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OECD Regions at a Glance

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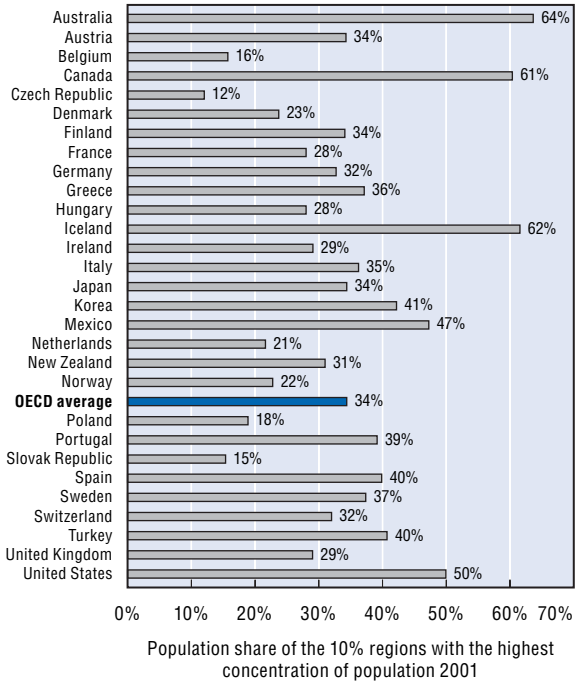
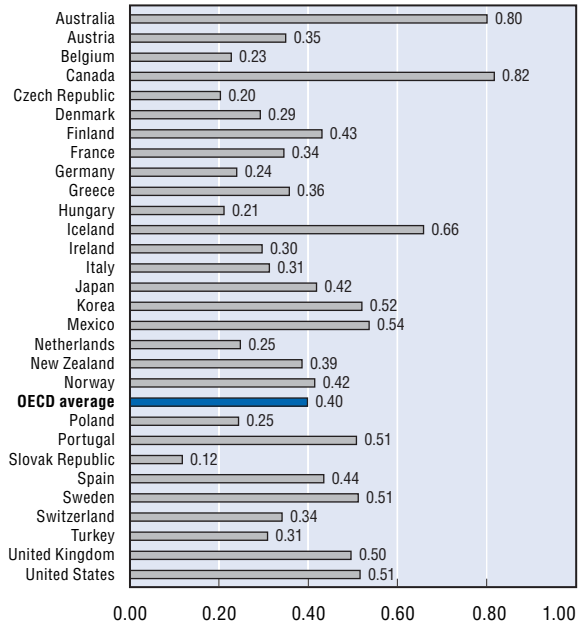
1.1. **In 15 countries in 2001 more than one-third of the national population was concentrated in only 10% of regions**



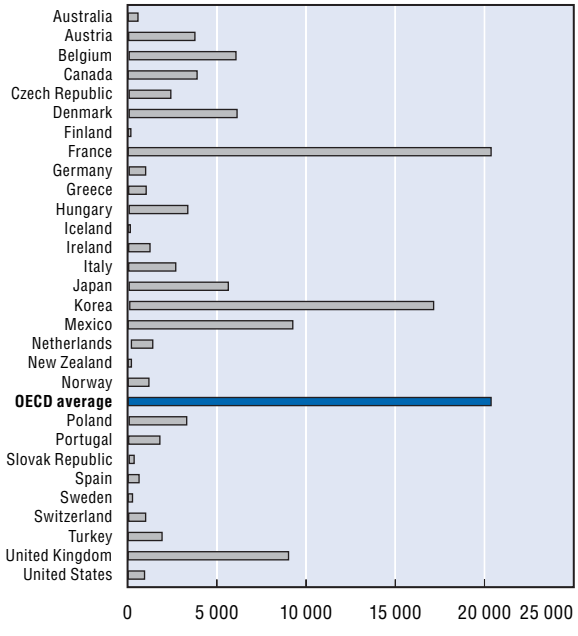
Population share of the 10% regions with the highest concentration of population 2001

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



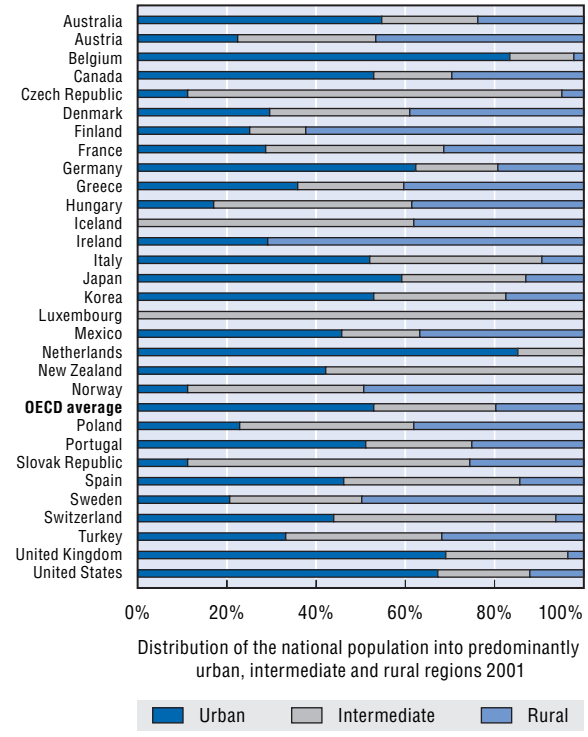
Index of geographic concentration of population 2001

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**

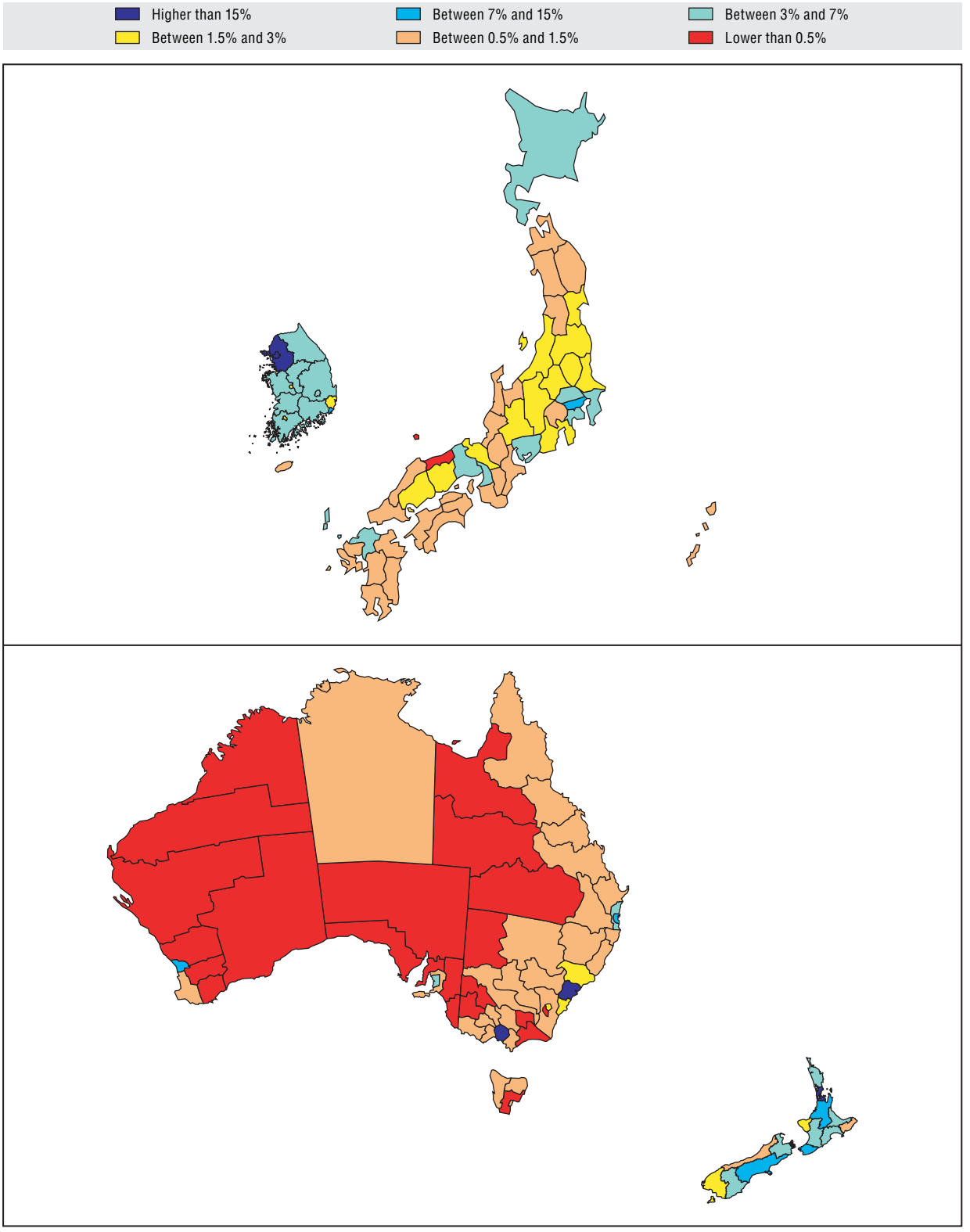


Distribution of the national population into predominantly urban, intermediate and rural regions 2001

Statlink: *http://dx.doi.org/10.1787/480387245238*

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

2001



Source: OECD Territorial Database.

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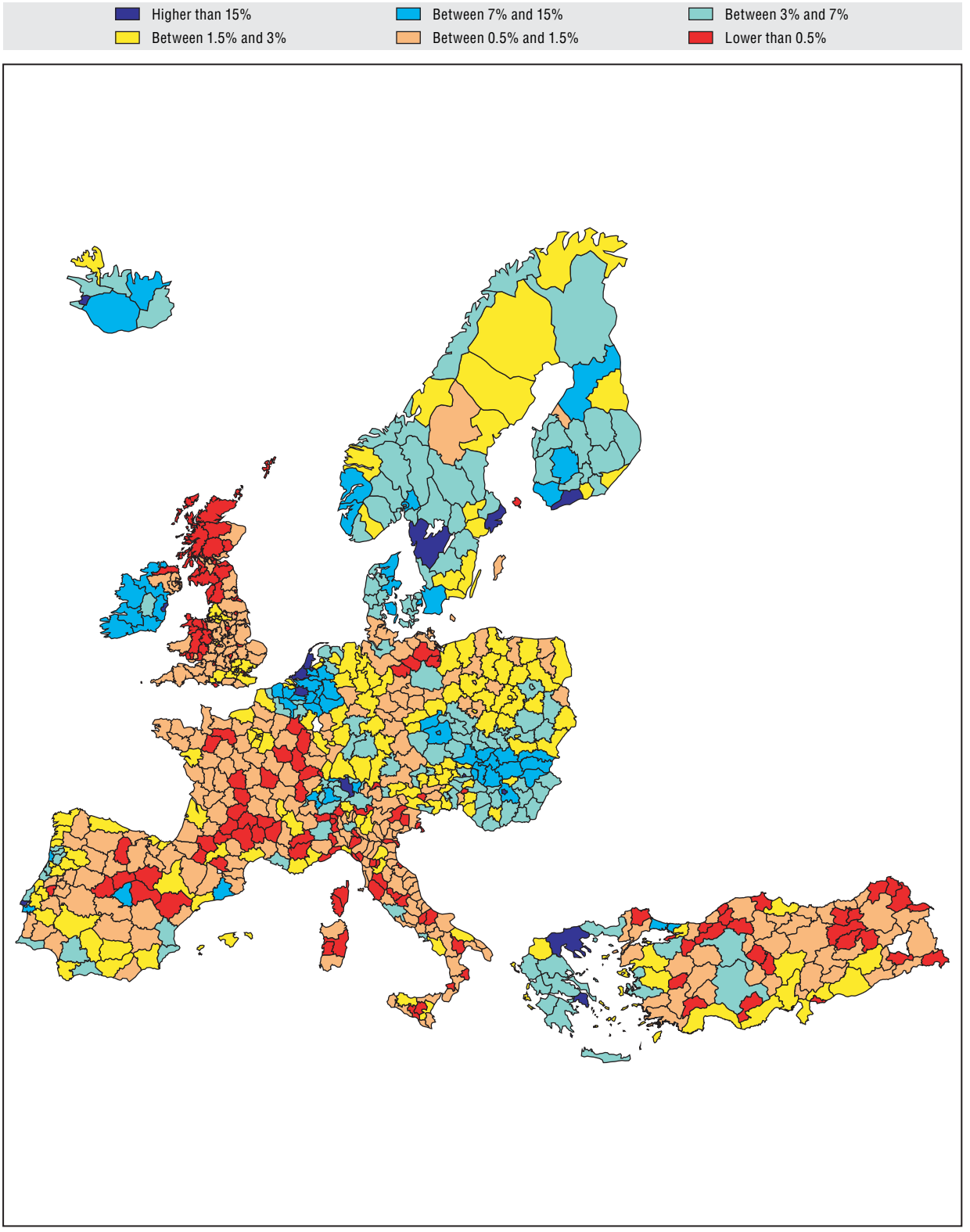
1.6. **Regional share of national population: Europe TL3**

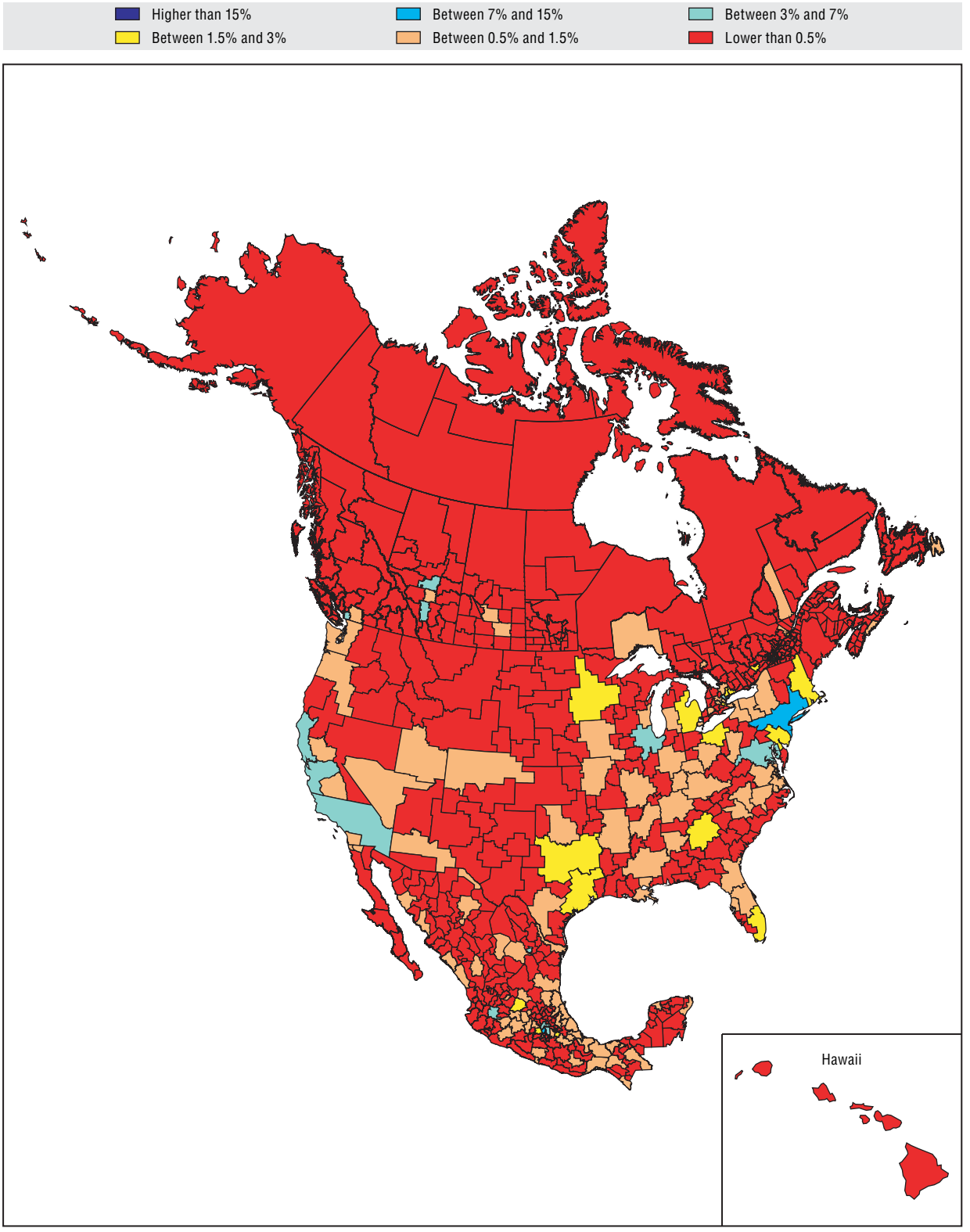
2001



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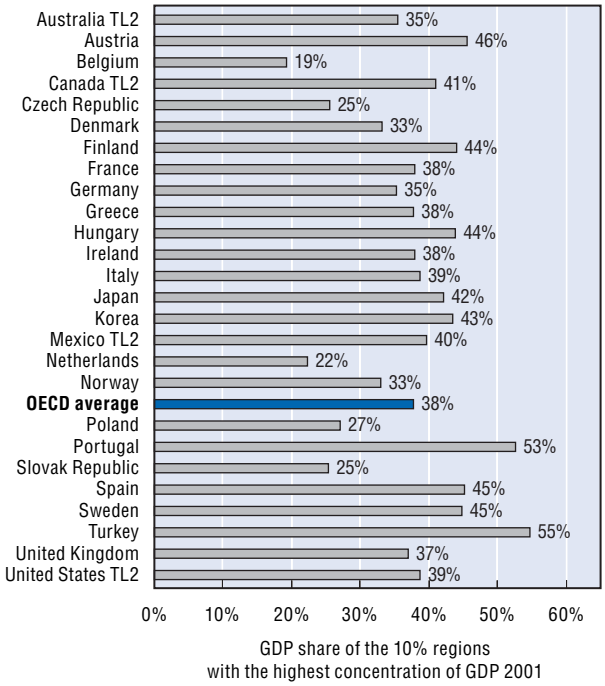
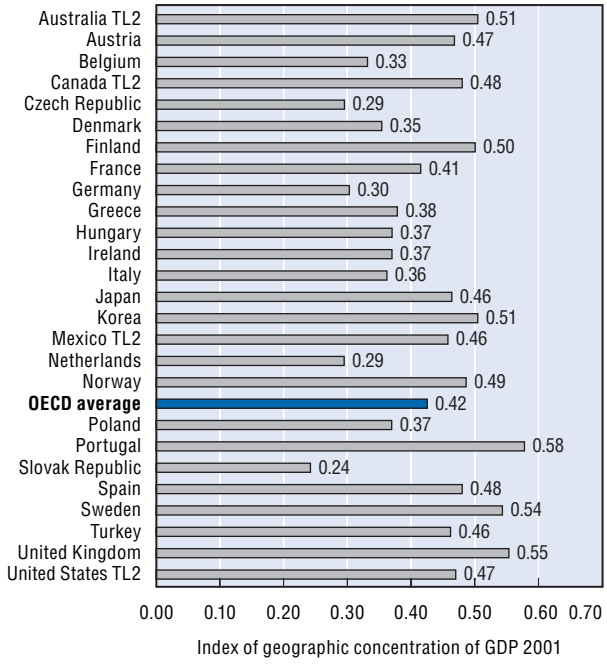
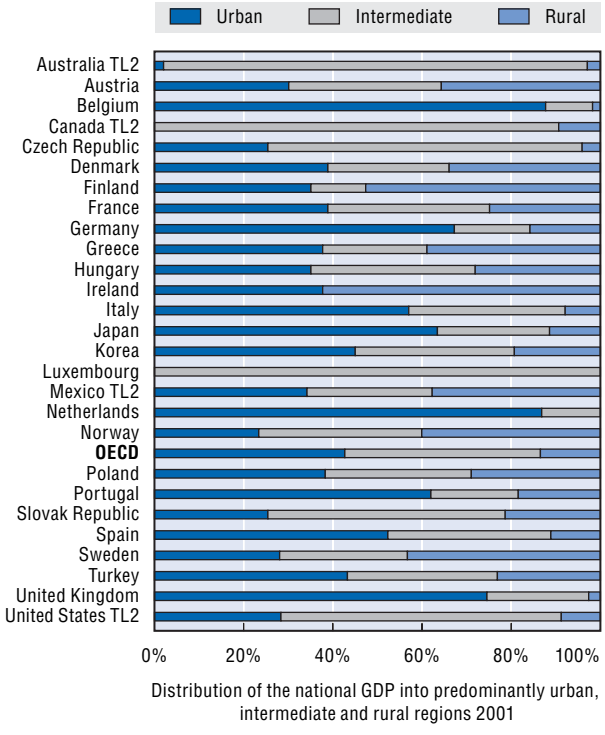
2.1. In 11 countries more than 40% of national GDP is concentrated in only 10% of regions



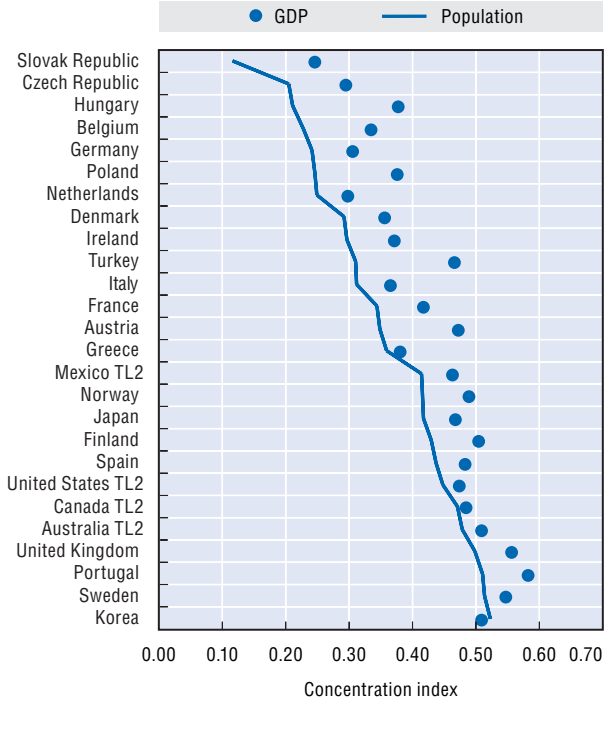
2.2. In 2001 Portugal, the United Kingdom and Sweden displayed the highest geographic concentration of GDP



