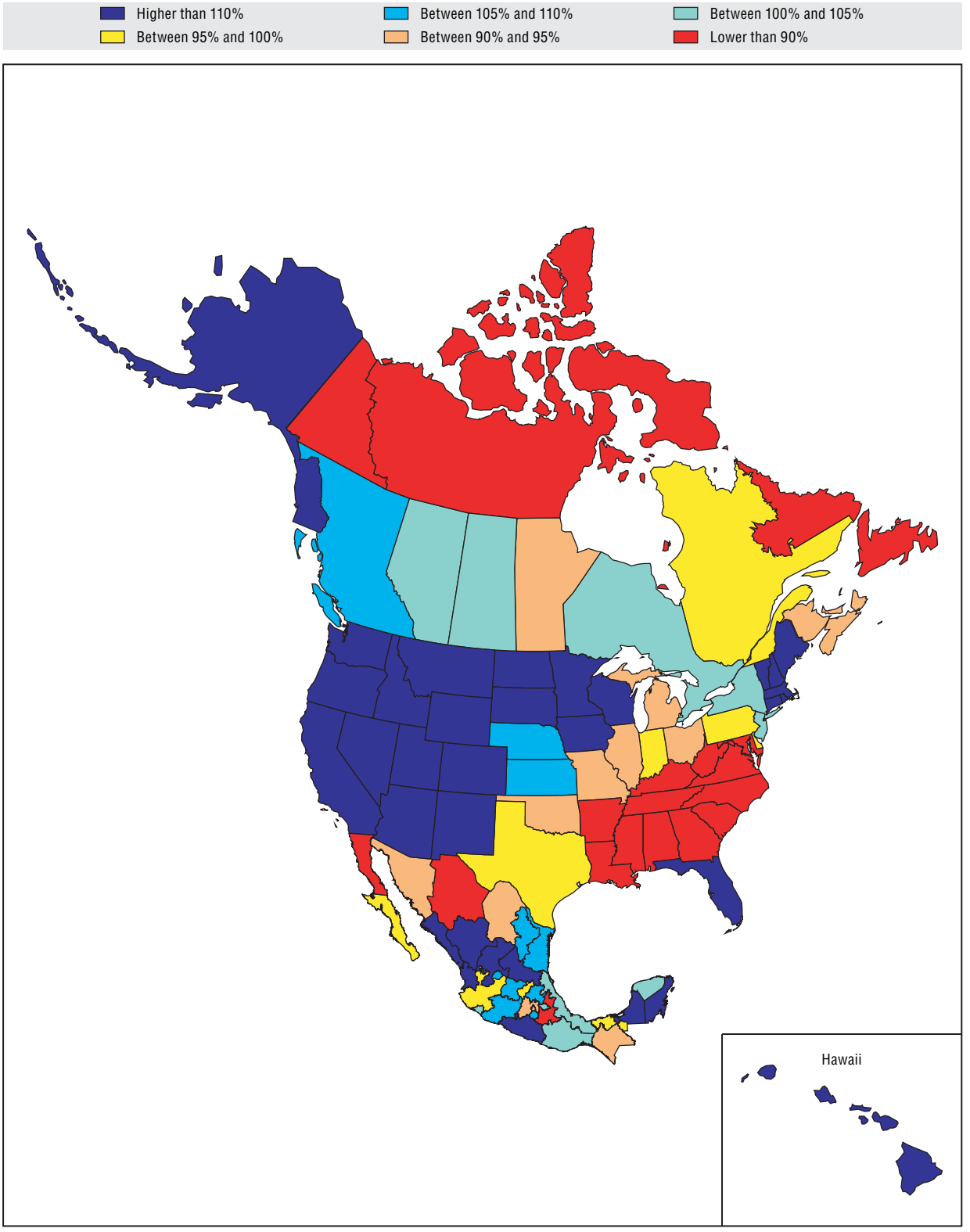


Source: OECD Territorial Database.

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26.5. **Age-adjusted mortality rate: North America TL2**

Percentage of the expected number of deaths 2000



Source: OECD Territorial Database.

27. Health resources: number of medical practitioners

In 2001, there were over 2 million medical practitioners in OECD countries, *i.e.* 2.9 doctors per 1 000 persons, on average.

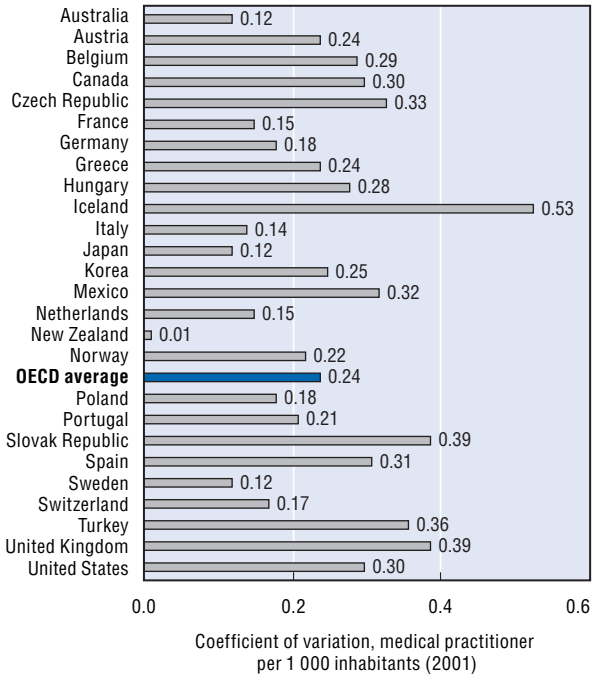
Despite wide regional differences in the number of doctors per capita, regional disparities – as measured by the coefficient of variation – tend to be quite narrow in most countries (Figure 27.1). In Mexico, for instance, the ratio of doctors to population in the region with the highest number of doctors per inhabitant is five times higher than in the region with the lowest number. Yet, regional disparities in Mexico are not very far from the OECD average, as the coefficient of variation is 0.32 and 0.24, respectively. This pattern indicates that even if there are some peaks in numbers of doctors per 1 000 inhabitants, usually in the capital region, access to health services is quite evenly distributed in the rest of the country.

Several countries, particularly New Zealand, Australia, Japan, Sweden, Italy, France and the Netherlands, show very small regional disparities.

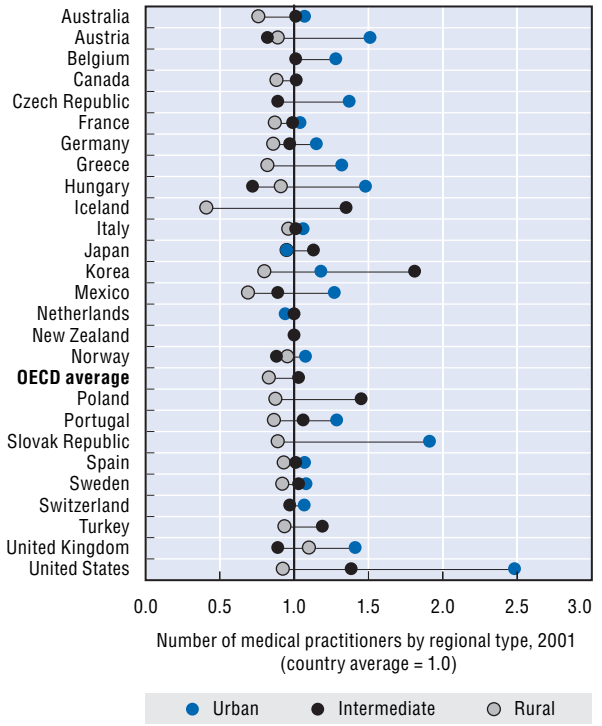
Regional disparities appear relatively large only in Iceland, where the coefficient of variation is 0.53. Low regional disparities are, at least in part, a consequence of the large size of the regions for which comparable data on doctors are available. In fact, as the size of a region increases, disparities tend to "average out". Therefore, low disparities between large regions may hide large disparities between smaller areas within the region.

In almost all countries the number of medical practitioners per capita is highest in urban regions and lowest in rural regions (Figure 27.2). In the United States and the Slovak Republic, the number of doctors per capita in urban regions is double the country average, while in Austria, Greece and Hungary is at least 50% higher.

27.1. **In 2001, regional disparities in doctors per capita were highest in Iceland and Poland and lowest in New Zealand**



27.2. **The population in urban regions tends to have access to more doctors than the population in rural and intermediate regions**



Statlink: *http://dx.doi.org/10.1787/827032656815*

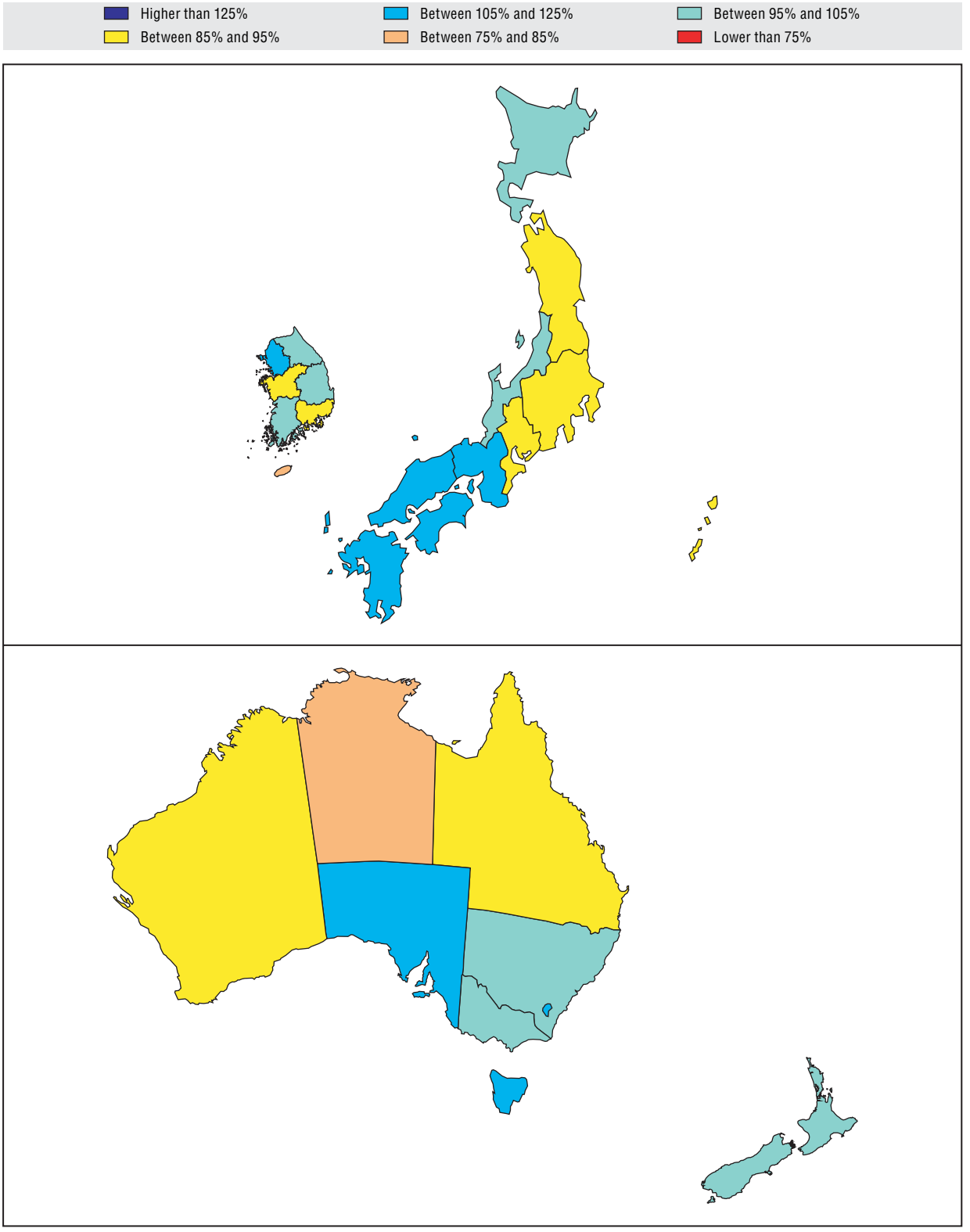
Definition

Data for physicians are comprehensive of physicians in activity. This category includes physicians with a medical practice and those without one (working in industry administration or research) (Eurostat, *European Regional Statistics, Reference Guide*, 2003).

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27.3. **Practicing physicians per inhabitant by region: Asia and Oceania TL2**

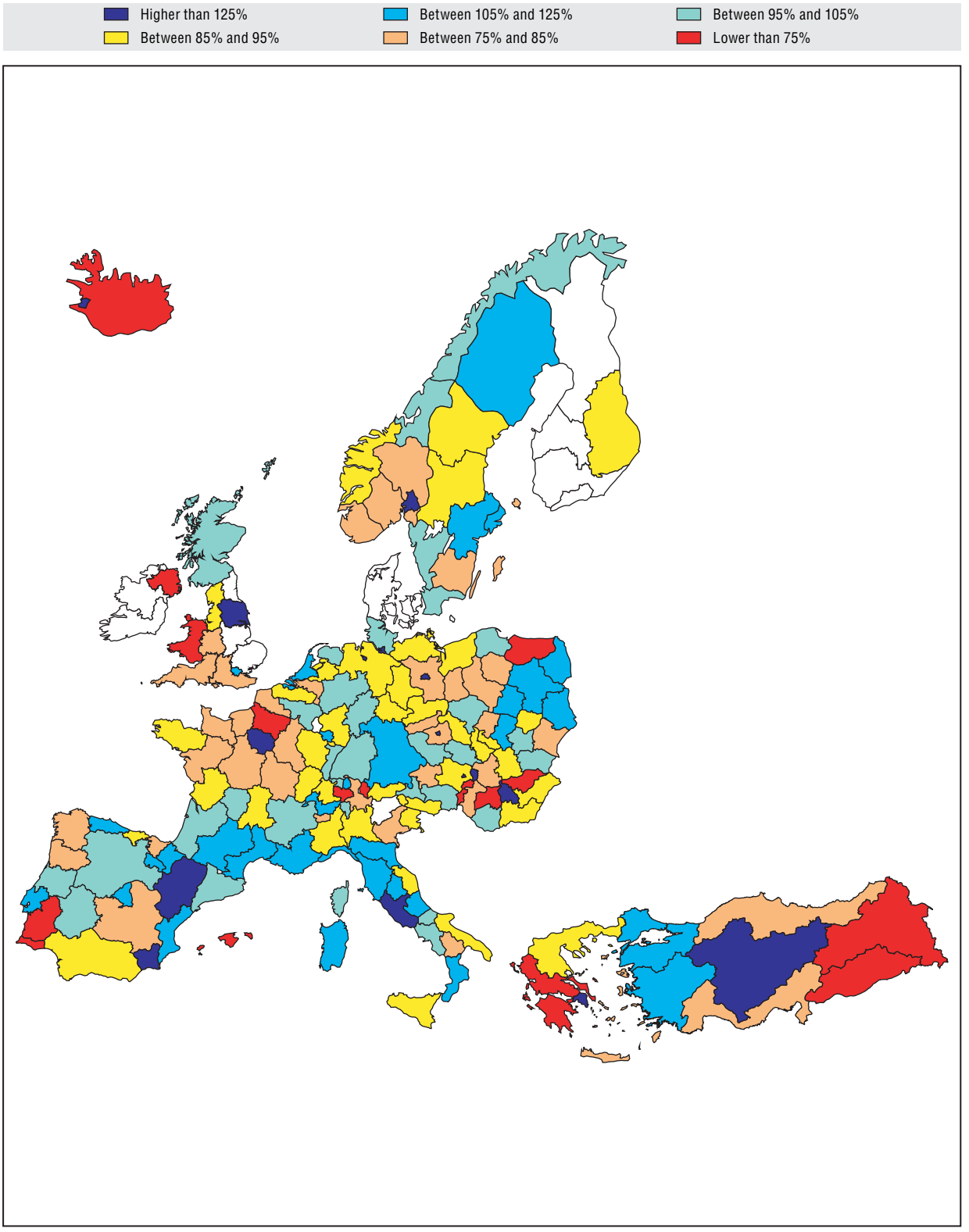
Percentage of national number of practicing physicians per inhabitant 2001



Source: OECD Territorial Database.

27.4. **Practicing physicians per inhabitant by region: Europe TL2**

Percentage of national number of practicing physicians per inhabitant 2001

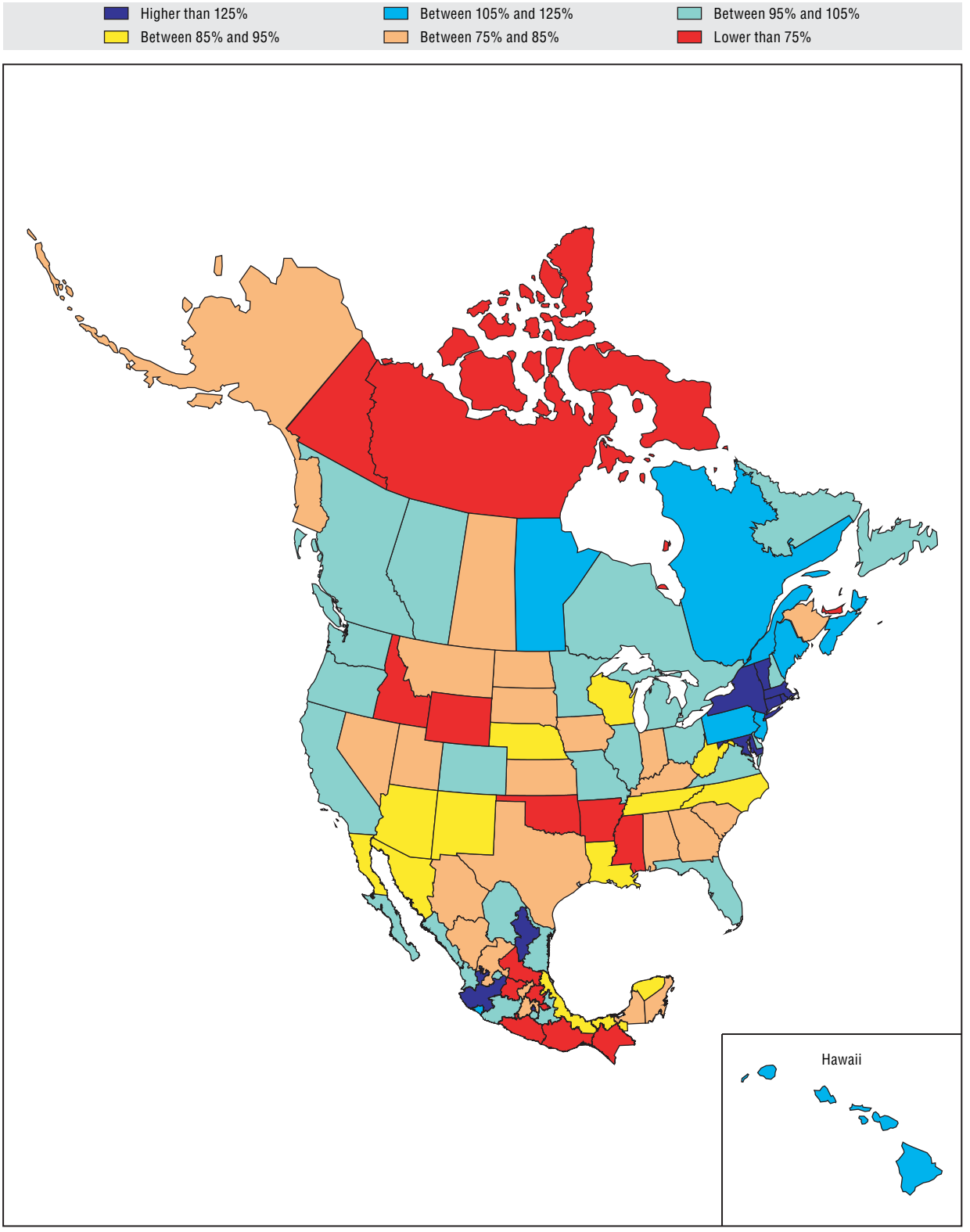


Source: OECD Territorial Database.

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27.5. **Practicing physicians per inhabitant by region: North America TL2**

Percentage of national number of practicing physicians per inhabitant 2001



Source: OECD Territorial Database.

28. Safety: reported criminal offences against property

Safety is an important factor in the attractiveness of regions. It contributes to citizens' decision to live in a certain region and helps to create a positive business environment for firms.

The number of reported criminal offences against property is a common indicator of a region's level of safety.

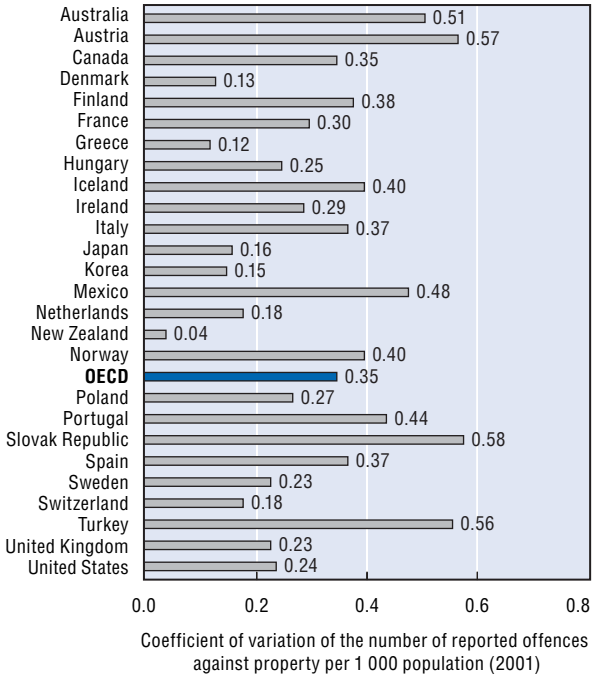
Lack of international standards for crime statistics makes international comparison difficult. Moreover, statistics on reported crime do not provide a clear indication of the safety of a given region because they are influenced by how crime is defined in national legislation, the statistical criteria for recording a crime and public willingness to report offences (see "Sources and Methodology").

In 2001 reported offences against property were unevenly distributed among regions within countries (Figure 28.1).

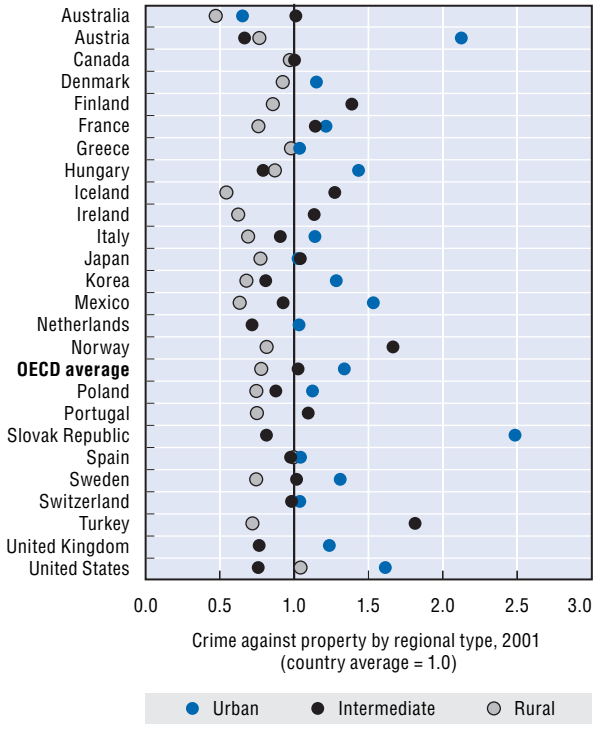
The high concentration of crime in the region of Bratislava (on average, more than double other regions) makes the Slovak Republic the country with the largest regional disparity in crimes against property, with a coefficient of variation of 0.58. Large disparities are also reported in Austria (0.57), Turkey (0.56) and Australia (0.51), while New Zealand, Greece and Denmark, as well as Japan and Korea show much smaller differences among regions.

In all OECD countries, offences against property per capita are more frequent in urban or intermediate regions than in rural regions (Figure 28.2). In the Slovak Republic, reported property offences are three times more frequent in urban than in intermediate regions, while in Austria, Iceland, Mexico, Norway and Turkey such reported offences are twice as frequent in urban or intermediate regions than in rural ones.

28.1. **The Slovak Republic displayed the highest variation in recorded offences against property**



28.2. **Crimes against property are manifestly more frequent in predominantly urban regions**



Statlink: *http://dx.doi.org/10.1787/636231170828*

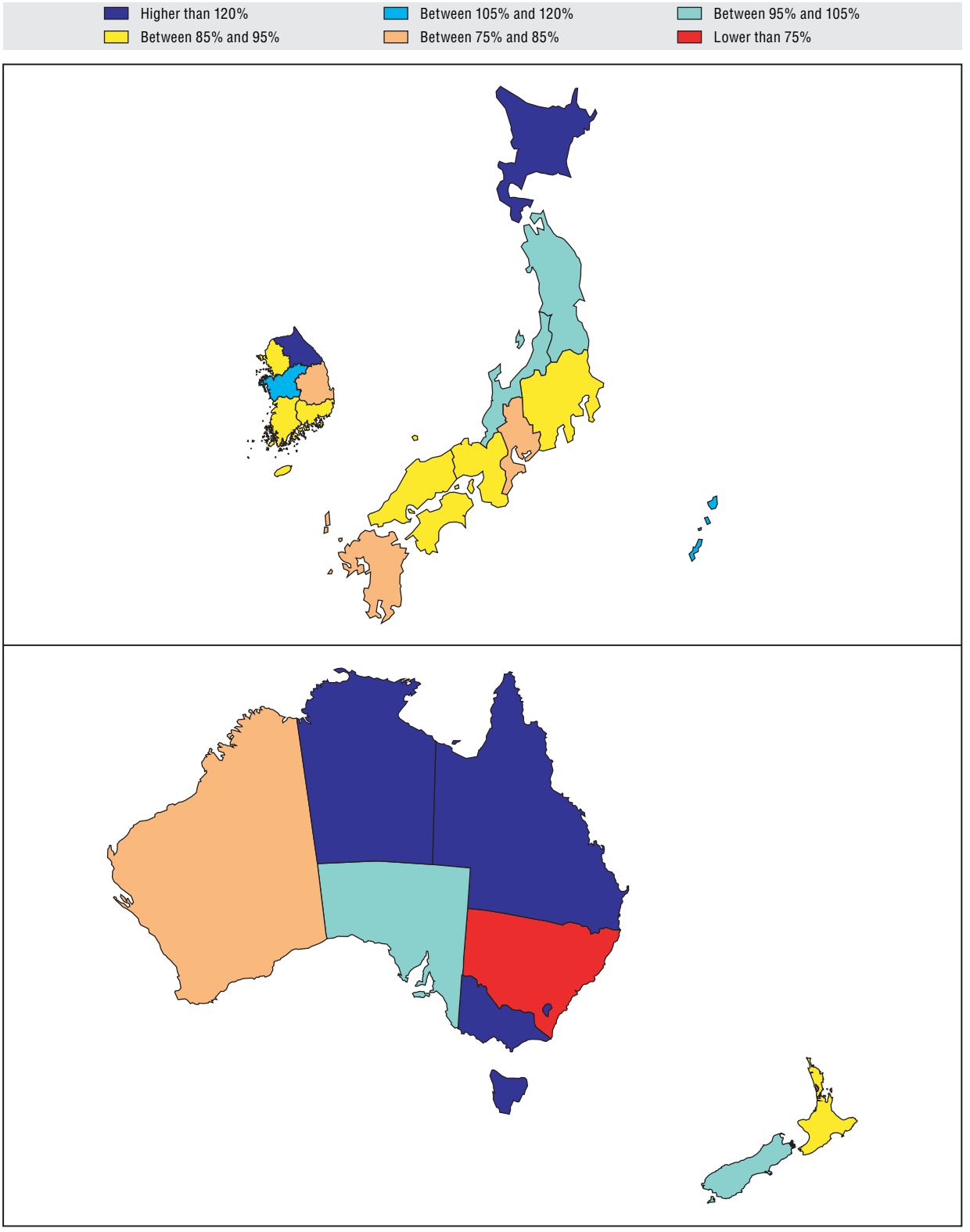
Definition

Offences against property include: forgery, arson, burglary, theft, fraud, robbery, malicious damage to property.

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28.3. **Reported crimes against the property per inhabitant by region: Asia and Oceania TL2**

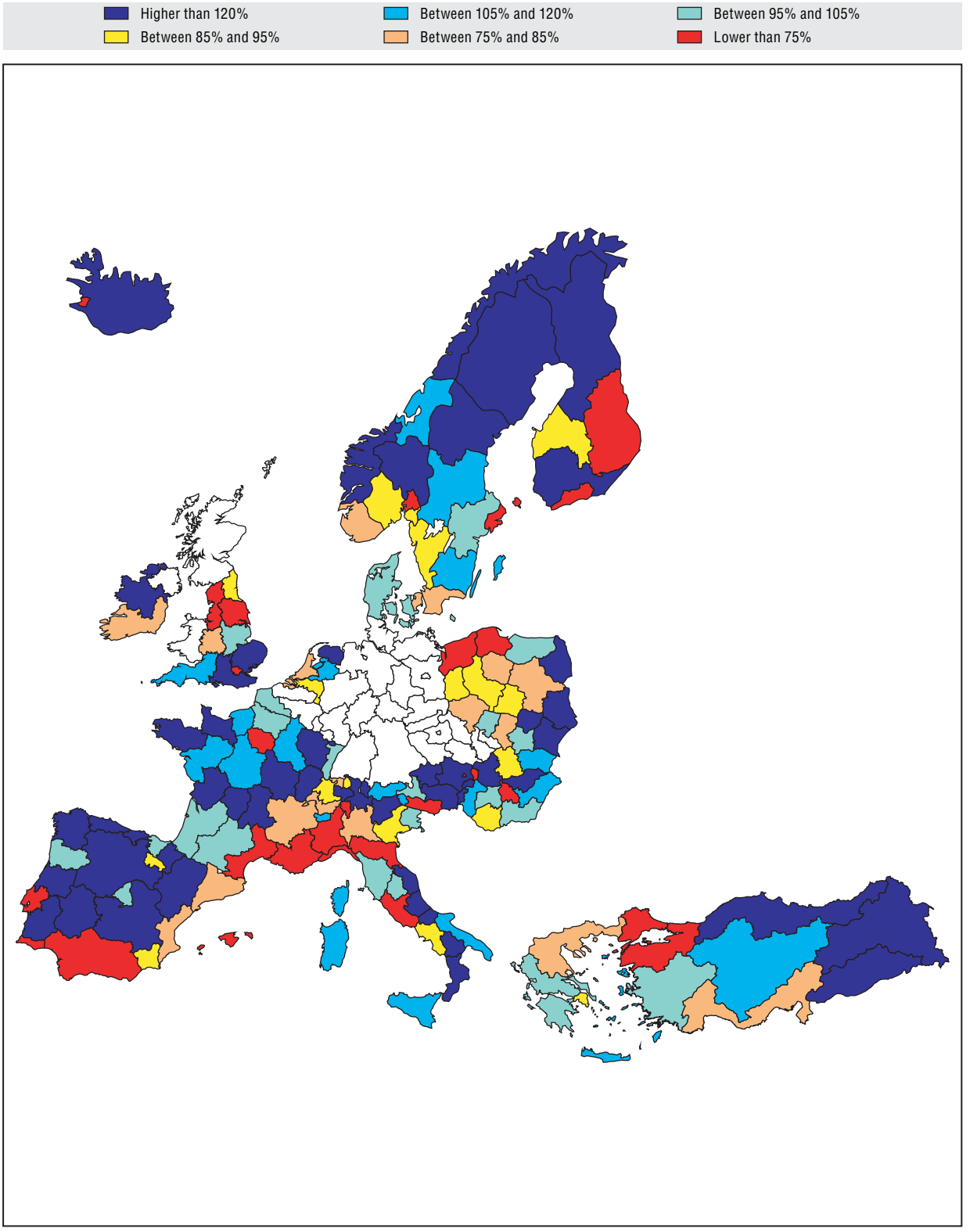
Percentage of national number of reported crimes against the property per inhabitant 2001



Source: OECD Territorial Database.

28.4. **Reported crimes against the property per inhabitant by region: Europe TL2**

Percentage of national number of reported crimes against the property per inhabitant 2001

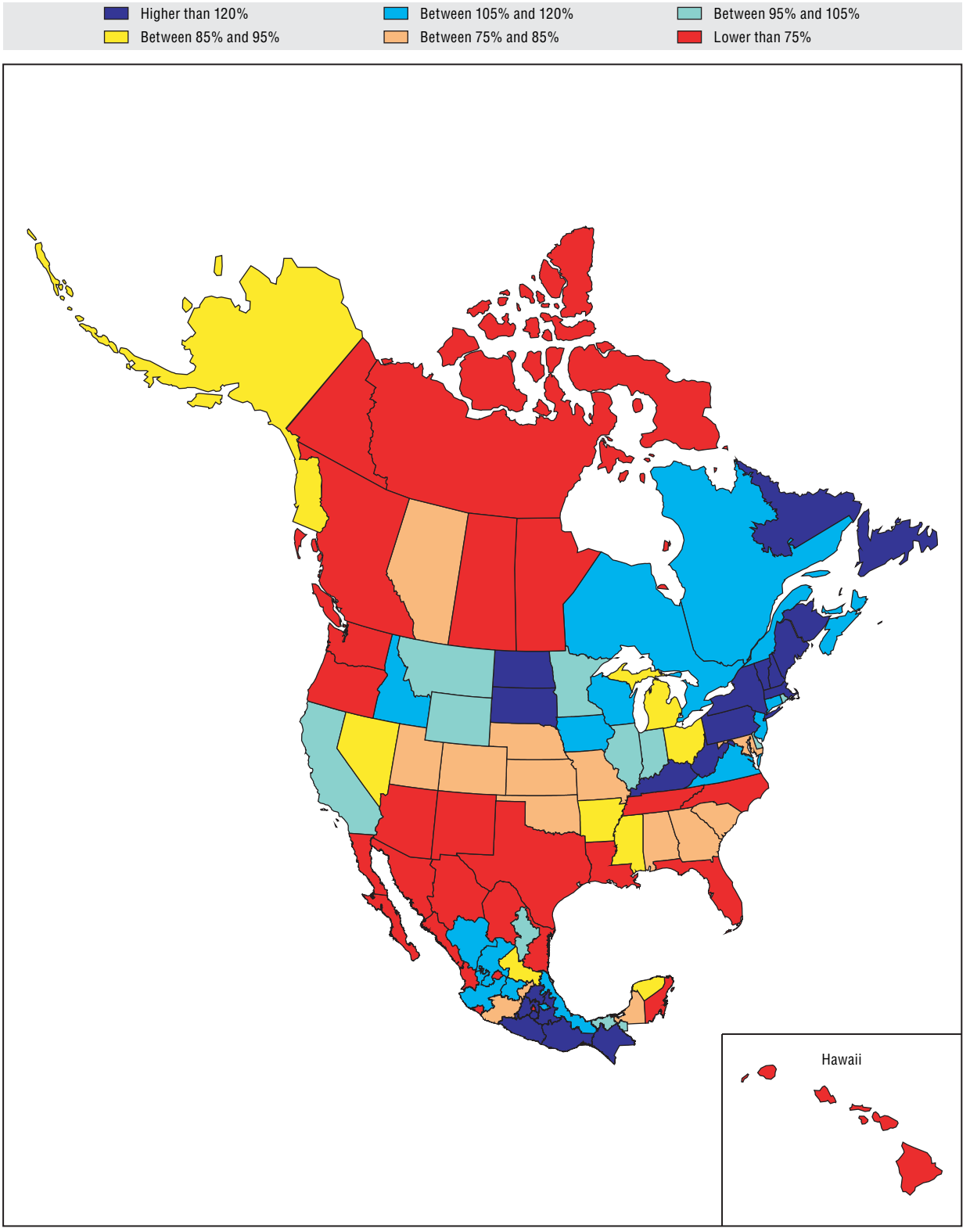


Source: OECD Territorial Database.

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28.5. **Reported crimes against the property per inhabitant by region: North America TL2**

Percentage of national number of reported crimes against the property per inhabitant 2001



Source: OECD Territorial Database.

29. Safety: reported criminal offences against persons

Safety is an important factor in the attractiveness of regions. It contributes to citizens' decisions to live in a certain region and helps to create a positive business environment for firms.

Like crimes against property, reported criminal offences against persons is a common indicator of a region's level of safety.

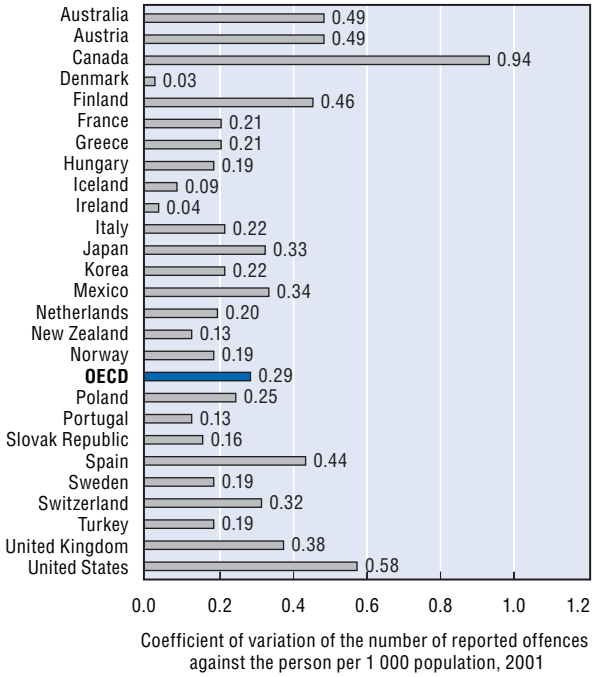
A reported criminal offence is defined as a violation of the law which is reported to the public authorities. The lack of international standards for crime statistics makes international comparison difficult (see "Sources and Methodology").

In 2001, regional disparities in the number of reported offences against persons were generally quite large (Figure 29.1).

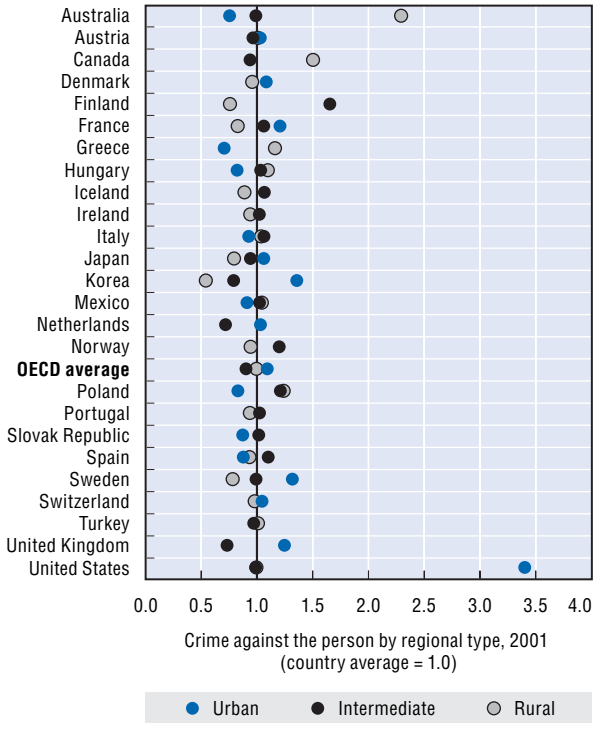
Canada is the country with the largest variation in the rate of reported offences against persons (0.94). The United States, Australia, Austria, Finland and Spain also show large regional differences, while reported crimes against persons are most evenly distributed in Ireland and Denmark.

As expected, in most countries the number of reported crimes against persons is higher in urban or intermediate areas (Figure 29.2). In the United States, per capita offences against persons are over three times higher in urban than in rural regions. The opposite pattern appears to hold for Australia, Canada, Greece, and Poland, where the frequency of crimes against persons is higher in rural regions.

29.1. **In 2001 the number of reported offences against persons was unevenly distributed among regions**



29.2. **The United States and Korea show the highest frequency of recorded crime in urban regions, 2001**



Statlink: *http://dx.doi.org/10.1787/280522251337*

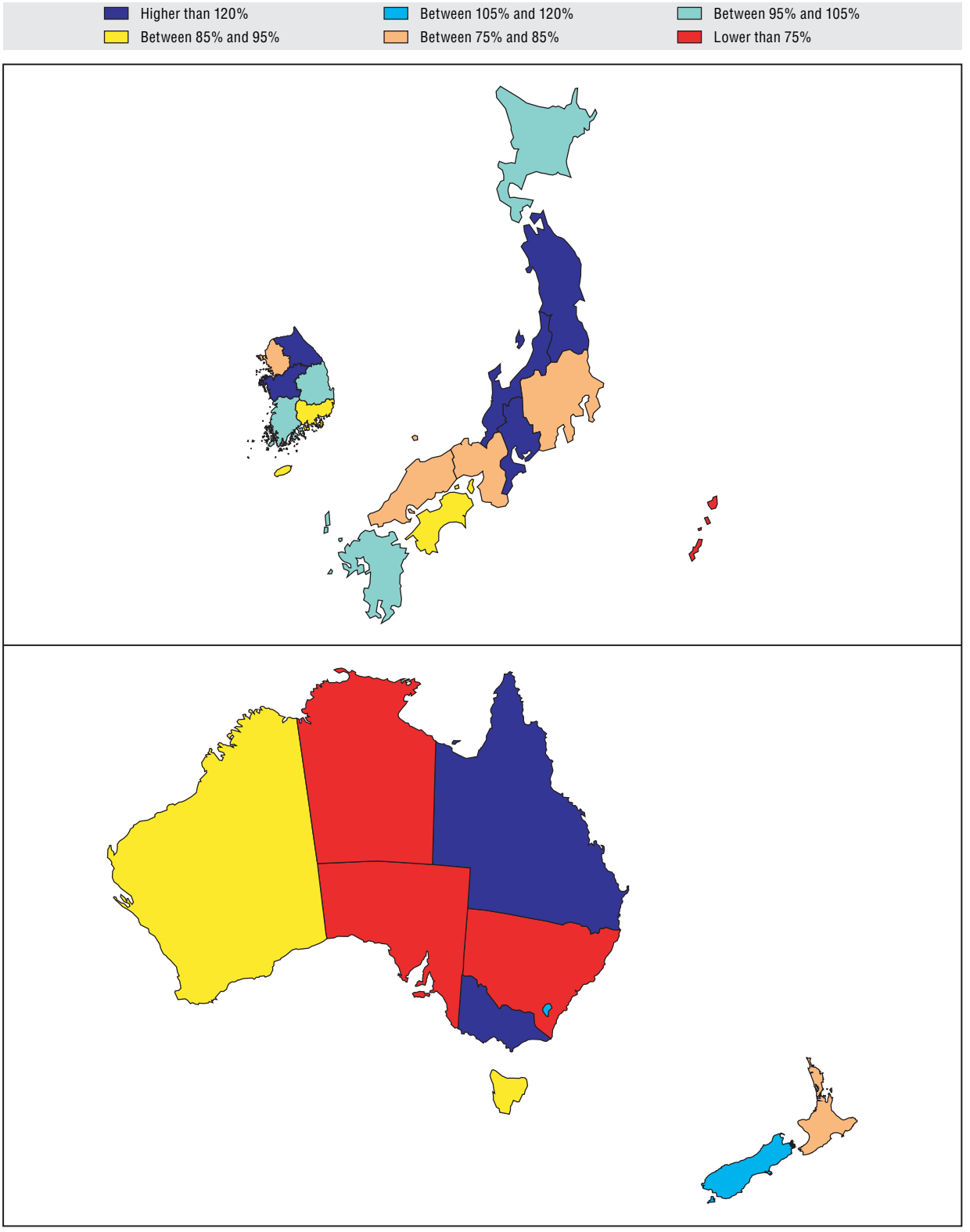
Definition

Violence against persons includes homicide, attempted murder, sexual offences and assault.

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29.3. **Reported crimes against the person per inhabitant by region: Asia and Oceania TL2**

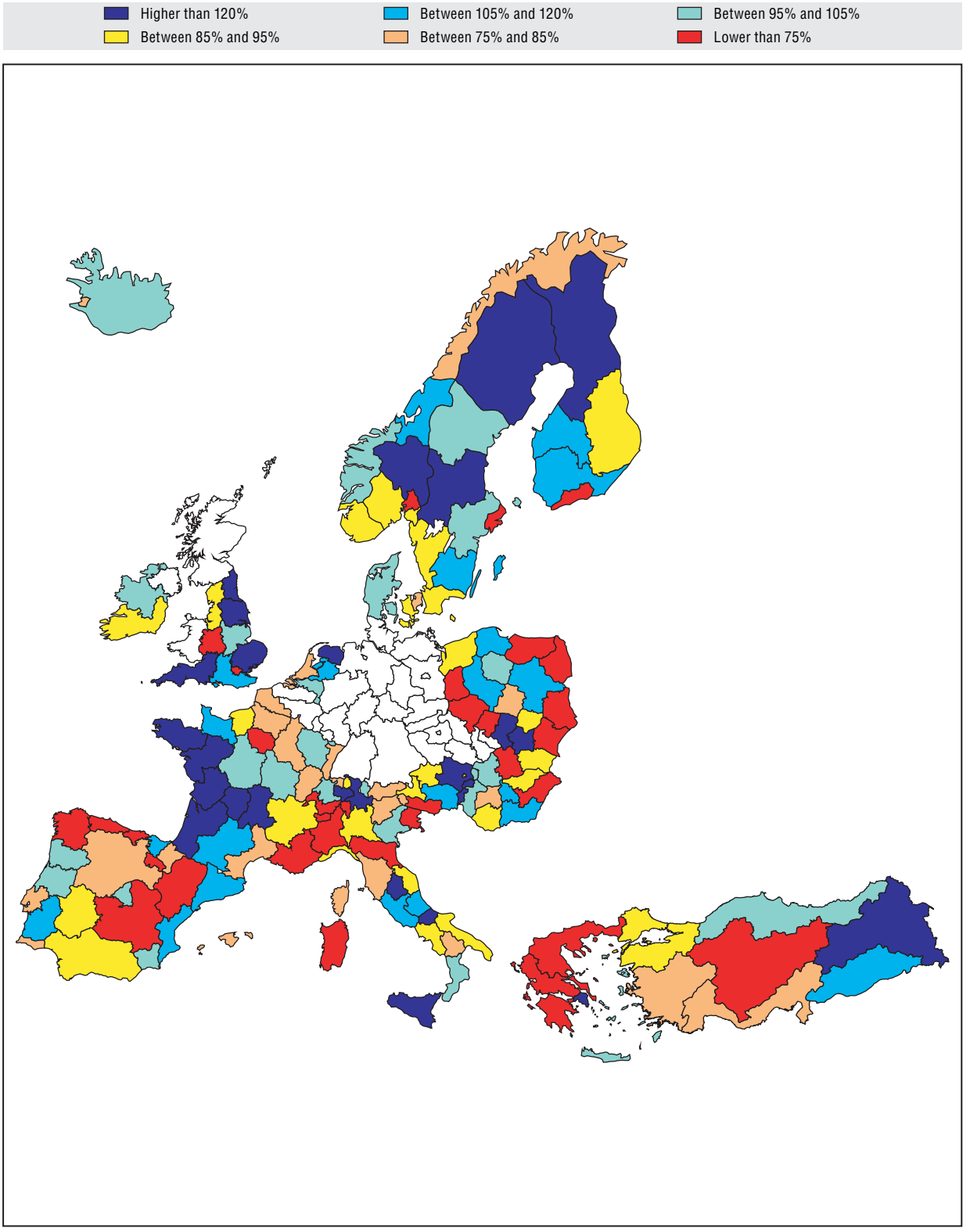
Percentage of national number of reported crimes against the person per inhabitant 2001



Source: OECD Territorial Database.

29.4. **Reported crimes against the person per inhabitant by region: Europe TL2**

Percentage of national number of reported crimes against the person per inhabitant 2001



Source: OECD Territorial Database.

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29.5. **Reported crimes against the person per inhabitant by region: North America TL2**

Percentage of national number of reported crimes against the person per inhabitant 2001



Source: OECD Territorial Database.

30. Road safety: fatal traffic accidents

Road accidents are responsible for a large number of injuries and fatalities. In recent years, many OECD countries have made considerable efforts to reduce the number and severity of transport accidents.

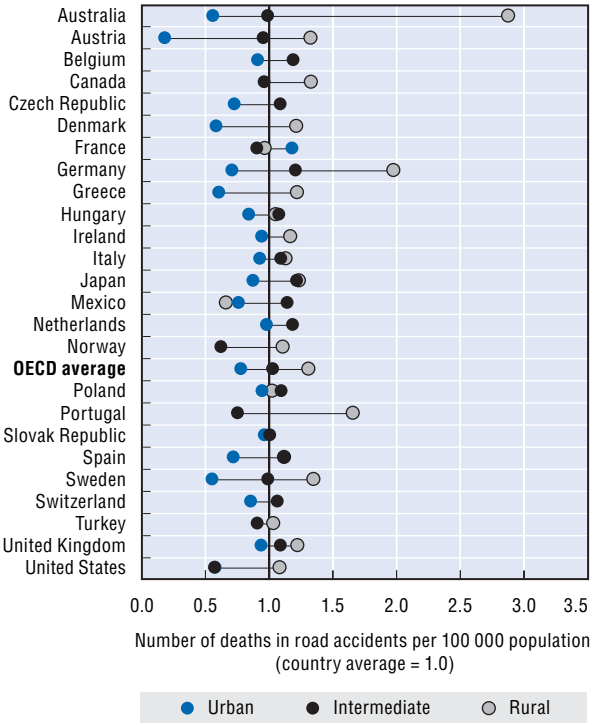
High-category roads, which run mainly through rural areas between cities, have the greatest traffic exposure in kilometres and more accidents than lower-category roads. Higher speeds on higher-category roads usually increase the seriousness of accidents and fatalities in rural and intermediate regions. On the other hand, the large volume of traffic in urbanised areas results in a larger number of accidents than in rural areas, although their consequences are usually less severe owing to more restrictive speed limits.

As an indicator of regional social well-being, road traffic fatalities present a major problem: the figures refer only to the number of fatal accidents in a region, not to the traffic safety of its residents.

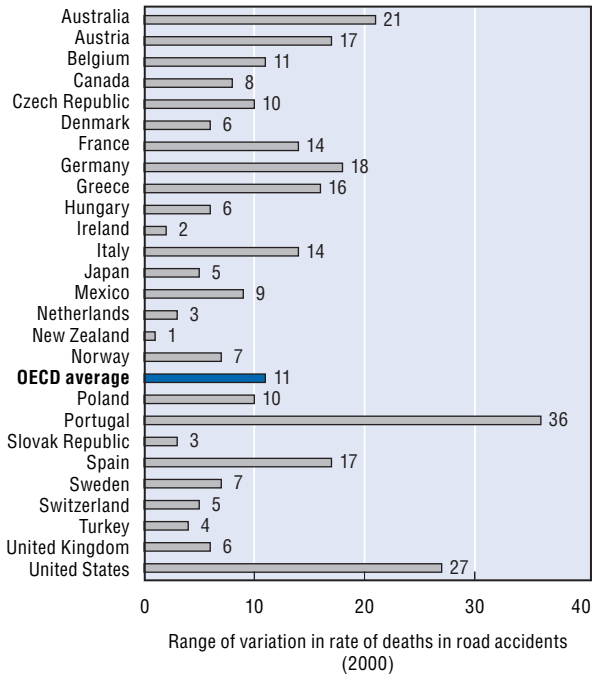
In 2000, deaths in traffic accidents were more frequent in rural and intermediate regions for all countries considered (Figure 30.1). Australia and Austria are the most extreme examples, with percentages of fatal traffic accidents in rural areas that were five and seven times higher, respectively, than in urban regions. Austria is also the country with the lowest density of deaths in urban regions (more than 80% below the country average).

Regional differences in the rate of fatal traffic accident were largest in Portugal (where the region of Alentejo peaks at 46 persons killed in traffic accidents per 100 000 population) and the United States, and smallest in New Zealand, Ireland, the Netherlands and the Slovak Republic (Figure 30.2).

30.1. **In 2000 road accidents were more frequent in rural and intermediate regions**



30.2. **In 2000, Portugal and the United States showed the largest regional differences in the rate of fatal traffic accidents**



Statlink: *http://dx.doi.org/10.1787/637036421038*

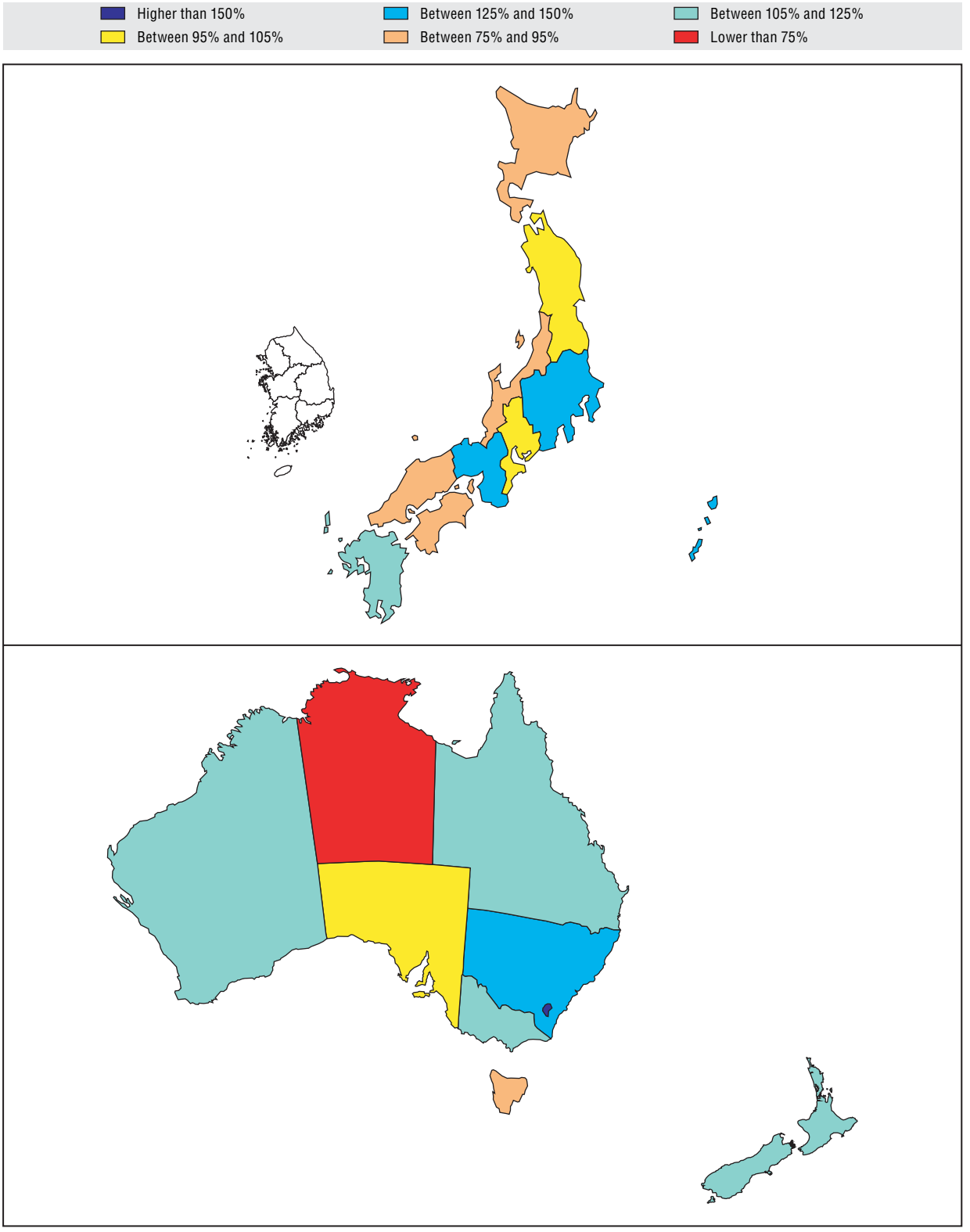
Definition

Any accident involving at least one road vehicle in motion on a public or private road resulting in at least one person killed. Included are collisions between road vehicles, between road vehicles and pedestrians, between road vehicles and animals or fixed obstacles and of one road vehicle alone.