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



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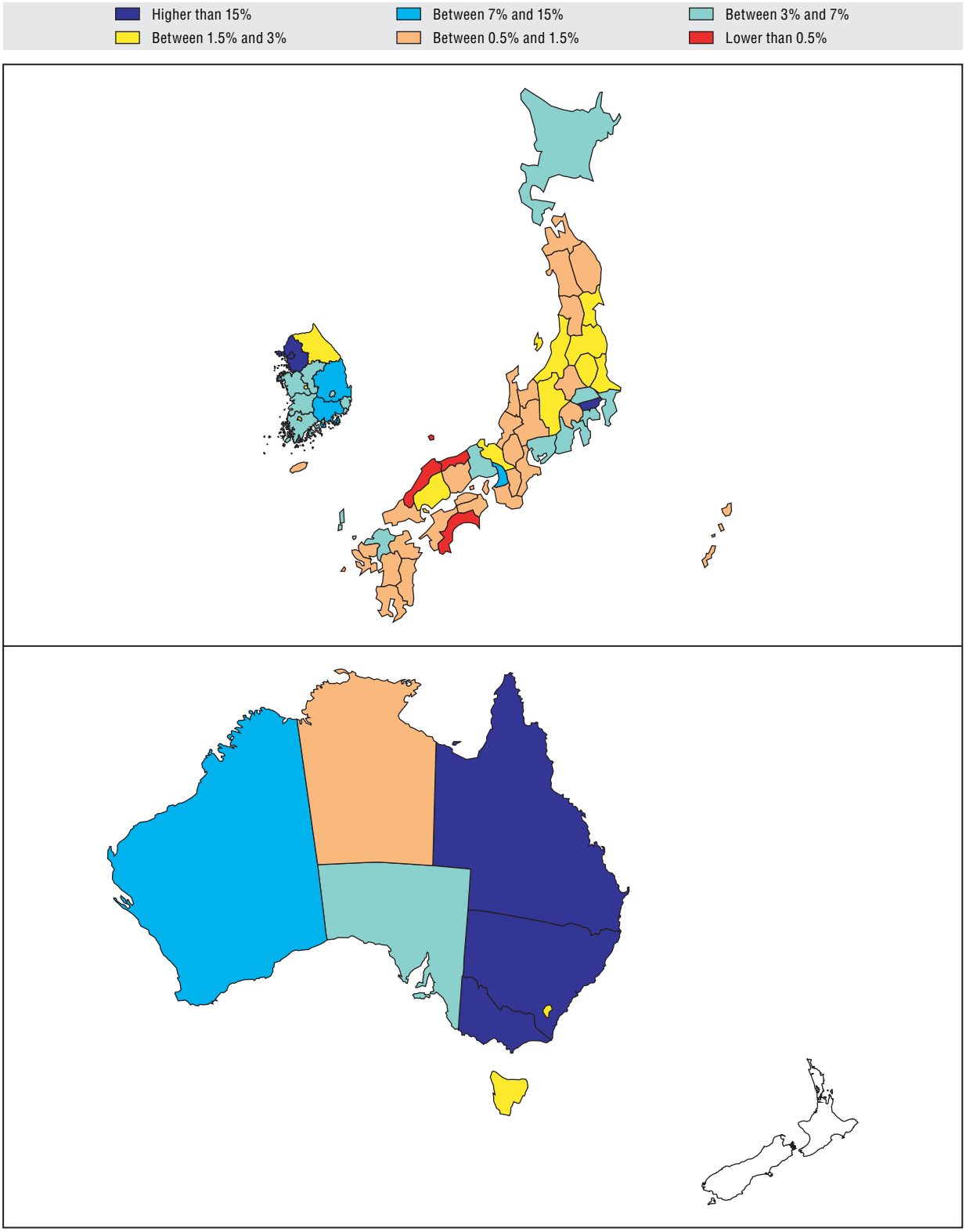
2.5. **Regional share of national GDP: Asia TL3 and Oceania TL2**

2001



Source: OECD Territorial Database.

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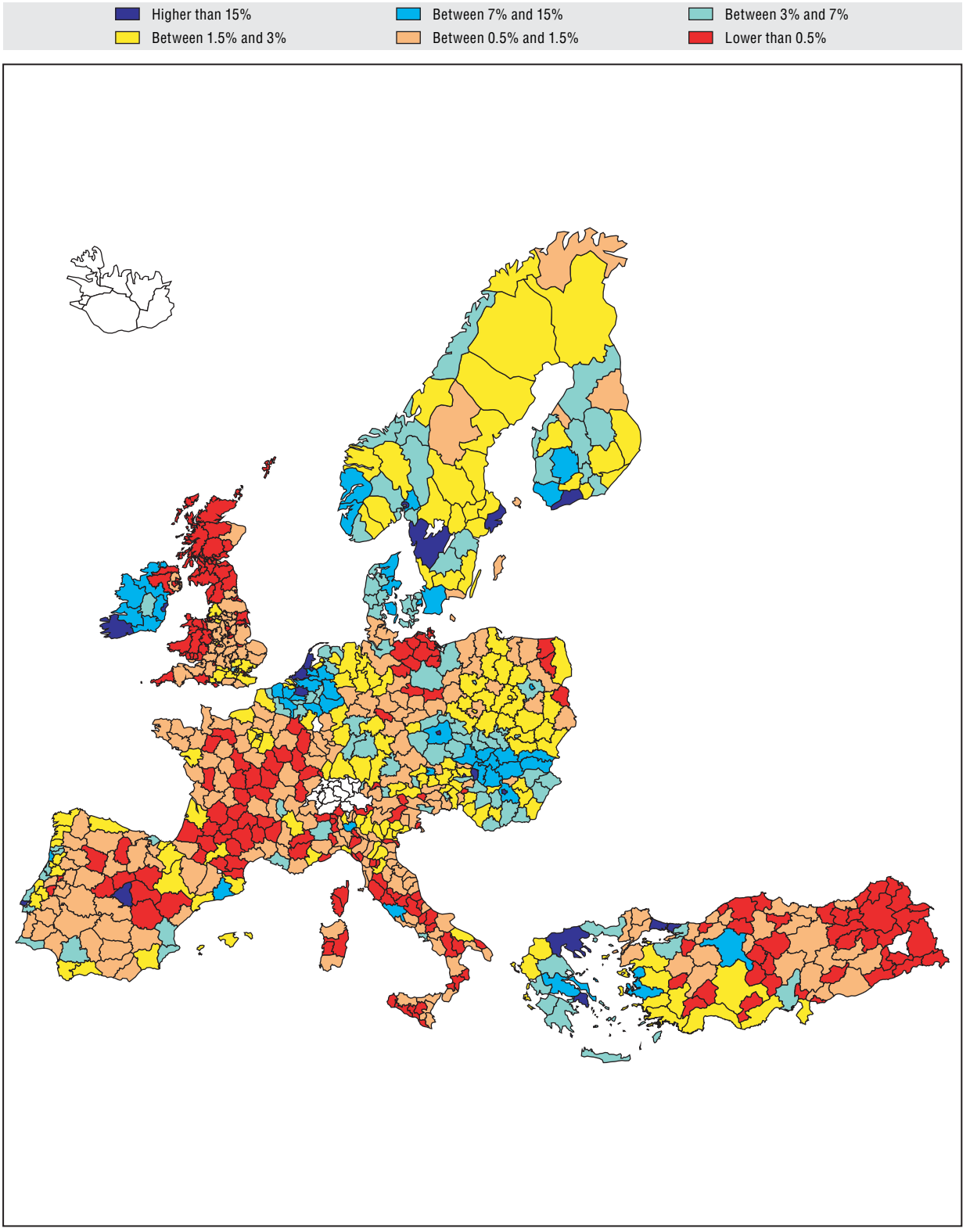
2.6. **Regional share of national GDP: Europe TL3**

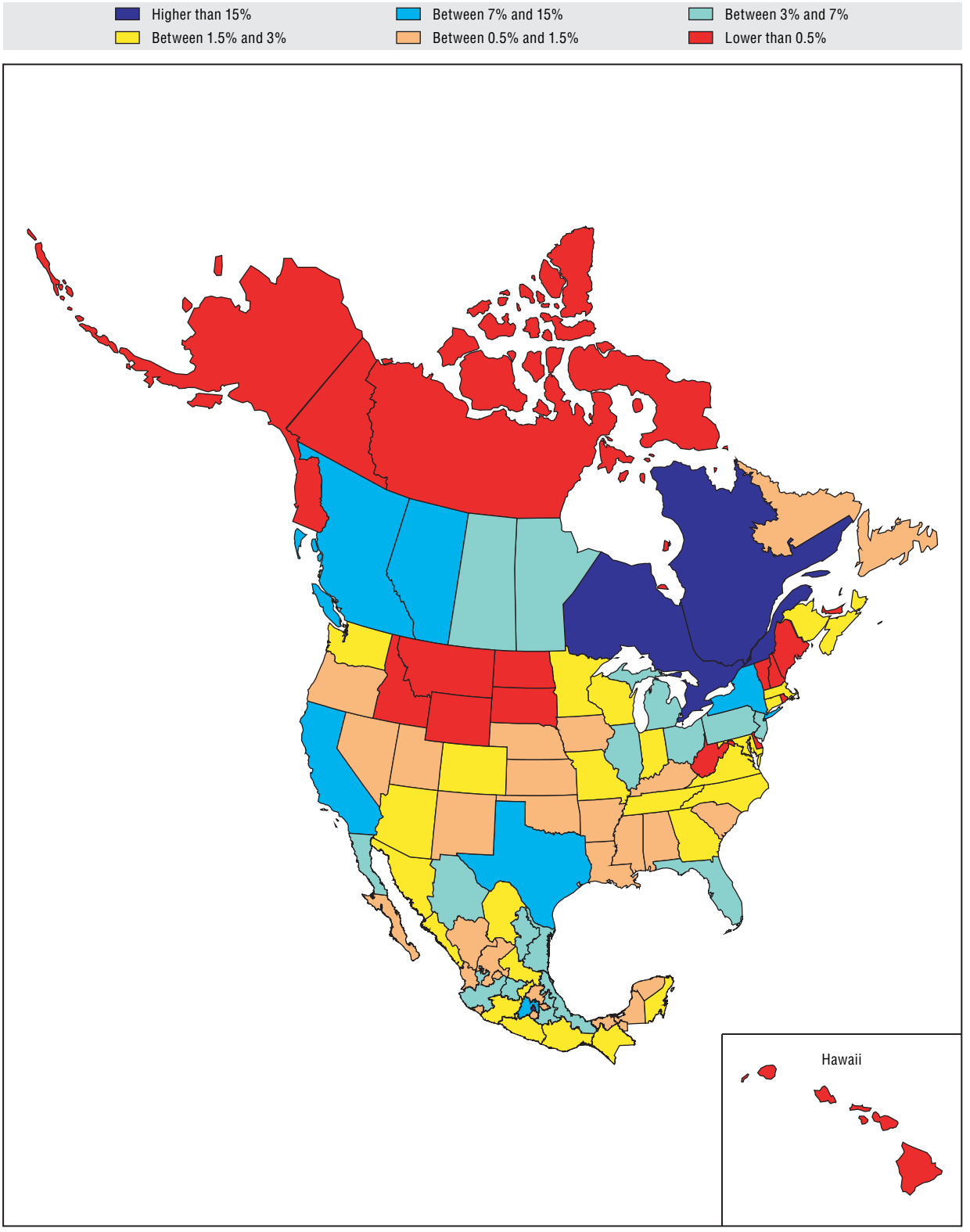
2001



Source: OECD Territorial Database.

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

2001



Source: OECD Territorial Database.

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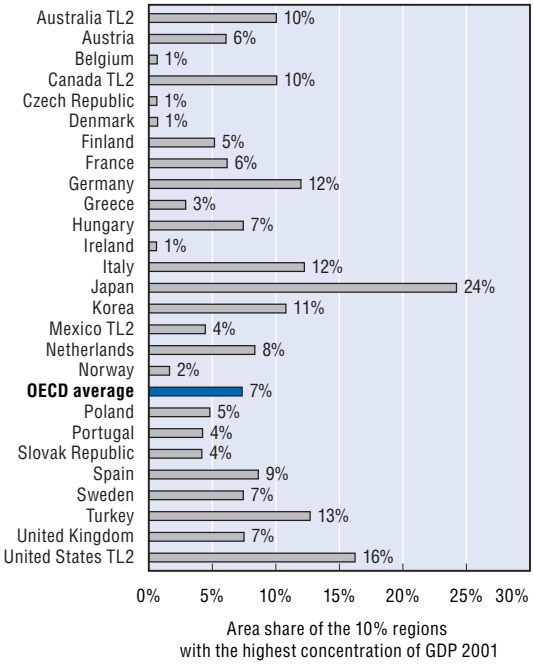
GDP concentration and agglomeration economies

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.

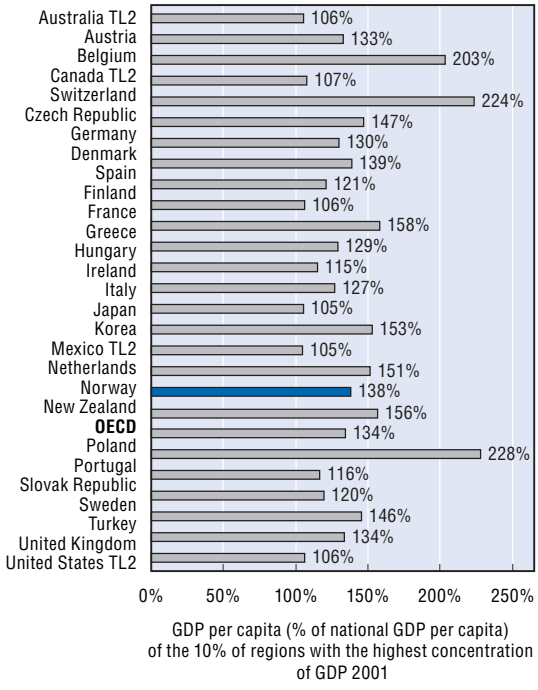
Urban areas and large towns in intermediate regions are prime zones or poles of development. The clustering of businesses and people in a small area improves the efficiency of the local economy and leads to the production of more output per capita. Figure 2.9 reveals that in every country the 10% of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

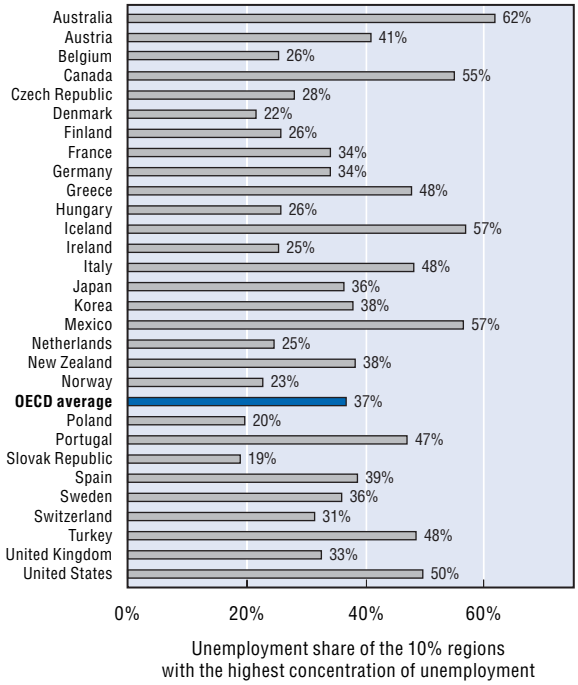
These different geographic patterns – core vs. periphery and rural vs. urban – suggest that the characteristics of unemployment are quite different from one country to another. Total unemployment is commonly regarded as a comparable statistics at the national level but it hides, in fact, a variety of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

Definition

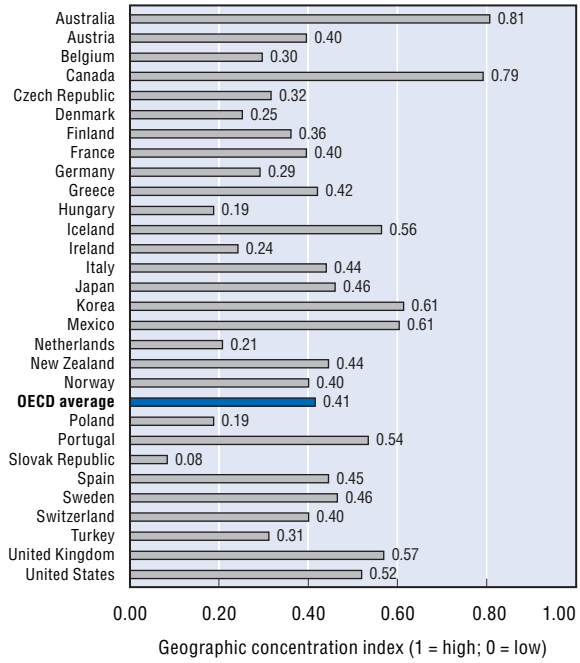
Unemployed persons comprise persons who were (all three conditions must be fulfilled simultaneously):

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).

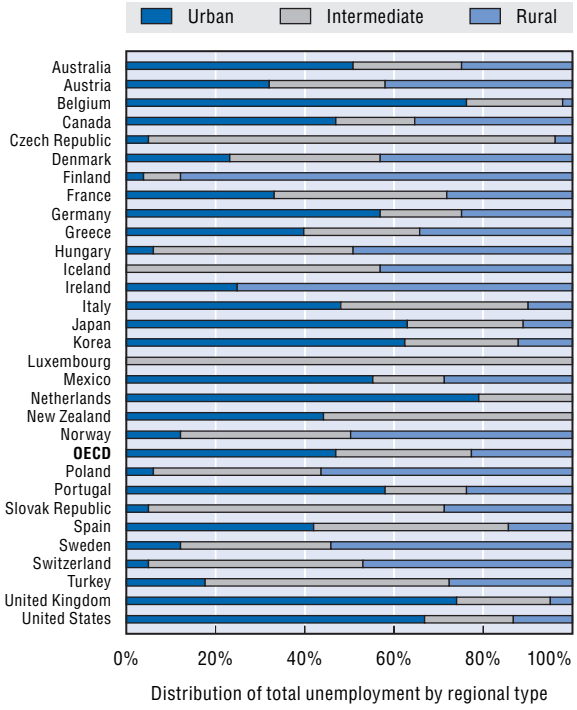
3.1. On average, 37% of national unemployment in 2001 was concentrated in only 10% of regions



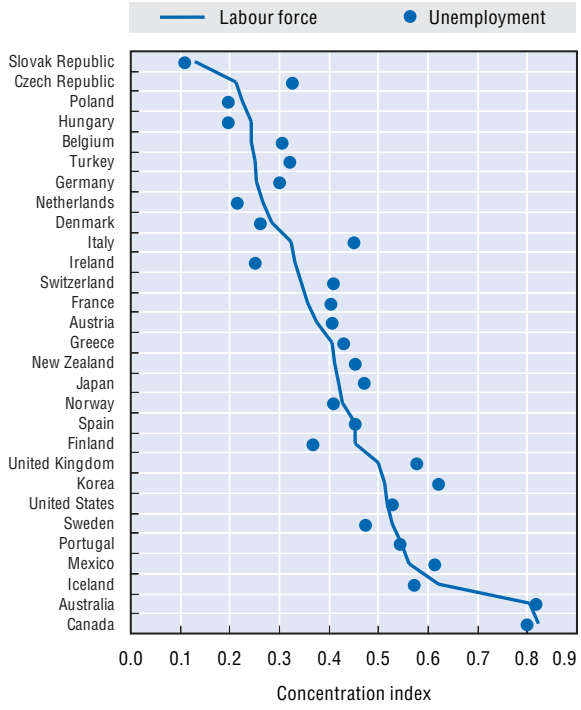
3.2. Unemployment is most concentrated in Australia and Canada and least concentrated in the Slovak Republic



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



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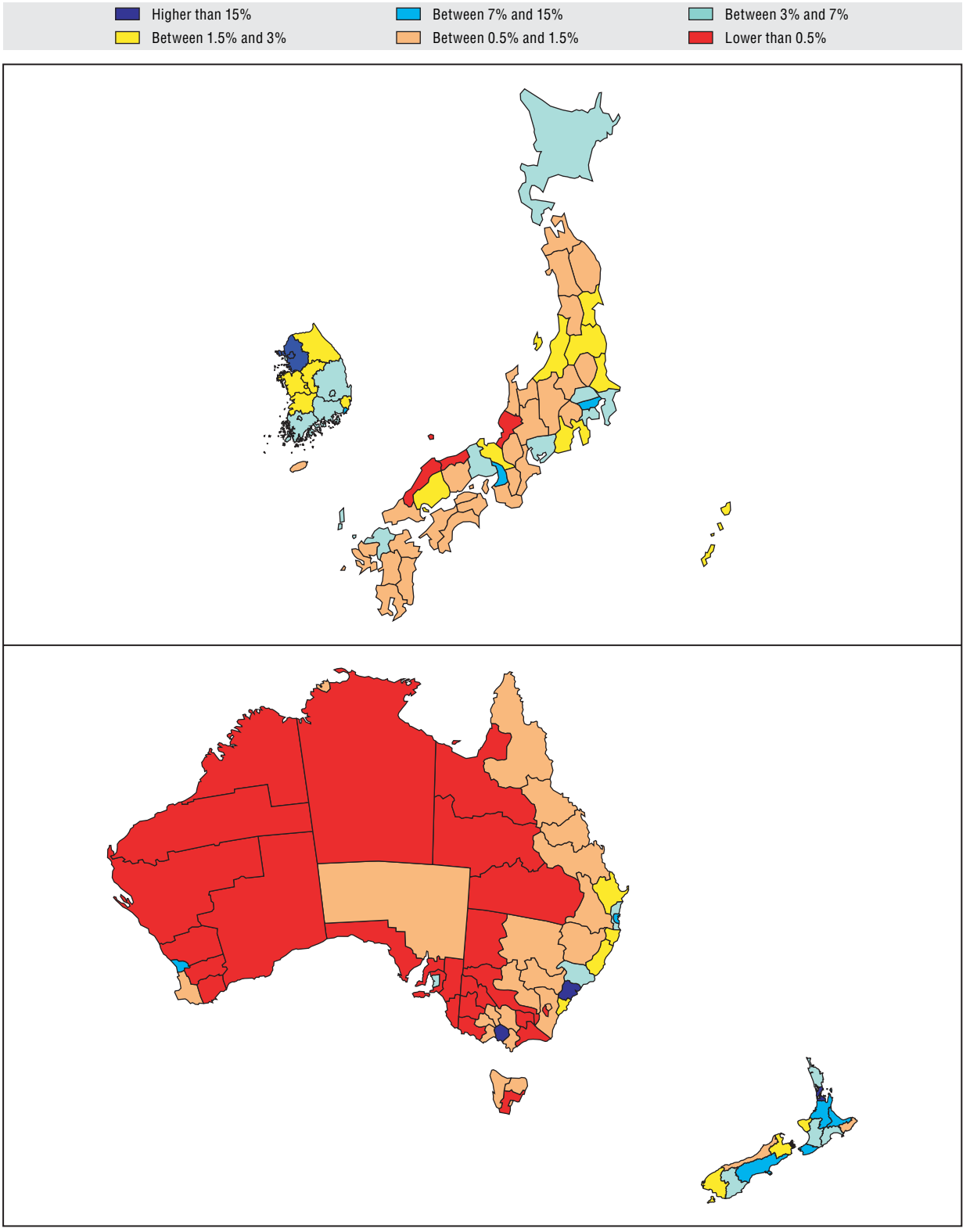
3.5. **Regional share of national unemployment: Asia and Oceania TL3**

2001



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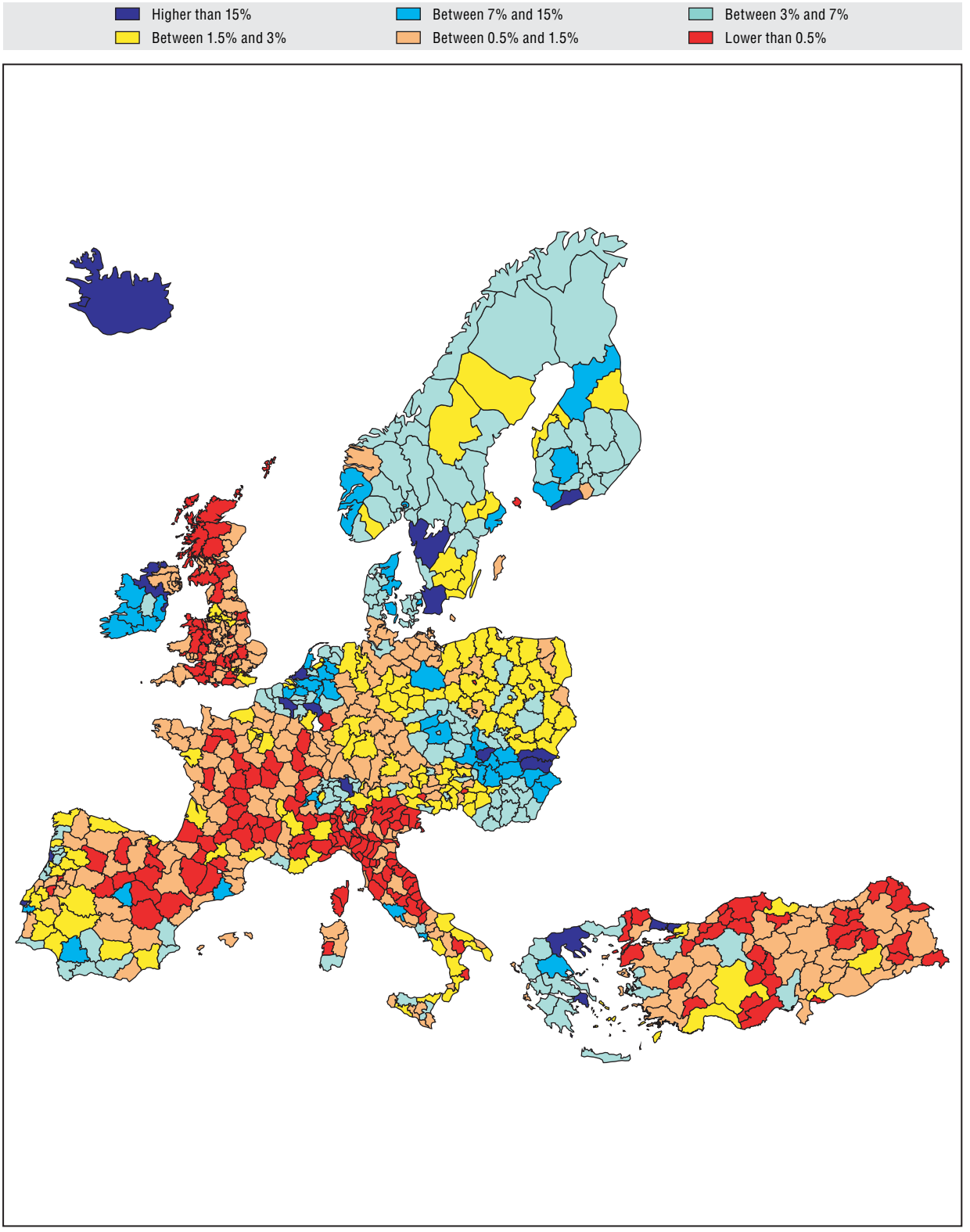
3.6. **Regional share of national unemployment: Europe TL3**

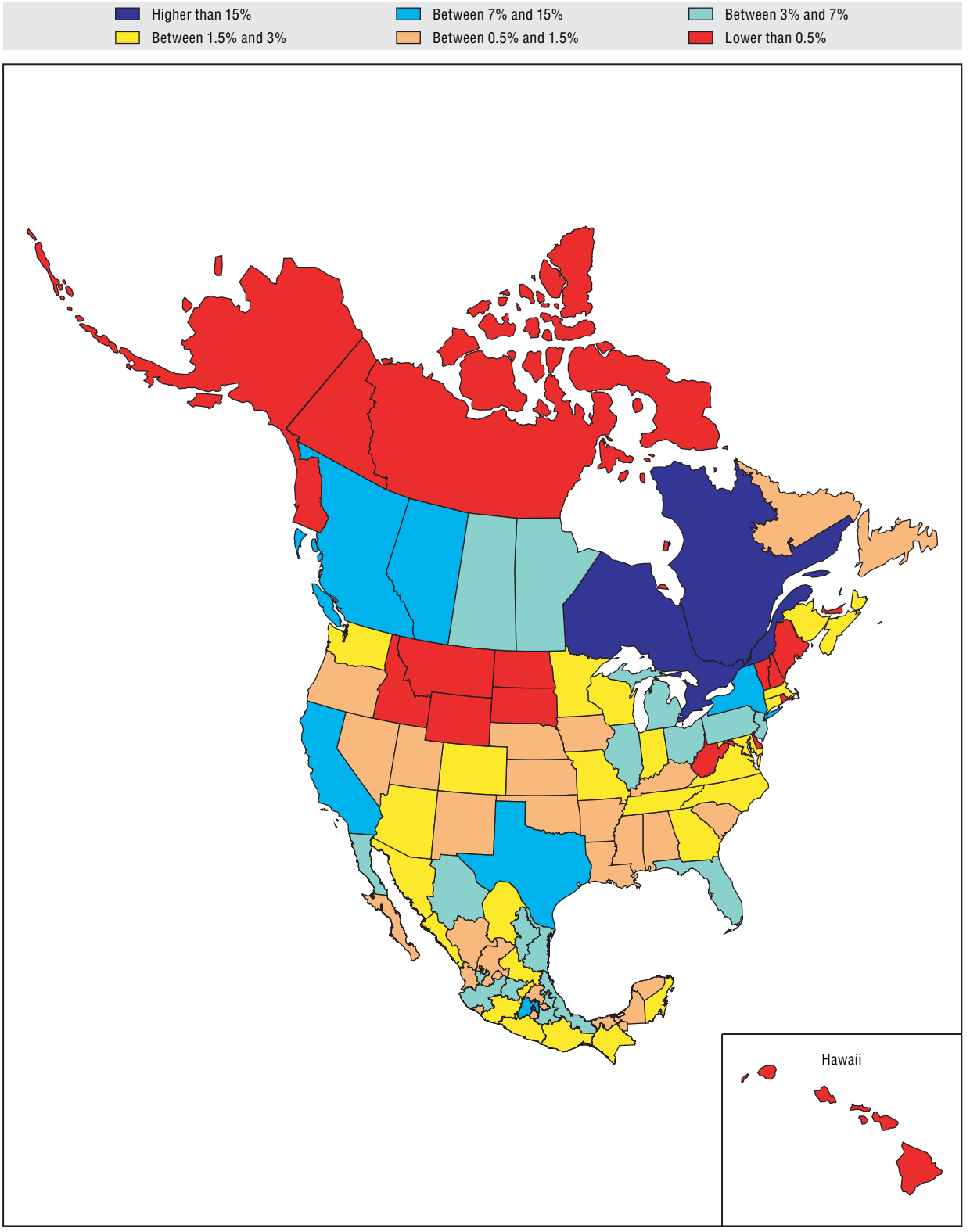
2001



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.

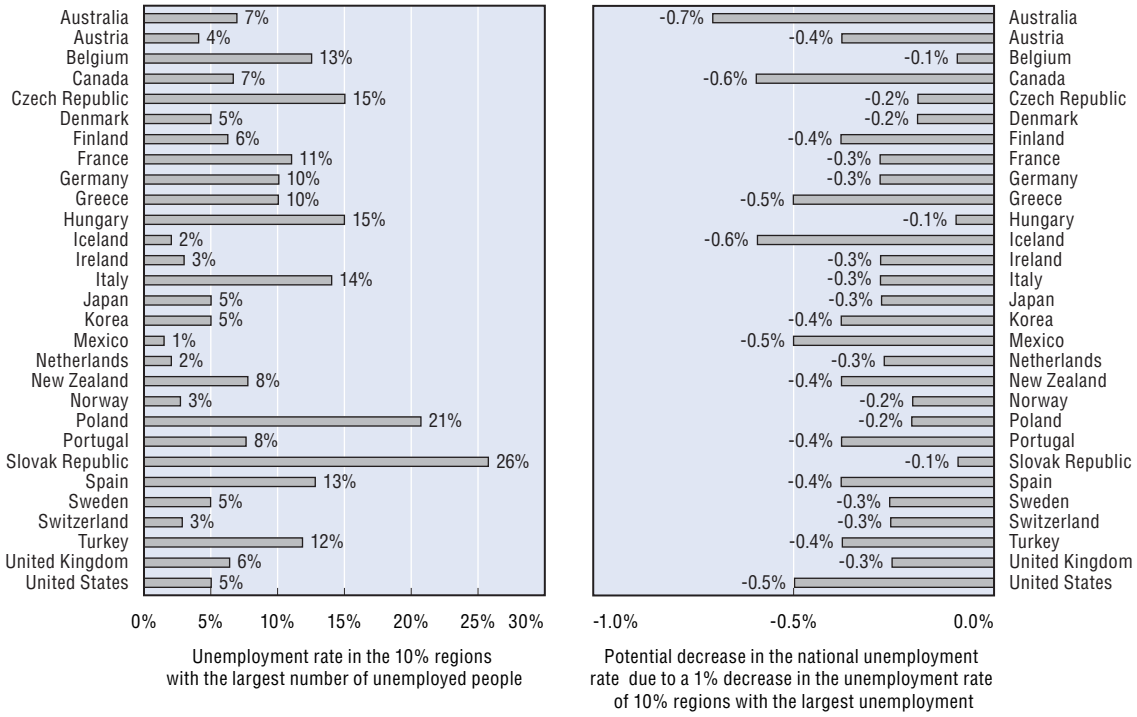
The answer depends on whether concentration of unemployment simply follows the distribution of the labour force or is the result of regional differences in unemployment rates. If concentration of unemployment is only due to the concentration of the labour force, national policies will be sufficient to 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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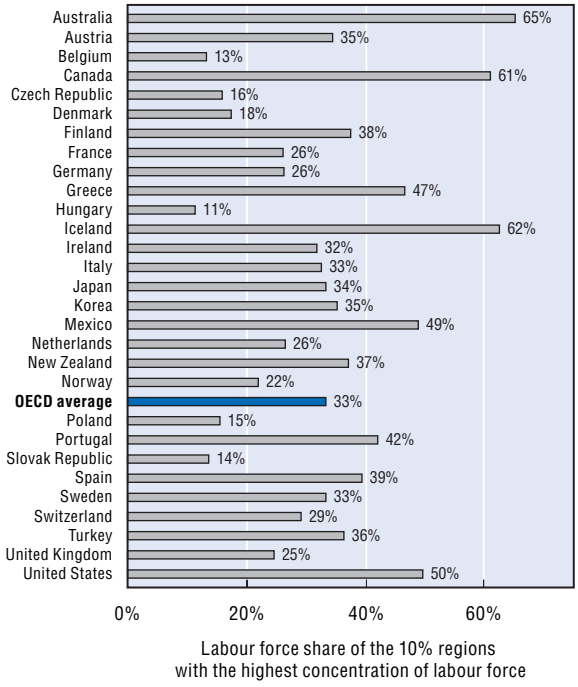
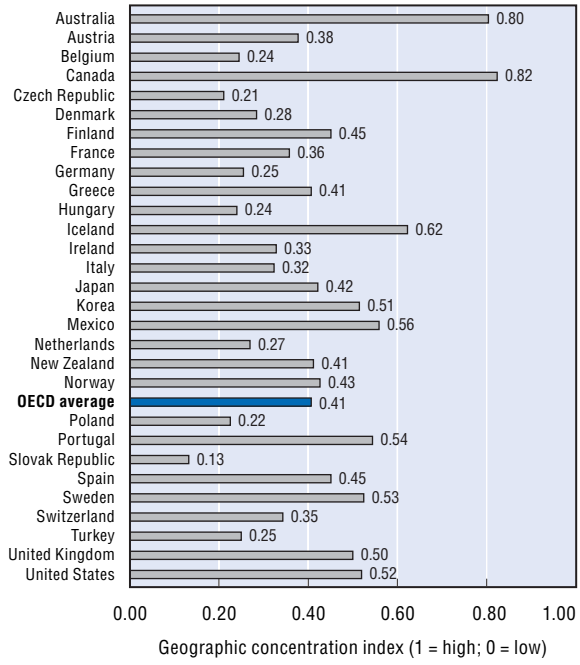
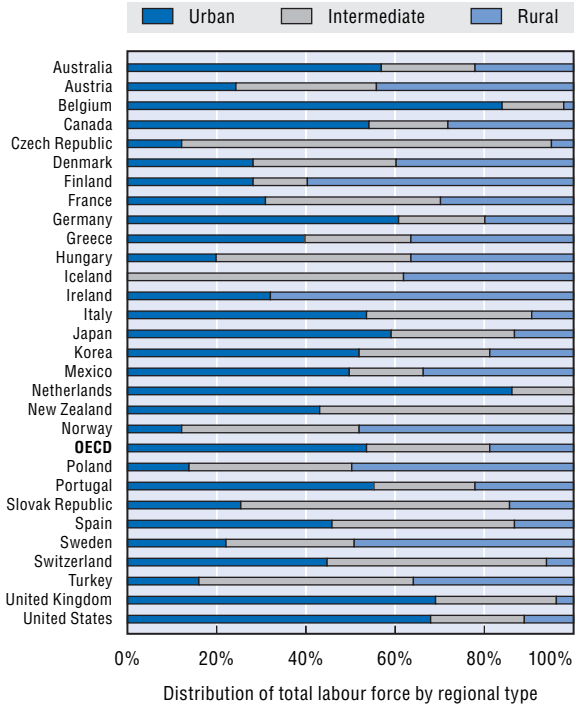
4.1. On average, 33% of the national labour force in 2001 was concentrated in only 10% of regions



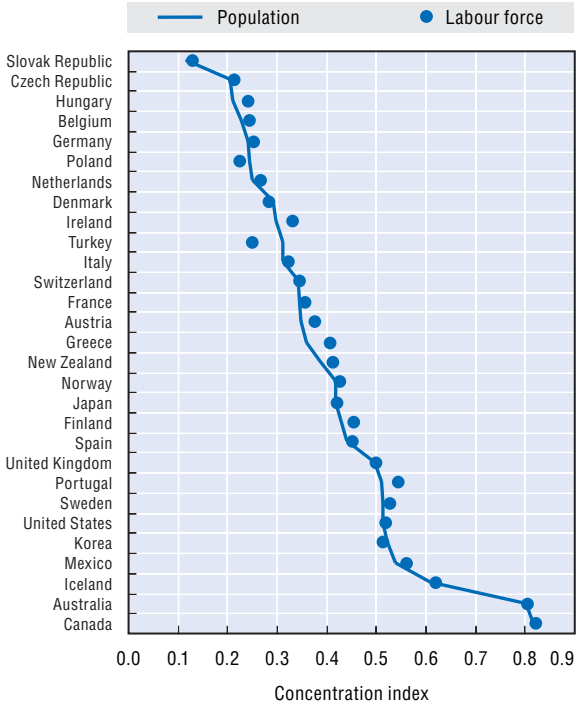
4.2. Concentration of the labour force is highest in Canada and Australia and lowest in the Slovak Republic



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



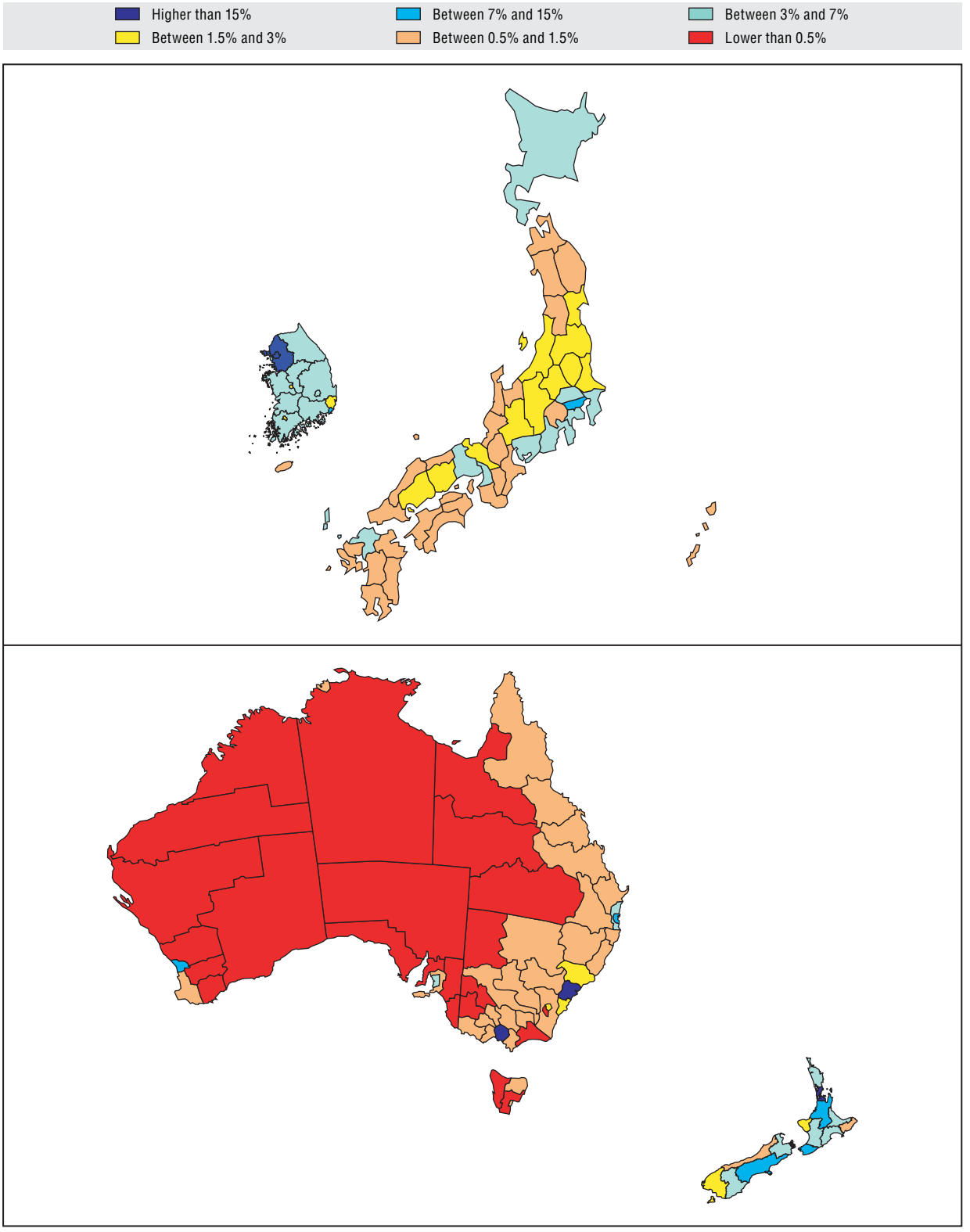
4.4. In most OECD countries, the labour force is more concentrated than population