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30.3. **Deaths in traffic accidents per inhabitant by region: Asia and Oceania TL2**

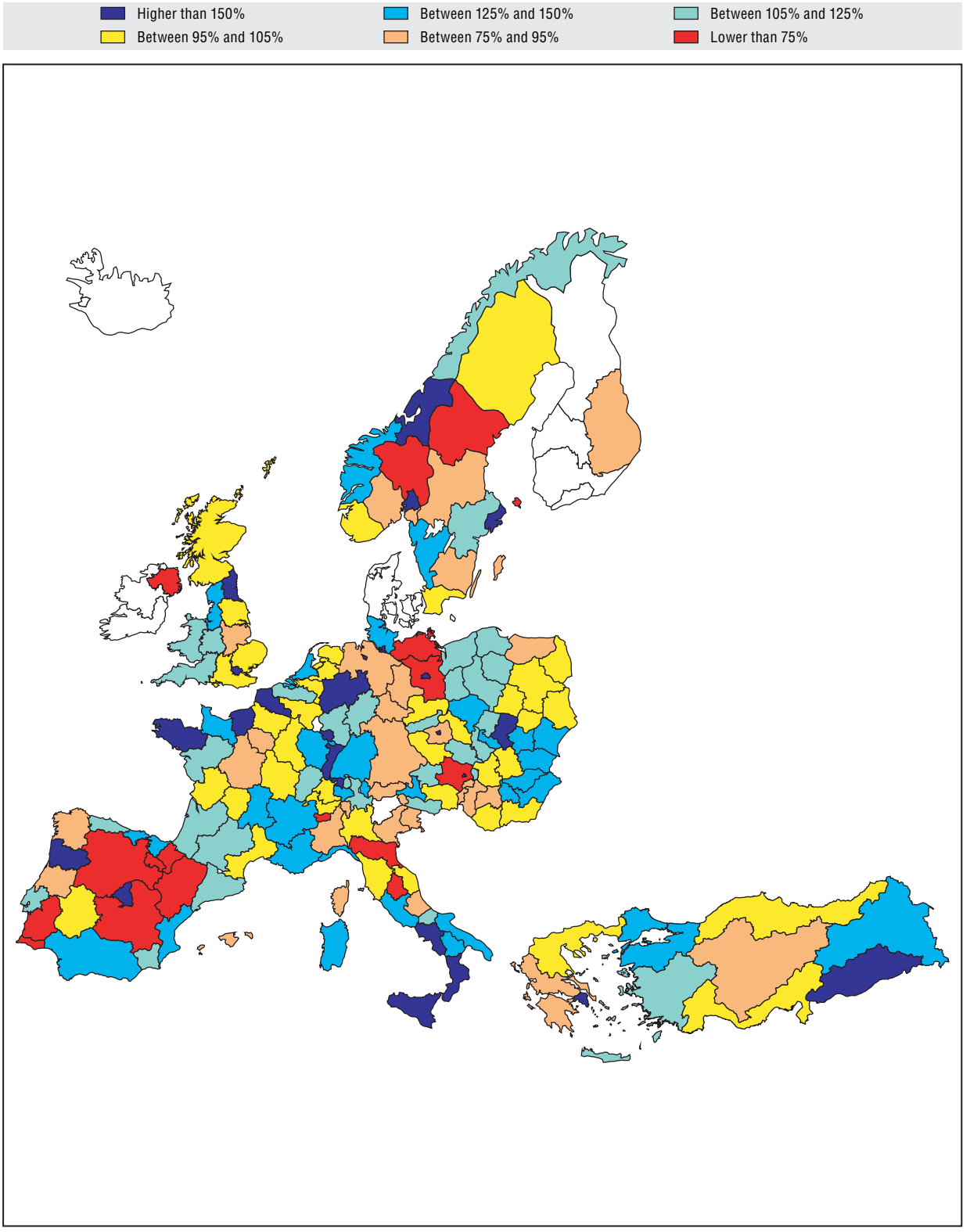
Percentage of national number of deaths in traffic accidents per inhabitant 2001



Source: OECD Territorial Database.

30.4. **Deaths in traffic accidents per inhabitant by region: Europe TL2**

Percentage of national number of deaths in traffic accidents per inhabitant 2001

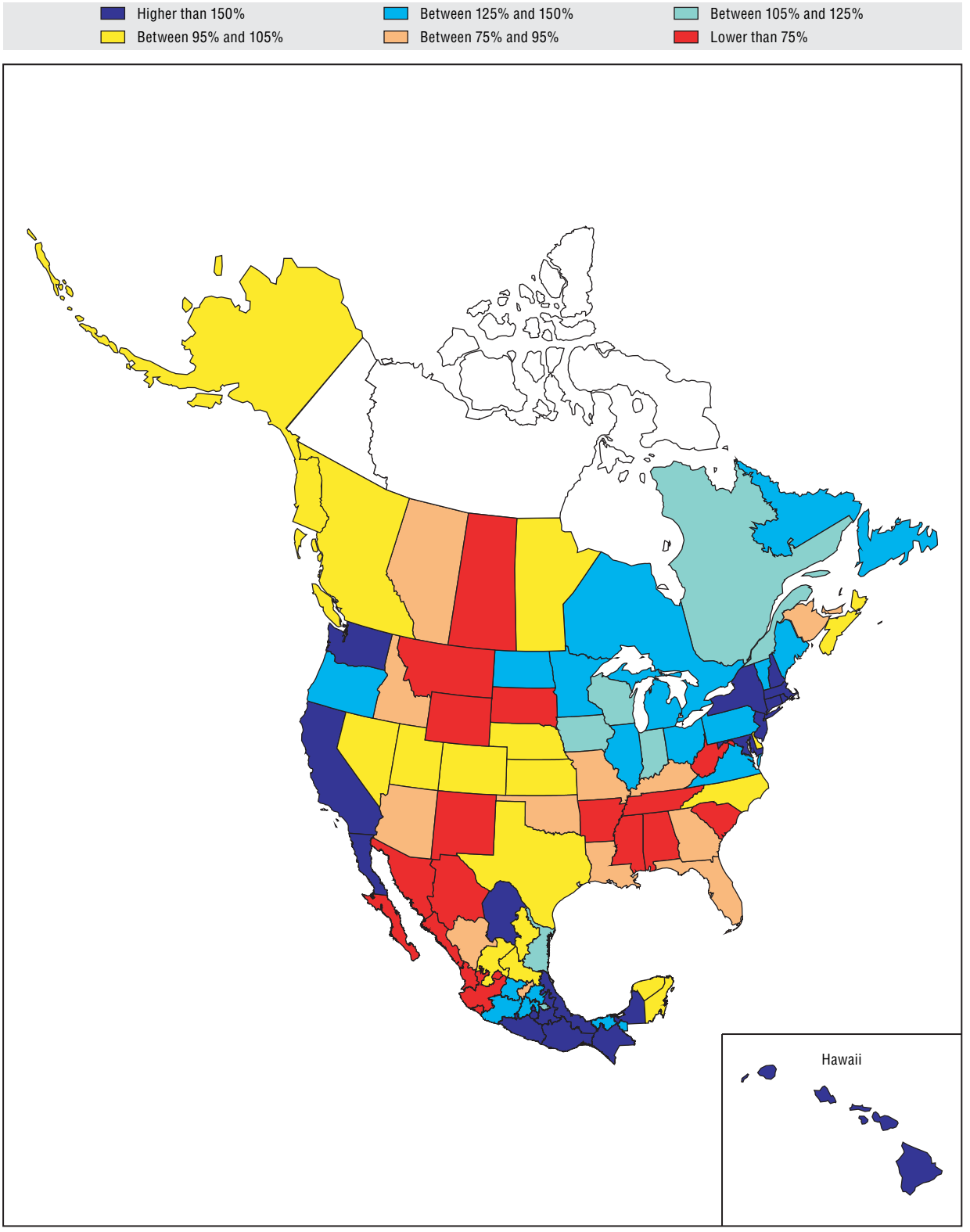


Source: OECD Territorial Database.

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30.5. **Deaths in traffic accidents per inhabitant by region: North America TL2**

Percentage of national number of deaths in traffic accidents per inhabitant 2001



Source: OECD Territorial Database.

31. Environment: stock of private vehicles

The reduction of motorised traffic is a policy target in many OECD countries. Motorised traffic makes a significant contribution to overall pollution and is a major source of pressure on the regional environment.

The number of private vehicles per capita is commonly used to address policy issues related to the integration of environmental objectives in transport policies. The category "private vehicles" includes road motor vehicles for the carriage of passengers.

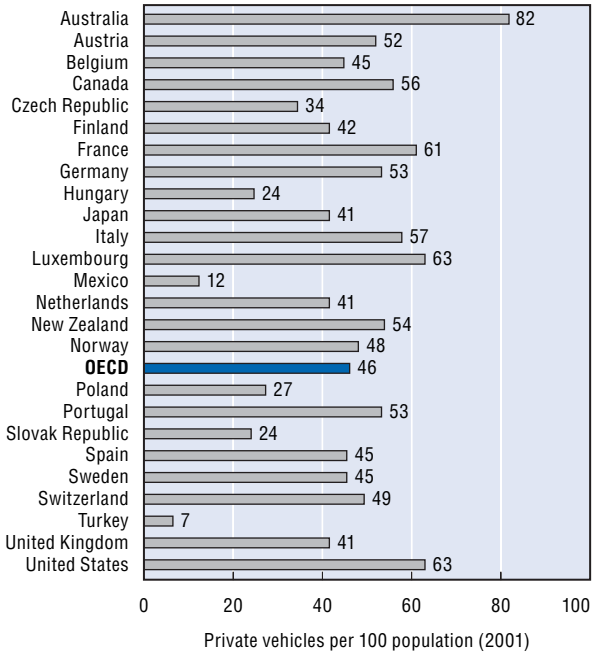
The number of vehicles per capita varies significantly among OECD countries (Figure 31.1). In 2001, Turkey had the smallest number of vehicles per 100 inhabitants (7) while Australia (82), Luxembourg (63) and the United States (63) had the highest.

In spite of the existence of extensive public transport networks and high parking costs, urban regions recorded in 2001 a higher number of private vehicles per capita in almost all OECD countries. Only in the United States, Sweden, Austria and Canada was the density of private vehicles higher in rural or intermediate regions.

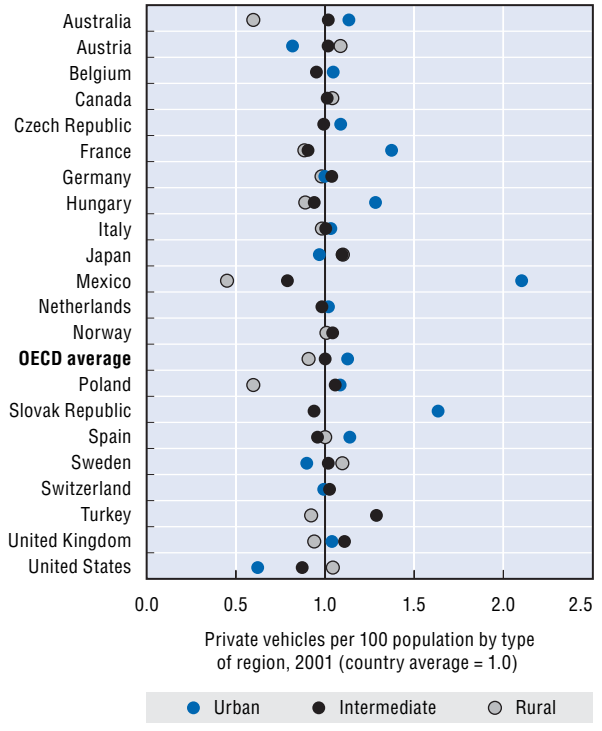
In Mexico the number of private vehicles per capita was almost five times higher in urban than in rural regions. Together with Poland and Australia, Mexico is also the country with the smallest number of vehicles per capita in rural regions.

In the United Kingdom and Germany, intermediate regions had the highest concentration of cars (9% and 2%, respectively, above the national average). As intermediate regions are often located around large cities, the higher number of vehicles per capita is likely to be due to commuting.

31.1. **In 2001, Australia and the United States had the highest number of per capita private vehicles...**



31.2. **... but the United States had the lowest number of vehicles per capita in urban regions**



Statlink: *http://dx.doi.org/10.1787/776820034761*

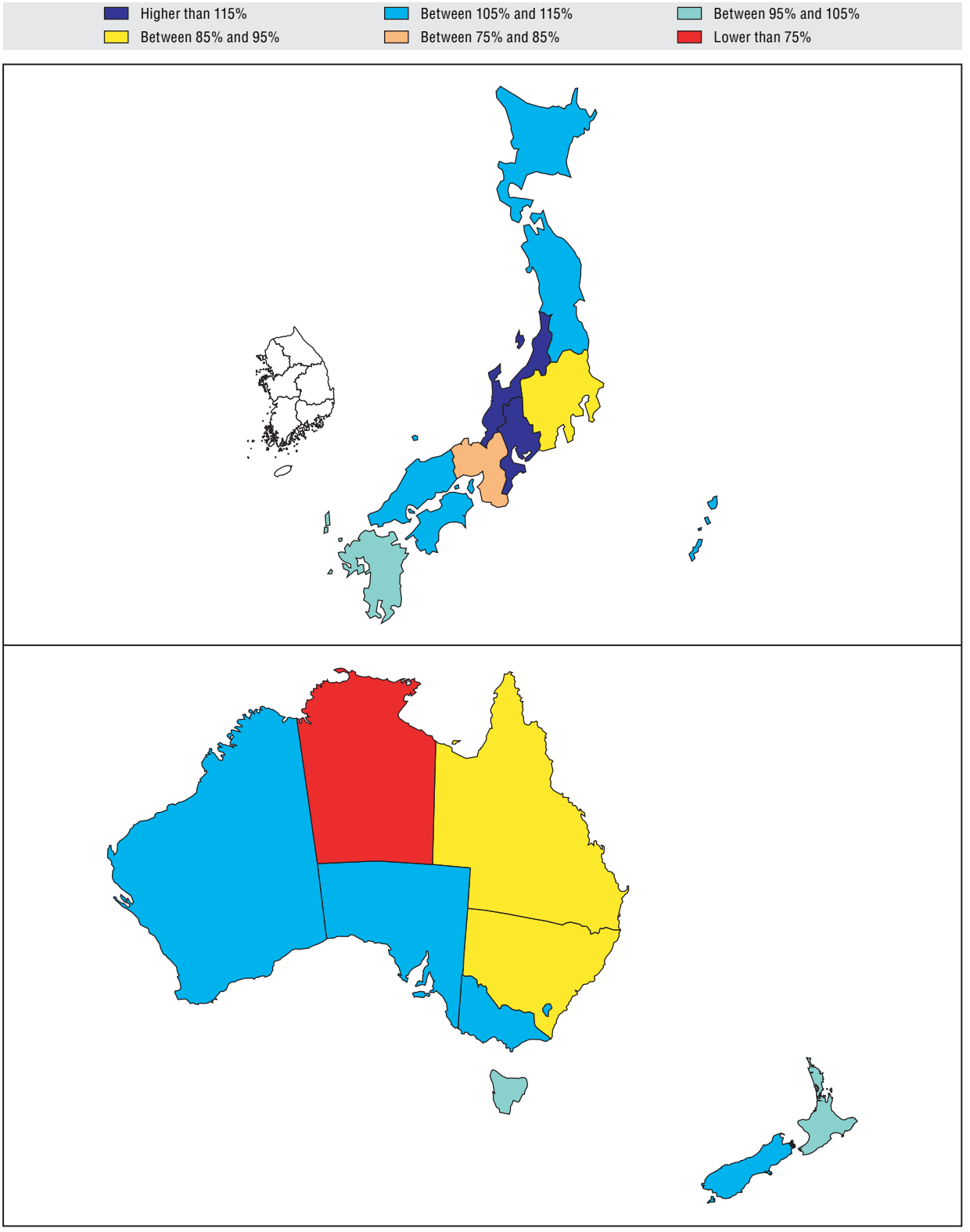
Definition

Road motor vehicle, other than a motorcycle, intended for the carriage of passengers and designed to seat no more than nine persons including the driver. The term passenger car therefore covers micro-cars (do not need a permit to be driven), taxis and hired passenger cars, provided that they have fewer than ten seats. This category may also include pick-ups.

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31.3. **Number of private vehicles per inhabitant by region: Asia and Oceania TL2**

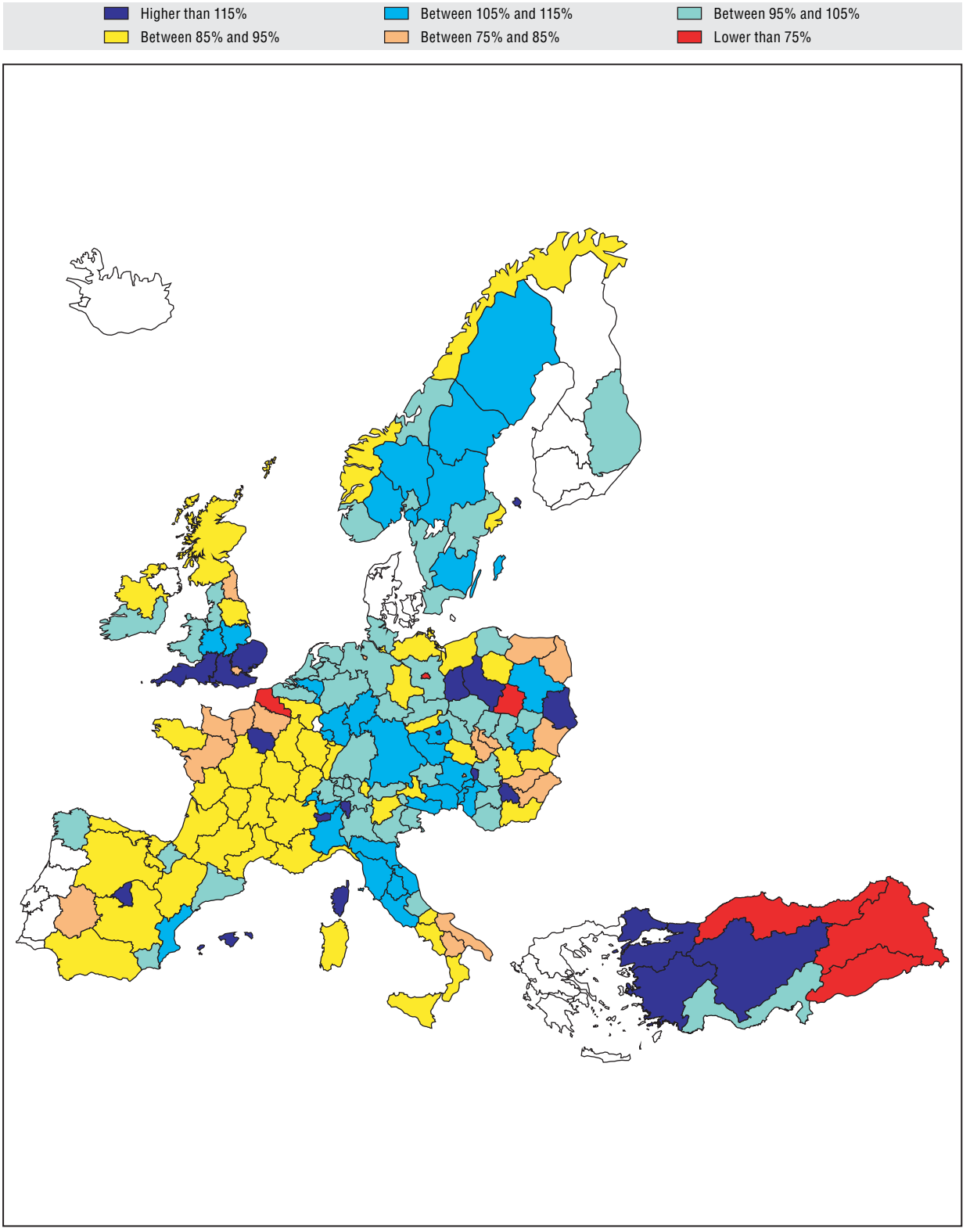
Percentage of national number of private vehicles per inhabitant 2001



Source: OECD Territorial Database.

31.4. **Number of private vehicles per inhabitant by region: Europe TL2**

Percentage of national number of private vehicles per inhabitant 2001

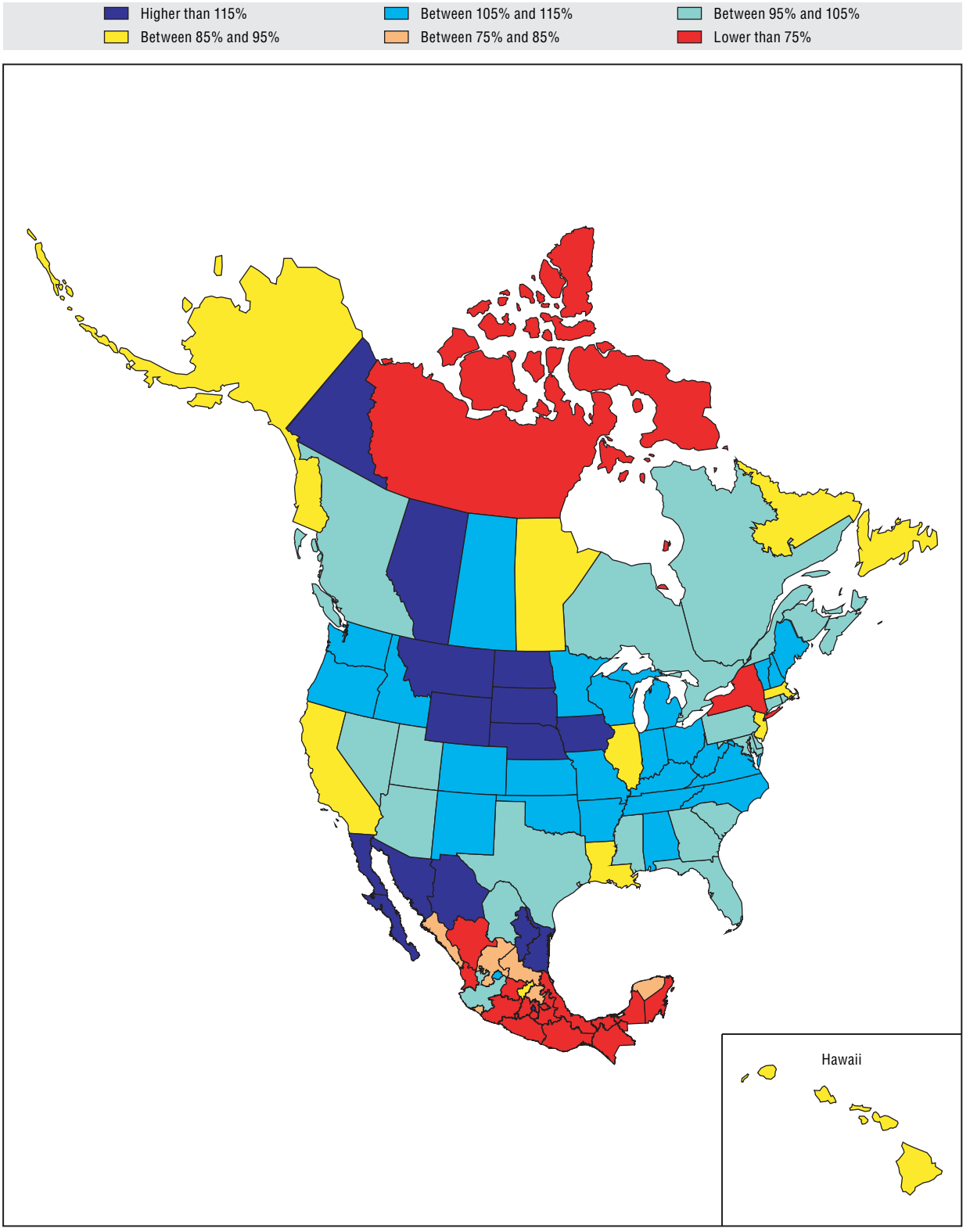


Source: OECD Territorial Database.

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31.5. **Number of private vehicles per inhabitant by region: North America TL2**

Percentage of national number of deaths in traffic accidents per inhabitant 2001



Source: OECD Territorial Database.

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PART IV

Sources and Methodology

Regional Grids and Classification

Regional grids

In any analytical study conducted at sub-national levels, the choice of the territorial unit is of prime importance. The word "region" can mean very different things both within and between countries. For instance, the smallest OECD region (Concepcion de Buenos Aires, Mexico) has an area of less than 10 square kilometres whereas the largest region (Nunavut, Canada) has over 2 000 square kilometres. Similarly, population in OECD regions ranges from about 400 inhabitants in Balance ACT (Australia) to more than 47 million in Kanto (Japan).

To address this issue, the OECD has classified regions within each member country. The classifications are based on two territorial levels (TLs). The higher level (Territorial Level 2) consists of about 300 macro-regions (Maps IV.1-IV.3) while the lower level (Territorial Level 3) is composed of more than 2 300 micro-regions[1] (Maps IV.4-IV.6). This classification – which, for European countries, is largely consistent with the Eurostat classification – facilitates greater comparability of regions at the same territorial level. Indeed, these two levels, which are officially established and relatively stable in all member countries, are used by many as a framework for implementing regional policies.[2]

Regional classification

A second important issue for the analysis of regional economies concerns the different "geography" of each region. For instance, in the United Kingdom one could question the relevance of comparing the highly urbanised area of London to the rural region of the Shetland Islands, despite the fact that both regions belong at the same territorial level. To take account of these differences, the OECD has established a regional typology according to which regions have been classified as predominantly urban, predominantly rural and intermediate. This typology, based on the percentage of regional population living in rural or urban communities, enables meaningful comparisons between regions belonging to the same type and level (Maps IV.1-IV.6).

The OECD regional typology is based on three criteria. The first criterion identifies rural communities according to population density. A community is defined as rural if its population density is below 150 inhabitants per square kilometre (500 inhabitants for Japan to account for the fact that its national population density exceeds 300 inhabitants

1. Level 0 indicates the territory of the whole country and Level 1 denotes groups of macro-regions.
2. Due to low comparability, regional statistics are not reported for the following territorial units: Other Territories (Australia), Dom-Tom (France), Açores and Madeira (Portugal), Canarias and Ceuta y Melilla (Spain).

per square kilometre). The second criterion classifies regions according to the percentage of population living in rural communities. Thus, a region is classified as:

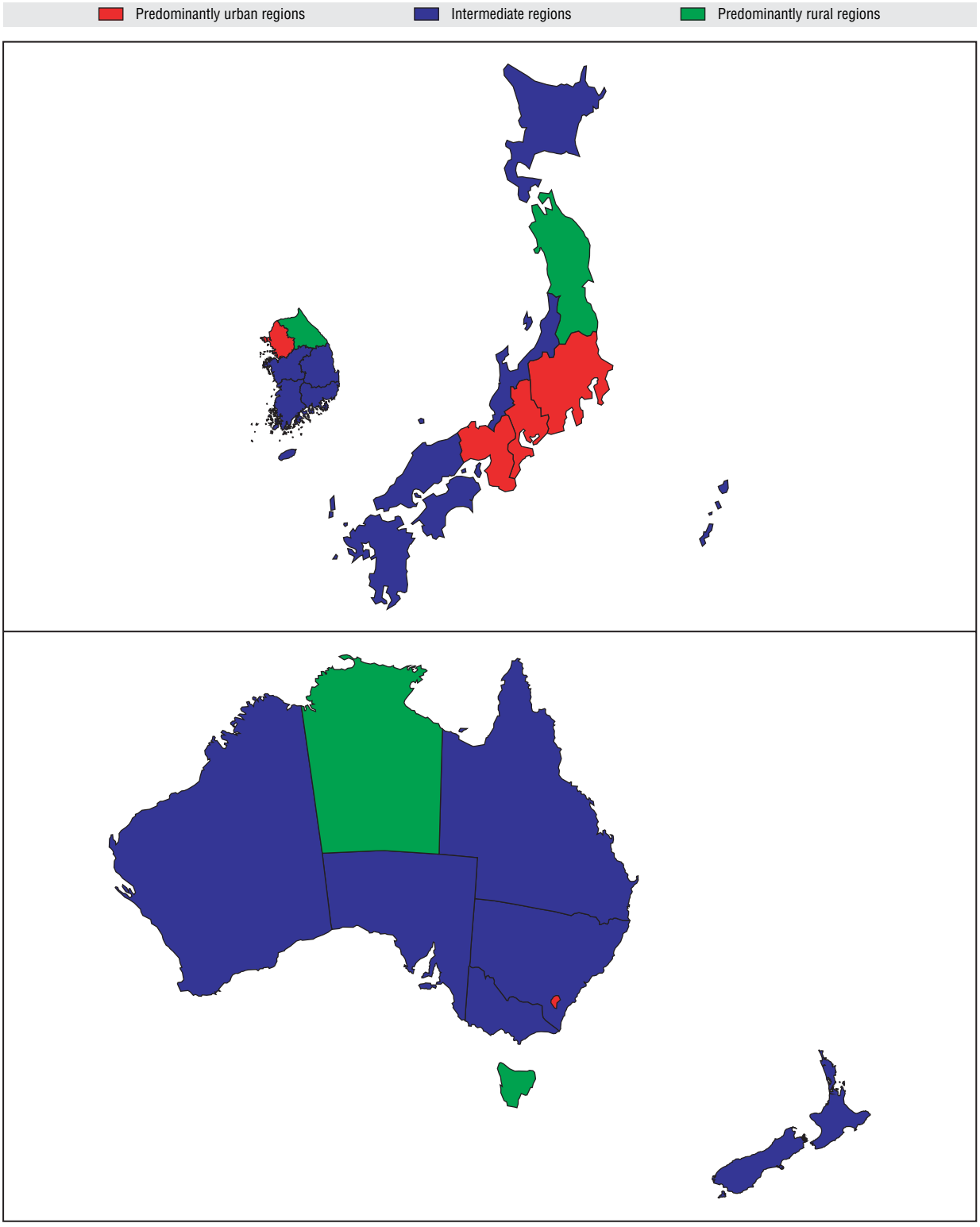
- *Predominantly rural (PR)*, if more than 50% of its population lives in rural communities.
- *Predominantly urban (PU)*, if less than 15% of the population lives in rural communities.
- *Intermediate (IN)*, if the share of population living in rural communities is between 15% and 50%.

The third criterion is based on the size of the urban centres. Accordingly:

- A region that would be classified as rural on the basis of the general rule is classified as intermediate if it has a urban centre of more than 200 000 inhabitants (500 000 for Japan) representing no less than 25%of the regional population.
- A region that would be classified as intermediate on the basis of the general rule is classified as predominantly urban if it has a urban centre of more than 500 000 inhabitants (1 000 000 for Japan) representing no less than 25% of the regional population.

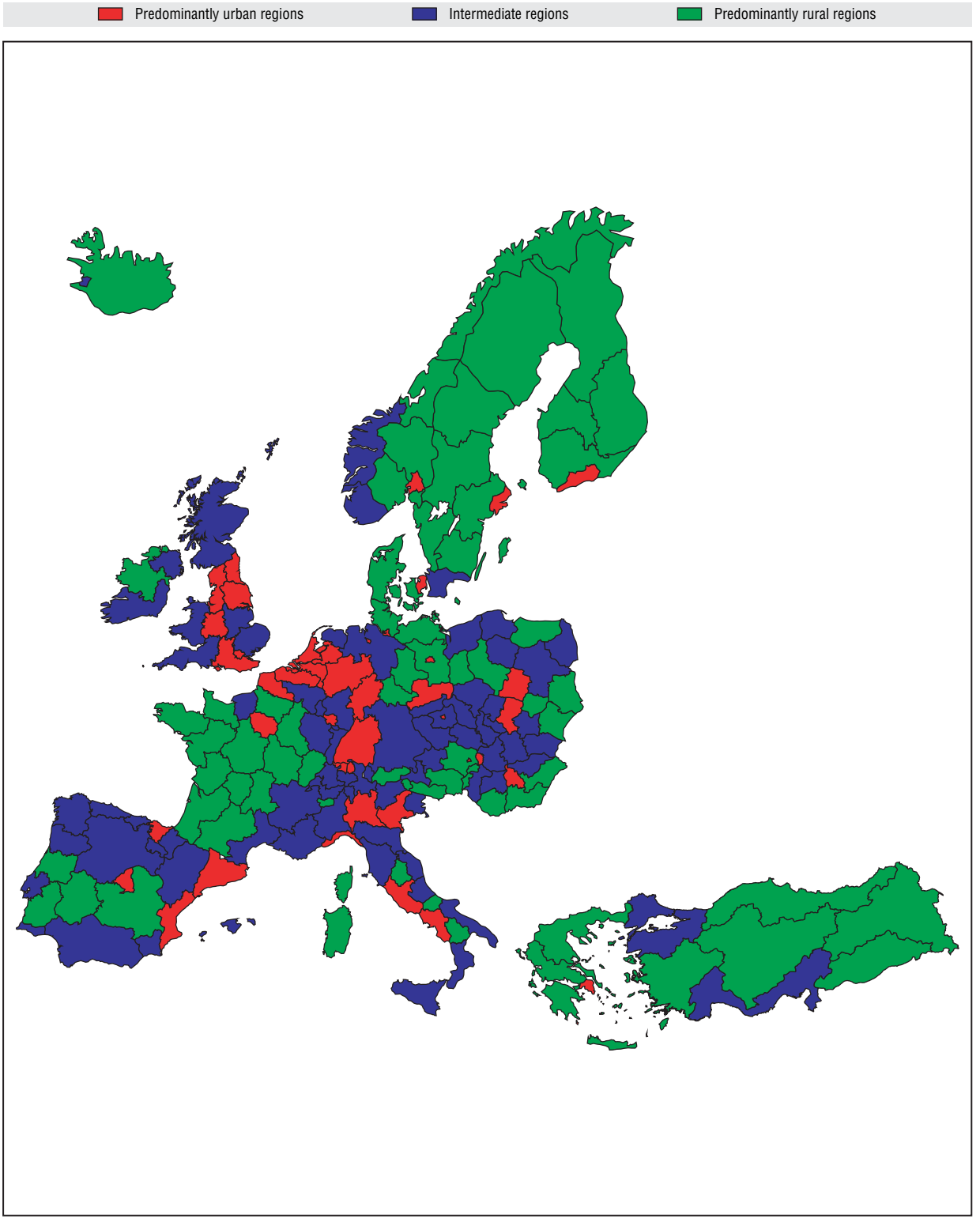
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IV.1. **Regional typology: Asia and Oceania TL2**



Source: OECD Territorial Database.

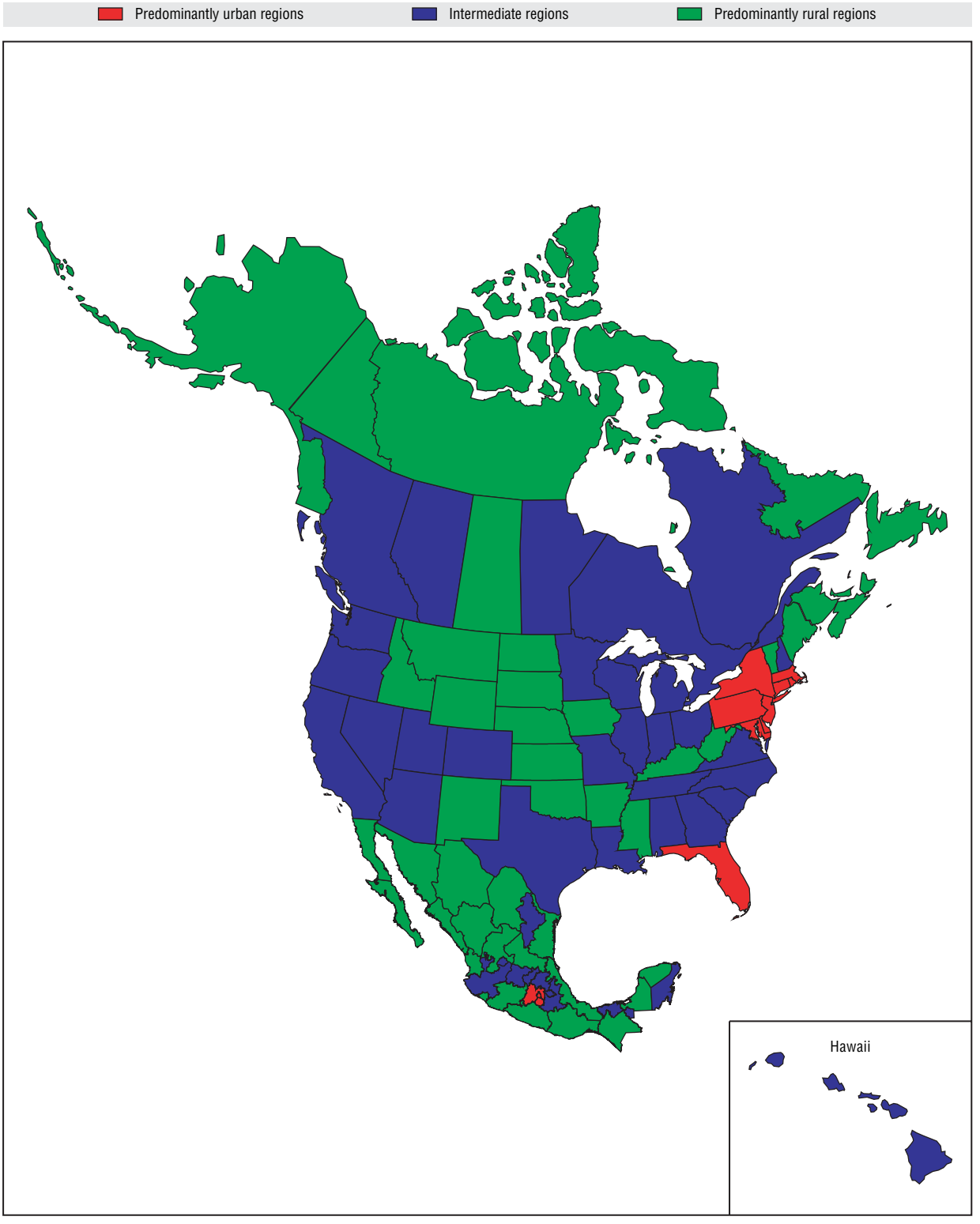
IV.2. **Regional typology: Europe TL2**



Source: OECD Territorial Database.

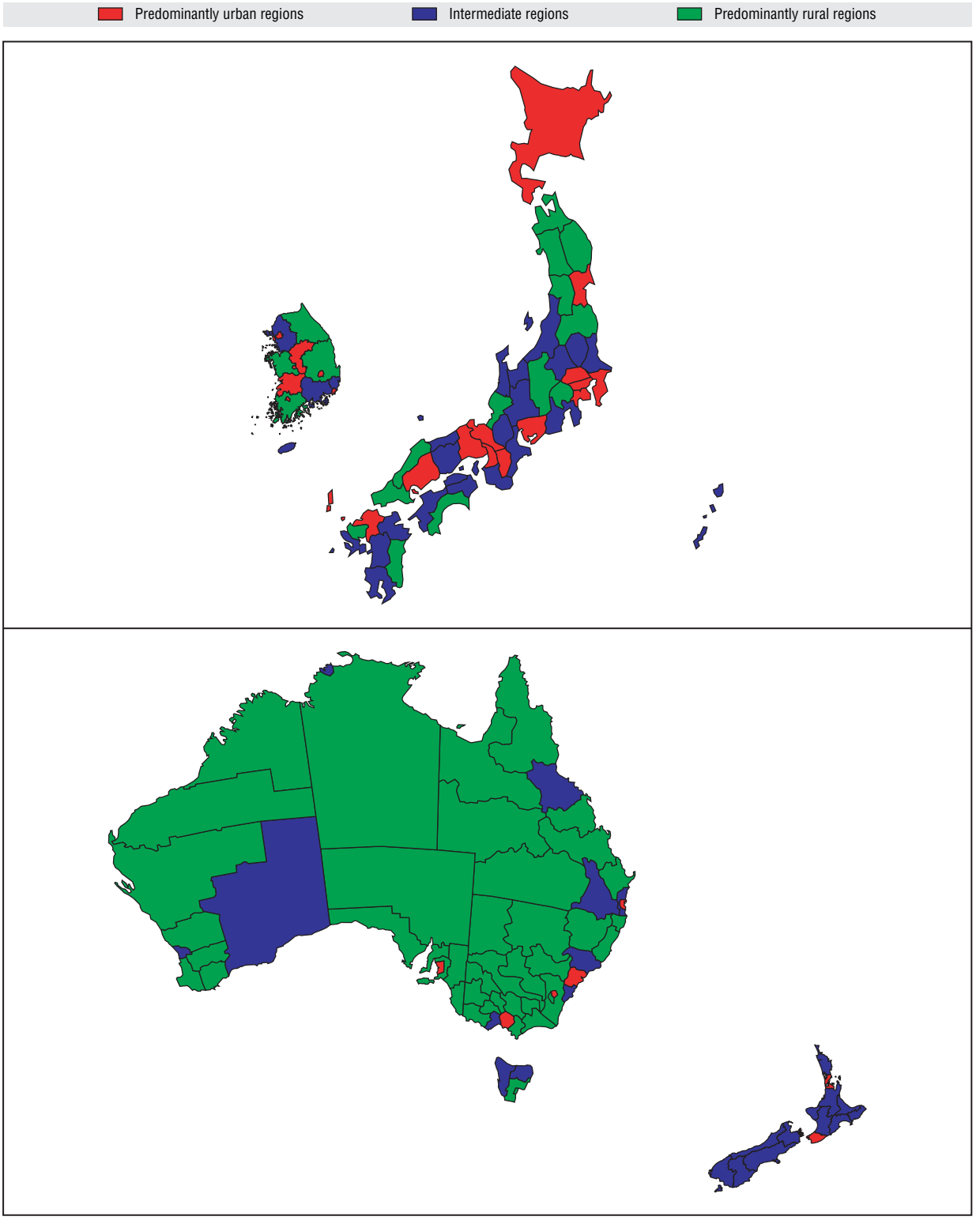
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IV.3. **Regional typology: North America TL2**



Source: OECD Territorial Database.

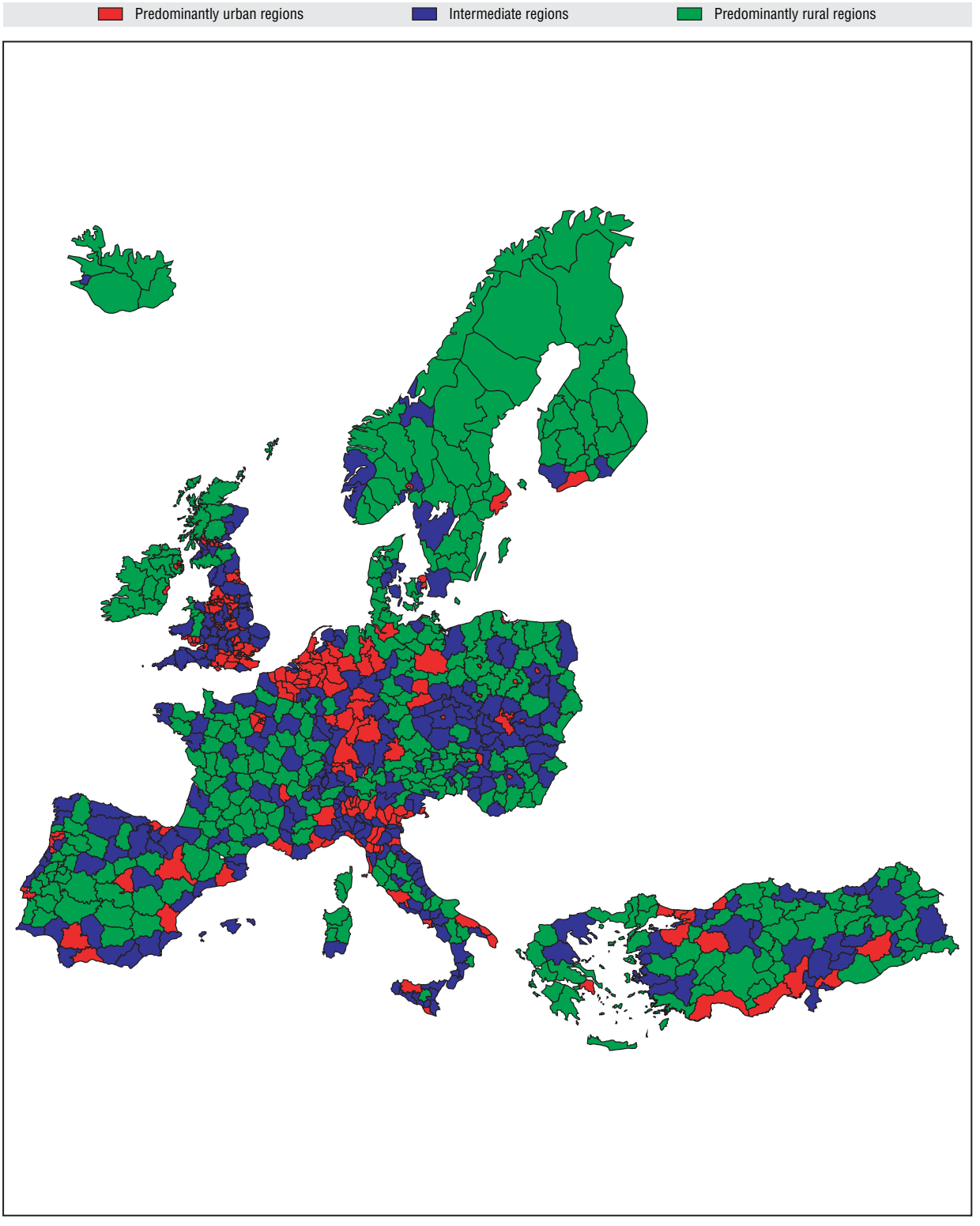
IV.4. **Regional typology: Asia and Oceania TL3**



Source: OECD Territorial Database.

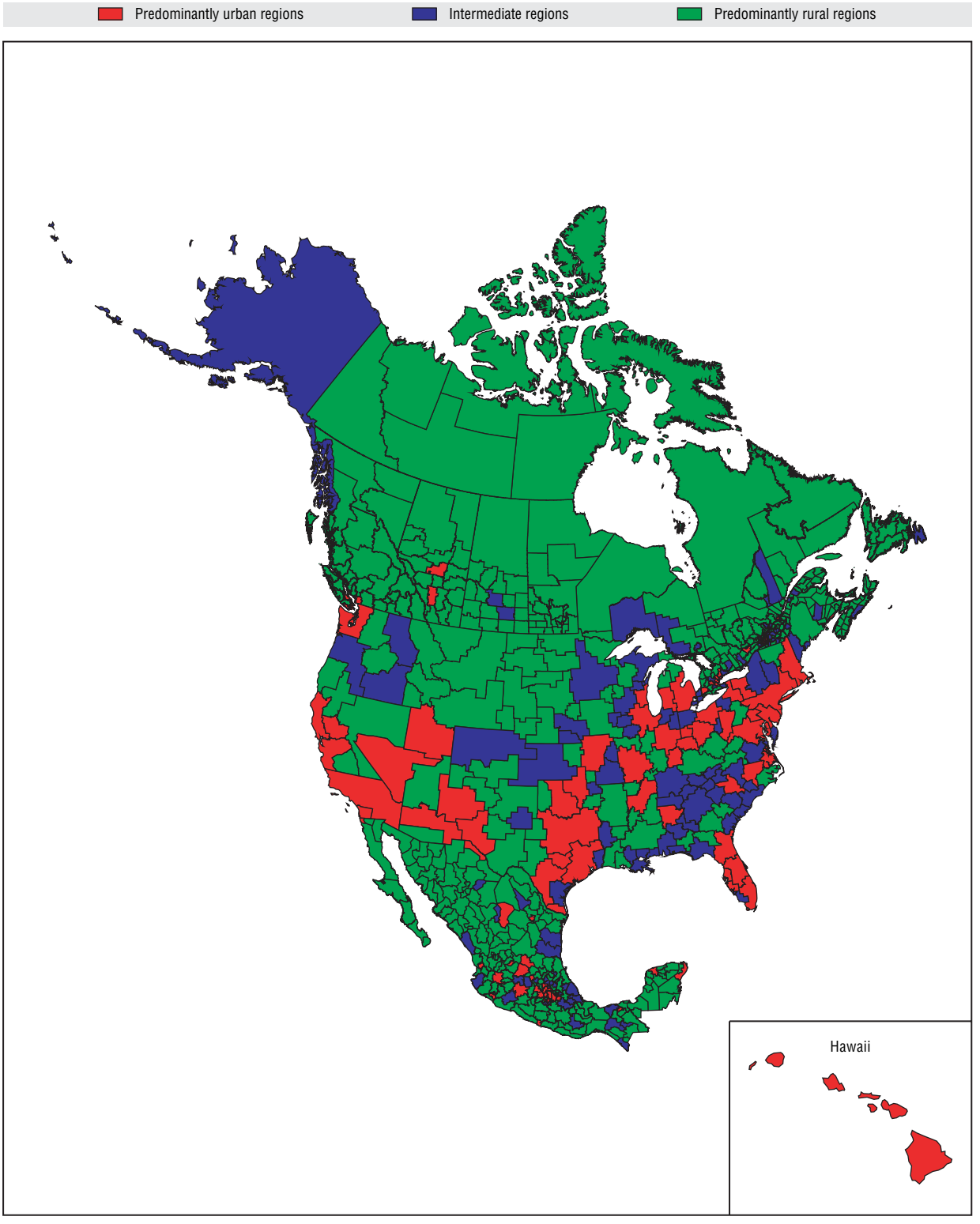
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IV.5. **Regional typology: Europe TL3**



Source: OECD Territorial Database.

IV.6. **Regional typology: North America TL3**



Source: OECD Territorial Database.

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Indicator 1. Population

Sources and year of reference

	Source	Year of reference	Territorial level
Australia	Australian Bureau of Statistics	2001	3
Austria	Eurostat, New Cronos	2001	3
Belgium	Eurostat, New Cronos	2001	3
Canada	Statistics Canada	2001	3
Czech Republic	Eurostat, New Cronos	2001	3
Denmark	Eurostat, New Cronos	2001	3
Finland	Eurostat, New Cronos	2001	3
France	Eurostat, New Cronos	2001	3
Germany	Eurostat, New Cronos	2001	3
Greece	Eurostat, New Cronos	2001	3
Hungary	Eurostat, New Cronos	2001	3
Iceland	Statistics Iceland	2000	3
Ireland	Eurostat, New Cronos	2001	3
Italy	Eurostat, New Cronos	2001	3
Japan	Statistics Bureau, MIC	2001	3
Korea	National Statistical Office	2001	3
Luxembourg	Eurostat, New Cronos	2001	3
Mexico	Inegi	2000	3
Netherlands	Eurostat, New Cronos	2001	3
New Zealand	Statistics New Zealand	2001	3
Norway	Statistics Norway	2001	3
Poland	Eurostat, New Cronos	2001	3
Portugal	Eurostat, New Cronos	2001	3
Slovak Republic	Eurostat, New Cronos	2001	3
Spain	Eurostat, New Cronos	2001	3
Sweden	Eurostat, New Cronos	2001	3
Switzerland	Swiss Federal Statistical Office	2001	3
Turkey	State Institute of Statistics	2000	3
United Kingdom	Eurostat, New Cronos	2001	3
United States	Bureau of Economic Analysis	2001	3

Country notes

Australia: Population data derive from the Census of Population and Housing.

Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Slovak Republic, Spain, Sweden and the United Kingdom: Data refer to the average annual population. The population is based on data from the most recent census adjusted by the components of population change produced since the last census, or based on population registers.

Canada: Data refer to total population excluding institutions residents. The data derive from the Census of Population (20% sample database).

Iceland: Data refer to population as of 1 December.

Japan: Data refer to total average population.

Korea: Population data derive from resident registration at the end of the year.

Mexico: Data refer to usually resident population.

New Zealand: Data derive form the Population Census and refer to usually resident population.

Norway: Data refer to total population as of 1 January.

Poland: Data refer to population as of 31 December 2001.

Switzerland: Data refer to resident population at the end of the year.

Turkey: Data derive from the Census of Population.

United States: Census Bureau mid-year population estimates. Estimates for 2000-02 reflect country population estimates as of April 2004.

Figures

In Figure 1.2 the Geographic concentration index of population is defined as:

$$\sum_{i=1}^{N} \left| p_i - a_i \right|$$

where p_i is the population share of region i, a_i is the area of region i as a percentage of the country area, N stands for the number of regions and | | indicates the absolute value.

The index lies between 0 (no concentration) and 1 (maximum concentration) in all countries and is suitable for international comparisons of geographic concentration.

In Figure 1.3 the regional population density (Dr) is calculated as follows:

$$Dr = \frac{Pr}{Ar}$$

where Pr is the population (number of inhabitants) in region r and Ar is the total area of region r in km^2.

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Indicator 2. Gross domestic product (GDP)

Sources and year of reference

	Source	Year of reference	Territorial level
Australia	Australian Bureau of Statistics	2001	2
Austria	Eurostat, New Cronos	2001	3
Belgium	Eurostat, New Cronos	2001	3
Canada	Statistics Canada	2001	2
Czech Republic	Eurostat, New Cronos	2001	3
Denmark	Eurostat, New Cronos	2001	3
Finland	Eurostat, New Cronos	2001	3
France	Eurostat, New Cronos	2001	3
Germany	Eurostat, New Cronos	2001	3
Greece	Eurostat, New Cronos	2001	3
Hungary	Eurostat, New Cronos	2001	3
Ireland	Eurostat, New Cronos	2001	3
Italy	Eurostat, New Cronos	2001	3
Japan	Economic and Social Research Institute, Cabinet Office	2001	3
Korea	National Statistical Office	2001	3
Luxembourg	Eurostat, New Cronos	2001	3
Mexico	Inegi	2001	2
Netherlands	Eurostat, New Cronos	2001	3
Norway	Norwegian Regional Accounts	2000	3
Poland	Eurostat, New Cronos	2000	3
Portugal	Eurostat, New Cronos	2001	3
Slovak Republic	Eurostat, New Cronos	2001	3
Spain	Eurostat, New Cronos	2001	3
Sweden	Eurostat, New Cronos	2001	3
Turkey	State Institute of Statistics	2000	3
United Kingdom	Eurostat, New Cronos	2001	3
United States	Bureau of Economic Analysis	2001	2

Country notes

Australia: GDP in millions of AUD at current prices.

Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Poland, Portugal, Slovak Republic, Spain, Sweden and the United Kingdom: GDP data were initially obtained in millions of euros at current prices. The OECD Secretariat recalculated the figures into millions of national currency units (including euro zone former currencies) at current prices by utilising the annual average exchange rates between the euro and the national currencies.

Canada: GDP in millions of CAD at current prices.

Japan: Real GDP in millions of JPY (1995 base year).

Korea: Gross regional domestic product in millions of KRW at 1995 constant prices.

Mexico: GDP in thousands of MXN at current prices.

Norway: Gross value added (GVA) data in millions of NOK at current prices.

Turkey: GDP in millions of TRL at current prices.

United States: Data refer to total gross state product expressed in millions of current USD.

Figures

In Figure 2.2 the Geographic concentration index of GDP is defined as:

$$\sum_{i=1}^{N} \left| y_i - a_i \right|$$

where y_i is the GDP share of region *i*, a_i is the area of region *i* as a percentage of the country area, N stands for the number of regions and | | indicates the absolute value.

The index lies between 0 (no concentration) and 1 (maximum concentration) in all countries and is suitable for international comparisons of geographic concentration.

In Figure 2.4 the Geographic Concentration Index of population is defined as:

$$\sum_{i=1}^{N} \left| p_i - a_i \right|$$

where p_i is the population share of region *i*, a_i is the area of region *i* as a percentage of the country area, N stands for the number of regions and | | indicates the absolute value.