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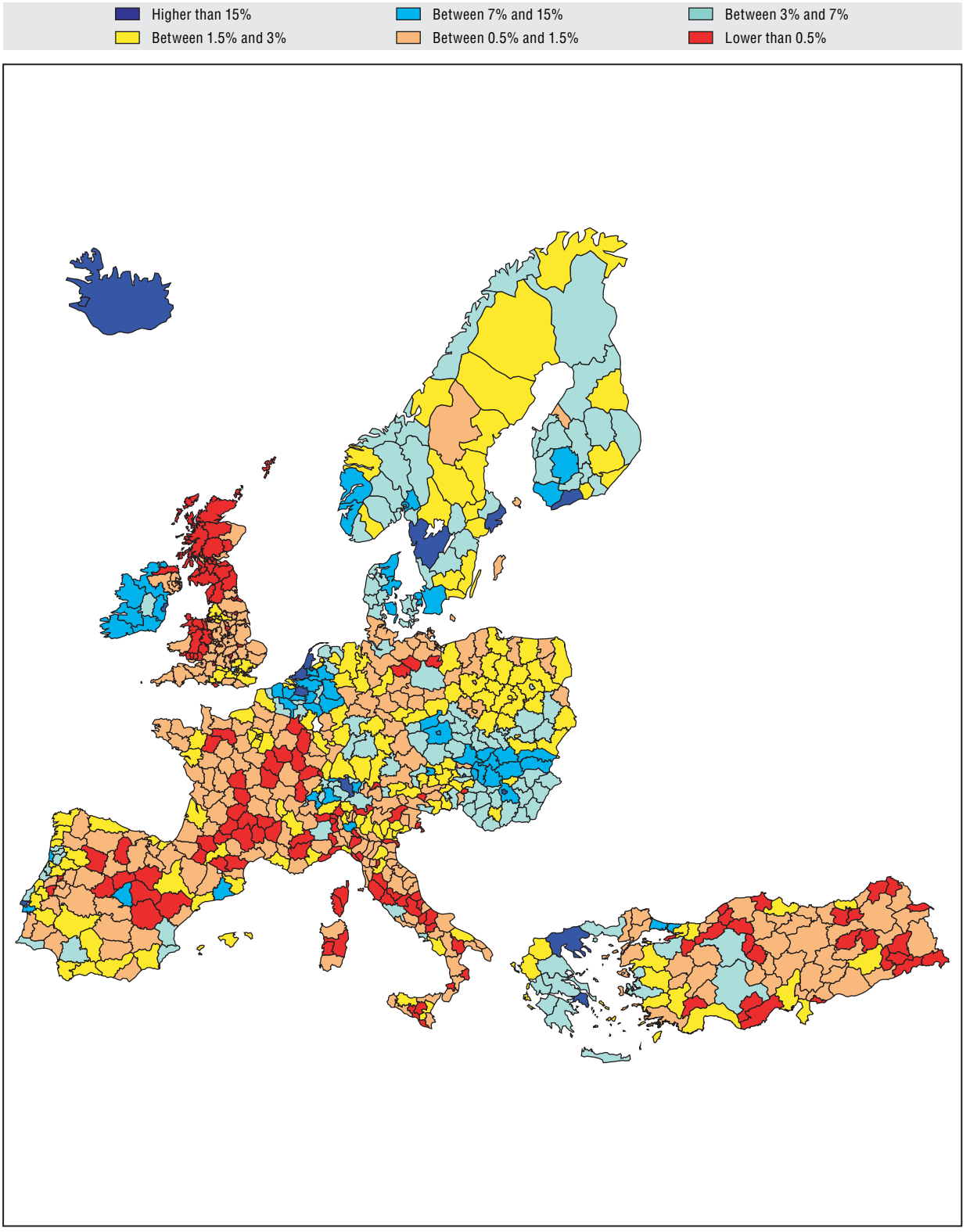
4.6. **Regional share of the national labour force: Europe TL3**

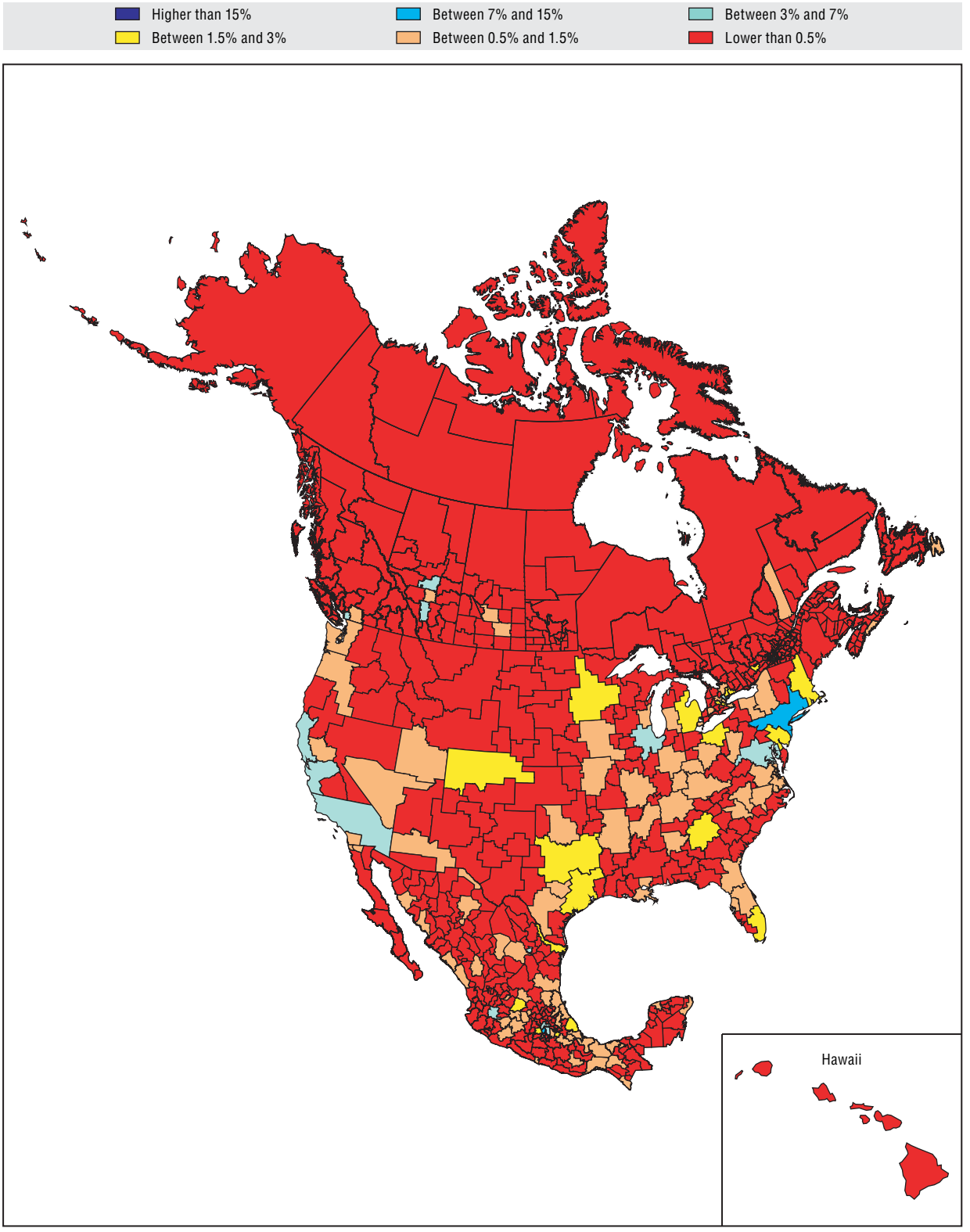
2001



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.

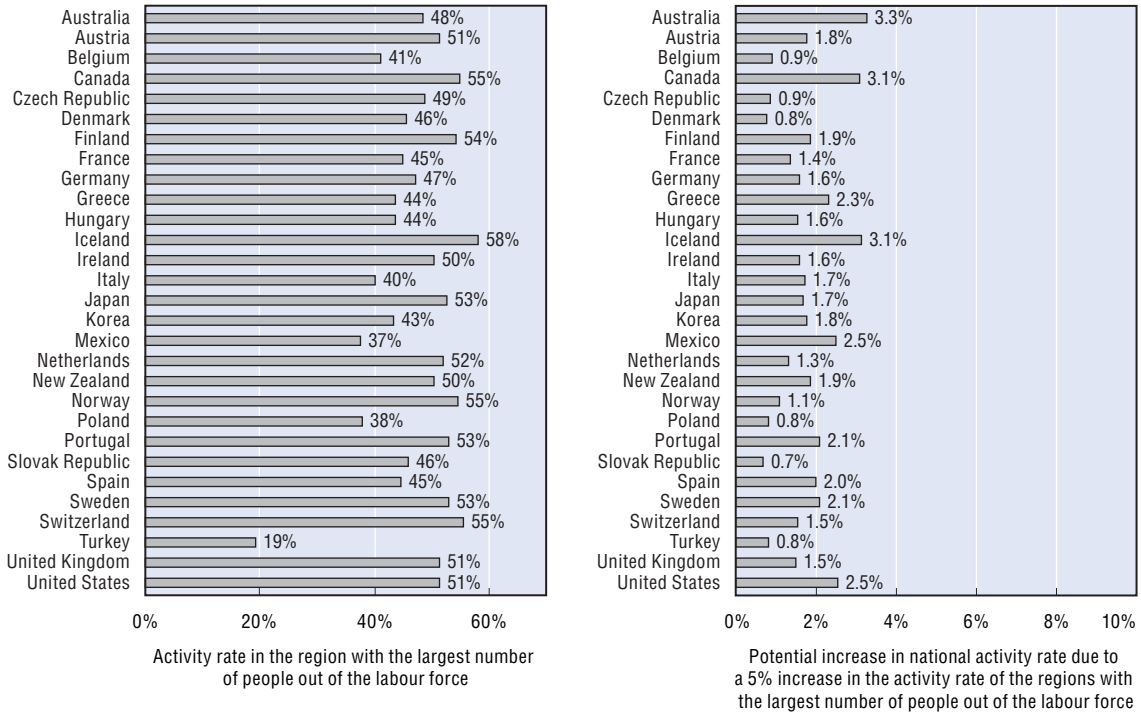
The answer depends on whether the concentration of the inactive population simply follows the distribution of population or is the result of regional differences in activity rates (*i.e.* the ratio of labour force to population). If the concentration of the inactive population is only due to the concentration 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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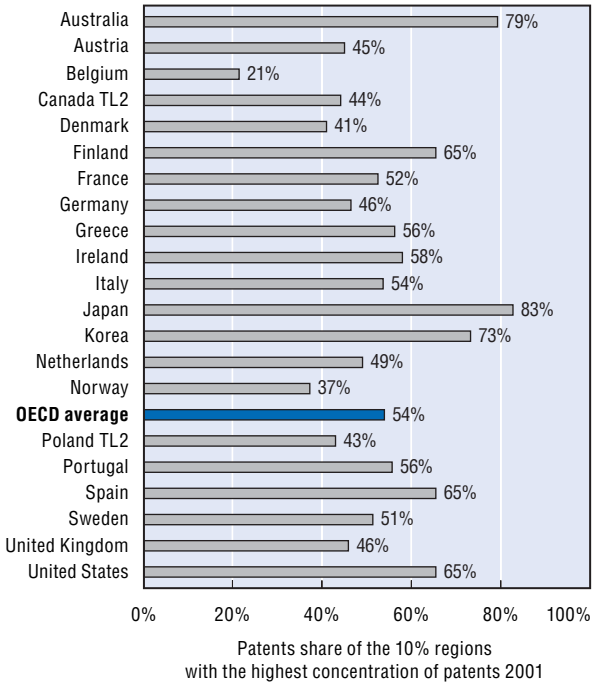
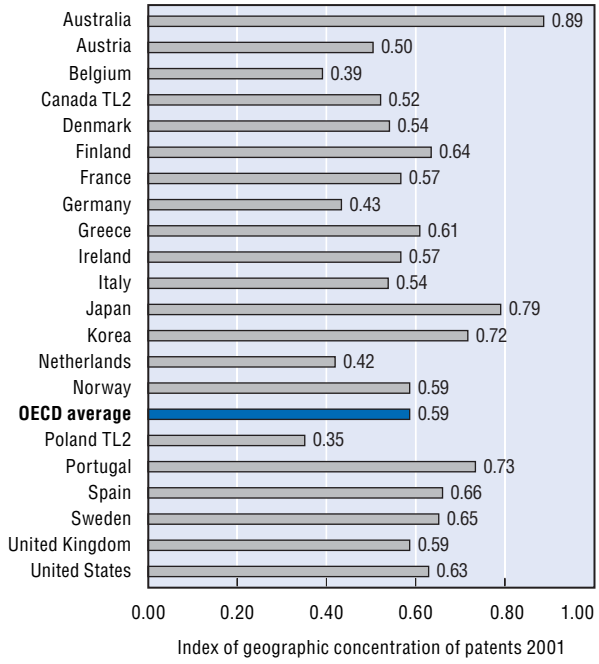
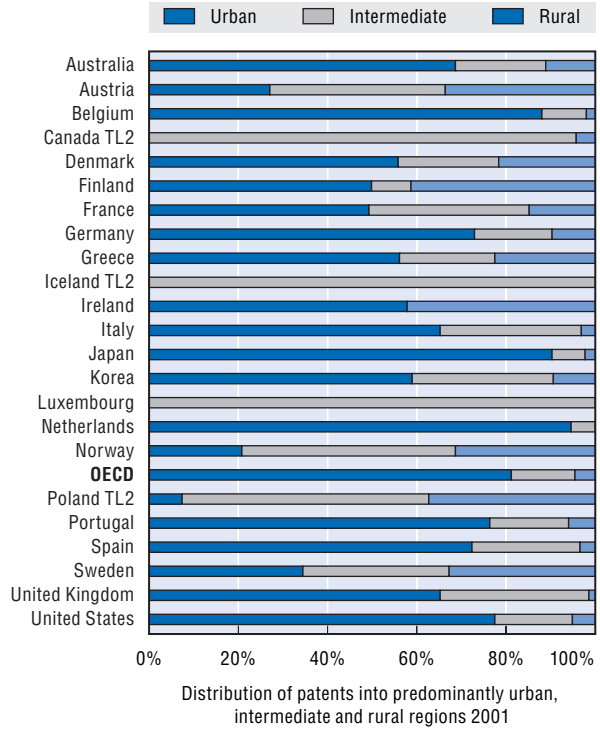
5.1. **On average in 2001, 54% of total patents were concentrated in only 10% of regions**



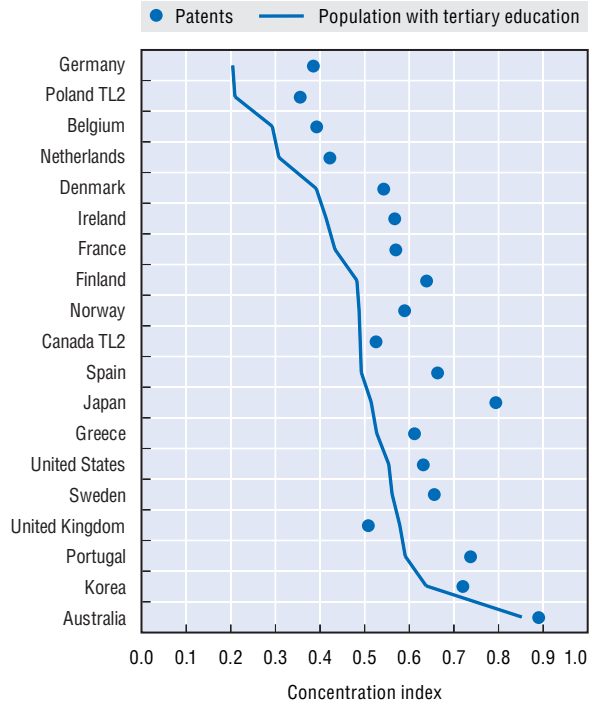
5.2. **In 2001 Australia, Japan, Portugal and Korea had the highest geographic concentration of patents**



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



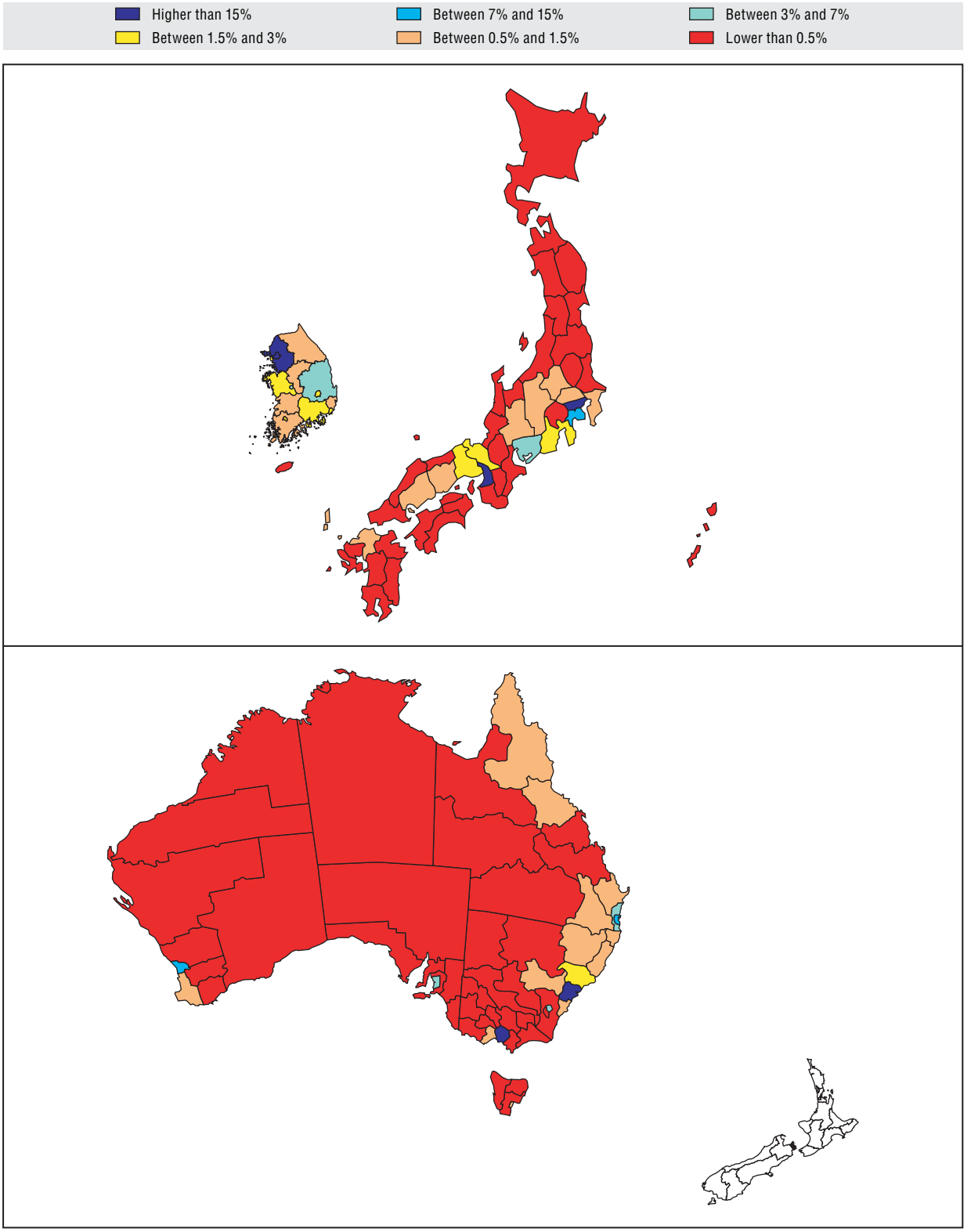
5.4. **Patents are more concentrated than the highly skilled population**



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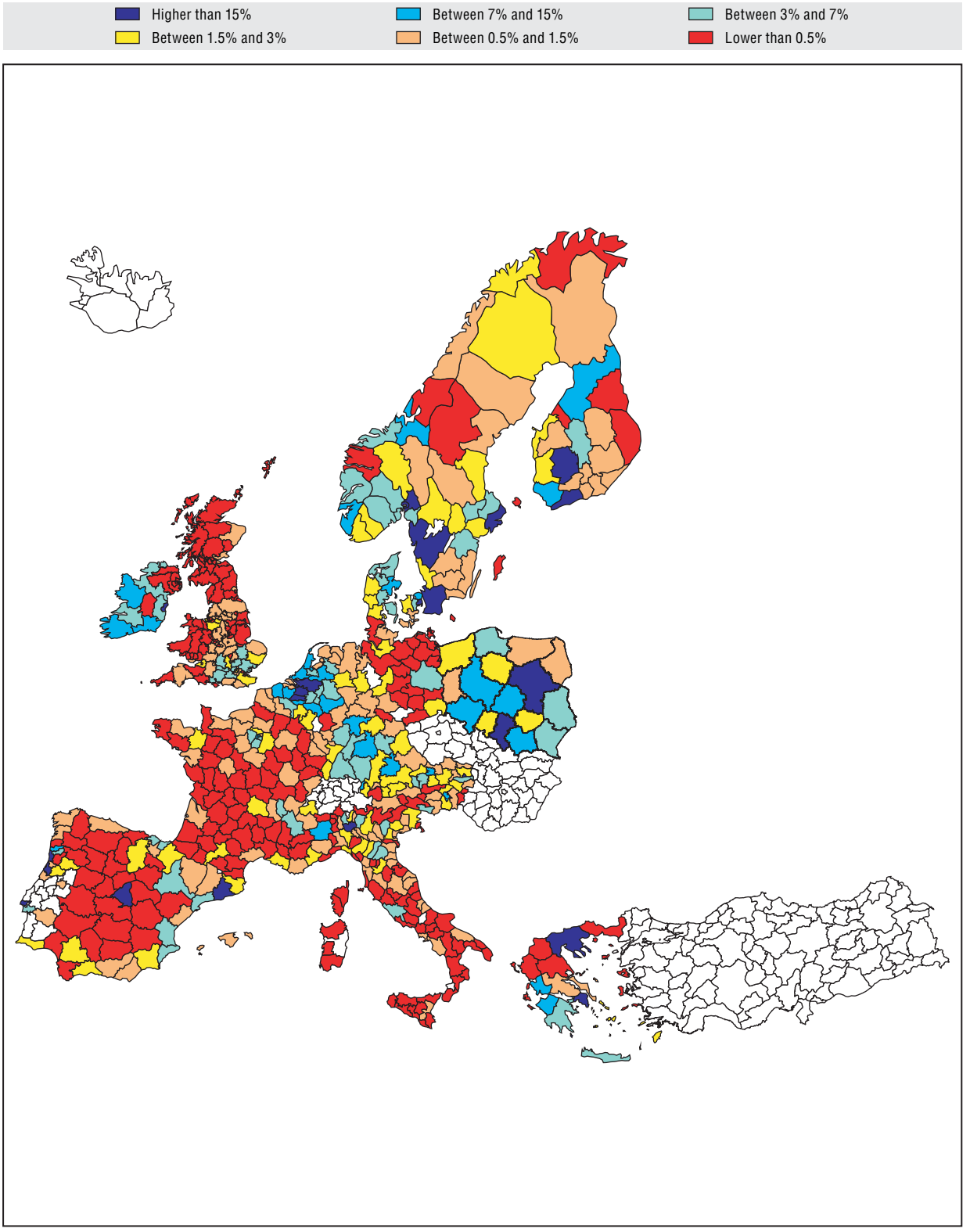
5.6. **Regional share of national patents: Europe TL3 (Poland TL2)**

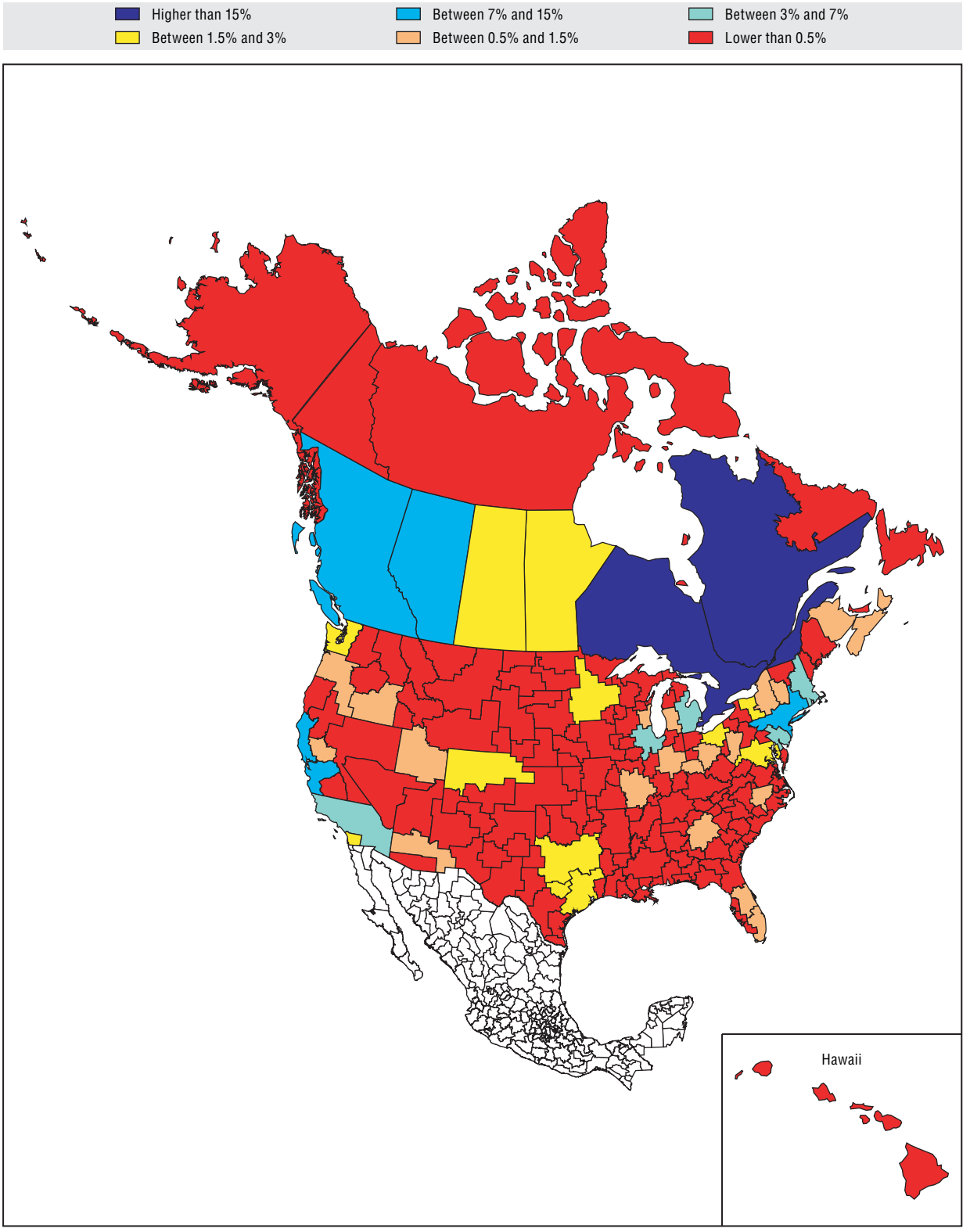
2001



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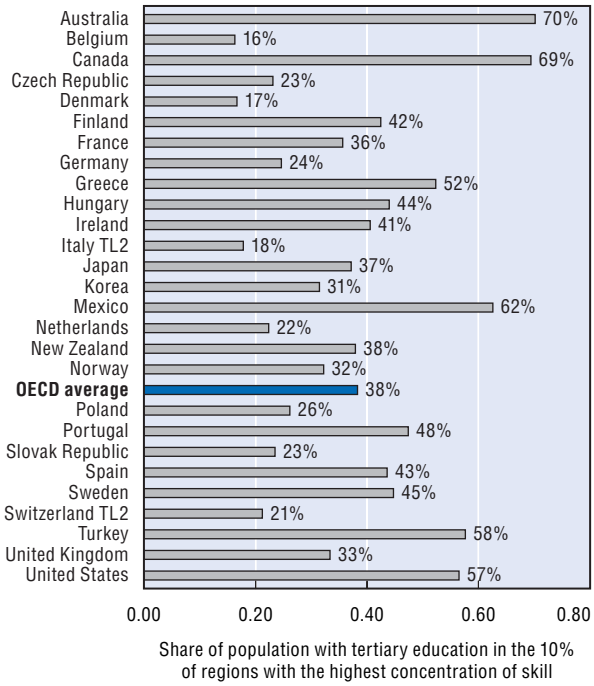
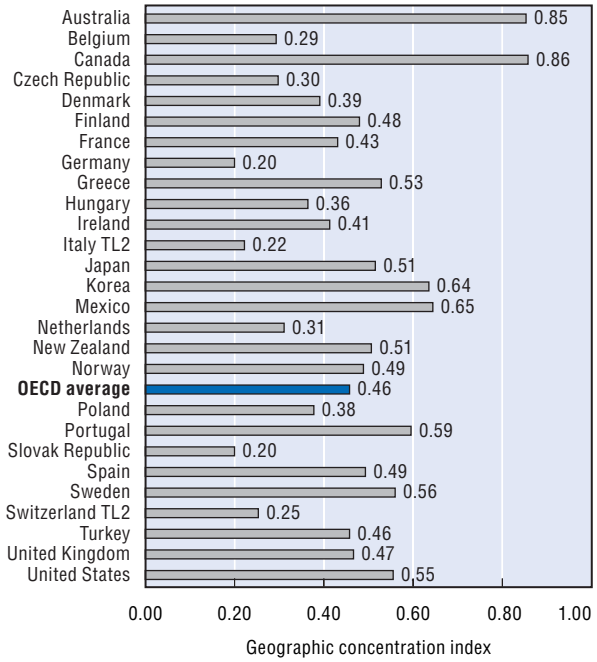
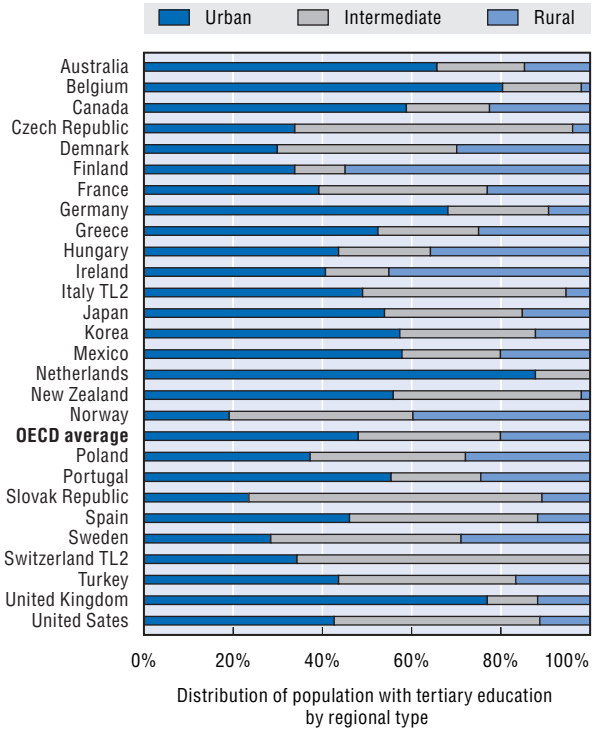
6.1. **On average, 38% of the population with tertiary-level education is concentrated in only 10% of regions**



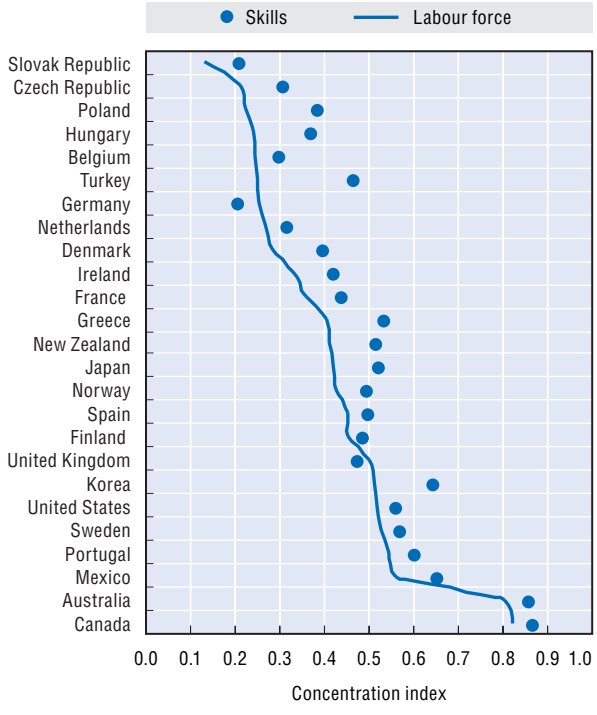
6.2. **Concentration of the population with tertiary education is highest in Australia and Canada and lowest in Belgium and the Slovak Republic**



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



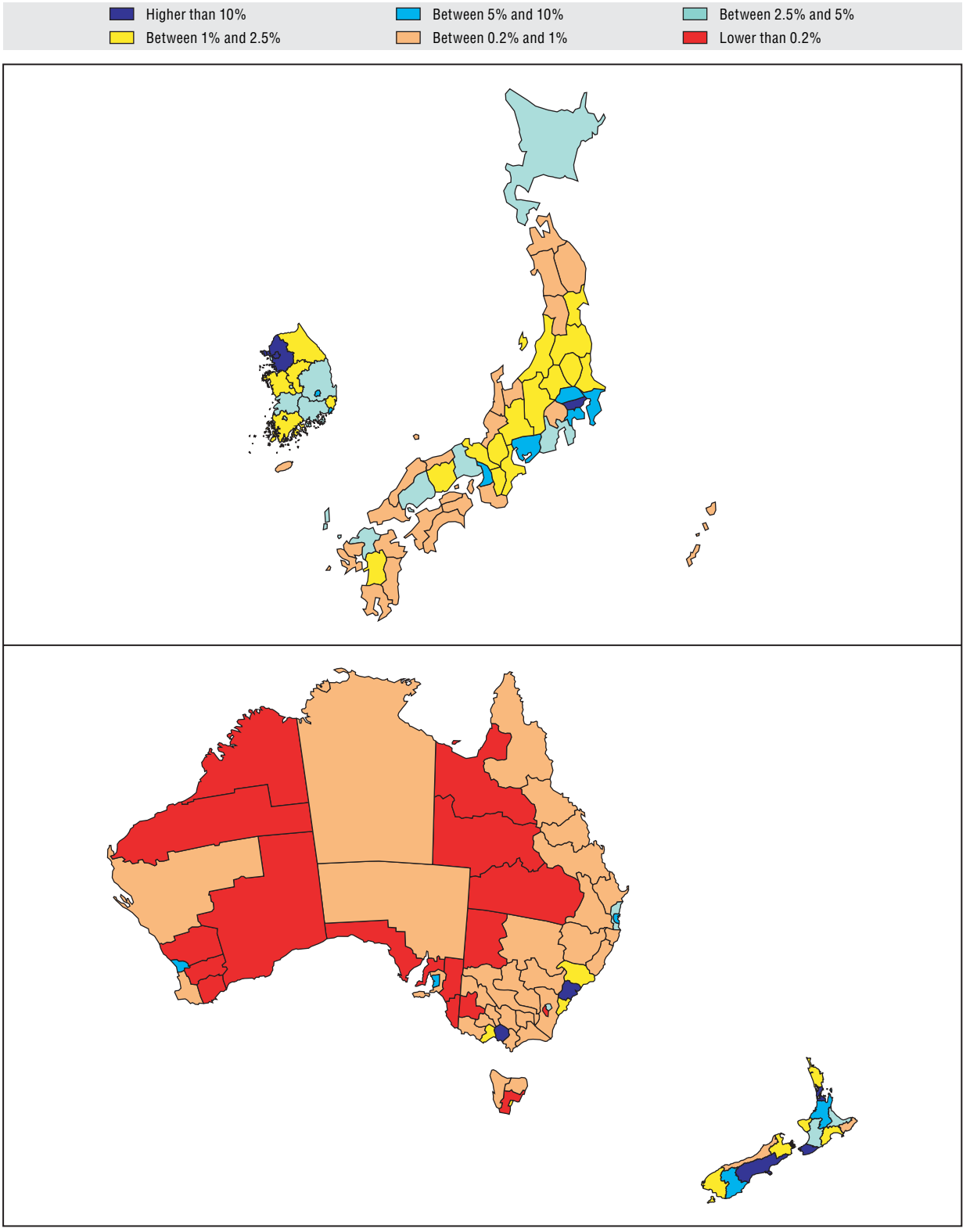
6.4. **In all OECD countries, the highly educated population is more concentrated than the labour force**



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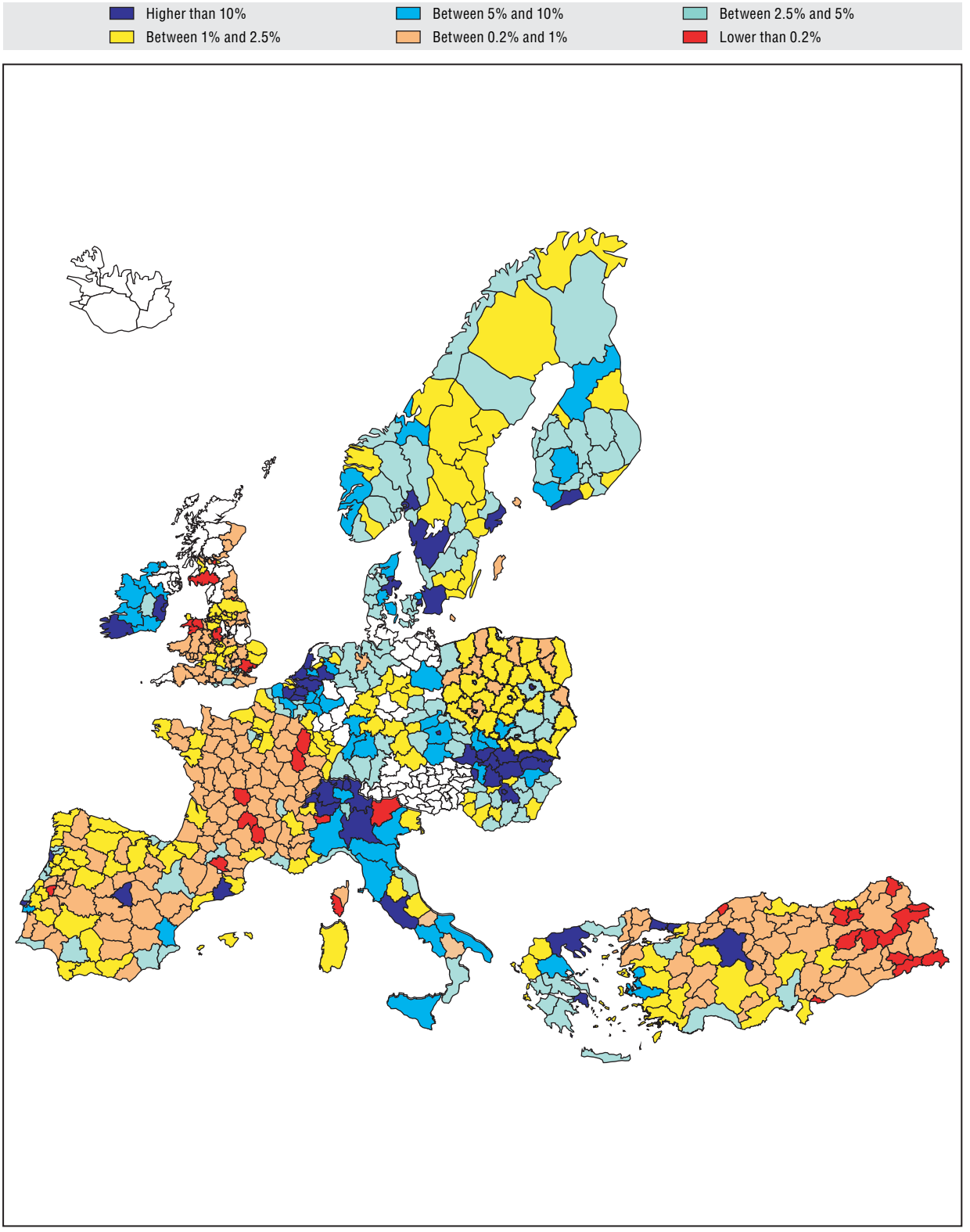
6.6. **Population with advanced education: Europe TL3**

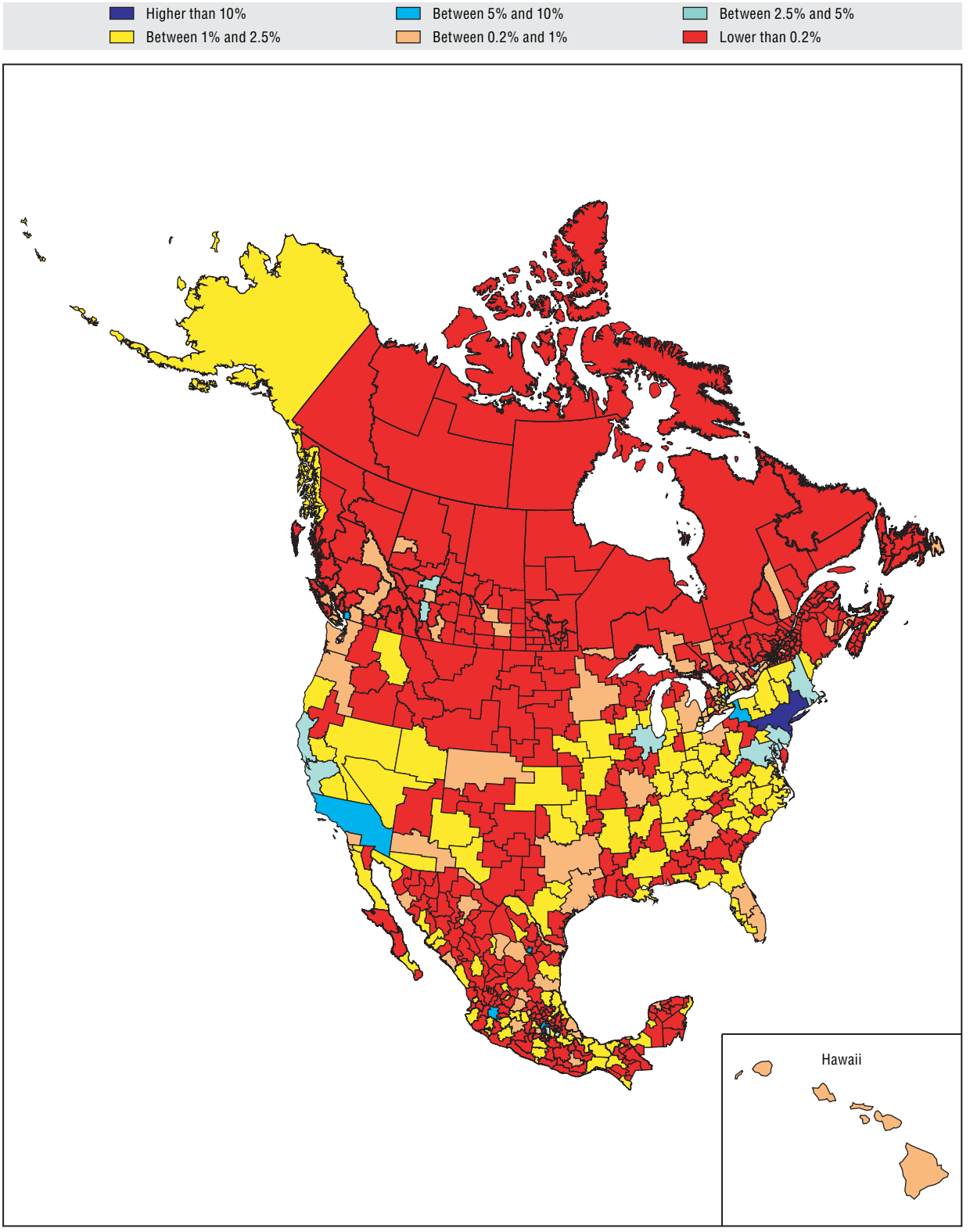
Regional share 2001



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?