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Indicator 3. Unemployment

Sources and year of reference

	Source	Year of reference	Territorial level
Australia	Australian Bureau of Statistics	2001	3
Austria	Eurostat, New Cronos	2001	3
Belgium	Eurostat, New Cronos	2001	3
Canada	Statistics Canada	2001	3
Czech Republic	Eurostat, New Cronos	2000	3
Denmark	Eurostat, New Cronos	2001	3
Finland	Eurostat, New Cronos	2001	3
France	Eurostat, New Cronos	2001	3
Germany	Eurostat, New Cronos	2000	3
Greece	Eurostat, New Cronos	2001	3
Hungary	Eurostat, New Cronos	2000	3
Iceland	Statistics Iceland	2001	3
Ireland	Eurostat, New Cronos	2001	2
Italy	Eurostat, New Cronos	2001	3
Japan	Statistics Bureau, MIC	2000	3
Korea	National Statistical Office	2000	3
Luxembourg	Eurostat, New Cronos	2001	3
Mexico	Inegi	2000	3
Netherlands	Eurostat, New Cronos	2001	3
New Zealand	Statistics New Zealand	2001	3
Norway	Statistics Norway	2000	3
Poland	Eurostat, New Cronos	2000	3
Portugal	Eurostat, New Cronos	2001	3
Slovak Republic	Eurostat, New Cronos	2001	3
Spain	Eurostat, New Cronos	2001	3
Sweden	Eurostat, New Cronos	2001	3
Switzerland	Swiss Federal Statistical Office	2000	3
Turkey	State Institute of Statistics	2000	3
United Kingdom	Eurostat, New Cronos	2001	3
United States	Bureau of Labor Statistics	2001	3

Country notes

Australia: Persons aged 15 years and over.

Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Poland, Slovak Republic, Spain, Sweden and the United Kingdom: Persons aged 15-74. Persons who found a job to start within a period of at most three months need not have been looking for work to be classified as unemployed.

Canada: Persons aged 15 years and over, excluding institutional residents. Persons who had definite arrangements to start a new job in four weeks or less need not have been looking for work to be classified as unemployed. Data are from the Census of Population (20% sample database).

Iceland: Person aged 16 years and over.

Japan: Persons aged 15 years and over.

Korea: Persons aged 15 years and over.

Mexico: Persons aged 12 years and over.

New Zealand: Civilian non-institutionalised usually resident New Zealand; population aged 15 and over.

Norway: Population aged 16-74 years.

Portugal: Persons aged 15 years and over.

Switzerland: Registered unemployed.

Turkey: Persons aged 12 years and over.

United States: Persons aged 16 years and over. Persons who were waiting to be recalled to a job from which they had been laid off need not have been looking for work to be classified as unemployed.

Figures

In Figure 3.2 the Geographic concentration index of unemployment is defined as:

$$\sum_{i=1}^{N} \left| u_i - a_i \right|$$

where u_i is the unemployment share of region i, a_i is the area of region i as a percentage of the country area, N stands for the number of regions and | | indicates the absolute value.

The index lies between 0 (no concentration) and 1 (maximum concentration) in all countries and is suitable for international comparisons of geographic concentration.

In Figure 3.4 the Geographic concentration index of the labour force is defined as:

$$\sum_{i=1}^{N} \left| lf_i - a_i \right|$$

where lf_i is the labour force share of region i, a_i is the area of region i as a percentage of the country area, N stands for the number of regions and | | indicates the absolute value.

Indicator 4. Labour force

Sources and year of reference

	Source	Year of reference	Territorial level
Australia	Australian Bureau of Statistics	2001	3
Austria	Eurostat, New Cronos	2001	3
Belgium	Eurostat, New Cronos	2001	3
Canada	Statistics Canada	2001	3
Czech Republic	Eurostat, New Cronos	2000	3
Denmark	Eurostat, New Cronos	2001	3
Finland	Eurostat, New Cronos	2001	3
France	Eurostat, New Cronos	2001	3
Germany	Eurostat, New Cronos	2000	3
Greece	Eurostat, New Cronos	2001	3
Hungary	Eurostat, New Cronos	2000	3
Iceland	Statistics Iceland	2001	2
Ireland	Eurostat, New Cronos	2001	3
Italy	Eurostat, New Cronos	2001	3
Japan	Statistics Bureau, MIC	2000	3
Korea	National Statistical Office	2000	3
Luxembourg	Eurostat, New Cronos	2001	3
Mexico	Inegi	2000	3
Netherlands	Eurostat, New Cronos	2001	3
New Zealand	Statistics New Zealand	2001	3
Norway	Statistics Norway	2000	3
Poland	Eurostat, New Cronos	2000	3
Portugal	Eurostat, New Cronos	2001	3
Slovak Republic	Eurostat, New Cronos	2001	3
Spain	Eurostat, New Cronos	2001	3
Sweden	Eurostat, New Cronos	2001	3
Switzerland	Swiss Federal Statistical Office	2000	3
Turkey	State Institute of Statistics	2000	3
United Kingdom	Eurostat, New Cronos	2001	3
United States	Bureau of Labor Statistics	2001	3

Country notes

Australia: Persons aged 15 years and over.

Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Poland, Slovak Republic, Spain, Sweden and the United Kingdom: Persons aged 15-74.

Canada: Persons aged 15 years and over, excluding institutional residents. Data are from the Census of Population (20% sample database).

Iceland: Person aged 16 years and over.

Japan: Persons aged 15 years and over.

Korea: Persons aged 15 years and over.

Mexico: Persons aged 12 years and over.

New Zealand: Civilian non-institutionalised usually resident New Zealand; population aged 15 and over.

Norway: Population aged 16-74 years.

Portugal: Persons aged 15 years and over.

Switzerland.[1]

Turkey: Persons aged 12 years and over.

United States: Persons aged 16 years and over.

Figures

In Figure 4.2 the Geographic concentration index of the labour force is defined as:

$$\sum_{i=1}^{N} \left| lf_i - a_i \right|$$

where lf_i is the labour force share of region i, a_i is the area of region i as a percentage of the country area, N stands for the number of regions and | | indicates the absolute value.

The index lies between 0 (no concentration) and 1 (maximum concentration) in all countries and is suitable for international comparisons of geographic concentration.

In Figure 4.4 the Geographic concentration index of population is defined as:

$$\sum_{i=1}^{N} \left| p_i - a_i \right|$$

where p_i is the population share of region i, a_i is the area of region i as a percentage of the country area, N stands for the number of regions and | | indicates the absolute value.

1. The labour force includes registered unemployed people only.

Indicator 5. Patents

Sources and year of reference

	Source	Year of reference	Territorial level
Australia	Intellectual Property Australia	2002	3
Austria	Eurostat, New Cronos	2001	3
Belgium	Eurostat, New Cronos	2001	3
Canada	Canadian Intellectual Property Office	2001	2
Denmark	Eurostat, New Cronos	2001	3
Finland	Eurostat, New Cronos	2000	3
France	Eurostat, New Cronos	2001	3
Germany	Eurostat, New Cronos	2001	3
Greece	Eurostat, New Cronos	2001	3
Iceland	Icelandic Patent Office	2001	3
Ireland	Eurostat, New Cronos	2001	3
Italy	Eurostat, New Cronos	2000	3
Japan	Japan Patent Office	2000	3
Korea	Korean Intellectual Property Office	2001	3
Luxembourg	Eurostat, New Cronos	2001	3
Netherlands	Eurostat, New Cronos	2001	3
Norway	Eurostat, New Cronos	2001	3
Poland	Patent Office of the Republic of Poland	2000	2
Portugal	Eurostat, New Cronos	2001	3
Spain	Eurostat, New Cronos	2001	3
Sweden	Eurostat, New Cronos	2001	3
United Kingdom	Eurostat, New Cronos	2001	3
United States	United States Patent and Trademark Office	1999	3

Country notes

Australia: Data refer to the number of all Australian patent applications (Patent Co-operation Treaty [PCT] and non-PCT) by Australian applicants filed with Intellectual Property Australia. Applications with multiple applicants are counted once per unique postcode. This practice results in around a 10% overestimation of total applications, as many applications have applicants from more than one postcode.

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden and the United Kingdom: Data refer to the number of patent applications to the European Patent Office (EPO), directly filed under the Patent Convention or to applications filed under the Patent Co-operation Treaty and designating the EPO (Euro-PCT). The regional distribution of patent applications is assigned according to the inventor's region of residence. If an application has more than one inventor, the application is divided equally among all to avoid double counting.

Canada: Data refer to the number of total patent filings (PCT and non-PCT) with the Canadian Intellectual Property Office.

Germany: There are no data for TL3 units DE32 and DE161.

Italy: There are no data for TL3 units IT721, IT934 and ITB02.

Japan: Data refer to the number of patent applications made by Japanese applicants to the Japan Patent Office.

Korea: Data refer to the number of patent applications made by Korean applicants to the Korean Intellectual Property Office.

Poland: Data refer to the number of patent applications filed with the Patent Office of the Republic of Poland.

Portugal: There are no data for TL3 units PT123, PT124, PT126, PT127, PT128, PT129, PT131, PT134, PT135, PT141, PT142 and PT144.

United States: Data refer to the number of utility patents awarded to inventors in each US county, by grant date. The distribution of patents by county is, to a large extent, based on inventor city and state data. Fractional patent counts may occur for some counties when a patent is associated with multiple counties within a state. All fractional patent counts are rounded to the nearest whole number.

Figures

In Figure 5.2 the Geographic concentration index of patents is defined as:

$$\sum_{i=1}^{N} \left| p_i - a_i \right|$$

where p_i is the patents' share of region i, a_i is the area of region i as a percentage of the country area, N stands for the number of regions and | | indicates the absolute value.

The index lies between 0 (no concentration) and 1 (maximum concentration) in all countries and is suitable for international comparisons of geographic concentration.

In Figure 5.4 the Geographic concentration index of the highly skilled population is defined as:

$$\sum_{i=1}^{N} \left| hs_i - a_i \right|$$

where hs_i is the share of population with tertiary education of region i, a_i is the area of region i as a percentage of the country area, N stands for the number of regions and | | indicates the absolute value.

Indicator 6. Geographic concentration of skills

Sources and year of reference

	Source	Age of the population	Year of reference	Territorial level
Australia	ABS (Census of population and housing – Community profiles)	15 years and over	2001	3
Belgium	Eurostat New Cronos (LFS)	25-64	2001	3
Canada	Statistics Canada (Census)	25-64	2001	3
Czech Republic	Czech statistical office (Population and housing Census)	15 and over	2001	3
Denmark	Statistics Denmark (Labour Force Statistics)	25-64	2002	3
Finland	Statistics Finland	25-64	2000	3
France	INSEE (Recensement de la Population)	25 and over	1999	3
Germany	Eurostat, New Cronos	25-64	2001	3
Greece	Eurostat, New Cronos	25-64	2001	3
Hungary	KSH	7-64	2001	3
Ireland	Central Statistical Office (Census)	25-64	2002	3
Italy	Eurostat, New Cronos	25-64	2001	2
Japan	Statistics Bureau (Population census)	25-64	2000	3
Korea	NSO	25-64	2000	3
Luxembourg	Eurostat, New Cronos	25-64	2001	3
Mexico	INEGI, Censo general de la Población y Vivienda	15 and over	2000	3
Netherlands	Eurostat, New Cronos	25-64	2001	3
New Zealand	Statistics New Zealand (Census of usually resident population)	25-64	2001	3
Norway	Statistics Norway (Population and housing Census)	25-66	2001	3
Poland	Polish official statistics, Census data.	15 and over	2002	3
Portugal	INE, Recenseamento Geral da População e Habitação	15 and over	2001	3
Slovak Republic	Statistical office of the Slovak republic, Population and Housing Census	25-64	2001	3
Spain	INE, Censos de Población y Viviendas	Active population	2001	3
Sweden	Statistics Sweden, The Swedish Register of Education (UREG)	25-64	2001	3
Switzerland	RFP	25-64	2000	2
Turkey	SIS, Census of Population	25-64	2000	3
United Kingdom	ONS, Local labour force survey	25-64	2001	3
United States	US Census Bureau	25 and over	2000	3

General notes

ISCED		Duration
5	**First stage of tertiary education**	
	ISCED 5 programmes have an educational content more advanced than those offered at Levels 3 and 4. Entry to these programmes normally requires the successful completion of ISCED Level 3A or 3B or a similar qualification at ISCED Level 4A or 4B.	
5A	The minimum cumulative theoretical duration is three years. Completion of a research project or thesis may be involved. The programmes provide the level of education required for entry into a profession with high skills requirements or an advanced research programme.	Duration categories: Medium: 3 to less than 5 years; long: 5 to 6 years, very long: more than 6 years.
5B	Programmes are more practically oriented and occupationally specific than programmes at ISCED 5A and they do not prepare students for direct access to advanced research programmes. They have a minimum duration of two years full-time equivalent.	Duration categories: Short: 2 to less than 3 years; medium 3 to less than 5 years; long: 5 to 6 years; very long: more than 6 years.
6	**Second stage of tertiary education**	
	The level requires the submission of a thesis or dissertation of publishable quality which is the product of original research and represents a significant contribution to knowledge. It is not solely based on course work. It prepares recipients for faculty posts in institutions offering ISCED 5A programmes, as well as research posts in government and industry.	

The classification criteria are based on a manual issued by the OECD: OECD, *Classifying Educational Programmes: Manual for ISCED 97 Implementation in OECD Countries*, 1999.

The allocation of different levels of education and training to ISCED categories is often difficult. Although the ISCED provides guidance on which qualification and stages of education should be assigned, the classification does not fully reflect the heterogeneity of educational systems, in particular of non-academic vocational trainings, across countries.

Another source of discrepancy is the age of the population to which the data refer. The main impact of including younger or older people in the population cohort can cause biases on the educational level. For most countries, data are available for a population aged 25-64, but there are some exceptions. For Australia, Mexico, New Zealand, Poland and Portugal, data are available for a population aged 15 and over. This penalises the performance of these six countries. For Spain data are available only for the active population; in this case the effect will be the opposite and Spain will have a better educational performance than it would have if the entire population 25-64 was counted.

Country notes

Italy, Switzerland: Data follow the TL2 grid (see Regional Grids and Classification). Bigger regions tend to be more homogenous as internal disparities are averaged out.

Germany, United Kingdom: For several regions of these two countries data on educational attainment are not available. This affects the calculation of the concentration index.

Czech Republic, France, Germany, Ireland, Japan, Korea, Slovak Republic, Sweden, and United Kingdom: Since the ISCED classification does not always fully reflect the heterogeneity of educational systems for these countries; part of the population aged 25-64 has not been classified according to the ISCED categories and belongs to a column "other".

Figures

In Figure 6.2 the Geographic concentration index of the highly skilled population is defined as:

$$\sum_{i=1}^{N} \left| hs_i - a_i \right|$$

where hs_i is the share of population with tertiary education of region i, a_i is the area of region i as a percentage of the country area, N stands for the number of regions and $|\ \ |$ indicates the absolute value.

The index lies between 0 (no concentration) and 1 (maximum concentration) in all countries and is suitable for international comparisons of geographic concentration.

In Figure 6.4 the Geographic concentration index of the labour force is defined as:

$$\sum_{i=1}^{N} \left| lf_i - a_i \right|$$

where lf_i is the labour force share of region i, a_i is the area of region *i* as a percentage of the country area, N stands for the number of regions and $|\ \ |$ indicates the absolute value.

Indicator 7. Population growth

Sources and period of reference

a) National annual population figures for the period 1996-2001 derive from the OECD.Stat reference series (main economic indicators).

b) Regional population data.

	Source	Period of reference	Territorial Level
Australia	Australian Bureau of Statistics	1996-2001	3
Austria	Eurostat, New Cronos	1996-2001	3
Belgium	Eurostat, New Cronos	1996-2001	3
Canada	Statistics Canada	1996-2001	3
Czech Republic	Eurostat, New Cronos	1996-2001	3
Denmark	Eurostat, New Cronos	1996-2001	3
Finland	Eurostat, New Cronos	1996-2001	3
France	Eurostat, New Cronos	1996-2001	3
Germany	Eurostat, New Cronos	1996-2001	3
Greece	Eurostat, New Cronos	1996-2001	3
Hungary	Eurostat, New Cronos	1996-2001	3
Iceland	Statistics Iceland	1995-2000	3
Ireland	Eurostat, New Cronos	1996-2001	3
Italy	Eurostat, New Cronos	1996-2001	3
Japan	Statistics Bureau, MIC	1996-2001	3
Korea	National Statistical Office	1996-2001	3
Luxembourg	Eurostat, New Cronos	1996-2001	3
Mexico	Inegi	1995-2000	3
Netherlands	Eurostat, New Cronos	1996-2001	3
New Zealand	Statistics New Zealand	1996-2001	3
Norway	Statistics Norway	1996-2001	3
Poland	Eurostat, New Cronos	1996-2001	3
Portugal	Eurostat, New Cronos	1996-2001	3
Slovak Republic	Eurostat, New Cronos	1996-2001	3
Spain	Eurostat, New Cronos	1996-2001	3
Sweden	Eurostat, New Cronos	1996-2001	3
Switzerland	Swiss Federal Statistical Office	1996-2001	3
Turkey	State Institute of Statistics	1995-2000	3
United Kingdom	Eurostat, New Cronos	1996-2001	3
United States	Bureau of Economic Analysis	1996-2001	3

Country notes

Australia: Population data derive from the Census of Population and Housing.

Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Slovak Republic, Spain, Sweden and the United Kingdom: Data refer to the average annual population based on data from the most recent census adjusted by the components of population change produced since the last census, or on population registers.

Canada: Data refer to total population excluding institutional residents. The data derive from the Census of Population (20% sample database).

Greece and the United Kingdom: Population data referring to 1996 are OECD estimates based on the trends in regional shares in the national population.

Iceland: Data refer to population as of 1 December.

Japan: Data refer to total average population.

Korea: Population data derive from resident registration at the end of the year. Population data referring to 1996 for TL3 units KR36 and KR38 are OECD Secretariat estimates based on the trend in population ratio between the two regions.

Mexico: Data refer to usually resident population

New Zealand: Data derive from the Population Census and refer to usually resident population.

Norway: Data refer to total population as of 1 January.

Poland: Data refer to population as of 31 December 2001.

Switzerland: Data refer to resident population at the end of the year.

Turkey: Data derive from the Census of Population. Population data referring to 1995 are OECD estimates based on average annual population growth rates between 1995 and 2000.

United States: Census Bureau mid-year population estimates. Estimates for 2000-02 reflect county population estimates as of April 2004.

Calculation of the indicator

Average annual population growth rate (a) during period t:

$$a = \sqrt[t]{Pt / Po} - 1$$

where Po is the population (number of inhabitants) in the initial year (o), Pt is the population (number of inhabitants) in the final year (t), t is the duration (number of years) of the period.

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Indicator 8. Gross domestic product (GDP) growth

Sources and period of reference

a) National annual GDP data in national currency at 2000 constant prices (expenditure approach) for the period 1996-2001 were obtained from OECD Main Economic Indicators (MEI) reference series.

b) Regional GDP data.

	Source	Period of reference	Territorial level
Australia	Australian Bureau of Statistics	1996-2001	2
Austria	Eurostat, New Cronos	1996-2001	3
Belgium	Eurostat, New Cronos	1996-2001	3
Canada	Statistics Canada	1996-2001	2
Czech Republic	Eurostat, New Cronos	1996-2001	3
Denmark	Eurostat, New Cronos	1996-2001	3
Finland	Eurostat, New Cronos	1996-2001	3
France	Eurostat, New Cronos	1996-2001	3
Germany	Eurostat, New Cronos	1996-2001	3
Greece	Eurostat, New Cronos	1996-2001	3
Hungary	Eurostat, New Cronos	1996-2001	3
Ireland	Eurostat, New Cronos	1996-2001	3
Italy	Eurostat, New Cronos	1996-2001	3
Japan	Economic and Social Research Institute, Cabinet Office	1996-2001	3
Korea	National Statistical Office	1996-2001	3
Luxembourg	Eurostat, New Cronos	1996-2001	3
Mexico	INEGI	1996-2001	2
Netherlands	Eurostat, New Cronos	1996-2001	3
Norway	Norwegian Regional Accounts	1995-2000	3
Poland	Eurostat, New Cronos	1995-2000	3
Portugal	Eurostat, New Cronos	1996-2001	3
Slovak Republic	Eurostat, New Cronos	1996-2001	3
Spain	Eurostat, New Cronos	1996-2001	3
Sweden	Eurostat, New Cronos	1996-2001	3
Turkey	State Institute of Statistics	1995-2000	3
United Kingdom	Eurostat, New Cronos	1996-2001	3
United States	Bureau of Economic Analysis	1996-2001	2

Country notes

Australia: GDP in millions of AUD at current prices.

Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Poland, Portugal, Slovak Republic, Spain, Sweden and the United Kingdom: GDP data were initially obtained in millions of EUR at current prices. The figures were recalculated into millions of national currency units (including euro zone former currencies) at current prices by utilising the annual average exchange rates between the euro and the national currencies.

Canada: GDP in millions of CAD at current prices.

Japan: Real GDP in millions of JPY (1995 base year).

Korea: Gross regional domestic product in millions of KRW at 1995 constant prices. GDP data referring to 1996 for TL3 units KR36 and KR38 are OECD estimates based on the trend in GDP ratio between the two regions.

Mexico: GDP in thousands of MXN at current prices

Norway: Gross value added (GVA) data in millions of NOK at current prices.

Turkey: GDP in millions of TRL at 1987 constant prices.

United States: Data refer to total gross state product expressed in millions of current USD.

Calculation of the indicator

Average annual GDP growth rate (a) during period t:

$$a = \sqrt[t]{Yt / Yo} - 1$$

where Yo is the GDP at constant prices in the initial year (o), Yt is the GDP at constant prices in the final year (t), t is the duration (number of years) of the period.

All regional GDP figures at current prices were converted to 2000 constant prices by multiplying them by the national GDP (expenditure approach) deflator (base 2000) obtained from the OECD Main Economic Indicators (MEI) reference series.

$$Y_{r2000} = Y_{rc} \times D_{GDP2000}$$

where Y_{r2000} is the GDP of region r at constant 2000 prices, Y_{rc} is the GDP of region r at current prices, $D_{GDP2000}$ is the national GDP (expenditure approach) deflator (base 2000).

Indicator 9. Employment growth

Sources and year of reference

	Source	Year of reference	Territorial level
Australia	Australian Bureau of Statistics	1996-2001	3
Austria	Eurostat, New Cronos	1996-2001	3
Belgium	Eurostat, New Cronos	1996-2001	3
Canada	Statistics Canada	1996-2001	3
Czech Republic	Eurostat, New Cronos	1998-2000	3
Denmark	Eurostat, New Cronos	1996-2001	3
Finland	Eurostat, New Cronos	1996-2001	3
France	Eurostat, New Cronos	1996-2001	3
Germany	Eurostat, New Cronos	1996-2000	3
Greece	Eurostat, New Cronos	1996-2001	3
Hungary	Eurostat, New Cronos	1997-2000	3
Iceland	Statistics Iceland	1996-2001	2
Ireland	Eurostat, New Cronos	1996-2001	3
Italy	Eurostat, New Cronos	1996-2001	3
Japan	Statistics Bureau, MIC	1995-2000	3
Korea	National Statistical Office	1995-2000	3
Luxembourg	Eurostat, New Cronos	1996-2001	3
Mexico	Inegi	1995-2000	3
Netherlands	Eurostat, New Cronos	1996-2001	3
New Zealand	Statistics New Zealand	1996-2001	3
Norway	Statistics Norway	1995-2000	3
Poland	Eurostat, New Cronos	1998-2000	3
Portugal	Eurostat, New Cronos	1996-2001	3
Slovak Republic	Eurostat, New Cronos	1998-2001	3
Spain	Eurostat, New Cronos	1996-2001	3
Sweden	Eurostat, New Cronos	1996-2001	3
Switzerland	Swiss Federal Statistical Office	1995-2000	3
Turkey	State Institute of Statistics	1995-2000	3
United Kingdom	Eurostat, New Cronos	1998-2001	3
United States	Bureau of Labor Statistics	1996-2001	3

Country notes

Australia: Persons aged 15 years and over.

Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Poland, Slovak Republic, Spain, Sweden and the United Kingdom: Persons aged 15-74.

Canada: Persons aged 15 years and over, excluding institutional residents. Data are from the Census of Population (20% sample database).

Iceland: Person aged 16 years and over.

Japan: Persons aged 15 years and over.

Korea: Persons aged 15 years and over.

Mexico: Persons aged 12 years and over. 1995 figure: OECD estimate based on decennial population census.

New Zealand: Civilian non-institutionalised usually resident New Zealand; population aged 15 and over.

Norway: Population aged 16-74 years.

Portugal: Persons aged 15 years and over.

Switzerland: 1995 figure: OECD estimate based on decennial population census.

Turkey: Persons aged 12 years and over. 1995 data: OECD estimate based on decennial population census.

United States: Persons aged 16 years and over.

Calculation of the indicator

Average annual employment growth rate (a) during period t:

$$a = \sqrt[t]{Pt / Po} - 1$$

where Po is employment (number of employed people) in the initial year (o), Pt is employment (number of employed people) in the final year (t), t is the duration (number of years) of the period.

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Indicator 10. Growth of the labour force

Sources and year of reference

	Source	Year of reference	Territorial level
Australia	Australian Bureau of Statistics	1996-2001	3
Austria	Eurostat, New Cronos	1996-2001	3
Belgium	Eurostat, New Cronos	1996-2001	3
Canada	Statistics Canada	1996-2001	3
Czech Republic	Eurostat, New Cronos	1998-2000	3
Denmark	Eurostat, New Cronos	1996-2001	3
Finland	Eurostat, New Cronos	1996-2001	3
France	Eurostat, New Cronos	1996-2001	3
Germany	Eurostat, New Cronos	1996-2000	3
Greece	Eurostat, New Cronos	1996-2001	3
Hungary	Eurostat, New Cronos	1997-2000	3
Iceland	Statistics Iceland	1996-2001	2
Ireland	Eurostat, New Cronos	1996-2001	3
Italy	Eurostat, New Cronos	1996-2001	3
Japan	Statistics Bureau, MIC	1995-2000	3
Korea	National Statistical Office	1995-2000	3
Luxembourg	Eurostat, New Cronos	1996-2001	3
Mexico	Inegi	1995-2000	3
Netherlands	Eurostat, New Cronos	1996-2001	3
New Zealand	Statistics New Zealand	1996-2001	3
Norway	Statistics Norway	1995-2000	3
Poland	Eurostat, New Cronos	1998-2000	3
Portugal	Eurostat, New Cronos	1996-2001	3
Slovak Republic	Eurostat, New Cronos	1998-2001	3
Spain	Eurostat, New Cronos	1996-2001	3
Sweden	Eurostat, New Cronos	1996-2001	3
Switzerland	Swiss Federal Statistical Office	1995-2000	3
Turkey	State Institute of Statistics	1995-2000	3
United Kingdom	Eurostat, New Cronos	1998-2001	3
United States	Bureau of Labor Statistics	1996-2001	3

Country notes

Australia: Persons aged 15 years and over.

Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Poland, Slovak Republic, Spain, Sweden and the United Kingdom: Persons aged 15-74.

Canada: Persons aged 15 years and over, excluding institutional residents. Data are from the Census of Population (20% sample database).

Iceland: Person aged 16 years and over.

Japan: Persons aged 15 years and over.

Korea: Persons aged 15 years and over.

Mexico: Persons aged 12 years and over. 1995 figure: OECD estimate based on decennial population census.

New Zealand: Civilian non-institutionalised usually resident New Zealand; population aged 15 and over.

Norway: Population aged 16-74 years.

Portugal: Persons aged 15 years and over.

Switzerland:[1] 1995 figure: OECD estimate based on decennial population census.

Turkey: Persons aged 12 years and over. 1995 figure: OECD estimate based on decennial population census.

United States: Persons aged 16 years and over.

Calculation of the indicator

Average annual labour force growth rate (a) during period t:

$$a = \sqrt[t]{Pt / Po} - 1$$

where Po is the number of people in the labour force in the initial year (o), Pt is the number of people in the labour force in the final year (t), t is the duration (number of years) of the period.

1. The labour force includes registered unemployed people only.

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Indicator 11. Gross domestic product (GDP) per capita

Sources and year of reference

a) National GDP per capita data in USD at current purchasing power parities (PPPs) for the year 2001 were obtained from the OECD Main Economic Indicators (MEI) – reference series.

b) Regional GDP and population data.