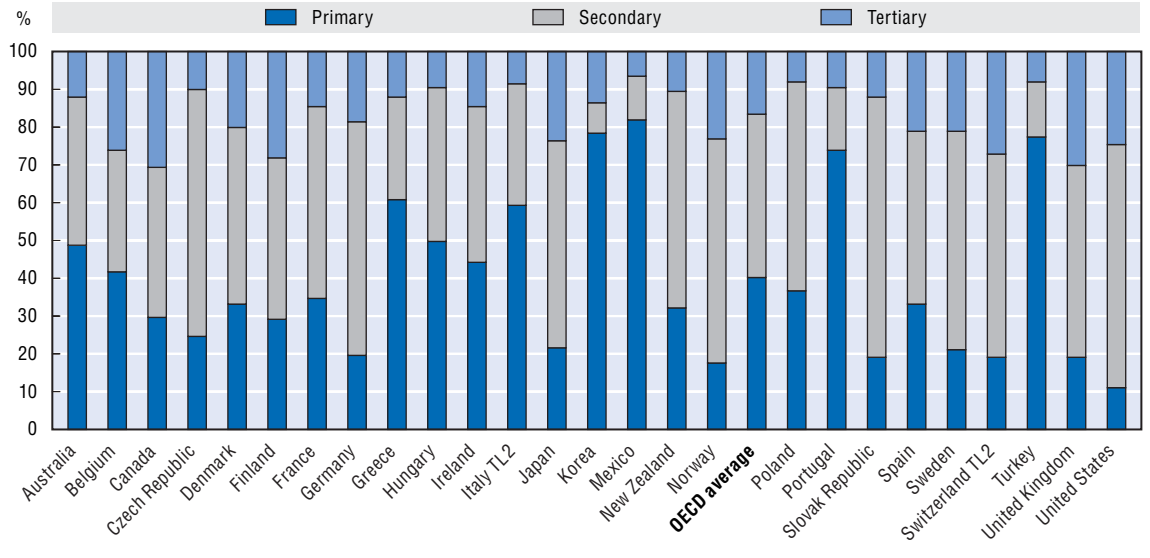
Education is a key factor for development and growth in today's knowledge-based economy. Low educational attainment in rural regions has traditionally been regarded as a major cause of slow growth in these regions. In recent years, skill-biased technical progress seems to have increased the differences 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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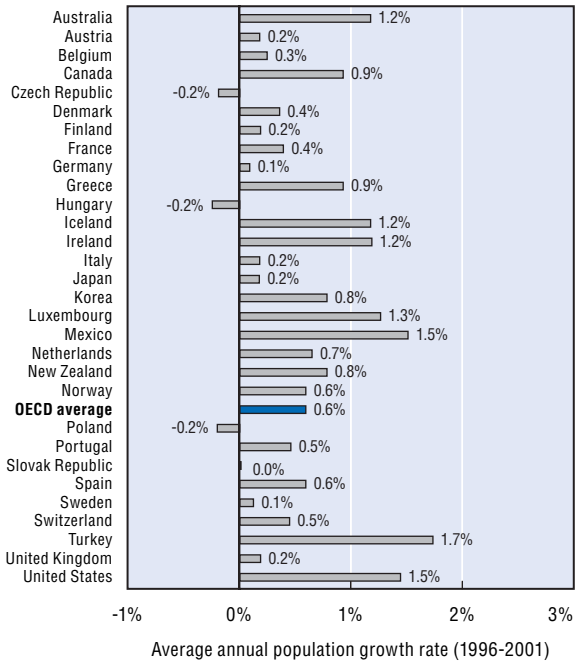
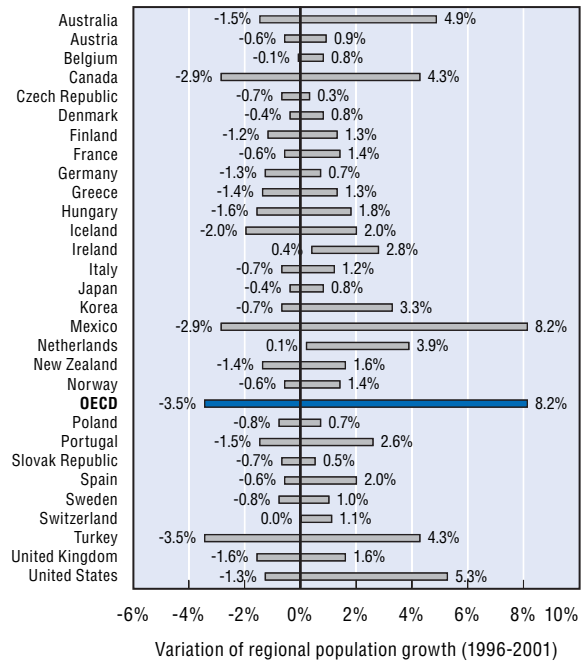
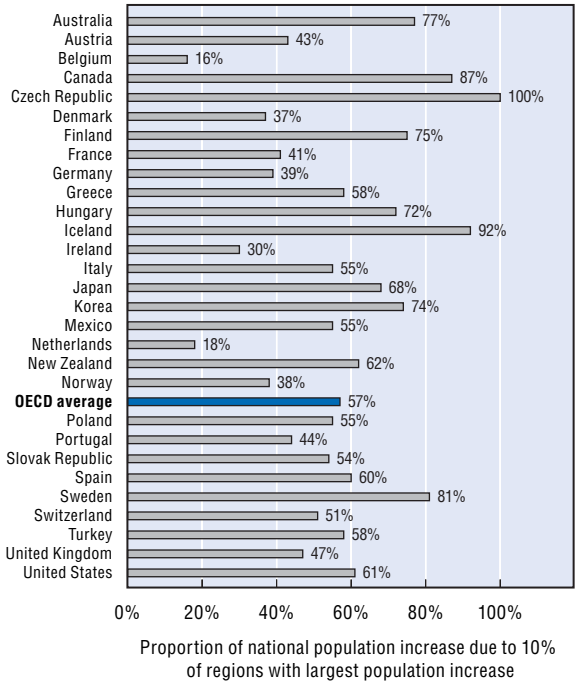
7.1. **From 1996 to 2001, population growth varied significantly among OECD countries...**



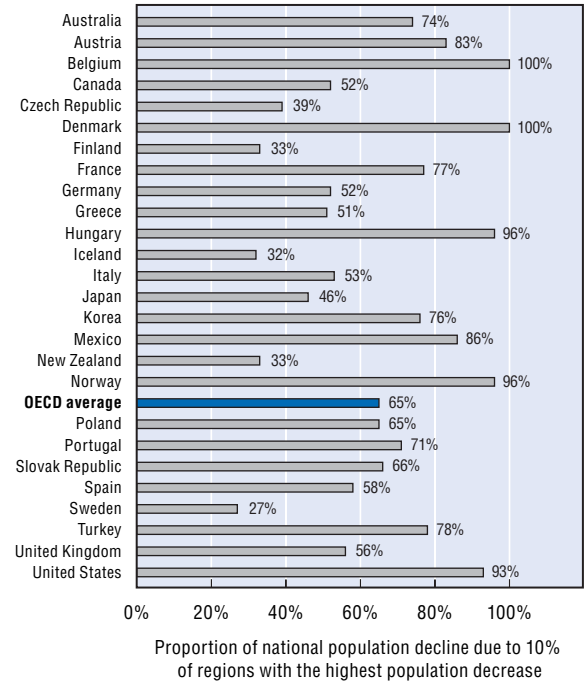
7.2. **... but the variation in population growth rates was even wider among regions within countries**



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



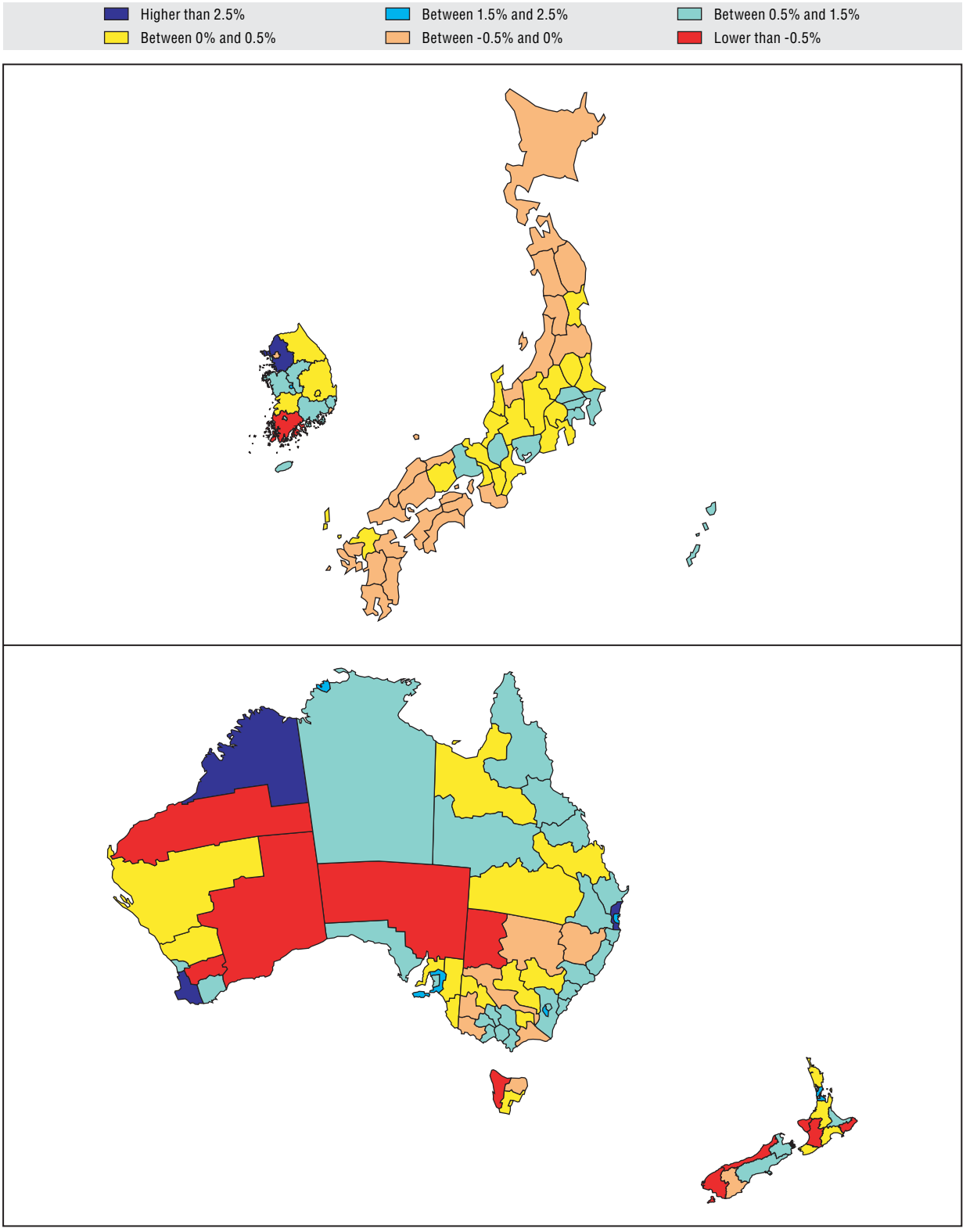
7.4. **65% of population decline in OECD countries occurred in just 10% of regions**



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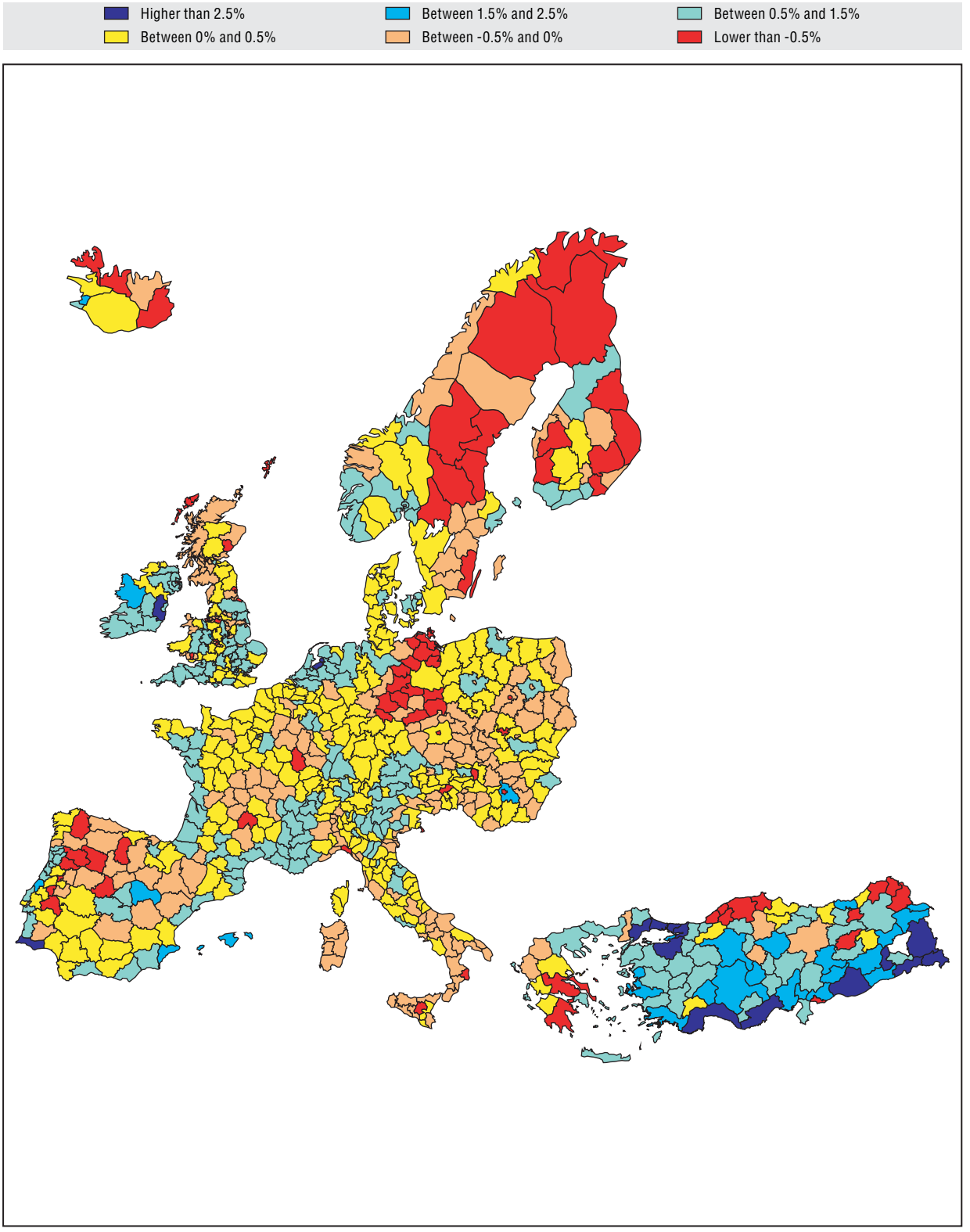
7.6. **Regional population growth: Europe TL3**

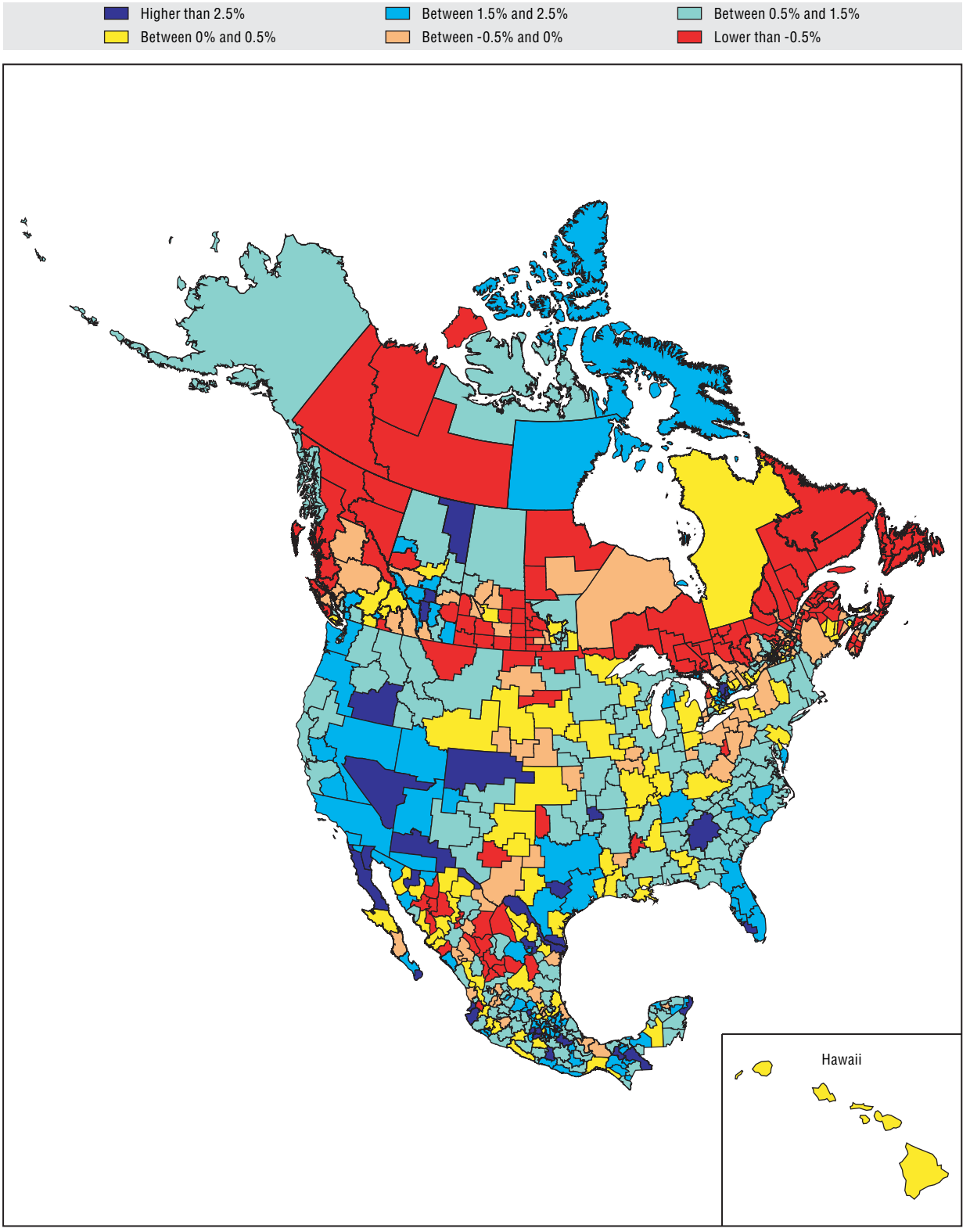
1996-2001



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?

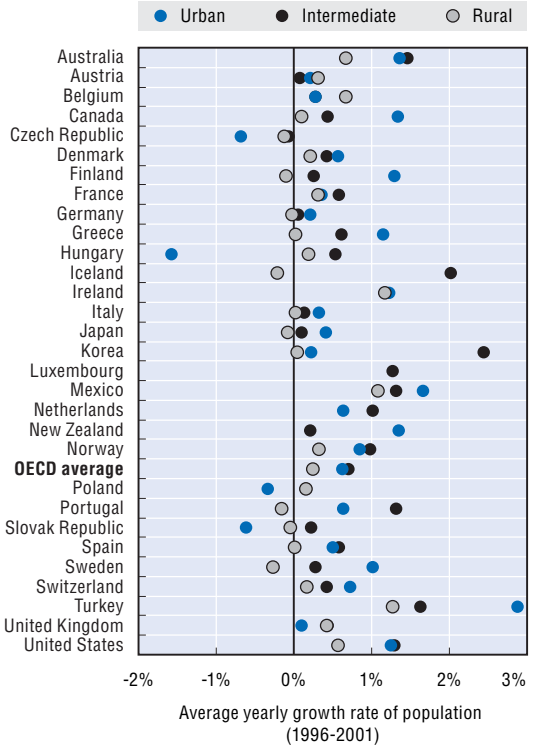
Intermediate and predominantly urban regions appear to drive population growth in OECD member countries (Figure 7.8). During the period 1996-2001 population grew at an average annual rate of 0.7% in intermediate and 0.6% in urban regions. In contrast, average yearly population growth in rural regions 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).

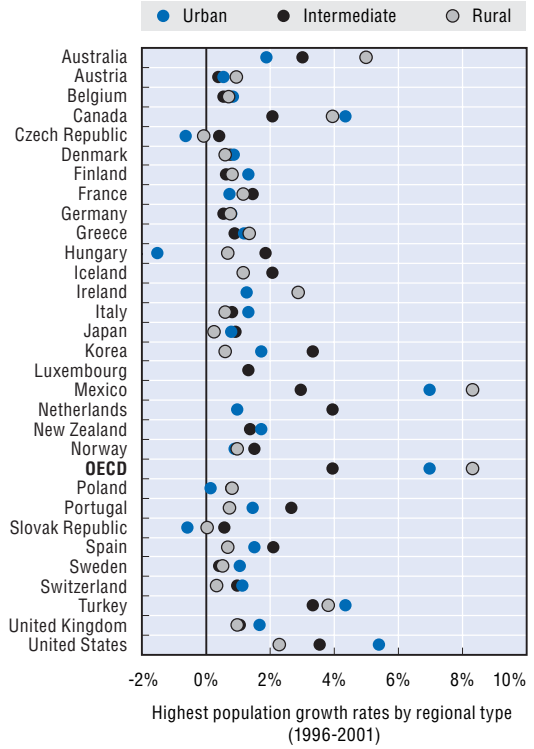
This trend suggests that population in member countries is likely to become more concentrated over the coming years. In 2001, urban regions already accounted for more than half of the OECD population, and intermediate regions hosted another 27%. If this trend continues, the share of rural regions is 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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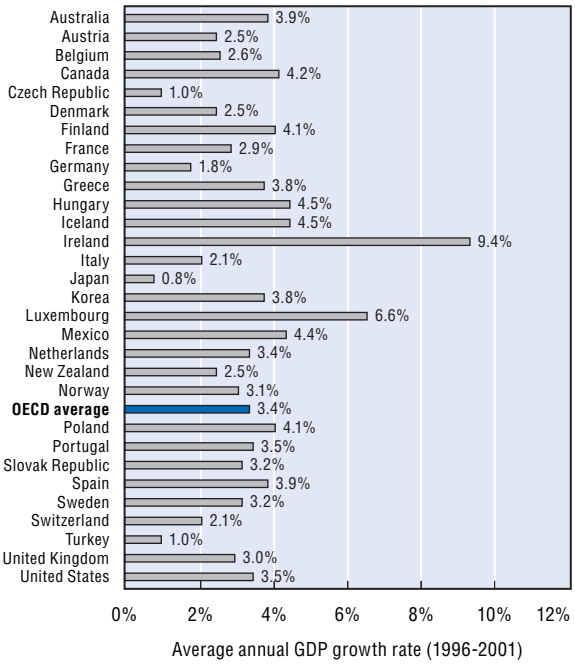
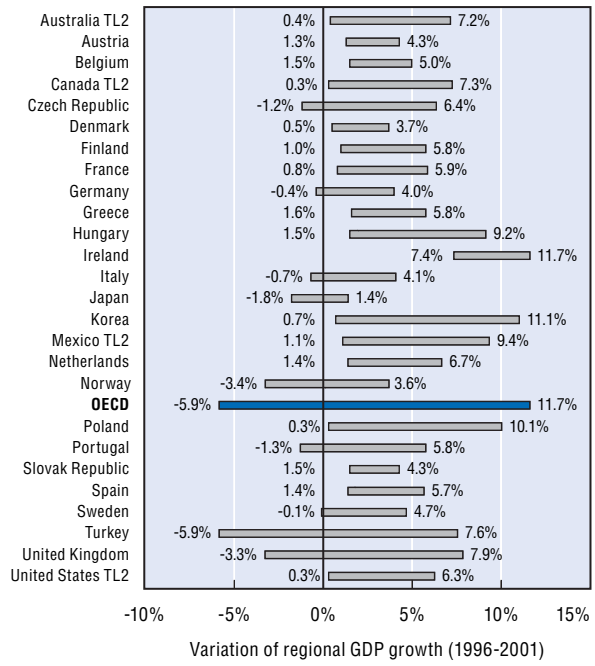
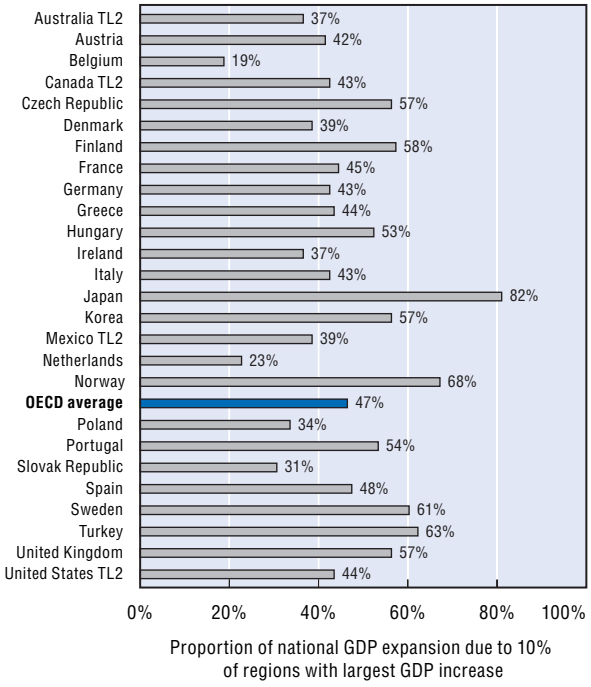
8.1. **From 1996 to 2001, GDP growth varied significantly among OECD countries...**



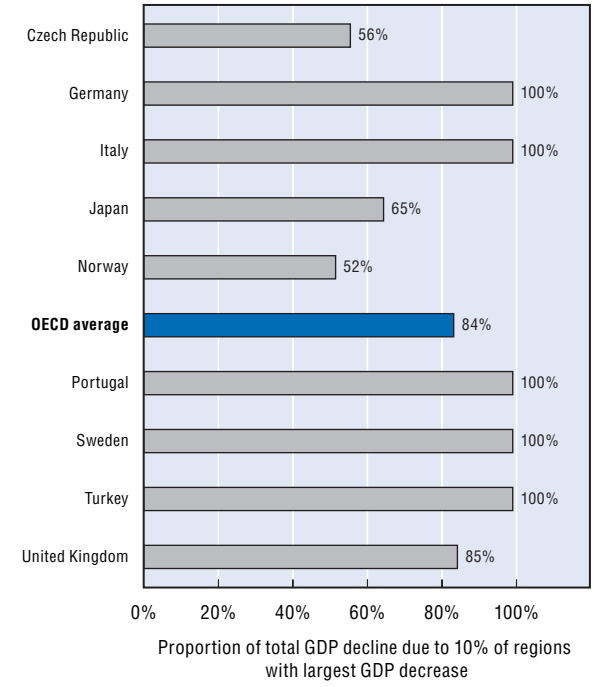
8.2. **... but the variation in GDP growth rates was even wider among regions within countries**



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



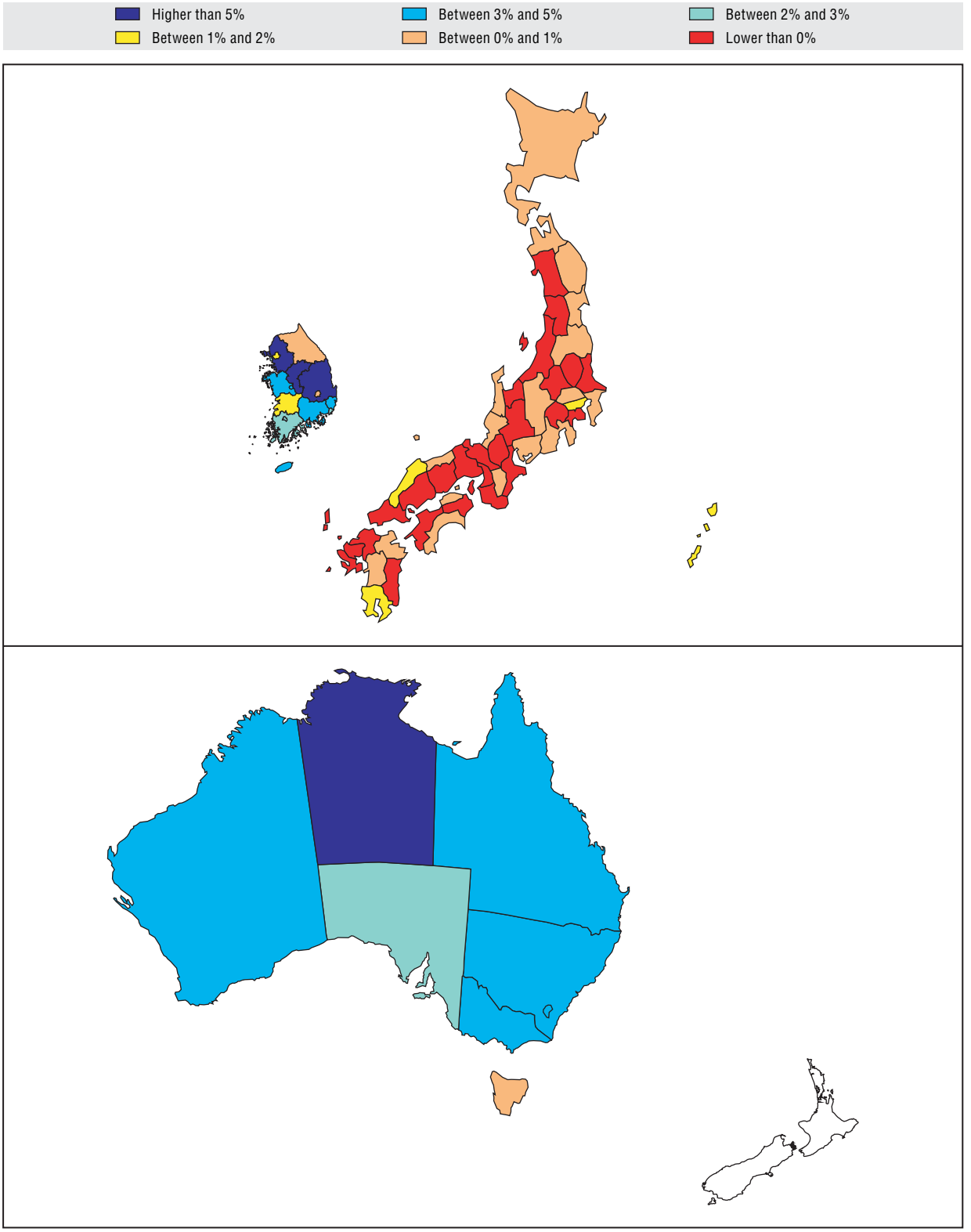
8.4. **84% of the decline in GDP in OECD countries took place in just 10% of regions**



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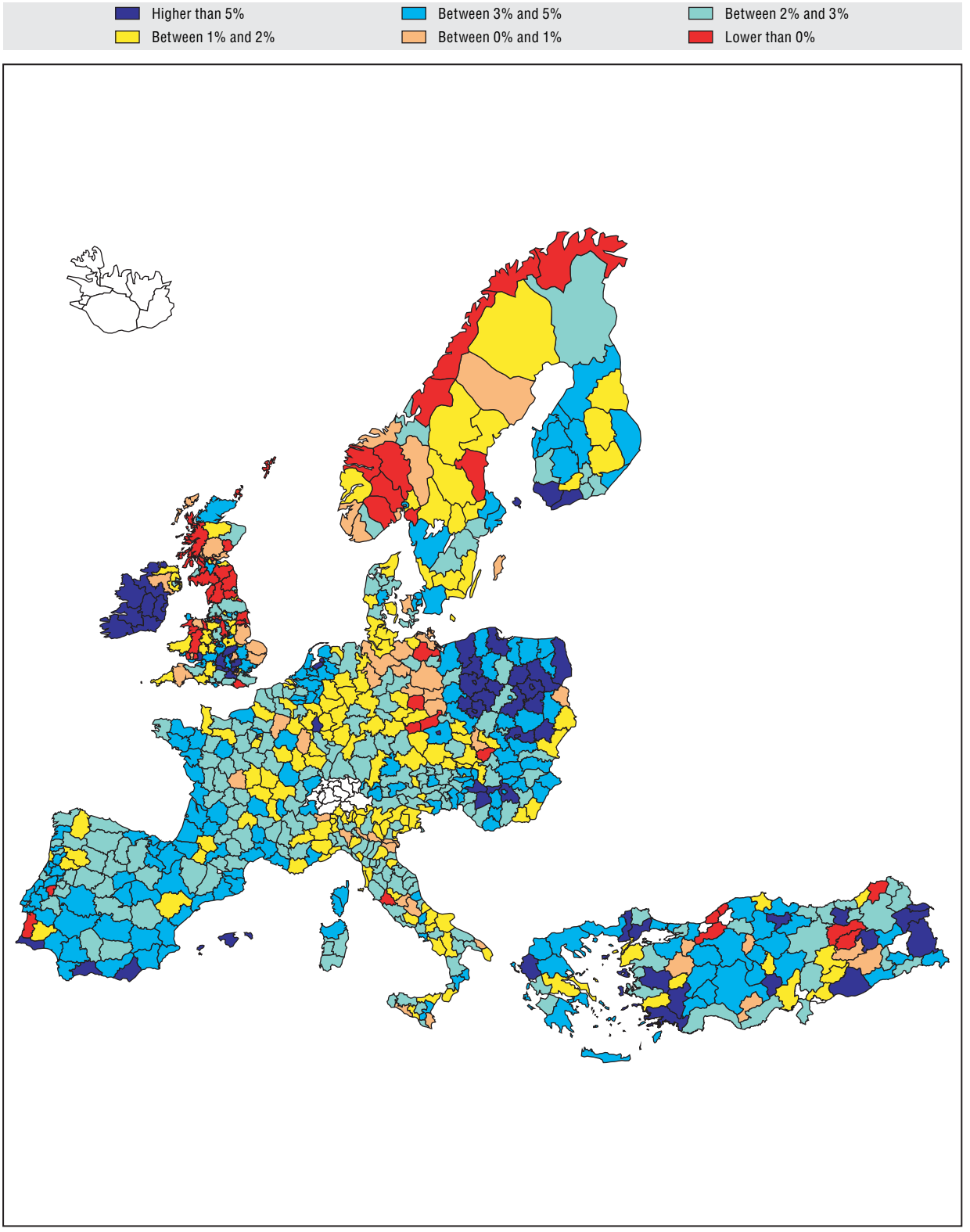
8.6. **Regional GDP growth: Europe TL3**

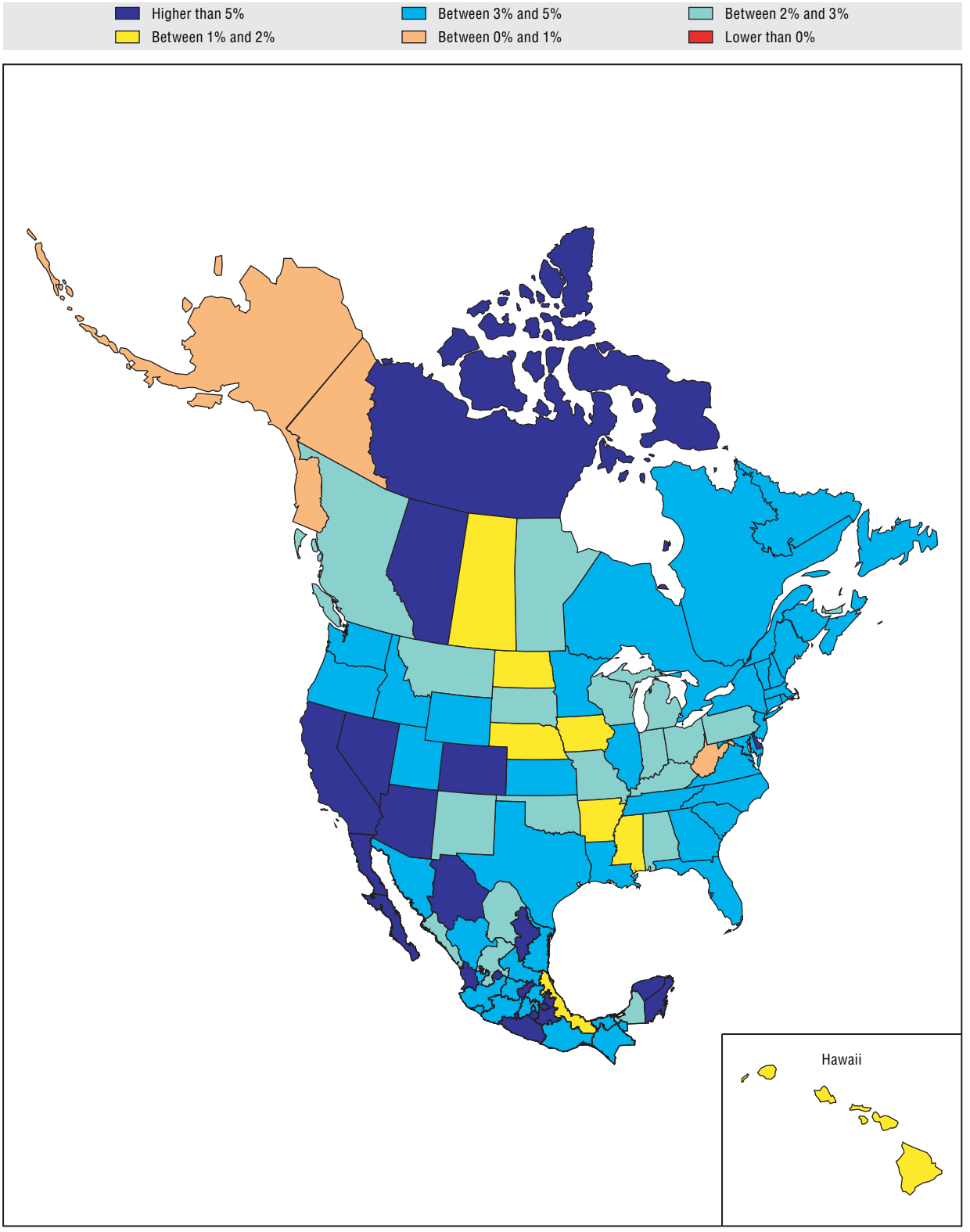
1996-2001



Source: OECD Territorial Database.

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

1996-2001



Source: OECD Territorial Database.

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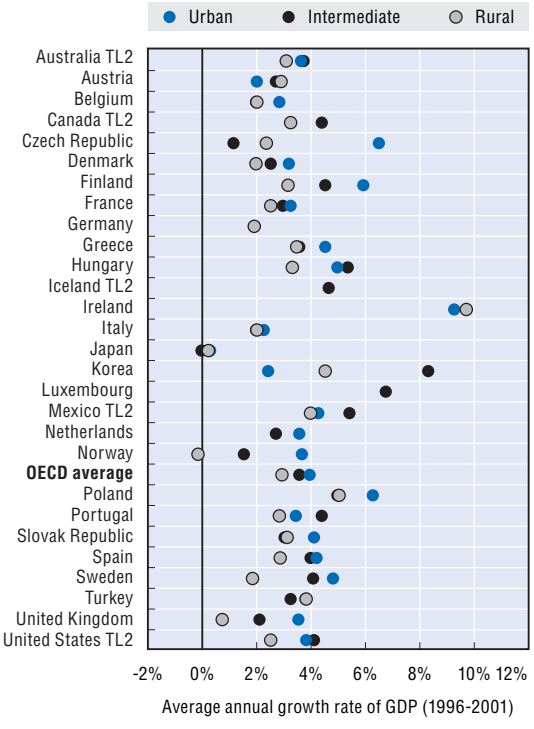
Is concentration good for growth?

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).

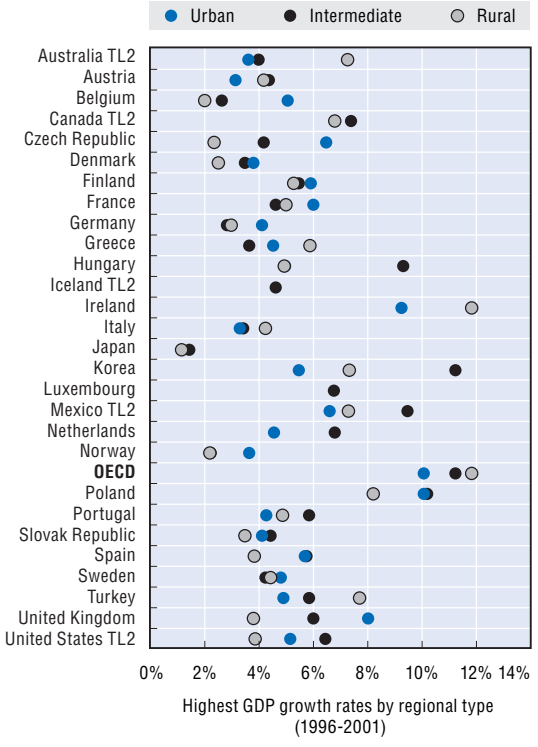
This pattern suggests that growth tends to be higher in regions where economic activity is highly concentrated than in those where it is more dispersed. Several factors explain why concentration has a positive impact on growth and they are commonly known as "agglomeration economies". First, information 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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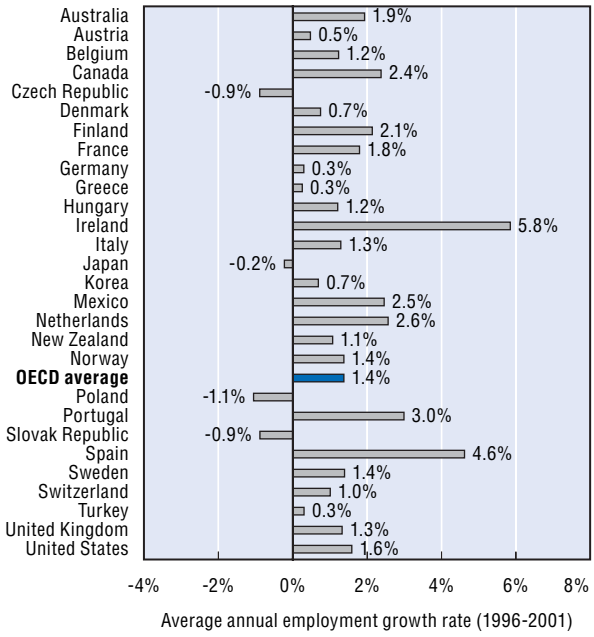
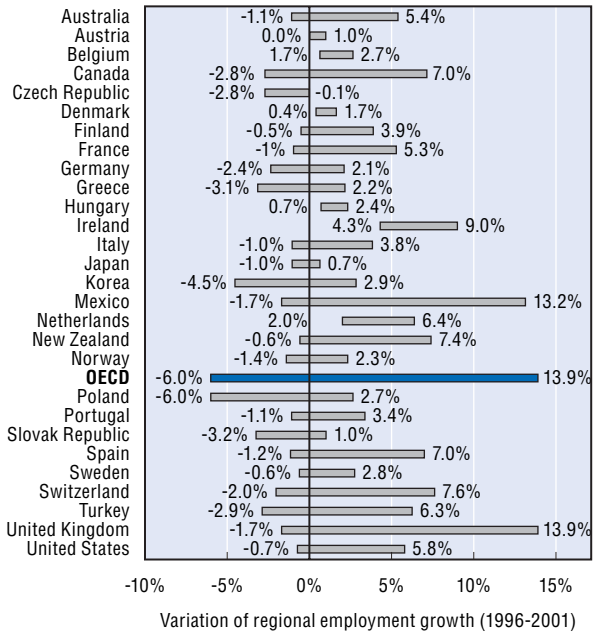
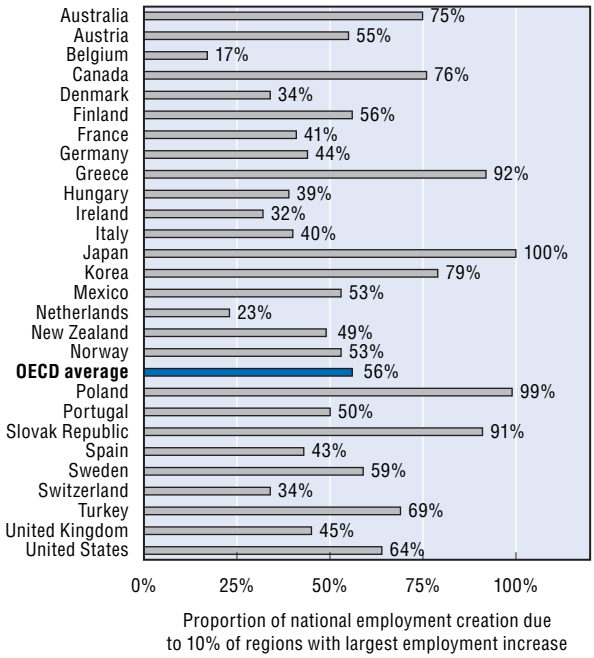
9.1. **From 1996 to 2001, employment growth varied significantly among OECD countries...**



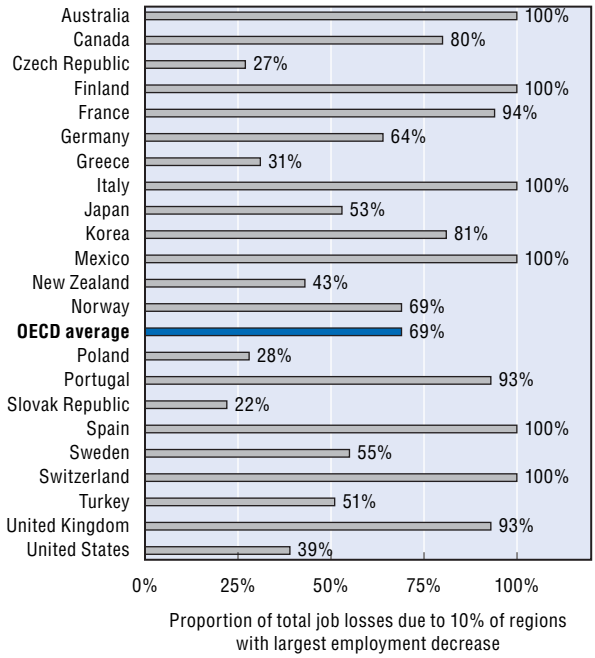
9.2. **... but differences in employment growth were even larger among regions within countries**



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]

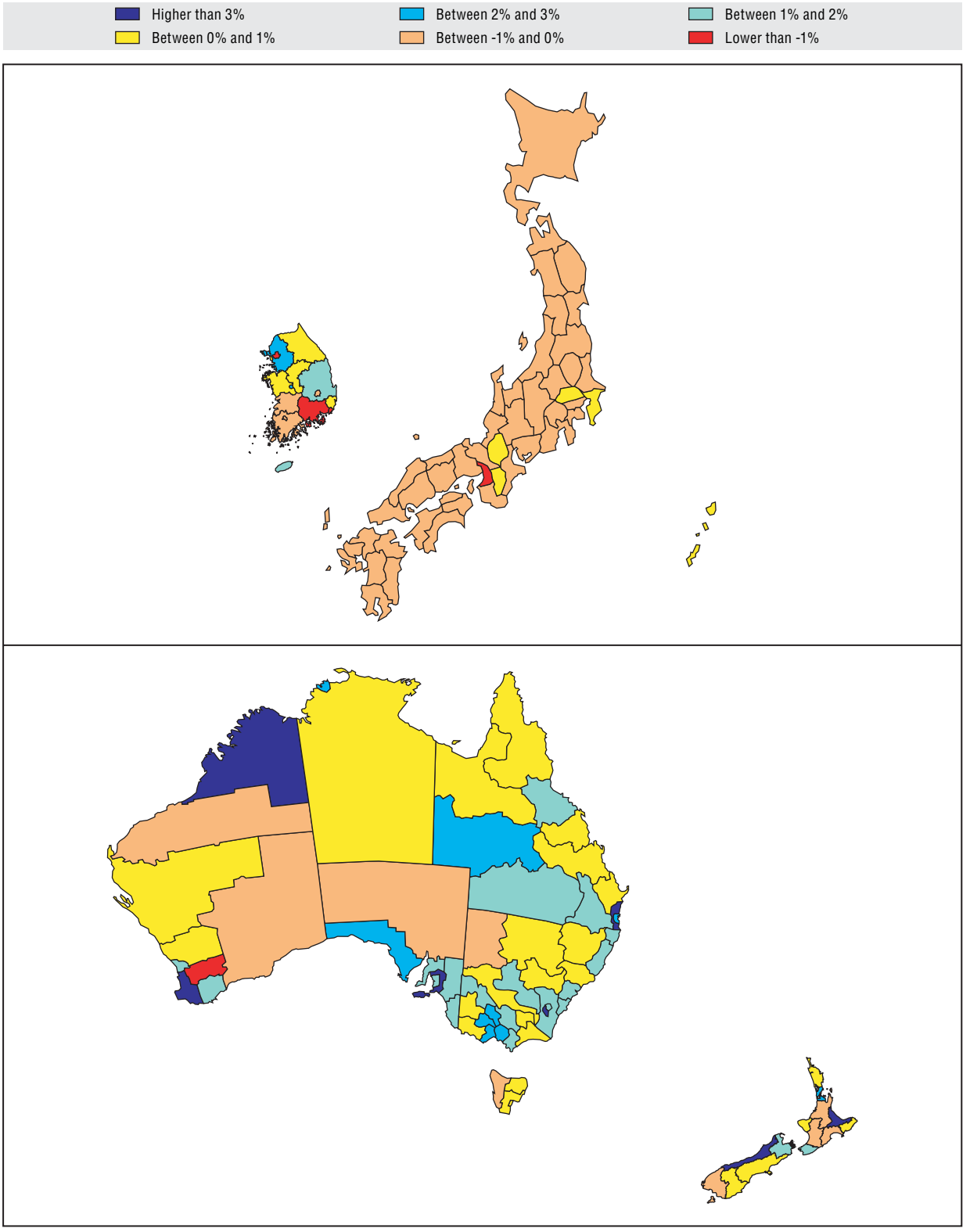


1. Czech Republic not shown as employment growth was negative in all regions.
2. Austria, Belgium, Denmark, Hungary, Ireland and the Netherlands not shown as employment growth was positive in all regions.