	Source	Year of reference	Territorial Level
Australia	Australian Bureau of Statistics	2001	2
Austria	Eurostat, New Cronos	2001	3
Belgium	Eurostat, New Cronos	2001	3
Canada	Statistics Canada	2001	2
Czech Republic	Eurostat, New Cronos	2001	3
Denmark	Eurostat, New Cronos	2001	3
Finland	Eurostat, New Cronos	2001	3
France	Eurostat, New Cronos	2001	3
Germany	Eurostat, New Cronos	2001	3
Greece	Eurostat, New Cronos	2001	3
Hungary	Eurostat, New Cronos	2001	3
Ireland	Eurostat, New Cronos	2001	3
Italy	Eurostat, New Cronos	2001	3
Japan	Economic and Social Research Institute, Cabinet Office	2001	3
Korea	National Statistical Office	2001	3
Mexico	INEGI	2000	2
Netherlands	Eurostat, New Cronos	2001	3
Norway	Norwegian Regional Accounts	2000	3
Poland	Eurostat, New Cronos	2000	3
Portugal	Eurostat, New Cronos	2001	3
Slovak Republic	Eurostat, New Cronos	2001	3
Spain	Eurostat, New Cronos	2001	3
Sweden	Eurostat, New Cronos	2001	3
Turkey	State Institute of Statistics	2000	3
United Kingdom	Eurostat, New Cronos	2001	3
United States	Bureau of Economic Analysis	2001	2

Country notes

Australia: GDP in millions of AUD at current prices. Population data derive from the Census of Population and Housing.

Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Poland, Portugal, Slovak Republic, Spain, Sweden and the United Kingdom: GDP data were initially obtained in millions of euros at current prices. The OECD Secretariat recalculated the figures into millions of national currency units (including euro zone former currencies) at current prices by utilising the annual average exchange rates between the euro and the national currencies. Population data refer to the average annual population (population as of 31 December 2001 for Poland). The population is based on data from the most recent census adjusted by the components of population change produced since the last census, or based on population registers.

Canada: GDP in millions of CAD at current prices. Population data refer to total population excluding institutions residents. The data derive from the Census of Population (20% sample database).

Iceland: GDP at current prices and current PPPs (in USD). Population data refer to population as of 1 December.

Japan: Real GDP in millions of JPY (1995 base year). Total average population.

Korea: Gross regional domestic product in millions of KRW at 1995 constant prices. Population data derive from resident registration at the end of the year.

Mexico: GDP in thousands of MXN at current prices. Usually resident population.

Norway: Gross value added (GVA) data in millions of NOK at current prices. Total population as of 1 January.

Turkey: GDP in millions of TRL at current prices. Population data derive from the Census of Population.

United States: Data refer to total gross state product expressed in millions of current USD. Census Bureau mid-year population estimates. Estimates for 2000-02 reflect country population estimates as of April 2004.

Calculation of the indicator

Regional disparities in GDP per capita are measured by an unweighted Gini index. The index is defined as:

$$GINI = \frac{2}{N-1} * \sum_{i=1}^{N-1} (F_i - Q_i)$$

where N is the number of regions, $F_i = \frac{i}{N}$; $Q_i = \frac{\sum_{j=1}^{i} y_j}{\sum_{j=1}^{N} y_j}$, and y_i is GDP per capita in region i.

The index ranges between 0 (perfect equality: GDP per capita is the same in all regions) and 1 (perfect inequality: GDP per capita is nil in all region except one).

Indicator 12. Average labour productivity

Sources and year of reference

	Source	Year of reference	Territorial level
Australia	Australian Bureau of Statistics	2001	2
Austria	Eurostat, New Cronos	2001	3
Belgium	Eurostat, New Cronos	2001	3
Canada	Statistics Canada	2001	2
Czech Republic	Eurostat, New Cronos	2001	3
Denmark	Eurostat, New Cronos	2001	3
Finland	Eurostat, New Cronos	2001	3
France	Eurostat, New Cronos	2001	3
Germany	Eurostat, New Cronos	2001	3
Greece	Eurostat, New Cronos	2001	3
Hungary	Eurostat, New Cronos	2001	3
Ireland	Eurostat, New Cronos	2001	3
Italy	Eurostat, New Cronos	2001	3
Japan	Economic and Social Research Institute, Cabinet Office; Statistics Bureau, MIC	2001	3
Korea	National Statistical Office	2001	3
Mexico	INEGI	2000	2
Netherlands	Eurostat, New Cronos	2001	3
Norway	Norwegian Regional Accounts; Statistics Norway	2000	3
Poland	Eurostat, New Cronos	2000	3
Portugal	Eurostat, New Cronos	2001	3
Slovak Republic	Eurostat, New Cronos	2001	3
Spain	Eurostat, New Cronos	2001	3
Sweden	Eurostat, New Cronos	2001	3
Turkey	State Institute of Statistics	2000	3
United Kingdom	Eurostat, New Cronos	2001	3
United States	Bureau of Economic Analysis; Bureau of Labor Statistics	2001	2

Country notes

Australia: GDP in millions of AUD at current prices. Persons aged 15 years and over.

Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Poland, Portugal, Slovak Republic, Spain, Sweden and the United Kingdom: GDP data were initially obtained in millions of euros at current prices. The OECD Secretariat recalculated the figures into millions of national currency units (including euro zone former currencies) at current prices by utilising the annual average exchange rates between the euro and the national currencies. Persons aged 15-74.

Canada: GDP in millions of CAD at current prices. Persons aged 15 years and over, excluding institutional residents. Data are from the Census of Population (20% sample database).

Japan: Persons aged 15 years and over. Real GDP in millions of JPY (1995 base year).

Korea: Gross regional domestic product in millions of KRW at 1995 constant prices. Persons aged 15 years and over.

Mexico: GDP in thousands of MXN at current prices. Persons aged 12 years and over. 1995 figure: OECD estimate based on decennial population census.

Norway: Gross value added (GVA) data in millions of NOK at current prices. Population aged 16-74 years.

Portugal: Persons aged 15 years and over.

Turkey: GDP in millions of TRL at current prices. Persons aged 12 years and over. 1995 data: OECD estimate based on decennial population census.

United States: Data refer to total gross state product expressed in millions of current USD. Persons aged 16 years and over.

Calculation of the indicator

Regional disparities in average labour productivity 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, $F_i = \frac{i}{N}$; $Q_i = \frac{\sum_{j=1}^{i} y_j}{\sum_{j=1}^{N} y_j}$, and y_i is labour productivity in region i.

The index ranges between 0 (perfect equality: productivity is the same in all regions) and 1 (perfect inequality: productivity is nil in all region except one).

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Indicator 13. Unemployment rate

Sources and year of reference

	Source	Year of reference	Territorial level
Australia	Australian Bureau of Statistics	2001	3
Austria	Eurostat, New Cronos	2001	3
Belgium	Eurostat, New Cronos	2001	3
Canada	Statistics Canada	2001	3
Czech Republic	Eurostat, New Cronos	2000	3
Denmark	Eurostat, New Cronos	2001	3
Finland	Eurostat, New Cronos	2001	3
France	Eurostat, New Cronos	2001	3
Germany	Eurostat, New Cronos	2000	3
Greece	Eurostat, New Cronos	2001	3
Hungary	Eurostat, New Cronos	2000	3
Iceland	Statistics Iceland	2001	2
Ireland	Eurostat, New Cronos	2001	3
Italy	Eurostat, New Cronos	2001	3
Japan	Statistics Bureau, MIC	2000	3
Korea	National Statistical Office	2000	3
Luxembourg	Eurostat, New Cronos	2001	3
Mexico	INEGI	2000	3
Netherlands	Eurostat, New Cronos	2001	3
New Zealand	Statistics New Zealand	2001	3
Norway	Statistics Norway	2000	3
Poland	Eurostat, New Cronos	2000	3
Portugal	Eurostat, New Cronos	2001	3
Slovak Republic	Eurostat, New Cronos	2001	3
Spain	Eurostat, New Cronos	2001	3
Sweden	Eurostat, New Cronos	2001	3
Switzerland	Swiss Federal Statistical Office	2000	3
Turkey	State Institute of Statistics	2000	3
United Kingdom	Eurostat, New Cronos	2001	3
United States	Bureau of Labor Statistics	2001	3

Country notes

Australia: Persons aged 15 years and over.

Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Poland, Slovak Republic, Spain, Sweden and the United Kingdom: Persons aged 15-74. Persons who found a job to start within a period of at most three months need not have been looking for work to be classified as unemployed.

Canada: Persons aged 15 years and over, excluding institutional residents. Persons who had definite arrangements to start a new job in four weeks or less need not have been looking for work to be classified as unemployed. Data are from the Census of Population (20% sample database).

Iceland: Person aged 16 years and over.

Japan: Persons aged 15 years and over.

Korea: Persons aged 15 years and over.

Mexico: Persons aged 12 years and over.

New Zealand: Civilian non-institutionalised usually resident New Zealand; population aged 15 and over.

Norway: Population aged 16-74 years.

Portugal: Persons aged 15 years and over.

Switzerland: Registered unemployed.

Turkey: Persons aged 12 years and over.

United States: Persons aged 16 years and over. Persons who were waiting to be recalled to a job from which they had been laid off need not have been looking for work to be classified as unemployed.

Calculation of the indicator

Regional disparities in unemployment rates are measured by an unweighted Gini index. The index is defined as:

$$GINI = \frac{2}{N-1} * \sum_{i=1}^{N-1} (F_i - Q_i)$$

where N is the number of regions, $F_i = \frac{i}{N}$; $Q_i = \frac{\sum_{j=1}^{i} u_j}{\sum_{j=1}^{N} u_j}$, and u_i is the unemployment rate of region i.

The index ranges between 0 (perfect equality: unemployment rates are the same in all regions) and 1 (perfect inequality: unemployment rates are nil in all region except one).

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Indicator 14. Participation rates

Sources and year of reference

	Source	Year of reference	Territorial level
Australia	Australian Bureau of Statistics	2001	3
Austria	Eurostat, New Cronos	2001	3
Belgium	Eurostat, New Cronos	2001	3
Canada	Statistics Canada	2001	3
Czech Republic	Eurostat, New Cronos	2000	3
Denmark	Eurostat, New Cronos	2001	3
Finland	Eurostat, New Cronos	2001	3
France	Eurostat, New Cronos	2001	3
Germany	Eurostat, New Cronos	2000	3
Greece	Eurostat, New Cronos	2001	3
Hungary	Eurostat, New Cronos	2000	3
Iceland	Statistics Iceland	2001	2
Ireland	Eurostat, New Cronos	2001	3
Italy	Eurostat, New Cronos	2001	3
Japan	Statistics Bureau, MIC	2000	3
Korea	National Statistical Office	2000	3
Luxembourg	Eurostat, New Cronos	2001	3
Mexico	Inegi	2000	3
Netherlands	Eurostat, New Cronos	2001	3
New Zealand	Statistics New Zealand	2001	3
Norway	Statistics Norway	2000	3
Poland	Eurostat, New Cronos	2000	3
Portugal	Eurostat, New Cronos	2001	3
Slovak Republic	Eurostat, New Cronos	2001	3
Spain	Eurostat, New Cronos	2001	3
Sweden	Eurostat, New Cronos	2001	3
Switzerland	Swiss Federal Statistical Office	2000	3
Turkey	State Institute of Statistics	2000	3
United Kingdom	Eurostat, New Cronos	2001	3
United States	Bureau of Labor Statistics	2001	3

Country notes

Australia: The labour force comprises persons aged 15 years and over.

Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Poland, Slovak Republic, Spain, Sweden and the United Kingdom: The labour force comprises persons aged 15-74.

Canada: The labour force comprises persons aged 15 years and over, excluding institutional residents. Data are from the Census of Population (20% sample database).

Iceland: The labour force comprises person aged 16 years and over.

Japan: The labour force comprises person aged 15 years and over.

Korea: The labour force comprises person aged 15 years and over.

Mexico: The labour force comprises person aged 12 years and over.

New Zealand: The labour force comprises civilian non-institutionalised usually resident New Zealand; population aged 15 and over.

Norway: The labour force comprises person aged 16-74 years.

Portugal: The labour force comprises person aged 15 years and over.

Switzerland: The labour force includes registered unemployed people only.

Turkey: The labour force comprises person aged 12 years and over.

United States: The labour force comprises person aged 16 years and over.

Calculation of the indicator

Regional disparities in participation rates are measured by an unweighted Gini index. The index is defined as:

$$GINI = \frac{2}{N-1} * \sum_{i=1}^{N-1} (F_i - Q_i)$$

where N is the number of regions, $F_i = \frac{i}{N}$; $Q_i = \frac{\sum_{j=1}^{i} pr_j}{\sum_{j=1}^{N} pr_j}$, and pr_i is the participation rate of region i.

The index ranges between 0 (perfect equality: participation rates are the same in all regions) and 1 (perfect inequality: participation rates are nil in all region except one).

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Indicator 15. The factors of regional competitiveness

Sources and year of reference

	Source	Year of reference	Territorial level
Australia	Australian Bureau of Statistics	2001	2
Austria	Eurostat, New Cronos	2001	3
Belgium	Eurostat, New Cronos	2001	3
Canada	Statistics Canada	2001	2
Czech Republic	Eurostat, New Cronos	2001	3
Denmark	Eurostat, New Cronos	2001	3
Finland	Eurostat, New Cronos	2001	3
France	Eurostat, New Cronos	2001	3
Germany	Eurostat, New Cronos	2001	3
Greece	Eurostat, New Cronos	2001	3
Hungary	Eurostat, New Cronos	2001	3
Ireland	Eurostat, New Cronos	2001	3
Italy	Eurostat, New Cronos	2001	3
Japan	Economic and Social Research Institute, Cabinet Office; Statistics Bureau, MIC	2001	3
Korea	National Statistical Office	2001	3
Mexico	INEGI	2000	2
Netherlands	Eurostat, New Cronos	2001	3
Norway	Norwegian Regional Accounts; Statistics Norway	2000	3
Poland	Eurostat, New Cronos	2000	3
Portugal	Eurostat, New Cronos	2001	3
Slovak Republic	Eurostat, New Cronos	2001	3
Spain	Eurostat, New Cronos	2001	3
Sweden	Eurostat, New Cronos	2001	3
Turkey	State Institute of Statistics	2000	3
United Kingdom	Eurostat, New Cronos	2001	3
United States	Bureau of Economic Analysis; Bureau of Labor Statistics	2001	2

Country notes

Australia: GDP in millions of AUD at current prices. Population data derive from the Census of Population and Housing.

Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Poland, Portugal, Slovak Republic, Spain, Sweden and the United Kingdom: GDP data were initially obtained in millions of euros at current prices. The OECD Secretariat recalculated the figures into millions of national currency units (including euro zone former currencies) at current prices by utilising the annual average exchange rates between the euro and the national currencies. Population data refer to the average annual population (population as of 31 December 2001 for Poland). The population is based on data from the most recent census adjusted by the components of population change produced since the last census, or based on population registers.

Canada: GDP in millions of CAD at current prices. Population data refer to total population excluding institutions residents. The data derive from the Census of Population (20% sample database).

Iceland: GDP at current prices and current PPPs (in USD). Population data refer to population as of 1 December.

Japan: Real GDP in millions of JPY (1995 base year). Total average population.

Korea: Gross regional domestic product in millions of KRW at 1995 constant prices. Population data derive from resident registration at the end of the year.

Mexico: GDP in thousands of MXN at current prices. Usually resident population.

Norway: Gross value added (GVA) data in millions of NOK at current prices. Total population as of 1 January.

Turkey: GDP in millions of TRL at current prices. Population data derive from the Census of Population.

United States: Data refer to total gross state product expressed in millions of current USD. Census Bureau mid-year population estimates. Estimates for 2000-02 reflect country population estimates as of April 2004.

Breakdown of GDP per capita

GDP per capita (in logarithms) in region *i* can be written as:

1. $\frac{GDP_i}{P_i} = \frac{GDP_i}{EW_i} + \frac{EW_i}{LFW_i} + \frac{LFW_i}{LFR_i} + \frac{LFR_i}{P_i}$

where *P*, *EW*, *LFW* and *LFR* stand, respectively, for population, employment at the workplace, labour force at the workplace and labour force at the place of residence.

Labour force at the workplace is defined as:

2. $LFW_i = LFR_i + NC_i$

where NC_i indicates net commuting to region *i*.

In theory, net commuting is equal to the difference between employment at the workplace and employment at the place of residence. In practice, however, data drawn from two different sources (regional accounts for employment at the workplace and labour force survey for employment at the place of residence) will be affected by their different sampling. This sampling error is revealed by the large difference between national employment at the workplace and national employment at the place of residence: in fact, assuming that international commuting is negligible, national employment at the workplace should equal national employment at the place of residence. At the level of each region, therefore, the difference between employment at the workplace and employment at the place of residence will measure net commuting plus the sampling error due to the use of different sources.

In order to correct for the sampling error, net commuting has been computed in the following way. Let *E(S)*, *E(A)* and *E* be defined as employment measured by labour force survey, employment measured by regional account and the true value of employment. Denoting *EW* as employment at the workplace and *ER* as employment a the place of residence, we obtain:

3. $\frac{EW(A)_i}{EW(A)} = \frac{EW_i}{E}$ and

4. $\frac{ER(S)_i}{ER(S)} = \frac{ER_i}{E}$

where the absence of a subscript indicates total national employment. Subtracting equation 4 from equation 3, we obtain:

5. $\frac{EW(A)_i}{EW(A)} - \frac{ER(S)_i}{ER(S)} = \frac{EW_i}{E} - \frac{ER_i}{E} = \frac{NC_i}{E}$

Equation 5 therefore provides a correction for the sampling error. It follows that:

6. $\frac{LFW(A)_i}{EW(A)} = \frac{LFW_i}{E} = \frac{LFR(S)_i}{ER(S)} + \frac{EW(A)_i}{EW(A)} - \frac{ER(S)_i}{ER(S)} = \frac{LFR_i}{E} - \frac{NC_i}{E}$

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so that equation 1 can be computed as:

$$7.\ \frac{GDP_i}{P_i} = \frac{GDP_i}{EW_i} + \frac{EW_i / E}{LFW_i / E} + \frac{LFW_i / E}{LFR_i / E} + \frac{LFR_i}{P_i}$$

or, equivalently,

GDP per capita = Productivity + Employment rate + Commuting rate + Activity rate

Therefore, the difference in GDP per capita (in logarithms) between a given region and the country average is equal to:

Difference in GDP per capita = Difference in productivity + Difference in employment rates + Commuting rate + Difference in activity rates

Breakdown of differences in productivity

Average labour productivity in region *i* is equal to a weighted average of sectoral productivity:

$$8.\ \frac{GDP_i}{EW_i} = \sum_j \frac{EW_{ij}}{EW_i} * \frac{GDP_{ij}}{EW_{ij}}$$

where *j* indicates the sector.

The difference from the average productivity can be broken down as:

$$9.\ \left(\frac{GDP_i}{EW_i} - \frac{GDP}{EW}\right) = \sum_j \left(\frac{EW_{ij}}{EW_i} - \frac{EW_j}{EW}\right) * \frac{GDP_j}{EW_j} + \sum_j \frac{EW_{ij}}{EW_i} * \left(\frac{GDP_{ij}}{EW_{ij}} - \frac{GDP_j}{EW_j}\right)$$

The first term on the right-hand side of the equation measures the proportion of the difference in productivity due to regional specialisation.

Breakdown of differences in employment rates

The employment rate in region *i* is equal to a weighted average of employment rates by educational attainment:

$$10.\ \frac{EW_i}{LFW_i} = \sum_j \frac{LFW_{ij}}{LFW_i} * \frac{EW_{ij}}{LFW_{ij}}$$

where *j* indicates educational attainment.

The difference from the average in employment rate can be broken down as:

$$11.\ \left(\frac{EW_i}{LFW_i} - \frac{EW}{LFW}\right) = \sum_j \left(\frac{LFW_{ij}}{LFW_i} - \frac{LFW_j}{LFW}\right) * \frac{EW_j}{LFW_j} + \sum_j \frac{LFW_{ij}}{LFW_i} * \left(\frac{EW_{ij}}{LFW_{ij}} - \frac{EW_j}{LFW_j}\right)$$

The first term on the right-hand side of the equation measures the proportion of the difference in employment rates due to the skills profile of the regional labour force.

Breakdown of differences in activity rates

The activity rate in region *i* is equal to a weighted average of activity rates by age groups:

$$12.\ \frac{LFR_i}{P_i} = \sum_j \frac{P_{ij}}{P_i} * \frac{LFR_{ij}}{P_{ij}}$$

where *j* indicates the age group.

The difference from the average activity rate can be broken down as:

$$13.\ \left(\frac{LFR_i}{P_i} - \frac{LFR}{P}\right) = \sum_j \left(\frac{P_{ij}}{P_i} - \frac{P_j}{P}\right) * \frac{LFR_j}{P_j} + \sum_j \frac{P_{ij}}{P_i} * \left(\frac{LFR_{ij}}{P_{ij}} - \frac{LFR_j}{P_j}\right)$$

The first term on the right-hand side of the equation measures the proportion of the difference in activity rates due to the age profile of the regional population.

Indicator 16. Regional differences in GDP per capita accounted by differences in average labour productivity

Sources and year of reference

	Source	Year of reference	Territorial level
Australia	Australian Bureau of Statistics	2001	2
Austria	Eurostat, New Cronos	2001	3
Belgium	Eurostat, New Cronos	2001	3
Canada	Statistics Canada	2001	2
Czech Republic	Eurostat, New Cronos	2001	3
Denmark	Eurostat, New Cronos	2001	3
Finland	Eurostat, New Cronos	2001	3
France	Eurostat, New Cronos	2001	3
Germany	Eurostat, New Cronos	2001	3
Greece	Eurostat, New Cronos	2001	3
Hungary	Eurostat, New Cronos	2001	3
Ireland	Eurostat, New Cronos	2001	3
Italy	Eurostat, New Cronos	2001	3
Japan	Statistics Bureau, MIC	2001	3
Korea	National Statistical Office	2001	3
Mexico	INEGI	2000	2
Netherlands	Eurostat, New Cronos	2001	3
Norway	Statistics Norway	2000	3
Poland	Eurostat, New Cronos	2000	3
Portugal	Eurostat, New Cronos	2001	3
Slovak Republic	Eurostat, New Cronos	2001	3
Spain	Eurostat, New Cronos	2001	3
Sweden	Eurostat, New Cronos	2001	3
Turkey	State Institute of Statistics	2000	3
United Kingdom	Eurostat, New Cronos	2001	3
United States	Bureau of Labor Statistics	2001	2

Country notes

Australia: GDP in millions of AUD at current prices. Persons aged 15 years and over.

Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Poland, Portugal, Slovak Republic, Spain, Sweden and the United Kingdom: GDP data were initially obtained in millions of euros at current prices. The OECD Secretariat recalculated the figures into millions of national currency units (including euro zone former currencies) at current prices by utilising the annual average exchange rates between the euro and the national currencies. Persons aged 15-74.

Canada: GDP in millions of CAD at current prices. Persons aged 15 years and over, excluding institutional residents. Data are from the Census of Population (20% sample database).

Japan: Persons aged 15 years and over. Real GDP in millions of JPY (1995 base year).

Korea: Gross regional domestic product in millions of KRW at 1995 constant prices. Persons aged 15 years and over.

Mexico: GDP in thousands of MXN at current prices. Persons aged 12 years and over. 1995 figure: OECD estimate based on decennial population census.

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Norway: Gross value added (GVA) data in millions of NOK at current prices. Population aged 16-74 years.

Portugal: Persons aged 15 years and over.

Turkey: GDP in millions of TRL at current prices. Persons aged 12 years and over. 1995 data: OECD estimate based on decennial population census.

United States: Data refer to total gross state product expressed in millions of current USD. Persons aged 16 years and over.

Calculation of the indicator

GDP per capita (in logarithms) in region *i* can be written as:

1. $$\frac{GDP_i}{P_i} = \frac{GDP_i}{EW_i} + \frac{EW_i}{LFW_i} + \frac{LFW_i}{LFR_i} + \frac{LFR_i}{P_i}$$

where *P*, *EW*, *LFW* and *LFR* stand, respectively, for population, employment at the workplace, labour force at the workplace and labour force at the place of residence.

Average labour productivity in region *i* is equal to a weighted average of sectoral productivity:

2. $$\frac{GDP_i}{EW_i} = \sum_j \frac{EW_{ij}}{EW_i} * \frac{GDP_{ij}}{EW_{ij}}$$

where *j* indicates the sector.

The difference from the average productivity can be broken down as:

3. $$\left(\frac{GDP_i}{EW_i} - \frac{GDP}{EW}\right) = \sum_j \left(\frac{EW_{ij}}{EW_i} - \frac{EW_j}{EW}\right) * \frac{GDP_j}{EW_j} + \sum_j \frac{EW_{ij}}{EW_i} * \left(\frac{GDP_{ij}}{EW_{ij}} - \frac{GDP_j}{EW_j}\right)$$

The second term on the right-hand side of equation 3 measures the differences in GDP per capita due to differences in average labour productivity, adjusted for industry specialisation (first term on the right-hand side of equation 3).

Indicator 17. Regional differences in GDP per capita that are accounted for by differences in industry specialisation

Sources and year of reference

	Source	Year of reference	Territorial level
Australia	Australian Bureau of Statistics	2001	2
Austria	Eurostat, New Cronos	2001	3
Belgium	Eurostat, New Cronos	2001	3
Canada	Statistics Canada	2001	2
Czech Republic	Eurostat, New Cronos	2001	3
Denmark	Eurostat, New Cronos	2001	3
Finland	Eurostat, New Cronos	2001	3
France	Eurostat, New Cronos	2001	3
Germany	Eurostat, New Cronos	2001	3
Greece	Eurostat, New Cronos	2001	3
Hungary	Eurostat, New Cronos	2001	3
Ireland	Eurostat, New Cronos	2001	3
Italy	Eurostat, New Cronos	2001	3
Japan	Economic and Social Research Institute, Cabinet Office; Statistics Bureau, MIC	2001	3
Korea	National Statistical Office	2001	3
Mexico	INEGI	2000	2
Netherlands	Eurostat, New Cronos	2001	3
Norway	Norwegian Regional Accounts; Statistics Norway	2000	3
Poland	Eurostat, New Cronos	2000	3
Portugal	Eurostat, New Cronos	2001	3
Slovak Republic	Eurostat, New Cronos	2001	3
Spain	Eurostat, New Cronos	2001	3
Sweden	Eurostat, New Cronos	2001	3
Turkey	State Institute of Statistics	2000	3
United Kingdom	Eurostat, New Cronos	2001	3
United States	Bureau of Economic Analysis; Bureau of Labor Statistics	2001	2

Country notes

Australia: GDP in millions of AUD at current prices. Persons aged 15 years and over.

Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Poland, Portugal, Slovak Republic, Spain, Sweden and the United Kingdom: GDP data were initially obtained in millions of euros at current prices. The OECD Secretariat recalculated the figures into millions of national currency units (including euro zone former currencies) at current prices by utilising the annual average exchange rates between the euro and the national currencies. Persons aged 15-74.

Canada: GDP in millions of CAD at current prices. Persons aged 15 years and over, excluding institutional residents. Data are from the Census of Population (20% sample database).

Japan: Persons aged 15 years and over. Real GDP in millions of JPY (1995 base year).

Korea: Gross regional domestic product in millions of KRW at 1995 constant prices. Persons aged 15 years and over.

Mexico: GDP in thousands of MXN at current prices. Persons aged 12 years and over. 1995 figure: OECD estimate based on decennial population census.

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Norway: Gross value added (GVA) data in millions of NOK at current prices. Population aged 16-74 years.

Portugal: Persons aged 15 years and over.

Turkey: GDP in millions of TRL at current prices. Persons aged 12 years and over. 1995 data: OECD estimate based on decennial population census.

United States: Data refer to total gross state product expressed in millions of current USD. Persons aged 16 years and over.

Calculation of the indicator

GDP per capita (in logarithms) in region *i* can be written as:

$$1.\quad \frac{GDP_i}{P_i} = \frac{GDP_i}{EW_i} + \frac{EW_i}{LFW_i} + \frac{LFW_i}{LFR_i} + \frac{LFR_i}{P_i}$$

where *P*, *EW*, *LFW* and *LFR* stand, respectively, for population, employment at the workplace, labour force at the workplace and labour force at the place of residence.

Average labour productivity in region *i* is equal to a weighted average of sectoral productivity:

$$2.\quad \frac{GDP_i}{EW_i} = \sum_j \frac{EW_{ij}}{EW_i} * \frac{GDP_{ij}}{EW_{ij}}$$

where *j* indicates the sector.

The difference from the average productivity can be broken down as:

$$3.\quad \left(\frac{GDP_i}{EW_i} - \frac{GDP}{EW}\right) = \sum_j \left(\frac{EW_{ij}}{EW_i} - \frac{EW_j}{EW}\right) * \frac{GDP_j}{EW_j} + \sum_j \frac{EW_{ij}}{EW_i} * \left(\frac{GDP_{ij}}{EW_{ij}} - \frac{GDP_j}{EW_j}\right)$$

The first term on the right-hand side of equation 3 measures the difference in GDP per capita accounted by differences in regional specialisation.

Indicator 18. Regional differences in GDP per capita accounted by differences in skills

Sources and year of reference

	Source	Age of the population	Year of reference	Territorial level
Australia	ABS (Census of population and housing – Community profiles)	15 years and over	2001	3
Belgium	Eurostat New Cronos (LFS)	25-64	2001	3
Canada	Statistics Canada (Census)	25-64	2001	3
Czech Republic	Czech statistical office (population and housing census)	15 and over	2001	3
Denmark	Statistics Denmark (labour force statistics)	25-64	2002	3
Finland	Statistics Finland	25-64	2000	3
France	INSEE (Recensement de la population)	25 and over	1999	3
Germany	Eurostat, New Cronos	25-64	2001	3
Greece	Eurostat, New Cronos	25-64	2001	3
Hungary	KSH	7-64	2001	3
Ireland	Central Statistical Office (census)	25-64	2002	3
Italy	Eurostat, New Cronos	25-64	2001	2
Japan	Statistics Bureau (population census)	25-64	2000	3
Korea	NSO	25-64	2000	3
Luxembourg	Eurostat, New Cronos	25-64	2001	3
Mexico	INEGI, Censo general de la Población y Vivienda	15 and over	2000	3
Netherlands	Eurostat, New Cronos	25-64	2001	3
New Zealand	Statistics New Zealand (census of usually resident population)	25-64	2001	3
Norway	Statistics Norway (population and housing census)	25-66	2001	3
Poland	Polish official statistics, census data.	15 and over	2002	3
Portugal	INE, Recenseamento Geral da População e Habitação	15 and over	2001	3
Slovak Republic	Statistical office of the Slovak Republic, population and housing census	25-64	2001	3
Spain	INE, Censos de Población y Viviendas	Active population	2001	3
Sweden	Statistics Sweden, The Swedish Register of Education (UREG)	25-64	2001	3
Switzerland	RFP	25-64	2000	2
Turkey	SIS, census of population	25-64	2000	3
United Kingdom	ONS, local labour force survey	25-64	2001	3
United States	US Census Bureau	25 and over	2000	3

General notes

Skills are measured as educational attainment (population with tertiary level education) and are classified according to the international standard qualification for education (ISCED 1997), which includes seven educational levels from 0 to 6. ISCED Levels 5 and 6 refer to university education.

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ISCED		Duration
5	**First stage of tertiary education**	
	ISCED 5 programmes have an educational content more advanced than those offered at Levels 3 and 4. Entry to these programmes normally requires the successful completion of ISCED Level 3A or 3B or a similar qualification at ISCED Level 4A or 4B.	
5A	The minimum cumulative theoretical duration is three years. Completion of a research project or thesis may be involved. The programmes provide the level of education required for entry into a profession with high skills requirements or an advanced research programme.	Duration categories: medium: 3 to less than 5 years; long: 5 to 6 years, very long: more than 6 years.
5B	Programmes are more practically oriented and occupationally specific than programmes at ISCED Level 5A and do not prepare students for direct access to advanced research programmes. They have a minimum duration of two years full-time equivalent.	Duration categories: short: 2 to less than 3 years; medium 3 to less than 5 years; long: 5 to 6 years; very long: more than 6 years.
6	**Second stage of tertiary education**	
	This level requires the submission of a thesis or dissertation of publishable quality which is the product of original research and represents a significant contribution to knowledge. It is not solely based on course work. It prepares recipients for faculty posts in institutions offering programmes at ISCED Level 5A , as well as research posts in government and industry.	

The classification criteria are based on a manual issued by the OECD: OECD, *Classifying Educational Programmes: Manual for ISCED 97 Implementation in OECD Countries*, 1999.

The allocation of different levels of education and training to ISCED categories is often difficult. Although ISCED provides guidance on which qualification and stages of education should be assigned, the classification does not fully reflect the heterogeneity of educational systems, in particular of non-academic vocational trainings, across countries.

Another source of discrepancy is the age of the population to which the data refer. The main impact of including younger or older people in the population cohort can cause biases in the level of education. For most countries, data are available for population aged 25-64, but there are some exceptions. For Australia, Mexico, New Zealand, Poland and Portugal, data are available for population aged 15 and over. This penalises the performance of these six countries. For Spain data are available only for the active population; in this case the effect will be the opposite and Spain will have better educational performance than it would have if the entire population 25-64 was counted.

Country notes

Germany, United Kingdom: For several regions of these two countries data on educational attainment are not available.

Czech Republic, France, Germany, Ireland, Japan, Korea, Slovak Republic, Sweden, and United Kingdom: Since the ISCED classification does not always fully reflect the heterogeneity of educational systems for these countries; part of the population aged 25-64 has not been classified according to the ISCED categories and belongs to a column "other".

Calculation of the indicator

GDP per capita (in logarithms) in region *i* can be written as:

$$1.\ \frac{GDP_i}{P_i} = \frac{GDP_i}{EW_i} + \frac{EW_i}{LFW_i} + \frac{LFW_i}{LFR_i} + \frac{LFR_i}{P_i}$$

where *P*, *EW*, *LFW* and *LFR* stand, respectively, for population, employment at the workplace, labour force at the workplace and labour force at the place of residence.

The employment rate in region *i* is equal to a weighted average of employment rates by educational attainment:

$$2.\ \frac{E_i}{LF_i} = \sum_j \frac{LF_{ij}}{LF_i} * \frac{E_{ij}}{LF_{ij}}$$

where *j* indicates educational attainment.

The difference from the benchmark – either the national or the regional average employment rate – can be broken down as:

$$3.\ \left(\frac{E_i}{LF_i} - \frac{E}{LF}\right) = \sum_j \left(\frac{LF_{ij}}{LF_i} - \frac{LF_j}{LF}\right) * \frac{E_j}{LF_j} + \sum_j \frac{LF_{ij}}{LF_i} * \left(\frac{E_{ij}}{LF_{ij}} - \frac{E_j}{LF_j}\right)$$

The first term on the right-hand side of equation 3 measures the differences in GDP per capita accounted by the educational attainments of the regional labour force.

The indicator is computed under the assumption that the distribution of the labour force by educational attainment is equal to the distribution of the sampled population.

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Indicator 19. Regional differences in GDP per capita accounted by differences in employment rates

Sources and year of reference

	Source	Year of reference	Territorial level
Australia	Australian Bureau of Statistics	2001	2
Austria	Eurostat, New Cronos	2001	3
Belgium	Eurostat, New Cronos	2001	3
Canada	Statistics Canada	2001	2
Czech Republic	Eurostat, New Cronos	2001	3
Denmark	Eurostat, New Cronos	2001	3
Finland	Eurostat, New Cronos	2001	3
France	Eurostat, New Cronos	2001	3
Germany	Eurostat, New Cronos	2001	3
Greece	Eurostat, New Cronos	2001	3
Hungary	Eurostat, New Cronos	2001	3
Ireland	Eurostat, New Cronos	2001	3
Italy	Eurostat, New Cronos	2001	3
Japan	Economic and Social Research Institute, Cabinet Office; Statistics Bureau, MIC	2001	3
Korea	National Statistical Office	2001	3
Mexico	INEGI	2000	2
Netherlands	Eurostat, New Cronos	2001	3
Norway	Norwegian Regional Accounts; Statistics Norway	2000	3
Poland	Eurostat, New Cronos	2000	3
Portugal	Eurostat, New Cronos	2001	3
Slovak Republic	Eurostat, New Cronos	2001	3
Spain	Eurostat, New Cronos	2001	3
Sweden	Eurostat, New Cronos	2001	3
Turkey	State Institute of Statistics	2000	3
United Kingdom	Eurostat, New Cronos	2001	3
United States	Bureau of Economic Analysis; Bureau of Labor Statistics	2001	2

Country notes

Australia: Persons aged 15 years and over.

Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Poland, Slovak Republic, Spain, Sweden and the United Kingdom: Persons aged 15-74.

Canada: Persons aged 15 years and over, excluding institutional residents. Data are from the Census of Population (20% sample database).

Iceland: Person aged 16 years and over.

Japan: Persons aged 15 years and over.

Korea: Persons aged 15 years and over.

Mexico: Persons aged 12 years and over. 1995 figure: OECD estimate based on decennial population census.

New Zealand: Civilian non-institutionalised usually resident New Zealand; population aged 15 and over.

Norway: Population aged 16-74 years.

Portugal: Persons aged 15 years and over.

Switzerland: 1995 figure: OECD estimate based on decennial population census.

Turkey: Persons aged 12 years and over. 1995 data: OECD estimate based on decennial population census.

United States: Persons aged 16 years and over.

Calculation of the indicator

GDP per capita (in logarithms) in region *i* can be written as:

$$1.\ \frac{GDP_i}{P_i} = \frac{GDP_i}{EW_i} + \frac{EW_i}{LFW_i} + \frac{LFW_i}{LFR_i} + \frac{LFR_i}{P_i}$$

where *P*, *EW*, *LFW* and *LFR* stand, respectively, for population, employment at the workplace, labour force at the workplace and labour force at the place of residence.

The employment rate in region *i* is equal to a weighted average of employment rates by educational attainment:

$$2.\ \frac{E_i}{LF_i} = \sum_j \frac{LF_{ij}}{LF_i} * \frac{E_{ij}}{LF_{ij}}$$

where *j* indicates educational attainment.

The difference from the benchmark – either the national or the regional average employment rate – can be broken down as:

$$3.\ \left(\frac{E_i}{LF_i} - \frac{E}{LF}\right) = \sum_j \left(\frac{LF_{ij}}{LF_i} - \frac{LF_j}{LF}\right) * \frac{E_j}{LF_j} + \sum_j \frac{LF_{ij}}{LF_i} * \left(\frac{E_{ij}}{LF_{ij}} - \frac{E_j}{LF_j}\right)$$

The second term on the right-hand side of equation 3 measures the regional differences in GDP per capita that is accounted for by employment rates, adjusted for differences in educational attainment (first term on the right-hand side of equation 3).

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Indicator 20. Regional differences in GDP per capita accounted by net commuting inflows

Sources and year of reference

	Source	Year of reference	Territorial level
Australia	Australian Bureau of Statistics	2001	2
Austria	Eurostat, New Cronos	2001	3
Belgium	Eurostat, New Cronos	2001	3
Canada	Statistics Canada	2001	2
Czech Republic	Eurostat, New Cronos	2001	3
Denmark	Eurostat, New Cronos	2001	3
Finland	Eurostat, New Cronos	2001	3
France	Eurostat, New Cronos	2001	3
Germany	Eurostat, New Cronos	2001	3
Greece	Eurostat, New Cronos	2001	3
Hungary	Eurostat, New Cronos	2001	3
Ireland	Eurostat, New Cronos	2001	3
Italy	Eurostat, New Cronos	2001	3
Japan	Statistics Bureau, MIC	2001	3
Korea	National Statistical Office	2001	3
Mexico	INEGI	2000	2
Netherlands	Eurostat, New Cronos	2001	3
Norway	Statistics Norway	2000	3
Poland	Eurostat, New Cronos	2000	3
Portugal	Eurostat, New Cronos	2001	3
Slovak Republic	Eurostat, New Cronos	2001	3
Spain	Eurostat, New Cronos	2001	3
Sweden	Eurostat, New Cronos	2001	3
Turkey	State Institute of Statistics	2000	3
United Kingdom	Eurostat, New Cronos	2001	3
United States	Bureau of Labor Statistics	2001	2

Calculation of the indicator

GDP per capita (in logarithms) in region *i* can be written as:

$$1.\quad \frac{GDP_i}{P_i} = \frac{GDP_i}{EW_i} + \frac{EW_i}{LFW_i} + \frac{LFW_i}{LFR_i} + \frac{LFR_i}{P_i}$$

where *P*, *EW*, *LFW* and *LFR* stand, respectively, for population, employment at the workplace, labour force at the workplace and labour force at the place of residence.

Labour force at the workplace is defined as:

$$2.\quad LFW_i = LFR_i + NC_i$$

where NC_i indicates net commuting to region *i*.

In theory, net commuting is equal to the difference between employment at the workplace and employment at the place of residence. In practice, however, data drawn from two different sources (regional accounts for employment at the workplace and labour force survey for employment at the place of residence) will be affected by their different sampling. This sampling error is revealed by the large difference between national employment at the workplace and national employment at the place of residence: in fact, assuming that international commuting is negligible, national employment at the workplace should equal national employment at the place of residence. At the level of each

region, therefore, the difference between employment at the workplace and employment at the place of residence will measure net commuting plus the sampling error due to the use of different sources.

In order to correct for the sampling error, net commuting has been computed in the following way. Let *E(S)*, *E(A)* and *E* be defined as employment measured by labour force survey, employment measured by regional account and true value of employment. Denoting *EW* as employment at the workplace and *ER* as employment at place of residence, we obtain:

3. $\frac{EW(A)_i}{EW(A)} = \frac{EW_i}{E}$ and

4. $\frac{ER(S)_i}{ER(S)} = \frac{ER_i}{E}$

where the absence of a subscript indicates total national employment. Subtracting equation 4 from equation 3, we obtain:

5. $\frac{EW(A)_i}{EW(A)} - \frac{ER(S)_i}{ER(S)} = \frac{EW_i}{E} - \frac{ER_i}{E} = \frac{NC_i}{E}$

Equation 5 therefore provides a correction for the sampling error. It follows that:

6. $\frac{LFW(A)_i}{EW(A)} = \frac{LFW_i}{E} = \frac{LFR(S)_i}{ER(S)} + \frac{EW(A)_i}{EW(A)} - \frac{ER(S)_i}{ER(S)} = \frac{LFR_i}{E} - \frac{NC_i}{E}$

so that equation 1 can be computed as:

7. $\frac{GDP_i}{P_i} = \frac{GDP_i}{EW_i} + \frac{EW_i / E}{LFW_i / E} + \frac{LFW_i / E}{LFR_i / E} + \frac{LFR_i}{P_i}$ or $\frac{GDP_i}{P_i} = \frac{GDP_i}{EW_i} + \frac{EW_i}{LFW_i} + \frac{LFW_i}{LFR_i} + \frac{LFR_i}{P_i}$

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Indicator 21. Regional differences in GDP per capita accounted by activity rates

Sources and year of reference

	Source	Year of reference	Territorial level
Australia	Australian Bureau of Statistics	2001	3
Austria	Eurostat, New Cronos	2001	3
Belgium	Eurostat, New Cronos	2001	3
Canada	Statistics Canada	2001	3
Czech Republic	Eurostat, New Cronos	2000	3
Denmark	Eurostat, New Cronos	2001	3
Finland	Eurostat, New Cronos	2001	3
France	Eurostat, New Cronos	2001	3
Germany	Eurostat, New Cronos	2000	3
Greece	Eurostat, New Cronos	2001	3
Hungary	Eurostat, New Cronos	2000	3
Iceland	Statistics Iceland	2001	2
Ireland	Eurostat, New Cronos	2001	3
Italy	Eurostat, New Cronos	2001	3
Japan	Statistics Bureau, MIC	2000	3
Korea	National Statistical Office	2000	3
Luxembourg	Eurostat, New Cronos	2001	3
Mexico	INEGI	2000	3
Netherlands	Eurostat, New Cronos	2001	3
New Zealand	Statistics New Zealand	2001	3
Norway	Statistics Norway	2000	3
Poland	Eurostat, New Cronos	2000	3
Portugal	Eurostat, New Cronos	2001	3
Slovak Republic	Eurostat, New Cronos	2001	3
Spain	Eurostat, New Cronos	2001	3
Sweden	Eurostat, New Cronos	2001	3
Switzerland	Swiss Federal Statistical Office	2000	3
Turkey	State Institute of Statistics	2000	3
United Kingdom	Eurostat, New Cronos	2001	3
United States	Bureau of Labor Statistics	2001	3

Country notes

Australia: The labour force comprises persons aged 15 years and over.

Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Poland, Slovak Republic, Spain, Sweden and the United Kingdom: The labour force comprises persons aged 15-74.

Canada: The labour force comprises persons aged 15 years and over, excluding institutional residents. Data are from the Census of Population (20% sample database).

Iceland: The labour force comprises persons aged 16 years and over.

Japan: The labour force comprises persons aged 15 years and over.

Korea: The labour force comprises persons aged 15 years and over.

Mexico: The labour force comprises persons aged 12 years and over.

New Zealand: The labour force comprises civilian non-institutionalised usually resident New Zealand; population aged 15 and over.

Norway: The labour force comprises persons aged 16-74 years.

Portugal: The labour force comprises persons aged 15 years and over.

Switzerland: The labour force includes registered unemployed people only.

Turkey: The labour force comprises persons aged 12 years and over.

United States: The labour force comprises persons aged 16 years and over.

Calculation of the indicator

GDP per capita (in logarithms) in region *i* can be written as:

1. $$\frac{GDP_i}{P_i} = \frac{GDP_i}{EW_i} + \frac{EW_i}{LFW_i} + \frac{LFW_i}{LFR_i} + \frac{LFR_i}{P_i}$$

where *P*, *EW*, *LFW* and *LFR* stand, respectively, for population, employment at the workplace, labour force at the workplace and labour force at the place of residence.

The activity rate in region *i* is equal to a weighted average of activity rates by age groups:

2. $$\frac{LFR_i}{P_i} = \sum_j \frac{P_{ij}}{P_i} * \frac{LFR_{ij}}{P_{ij}}$$

where *j* indicates the age group.

The difference from the average activity rate can be broken down as:

3. $$\left(\frac{LFR_i}{P_i} - \frac{LFR}{P}\right) = \sum_j \left(\frac{P_{ij}}{P_i} - \frac{P_j}{P}\right) * \frac{LFR_j}{P_j} + \sum_j \frac{P_{ij}}{P_i} * \left(\frac{LFR_{ij}}{P_{ij}} - \frac{LFR_j}{P_j}\right)$$

The second term on the right-hand side of equation 3 measures the difference in GDP per capita that is accounted for by differences in activity rates, adjusted for the age profile of the population (first term on the right-hand side of equation 3).

Indicator 22. Regional differences in GDP per capita accounted for by ageing

Sources and year of reference

	Source	Year of reference	Territorial level
Australia	Australian Bureau of Statistics	2001	3
Austria	Eurostat, New Cronos	2001	3
Belgium	Eurostat, New Cronos	2001	3
Canada	Statistics Canada	2001	3
Czech Republic	Eurostat, New Cronos	2000	3
Denmark	Eurostat, New Cronos	2001	3
Finland	Eurostat, New Cronos	2001	3
France	Eurostat, New Cronos	2001	3
Germany	Eurostat, New Cronos	2000	3
Greece	Eurostat, New Cronos	2001	3
Hungary	Eurostat, New Cronos	2000	3
Iceland	Statistics Iceland	2001	2
Ireland	Eurostat, New Cronos	2001	3
Italy	Eurostat, New Cronos	2001	3
Japan	Statistics Bureau, MIC	2000	3
Korea	National Statistical Office	2000	3
Luxembourg	Eurostat, New Cronos	2001	3
Mexico	INEGI	2000	3
Netherlands	Eurostat, New Cronos	2001	3
New Zealand	Statistics New Zealand	2001	3
Norway	Statistics Norway	2000	3
Poland	Eurostat, New Cronos	2000	3
Portugal	Eurostat, New Cronos	2001	3
Slovak Republic	Eurostat, New Cronos	2001	3
Spain	Eurostat, New Cronos	2001	3
Sweden	Eurostat, New Cronos	2001	3
Switzerland	Swiss Federal Statistical Office	2000	3
Turkey	State Institute of Statistics	2000	3
United Kingdom	Eurostat, New Cronos	2001	3
United States	Bureau of Labor Statistics	2001	3

Country notes

Australia: The labour force comprises persons aged 15 years and over.

Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Poland, Slovak Republic, Spain, Sweden and the United Kingdom: The labour force comprises persons aged 15-74.

Canada: The labour force comprises persons aged 15 years and over, excluding institutional residents. Data are from the Census of Population (20% sample database).

Iceland: The labour force comprises persons aged 16 years and over.

Japan: The labour force comprises persons aged 15 years and over.

Korea: The labour force comprises persons aged 15 years and over.

Mexico: The labour force comprises persons aged 12 years and over.

New Zealand: The labour force comprises civilian non-institutionalised usually resident New Zealand; population aged 15 and over.

Norway: The labour force comprises persons aged 16-74 years.

Portugal: The labour force comprises persons aged 15 years and over.

Switzerland: The labour force includes registered unemployed people only.

Turkey: The labour force comprises persons aged 12 years and over.

United States: The labour force comprises persons aged 16 years and over.

Calculation of the indicator

GDP per capita (in logarithms) in region *i* can be written as:

1. $$\frac{GDP_i}{P_i} = \frac{GDP_i}{EW_i} + \frac{EW_i}{LFW_i} + \frac{LFW_i}{LFR_i} + \frac{LFR_i}{P_i}$$

where *P*, *EW*, *LFW* and *LFR* stand, respectively, for population, employment at the workplace, labour force at the workplace and labour force at the place of residence.

The activity rate in region *i* is equal to a weighted average of activity rates by age groups:

2. $$\frac{LFR_i}{P_i} = \sum_j \frac{P_{ij}}{P_i} * \frac{LFR_{ij}}{P_{ij}}$$

where *j* indicates the age group.

The difference from the average activity rate can be broken down as:

3. $$\left(\frac{LFR_i}{P_i} - \frac{LFR}{P}\right) = \sum_j \left(\frac{P_{ij}}{P_i} - \frac{P_j}{P}\right) * \frac{LFR_j}{P_j} + \sum_j \frac{P_{ij}}{P_i} * \left(\frac{LFR_{ij}}{P_{ij}} - \frac{LFR_j}{P_j}\right)$$

The first term on the right-hand side of equation 3 measures the regional differences in GDP per capita accounted by the age profile of the population.

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Indicator 23. Accessibility: distance in time from a major centre

Definition

City is defined as a large locality of a country (United Nations, International Merchandise Trade Statistics – Concepts and Definitions. Series F, No. 52, Rev. 2, para. 2.51 (United Nations publication, Sales No. E.98.XVII.16).

Urban Agglomeration comprises the city or town and also the suburban fringe or thickly settled territory lying outside, but adjacent to, its boundaries. A single large urban agglomeration may comprise several cities or towns and their suburban fringes (United Nations. Principles and Recommendations for Population and Housing Censuses, Revision 1. Series M, No. 67, Rev. 1, para. 2.51 (United Nations publication, Sales No. E.98.XVII.1).

Methodology

Choice of cities and urban agglomeration

In order to make a selection of major centres from which to calculate the distance in time to peripheral regions, the population threshold was generally established at a minimum of 300 000 for cities and a minimum of 500 000 for urban agglomerations (time/distance for a region hosting a centre is therefore nil). The thresholds have been calculated on the basis of the 1998 *UN Demographic Yearbook* data for cities with more than 100 000 inhabitants.

Time-distance calculation

To calculate the distance in time for European countries, the Eurostat Matrix was used (weighted distance-time by road and by rail). The time-distance to go through a major centre (to go from the city limit to the centre) varies according to the size of the centre or the agglomeration (centres < 1 000 000, 35 minutes; centres 1-2 million, 40 minutes; centres 2-3 million, 45 minutes; centres 3-4 million, 50 minutes; centres 4-5 million, 55 minutes; centres 5-6 million, 60 minutes; centres 6-8 million, 65 minutes; centres 8-10 million, 70 minutes; centres > 10 million, 75 minutes).

Time-distances for Australia, New Zealand, Canada, Japan, Korea, Mexico and Turkey were measured with a cartographic work (GIS software). A measure of speed (km/h) was used according to the type of communication, motorway (90 km/h), national road (60 km/h), maritime transport (35 km/h).

Therefore:

(km motorway × 90) + (km national road × 60) + (km maritime transport × 35) = ^{time}/road.

Owing to lack of information, ^{time}/rail has not been taken into consideration for non-European countries (for Japan, it was possible to constitute a precise temporal relation between towns with the help of the train timetable but it was decided to not take rail into account).

For the United States distances were calculated with the help of the *Zip Code Distance Wizard* software. Linear distances were calculated from each county seat (city hall) to the closest major centre (city hall). Time-distances were then calculated taking 75 km/h as the average speed of motorways and national road (about 45 miles per hour). On the map, which is presented at Bureau of Economic Analysis (BEA) economic areas level, an average distance to the major centre was calculated for the counties belonging to an economic area.

The calculations for this variable were done in 2001 (2004 for the United States) but data on population come from the 1998 *UN Demographic Yearbook*.

Country notes

Australia, Poland: The population threshold for cities is 400 000 inhabitants.

France: The population threshold for cities is 250 000 inhabitants, the population threshold for urban agglomeration is 450 000 inhabitants.

Iceland: The population threshold for Cities and urban agglomeration is 100 000 inhabitants.

Ireland: Belfast is included among the selected urban units > 300 000 although it has 297 300 inhabitants.

Italy: The population threshold for urban agglomeration is 300 000 inhabitants, Venice is included among the selected urban units > 300 000 although it has 297 743 inhabitants.

Japan: The population threshold for cities is 800 000 inhabitants.

Korea: The population threshold for cities is 1 million inhabitants.

Luxembourg: the population threshold for cities is 100 000 inhabitants.

Mexico: The population threshold for urban agglomeration is 800 000 inhabitants.

Turkey, United States: The population threshold for cities is 500 000 inhabitants, the population threshold for urban agglomerations is 800 000 inhabitants.

Figures

Figure 23.1: Maximum value of x_c – where x is the time/distance in country c.

Figure 23.2: Average time/distance in regions of the same type (predominantly urban, intermediate, predominantly rural, see "Regional Grids and Classification").

$$\overline{x}_{t_c} = \frac{1}{n}\sum_{i=1}^{n} x_{t_c}$$

where $\overline{x}_{t_c}$ is the average time-distance in regions of type t in country c, x_{t_c} is the time-distance in regions of type t in country c, n is the number of regions of type t in country c.

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Indicator 24. Home ownership

Definition

The person whose name figures in the real property taxation register is considered the owner. In the population register, the address of the owner has to correspond with the address of the dwelling owned. In this case, the dwelling is considered to be occupied by the owner. A dwelling is considered owned either if it is fully owned or being purchased.

The indicator is obtained by dividing the number of dwellings inhabited by the owner by the total number of occupied dwellings.

Data comparability is a problem for all social indicators owing to discrepancies between the statistical bases of different countries. The results must therefore be interpreted with caution.

Sources and year of reference

	Source	Year of reference	Territorial level
Australia	Census, Basic community profiles	2001	3
Austria	Statistik Austria	2001	3
Canada	Census of population	1996	3
Czech Republic	Census	2001	3
Denmark	Statistics Denmark	2001	3
Finland	Statistics Finland	2002	3
France	INSEE Census	1999	3
Greece	Statistics Greece, Census	2001	3
Ireland	Statistics Ireland, Census	2002	3
Italy	General census of population and housing	2001	3
Japan	Housing and land survey	1998	3
Korea	NSO	2000	3
Mexico	INEGI Census	2000	3
Netherlands	Statistics Netherlands, Census	2001	3
New Zealand	Statistics New Zealand, Census	2001	3
Norway	Statistics Norway	2001	3
Poland	Population and Housing Census	2002	3
Portugal	INE Census, definitive results	2001	3
Slovak Republic	Population and Housing Census	2001	3
Spain	INE	2001	3
Switzerland	RF	2000	3
Turkey	Census of Population, SIS	2001	3
United Kingdom	NSO, Census (England and Wales)	2001	2
United States	Census Bureau	2001	3

Country notes

Australia: Homes being purchased under a rent/buy scheme not included in owned accommodations.

Greece, Netherlands, Japan, Turkey: The percentage of occupied dwellings is the ratio of dwellings inhabited by the owner to the total number of dwellings (not the total number of occupied dwellings).

Poland: Data concern permanently occupied dwellings.

Calculation of the indicator

$$HOR_i = \frac{n_i}{N_i} \times 1000$$

where HOR_i is the home ownership rate of region i, n_i is the number of dwellings occupied by the owner in region i, N_i is the total number of occupied dwellings in region i.

Figures

In Figure 24.1 this rate is reported as percentage of the national rate $= \frac{HOR_i}{HOR_c}$

where HOR_c is the home ownership rate of country c.

In Figure 24.2 a rate is calculated for regions of the same type (predominantly urban, intermediate and predominantly rural, see "Regional Grids and Classification") which is reported as a percentage of the national rate $= \frac{HOR_t}{HOR_c}$

where HOR_t is the number of dwellings occupied by the owner in region of type t.

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Indicator 25. Enrolment in tertiary education

Definition

Total enrolment in all types of schools and education institutions, including public, private and all other institutions that provide advanced (tertiary-level) organised educational programmes (ISCED 5-6; see OECD, *Classifying Educational Programmes, ISCED Implementation in OECD Countries*, OECD, 1999) regardless of age.

The indicator is calculated by dividing the number of students enrolled in tertiary education by the total population.

Data comparability is a problem for all social indicators owing to discrepancies between the statistical bases of different countries. The results must therefore be interpreted with caution.

Sources and year of reference

	Source	Year of reference	Territorial level
Australia	ABS Census, Basic Community Profile	2001	2
Austria	Statistik Austria	2001	2
Belgium	Eurostat, New Cronos	2001	2
Canada	Statistics Canada	1999-2000	2
Denmark	Statistics Denmark	2001	2
Finland	Statistics Finland	2000	2
France	Eurostat, New Cronos	2001	2
Germany	Eurostat, New Cronos	2001	2
Greece	Eurostat, New Cronos	1999	2
Hungary	KSH – MRSTAR	2001	2
Iceland	Statistics Iceland Student Register	2002-2003	2
Ireland	Eurostat, New Cronos	2001	2
Italy	Eurostat, New Cronos	2001	2
Japan	School Basic Survey	2000	2
Korea	MEHRD	2000	2
Luxembourg	Eurostat, New Cronos	2001	2
Mexico	INEGI. Base de datos del XII Censo General de Población y Vivienda	2000	2
Netherlands	Eurostat, New Cronos	2001	2
Norway	Statistics Norway, Education statistics	2000	2
Poland	CSO Poland	2000-2001	2
Portugal	INE Portugal	2002-2003	2
Slovak Republic	Ministry of Education (Institute of information and prognosis of Education)	2001-2002	2
Spain	Eurostat, New Cronos	2001	2
Sweden	Eurostat, New Cronos	2001	2
Turkey	MEB	2001-2002	2
United Kingdom	Eurostat, New Cronos	2000	2
United States	Census Bureau	2001	2

Country notes

Canada: Data include all registrations in public, private and federal schools and schools for the visually and hearing impaired, as well as DND schools overseas.

Calculation of the indicator

Rate of enrolment in tertiary education:

$$ETE_i = \frac{e_i}{POP_i} \times 1000$$

where ETE_i stands for enrolment in tertiary education rate in region *i*, e_i is the number of students enrolled in tertiary education (ISCED 5-6) in region *i*, POP_i is the total population in region *i*.

Figures

In Figure 25.1 a variation coefficient of the rate of enrolment in tertiary education is calculated:

$$CV_{ETE_c} = \frac{\sigma_{ETE_c}}{\mu_{ETE_c}}$$

where σ_{ETEc} is the standard deviation of the enrolment rate in country *c*, μ_{ETEc} is the average enrolment rate in country *c*.

In Figure 25.2 a rate is calculated for regions of the same type (predominantly urban, intermediate and predominantly rural, see "Regional Grids and Classification"), which is reported as a percentage of the national rate:

$$\frac{ETE_t}{ETE_c}$$

where ETE_t is the rate of enrolment in tertiary education in regions of type *t*, ETE_c is the rate of enrolment in tertiary education of country *c*.

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Indicator 26. Age-adjusted mortality rates

Definition

Death is the permanent disappearance of all evidence of life at any time after live birth has taken place (postnatal cessation of vital functions without capability of resuscitation) (this definition does not apply to foetal deaths).

For reasons of comparison between regions the rate has been adjusted for age, which is a primary factor of mortality. Regions with higher percentages of older residents will almost always have much higher crude death rates than regions with a younger population. Age-adjusted rates eliminate the age bias in the makeup of the populations being compared, thereby providing a much more reliable rate for comparison purposes.

Data comparability is a problem for all social indicators owing to discrepancies between the statistical bases of different countries. The results must therefore be interpreted with caution.

Source and year of reference

	Source	Year of reference	Territorial level
Australia	ABS, Demographic Summary, Statistical areas	2002	2
Austria	Statistics Austria	2000	2
Belgium	Eurostat, New Cronos	2001	2
Canada	Statistics Canada	2001	2
Czech republic	Eurostat, New Cronos	2000	2
Denmark	Statistics Denmark, Medical birth and death statistics	2001	2
Finland	Statistics Finland	2000	2
France	INSEE	2000	2
Germany	Statistics Germany	2001	2
Greece	Statistics Greece	2001	2
Hungary	Eurostat, New Cronos	2000	2
Iceland	Statistics Iceland	2003	2
Japan	Vital Statistics of Japan	2002	2
Korea	Korea NSO, Population and Housing Census	2000	2
Luxembourg	Annuaires démographiques internationaux	2001	2
Mexico	INEGI, *Estadísticas Vitales*	2001	2
Netherlands	CBS Statline	2003	2
Norway	Statistics Across Borders 2003, Nordic Regional Statistics	2001	2
Poland	Eurostat, New Cronos	2000	2
Portugal	INE, Demographic Statistics	2000	2
Slovak Republic	SO SR, Demographic Statistics	2000	2
Spain	INE, Vital statistics. Volume II.	2001	2
Sweden	Eurostat, New Cronos	1999	2
United Kingdom	NSO, Vital Statistics, People and Society/Population and Migration	1998	2
United Sates	CDC/NCHS, National vital statistical system, Mortality	2001	2

Country notes

Australia: Data presented in this ABS product refer to deaths registered during the year shown. There is usually an interval between occurrence and registration of a death; as a result some deaths are not registered in the year in which they occur. However, most deaths are registered within six months of occurrence. More than 99% of deaths occurring in one year are registered by 30 June of the following year. Death statistics are presented on

the basis of the state or territory of usual residence of the deceased, regardless of where in Australia the death occurred or was registered. Deaths of Australian residents that occurred overseas are not included. Deaths in Australia of persons usually resident overseas are included in these statistics and are classified according to the state or territory in which the death was registered.

Korea: Deaths abroad and of unknown age were excluded.

United Kingdom: As with births, within England and Wales, a death is normally assigned to the area of usual residence of the deceased. If this is outside England and Wales, the death is included in an aggregate figure for England and Wales as a whole, but excluded from the figures for any individual region or area. There were 1 441 deaths of non-residents in 1998.

Calculation of the indicator

Variables needed: Number of deaths, average population, age-specific mortality rates:

$$SMR_i = \frac{\sum_{i=1}^{n} d_{i_g}}{\sum_{i=1}^{n} M_{c_g} \times pop_{i_g}}$$

where SMR_i is the standardised mortality rate in region i, d_{i_g} is the observed number of deaths in region *i* for age group *g*, M_{c_g} is the age-specific mortality rate in the standard population of country *c* for persons in age group *g*, pop_{i_q} is the average population in region i in age group *g*.

where SMR_i is the standardised mortality rate in region i, d_{i_g} is the observed number of deaths in region i for age group *g*, pop_{i_g} is the average population in region *i* in age group *g*, and M_{c_g} is the age-specific mortality rate in the standard population of country *c* for persons in age group *g*. Age-specific mortality rates are defined as d_{c_g}/pop_c, where d_{c_g} are the number of deaths in country *c* in age group *g*, and pop_{c_g} is the population of country *c* in age group *g*.

Figures

Figure 26.1: See Calculation of the indicator.

Figure 26.2: A coefficient of variation of the age-adjusted mortality rate is calculated:

$$CV_{SMR_c} = \frac{\sigma_{SMR_c}}{\mu_{SMR_c}}$$

where σ_{SMR_c} is the standard deviation of the age-adjusted mortality rate in country c, μ_{SMR_c} is the average age-adjusted mortality rate in country *c*.

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Indicator 27. Health resources: number of medical practitioners

Definition

Data for physicians are comprehensive of physicians in activity. This category includes physicians with a medical practice and those without one (working in industry administration or research) (Eurostat, *European Regional Statistics, Reference Guide*, 2003).

The indicator is obtained by dividing the number of physicians in activity by the total population.

Data comparability is a problem for all social indicators owing to discrepancies between the statistical bases of different countries. The results must therefore be interpreted with caution.

Sources and year of reference

	Source	Year of reference	Territorial Level
Australia	Australian Medical Publishing	2004	2
Austria	Eurostat, New Cronos	2001	2
Belgium	Eurostat, New Cronos	2000	2
Canada	Statistics Canada (National Occupational Classification for Statistics)	2001	2
Czech Republic	Eurostat, New Cronos	2001	2
Finland	Eurostat, New Cronos (data only available for two regions)	2001	2
France	Eurostat, New Cronos	2001	2
Germany	Eurostat, New Cronos	2001	2
Greece	Eurostat, New Cronos	2001	2
Hungary	Eurostat, New Cronos	2001	2
Iceland	Directorate of Health, Register of licensed physicians	2002	2
Italy	Eurostat, New Cronos	2001	2
Japan	Survey of physicians , dentists and pharmacists	2000	2
Korea	Ministry of Health and Welfare, Health Resources Division.	2001	2
Luxembourg	Eurostat, New Cronos	2000	2
Mexico	INEGI Base de datos del XII Censo General de Población y Vivienda	2000	2
Netherlands	Eurostat, New Cronos	2001	2
New Zealand	New Zealand Health Information Service	2002	2
Norway	The Norwegian Medical Association	2002	2
Poland	Eurostat, New Cronos	2001	2
Portugal	INE Portugal	2002	2
Slovak Republic	Eurostat, New Cronos	2001	2
Spain	Eurostat, New Cronos	2000	2
Sweden	Eurostat, New Cronos	2000	2
Switzerland	OFS/EPFL-CHOROS	2000	2
Turkey	MoH	2001	2
United Kingdom	Eurostat, New Cronos	2000	2
United Sates	American Medical Association (AMA).	2001	2

Country notes

Austria, Belgium, Germany, Greece, France, Luxembourg, Sweden: Includes only physicians in activity with a medical practice (Eurostat, *European Regional Statistics, Reference Guide*, 2003).

Italy, Finland, Netherlands, Portugal and Spain: Includes physicians "entitled to practise". This concept covers certain physicians in activity and some who are not. A physician may be entitled to practice but have not a medical practice (work in industry, research, etc.) or have no activity (unemployed) (Eurostat, *European Regional Statistics, Reference Guide*, 2003).

Poland: Data concern practising physicians only.

Korea: Number of doctors active in hospitals, clinics, midwifery clinics, health centres, sub-health centres and primary health-care posts.

United Kingdom: Includes physicians in activity with a medical practice working in the public sector only.

United States: Include active non-federal physicians and doctors of medicine in patient care.

Calculation of the indicator

$$PHR_i = \frac{ph_i}{POP_i} \times 1000$$

where PHR_i is the rate of active physicians per 1 000 population in region *i*, ph_i is the number of physicians in region *i*, POP_i is the total population in region *i*.

Figures

In Figure 27.1 a variation coefficient of the rate of doctors per 1 000 population is calculated:

$$CV_{PHR_c} = \frac{\sigma_{PHR_c}}{\mu_{PHR_c}}$$

where σ_{PHR_c} is the standard deviation of the rate of doctors for 1 000 inhabitants in country *c*, μ_{PHR_c} is the average rate of doctors per 1 000 inhabitants in country *c*.

In Figure 27.2 a rate is calculated for regions of the same type (predominantly urban, intermediate and predominantly rural, see "Regional Grids and Classification"), which is reported as a percentage of the national rate:

$$\frac{PHR_t}{PHR_c}$$

where PHR_t is the rate of physicians per 1 000 population in regions of type *t*, PHR_c is the rate of physicians per 1 000 population of country *c*.

Indicator 28. Reported criminal offences against property

Definition

Offences against property include: forgery, arson, burglary, theft, fraud, robbery, malicious damage to property.

The indicator is calculated by dividing the number of offences against property by the total population.

Data comparability is a problem for all social indicators owing to discrepancies between the statistical bases of different countries. The results must therefore be interpreted with caution.

Sources and year of reference

	Source	Year of reference	Territorial level
Australia	ABS, Recorded Crime – Victims.	2003	2
Austria	Ministry of Interior	2003	2
Canada	Statistics Canada, CANSIM, Table 252-0013.	2003	2
Denmark	The Central Register of Reported Criminal Offences	2001	2
Finland	Statistics Finland	2000	2
France	Ministère de l'intérieur – Direction générale de la Police nationale – Direction centrale de la Police judiciaire	2002	2
Greece	Statistics Greece	2001	2
Hungary	KSH-TSTAR	2002	2
Iceland	The National Commissioner of the Icelandic Police	2002	2
Ireland	Garda Síochána anuual report	2001	2
Italy	Forze di Polizia	2001	2
Japan			2
Korea	The Supreme Public Prosecutor's Office, Analytical Report on Crimes.	2001	2
Mexico	INEGI. Base de datos. Juzgados de Primera instancia	2000	2
Netherlands	CBS, policestatistics	2003	2
New Zealand	Police Statistics	2001	2
Norway	Statistics Norway, Crime statistics	2002	2
Poland	Statistical Yearbook of the Regions, (data of the General Police Headquarters)	2003	2
Portugal	Justice statistics	2001	2
Slovak Republic	Ministry of Interior of the Slovak Republic	2000	2
Spain	Estadística Penal Común. Audiencias Provinciales y Juzgado de lo Penal	2001	2
Sweden	National Council for Crime Prevention	2001	2
Switzerland	Reported offences: Police statistics from file je-f-19(1).3.1.1-crimes	2000	2
Turkey	General Directorate of Security	2003	2
United Kingdom	NSO	2000-01	2
United Sates	FBI	2001	2

Country notes

Australia: Includes only robbery (armed and unarmed) and black extortion (victims are individual persons or organisations).

Canada: Includes breaking and entering, motor vehicle theft, theft over CAD 5 000, theft CAD 5 000 and under, possession of stolen goods, fraud.

Denmark: Includes forgery, arson, burglary theft, fraud, robbery, theft of registered vehicles, theft of motorcycles, mopeds, theft of bicycles, malicious damage to property. A violation of the law committed by more than one person is registered as one offence and if

a violation of the law includes more than a single victim it will also be registered as one offence. If more than one person has reported the violation of the law to the police, more than one reported criminal offence can in exceptional cases be registered.

Korea: Includes only the number of crimes in big cities of population ≥ 150 000 persons.

Mexico: sentenced offences registered in federal and local law courts of first instance by state where offences occurred.

Norway: Includes offences of narcotics, environment offences, work environment offences, traffic offences, and other offences.

Sweden: Includes theft, robbery, other offences of stealing, fraud and other acts of dishonesty, crimes inflicting damage, crimes of falsification.

Switzerland: Statistics on reported offences are only available for the whole country. At the level of cantons, data are available on the number of condemnations for each type of crime. Total offences for Switzerland are distributed proportionally by cantons and great regions.

United Kingdom: Data available for England and Wales only.

Calculation of the indicator

Number of reported offences against property per 1 000 population:

$$OPR_i = \frac{opr_i}{POP_i} \times 1000$$

where OPR_i is the number of reported offences against property per 1 000 population in region *i*, opr_i is the number of reported offences against property in region *i*, POP_i is the total population in region *i*.

Figures

In Figure 28.1 a variation coefficient of the number of reported offences against property per 1 000 population is calculated:

$$CV_{OPR_c} = \frac{\sigma_{OPR_c}}{\mu_{OPR_c}}$$

where σ_{OPR_c} is the standard deviation of the number of reported offences against property per 1 000 population in country *c*, μ_{OPR_c} is the average number of reported offences against property per 1 000 population in country *c*.

In Figure 28.2 the number of reported offences against property per 1 000 population is calculated for regions of the same type (predominantly urban, intermediate and predominantly rural, see "Regional Grids and Classification"), which is reported as percentage of the national rate:

$$\frac{OPR_t}{OPR_c}$$

where OPR_t is the number of reported offences against property per 1 000 population in regions of type *t*, OPR_c is the number of reported offences against property per 1 000 population in country *c*.

Indicator 29. Reported criminal offences against persons

Definition

Violence against persons includes homicide, attempted murder, sexual offences and assault. Assault includes intentional application of force without consent, attempt or threat to apply force to another person, accosting or impeding another person, assault with a weapon, threats to use a weapon (or an imitation), assault causing bodily harm, which wounds, maims, disfigures or endangers the life of complainant. It also includes unlawfully causing bodily harm, discharging firearms with intent, abductions, assaults against police officers, assaults against other peace or public officers, dangerous operation of motor vehicle, boat, vessel or aircraft, dangerous operation of motor vehicle, boat, vessel or aircraft causing bodily harm or death, driving motor vehicle while prohibited and failure to stop or remain.

Data comparability is a problem for all social indicators owing to discrepancies between the statistical bases of different countries. The results must therefore be interpreted with caution.

Sources and year of reference

	Source	Year of reference	Territorial level
Australia	ABS, Recorded Crime – Victims.	2003	2
Austria	Ministry of Interior	2003	2
Canada	Statistics Canada, CANSIM, Table 252-0013.	2003	2
Denmark	The Central Register of Reported Criminal Offences	2001	2
Finland	Statistics Finland	2000	2
France	Ministère de l'intérieur – Direction générale de la Police nationale – Direction centrale de la Police judiciaire	2002	2
Greece	Statistics Greece	2001	2
Hungary	KSH-TSTAR	2002	2
Iceland	The National Commissioner of the Icelandic Police	2002	2
Ireland	Garda Síochána anuual report	2001	2
Italy	Forze di Polizia	2001	2
Japan			2
Korea	The Supreme Public Prosecutor's Office, Analytical Report on Crimes.	2001	2
Mexico	INEGI. Base de datos. Juzgados de Primera instancia	2000	2
Netherlands	CBS, policestatistics	2003	2
New Zealand	Police Statistics	2001	2
Norway	Statistics Norway, Crime statistics	2002	2
Poland	Statistical Yearbook of the Regions, (data of the General Police Headquarters)	2003	2
Portugal	Justice statistics	2001	2
Slovak Republic	Ministry of Interior of the Slovak Republic	2000	2
Spain	Estadística Penal Común. Audiencias Provinciales y Juzgado de lo Penal	2001	2
Sweden	National Council for Crime Prevention	2001	2
Switzerland	Reported offences: Police statistics from file je-f-19(1).3.1.1-crimes	2000	2
Turkey	General Directorate of Security	2003	2
United Kingdom	NSO	2000-01	2
United Sates	FBI	2001	2
Australia	ABS, Recorded Crime – Victims.	2003	2
Austria	Ministry of Interior	2003	2
Canada	Statistics Canada, CANSIM, Table 252-0013.	2003	2
Denmark	The Central Register of Reported Criminal Offences	2001	2

Country notes

Australia: Includes murder, attempted murder, manslaughter, assault, child abduction, driving causing death (victims are individual persons).

Denmark: A violation of the law committed by more than one person is registered as one offence and if a violation of the law includes more than a single victim it will also be registered as one offence. If more than one person has reported the violation of the law to the police, more than one reported criminal offence can in exceptional cases be registered.

Korea: Includes only the number of crimes in big cities of population of ≥ 150 000 persons.

Mexico: sentenced offences registered in federal and local law courts of first instance by state where offences occurred.

Poland: Excluding crimes against freedom, freedom of conscience and religion, sexual freedom and morals as well as against the family and custody.

Sweden: Includes crimes against life and health, violence against public servants.

Switzerland: Statistics on reported offences are only available for the whole country. On the level of cantons, data are available on the number of condemnations for each type of crime. Total offences for Switzerland are distributed proportionally by cantons and "grandes régions".

United Kingdom: Data available for England and Wales only.

Calculation of the indicator

Number of reported offences against persons per 1 000 population:

$$OPE_i = \frac{ope_i}{POP_i} \times 1000$$

where OPE_i is the number of reported offences against persons per 1 000 population in region *i*, ope_i is the number of reported offences against persons in region *i*, POP_i is the total population in region *i*.

Figures

In Figure 29.1 a variation coefficient of the number of reported offences against the person per 1 000 population is calculated:

$$CV_{OPE_c} = \frac{\sigma_{OPE_c}}{\mu_{OPE_c}}$$

where σ_{OPE_c} is the standard deviation of the number of reported offences against persons per 1 000 population in country *c*, μ_{OPE_c} is the average number of reported offences against persons per 1 000 population in country *c*.

In Figure 29.2 the number of reported offences against persons per 1 000 population is calculated for regions of the same type (predominantly urban, intermediate and predominantly rural, see "Regional Grids and Classification") which is reported as percentage of the national value:

$$\frac{OPE_t}{OPE_c}$$

where OPE_t is the number of reported offences against persons per 1 000 population in regions of type *t*, OPE_c is the number of reported offences against persons per 1 000 population in country *c*.

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Indicator 30. Road safety: fatal traffic accidents

Definition

Any accident involving at least one road vehicle in motion on a public or private road resulting in at least one person killed. Included are collisions between road vehicles, between road vehicles and pedestrians, between road vehicles and animals or fixed obstacles and of one road vehicle alone.

The indicator is calculated by dividing the number of fatal traffic accidents by the total population.

Data comparability is a problem for all social indicators owing to discrepancies between the statistical bases of different countries. The results must therefore be interpreted with caution.

Sources and year of reference

	Source	Year of reference	Territorial Level
Australia	Australian Transport Safety Bureau, 'Road Fatalities Australia'.	2001	2
Austria	Eurostat, New Cronos	2000	2
Belgium	Eurostat, New Cronos	1999	2
Canada	Statistics Canada (International Classification for Disease)	2002	2
Czech Republic	Eurostat, New Cronos	2001	2
Denmark	Police report on road traffic accidents with casualties	2003	2
Finland	Eurostat, New Cronos	2000	2
France	Eurostat, New Cronos	2000	2
Germany	Eurostat, New Cronos	2000	2
Greece	Eurostat, New Cronos	1999	2
Hungary	Eurostat, New Cronos	2001	2
Ireland	National Road Authority, road accident information recorded by An garda Síochána	2001	2
Italy	Eurostat, New Cronos	2000	2
Japan	National Policy Agency	2000	2
Luxembourg	Eurostat, New Cronos	2000	2
Mexico	Accidentes de Tránsito Terrestre en Zonas Urbanas y Suburbanas	2001	2
Netherlands	Eurostat, New Cronos	2000	2
New Zealand	Land and transport safety authority	2001	2
Norway	Statistics Norway	2003	2
Poland	CSO Poland; 2002 Statistical Yearbook of the Regions	2002	2
Portugal	INE – Serviço de Estatísticas dos Serviços, Inquerito a Direcção Geral de viação.	2003	2
Slovak Republic	Eurostat, New Cronos	2001	2
Spain	Eurostat, New Cronos	2000	2
Sweden	Eurostat, New Cronos	2000	2
Switzerland	OFS/EPFL-Chôros	2000	2
Turkey	n.a.	2002	2
United Kingdom	Eurostat, New Cronos	2000	2
United Sates	Federal Highway Administration	2000	2

Country notes

Australia, Canada, Denmark, Ireland, Japan, New Zealand, Norway, Portugal: Figures refer to persons killed in traffic accidents (not to the number of traffic accidents with fatalities).

Canada: Traffic accidents are defined as code range E810-E819 in the International Classification of Disease (ICD) 9th revision.

Denmark: The statistics only include fatalities reported by the police.

Finland: Data available only for two regions (Ita-Suomi, Aland).

Japan: People who die within 24 hours of the accident.

Mexico: All persons who die at the time of the accident or within a period of 30 days as a consequence of the accident.

Calculation of the indicator

Number of fatal traffic accidents per 100 000 population:

$$FTA_i = \frac{fta_i}{POP_i} \times 100000$$

where FTA_i is the number of fatal traffic accidents per 100 000 population in region *i*, fta_i is the number of number of traffic accidents in region *i*, $POP_i$is the total population in region *i*.

Figures

In Figure 30.1 the number of fatal traffic accidents per 100 000 population is calculated for regions of the same type (predominantly urban, intermediate and predominantly rural, see "Regional Grids and Classification") which is reported as percentage of the national rate:

$$\frac{FTA_t}{FTA_c}$$

where FTA_t is the number of fatal traffic accidents per 100 000 population in regions of type *t*, FTA_c is the number of fatal traffic accidents per 100 000 population in country *c*.

In Figure 30.2 the range of variation in the number of fatal traffic accidents per 100 000 population is calculated for each country:

$$Range_{FTA_c} = FTA_{max_c} - FTA_{min_c}$$

where FTA_{max_c} is the region with the highest number of fatal traffic accidents per 100 000 population in country *c*, FTA_{min_c} is the region with the lowest number of fatal traffic accidents per 100 000 population in country *c*.

Indicator 31. Environment: stock of private vehicles

Definition

Road motor vehicle, other than a motorcycle, intended for the carriage of passengers and designed to seat no more than nine persons including the driver. The term passenger car therefore covers micro-cars (do not need a permit to be driven), taxis and hired passenger cars, provided that they have fewer than ten seats. This category may also include pick-ups.

Data comparability is a problem for all social indicators owing to discrepancies between the statistical bases of different countries. The results must therefore be interpreted with caution.

Sources and year of reference

	Source	Year of reference	Territorial Level
Australia	Motor vehicle census	2001	2
Austria	Eurostat, New Cronos	2001	2
Belgium	Eurostat, New Cronos	1999	2
Canada	Statistics Canada (road motor vehicle registration – annual survey)	2003	2
Czech Republic	Eurostat, New Cronos	2001	2
Finland	Eurostat, New Cronos	2001	2
France	Eurostat, New Cronos	2001	2
Germany	Eurostat, New Cronos	2001	2
Hungary	Eurostat, New Cronos	2001	2
Ireland	Eurostat, New Cronos	2001	2
Italy	Eurostat, New Cronos	2001	2
Japan	Ministry of Land , Infrastructure and Transport	2000	2
Luxembourg	Eurostat, New Cronos	2001	2
Mexico	Estadística de Vehículos de Motor Registrados en Circulación (VMRC)	2001	2
Netherlands	Eurostat, New Cronos	2001	2
New Zealand	Transport Registry Centre, Land and Transport Safety Authority	2003	2
Norway	Statistics Norway	2002	2
Poland	CSO Poland; 2002 Statistical Yearbook of the Regions	2002	2
Slovak Republic	Eurostat, New Cronos	2001	2
Spain	Eurostat, New Cronos	2001	2
Sweden	Eurostat, New Cronos	2001	2
Switzerland	OFS	2000	2
Turkey	n.a.	2002	2
United Kingdom	Eurostat, New Cronos	2001	2
United Sates	US Census Bureau	2001	2

Country notes

Australia: Data refer to all registered motor vehicles for the carriage of passengers (sedans and station wagons).

Finland: Data available for two regions only (Ita-Suomi, Aland).

Mexico: Includes all vehicles designed to seat no more than ten persons including the driver.

Calculation of the indicator

Stock of private vehicles per 100 population:

$$SPV_i = \frac{spv_i}{POP_i} \times 100$$

where SPV_i is the stock of private vehicles per 100 population in region *i*, spv_i is the stock of private vehicles in region *i*, POP_i is the total population in region *i*.

Figures

Figure 31.1 shows the country average of the stock of private vehicles per 100 population.

Figure 31.2 shows the stock of private vehicles per 100 population for regions of the same type (predominantly urban, intermediate and predominantly rural, see "Regional Grids and Classification") reported as a percentage of the national rate:

$$\frac{SPV_t}{SPV_c}$$

where SPV_t is the stock of private vehicles per 100 population in regions of type *t*, SPV_c is the stock of private vehicles per 100 population in country *c*.

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OECD Regions at a Glance

Regions are high on the policy agenda of OECD countries. And it is no wonder. Just 10% of regions accounted for more than half of total employment creation in most OECD countries between 1996 and 2001. This means that national growth tends to be driven by the dynamism of a small number of regions.

Policy makers need sound statistical information on the source of regional competitiveness, but such information is not always available. Sub-national data are limited and regional indicators are difficult to compare between countries. *OECD Regions at a Glance* aims to fill this gap by analysing and comparing major territorial patterns and regional trends across OECD countries. It assesses the impact of regions on national growth. It identifies unused resources that can be mobilised to improve regional competitiveness. And it tackles more intangible factors that can make the difference: it shows how regions compete in terms of well-being (access to higher education, health services, safety, etc.).

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