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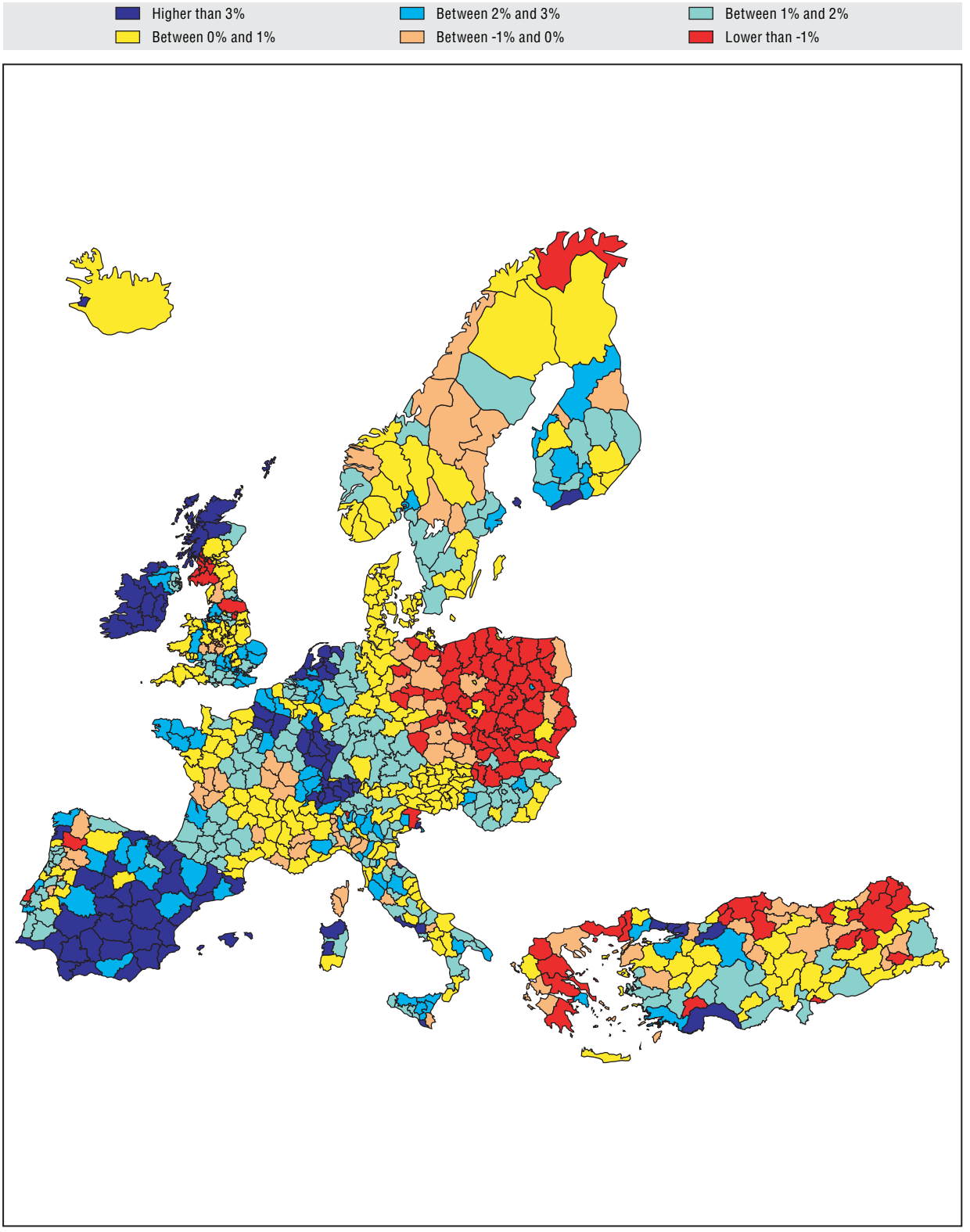
9.6. **Regional employment growth: Europe TL3**

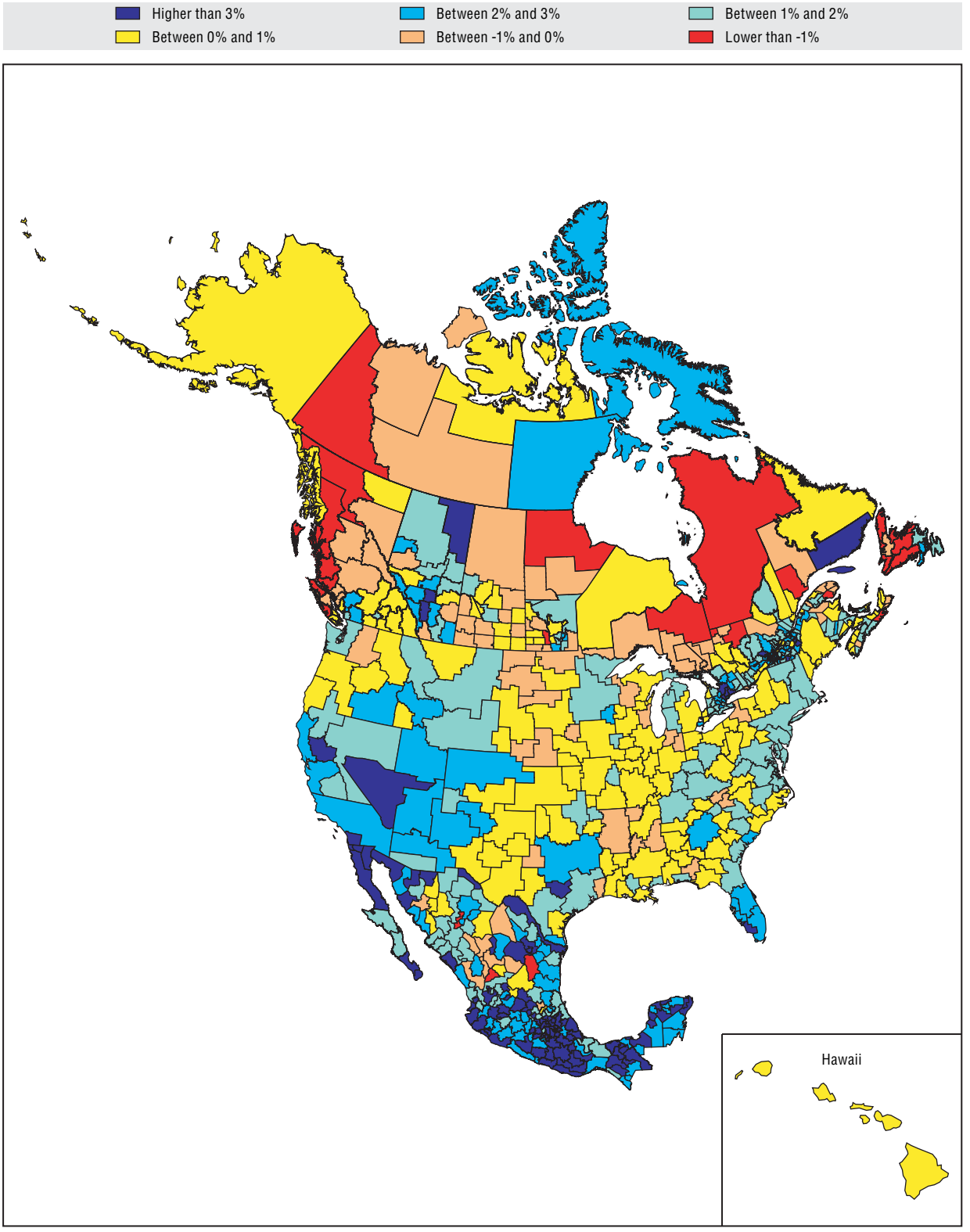
Annual average rate 1996-2001



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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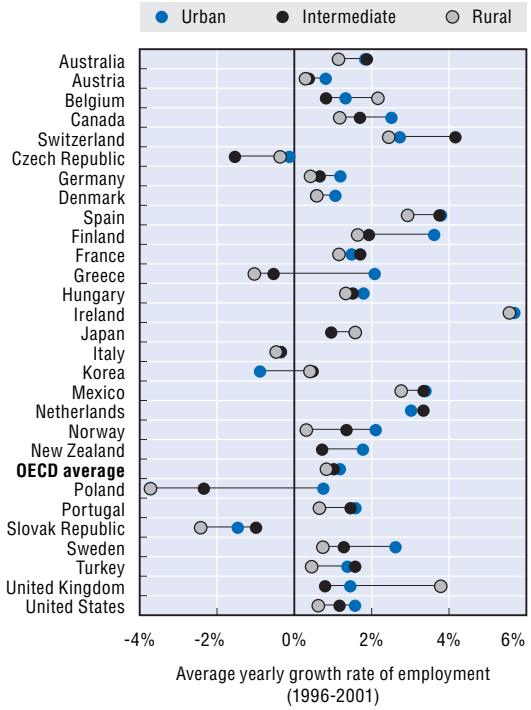
Fostering employment growth: a role for rural regions?

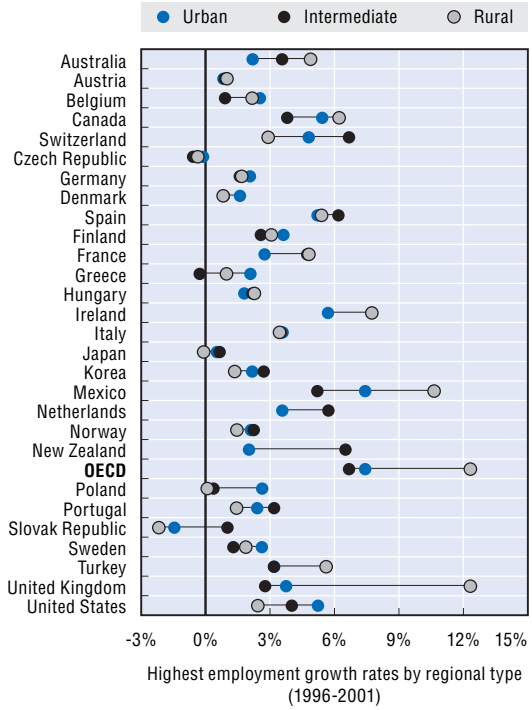
The structural change away from agriculture and manufacturing and towards services has produced uneven effects on regions. Traditionally specialised in primary activities, rural regions have been strongly affected by the secular decline in employment in agriculture. This trend has resulted in sluggish 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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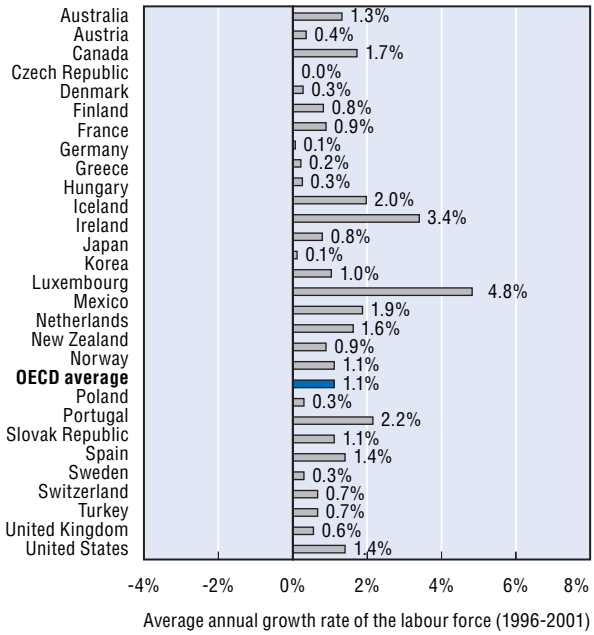
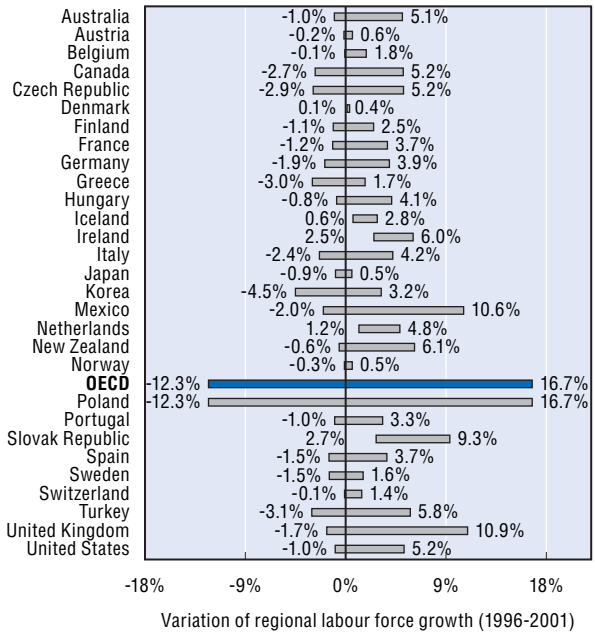
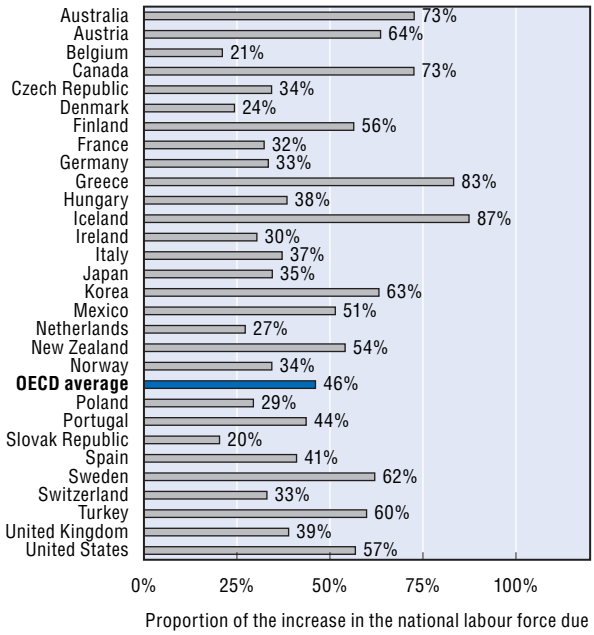
10.1. **From 1996 to 2001, growth of the labour force varied significantly among OECD countries...**



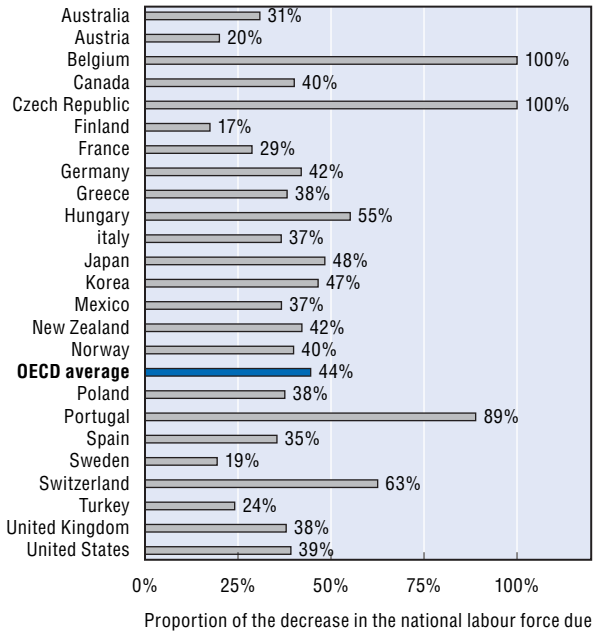
10.2. **... but the differences were even larger among regions within countries**



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



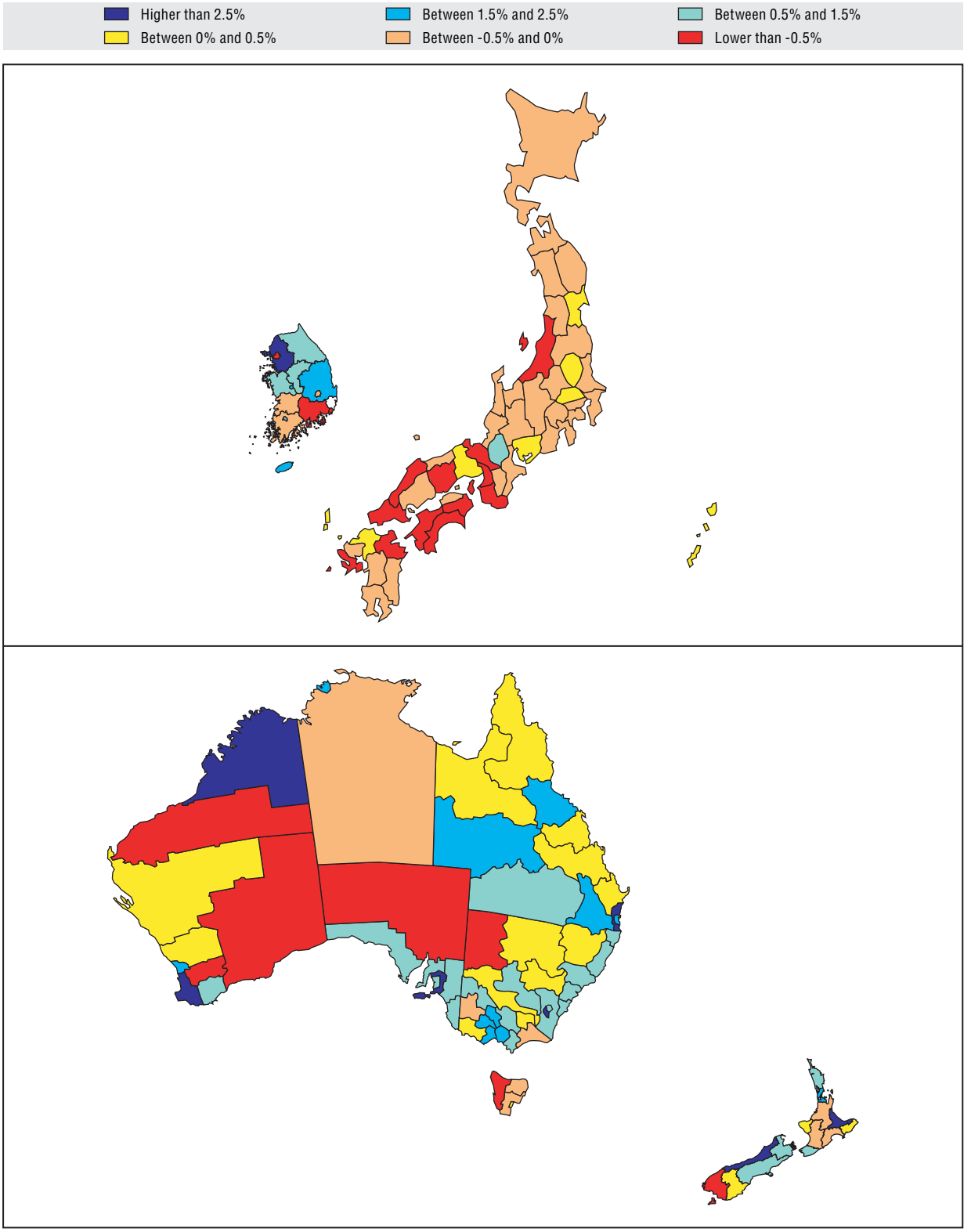
10.4. **44% of the decrease in the labour force in OECD countries was due to only 10% of regions**



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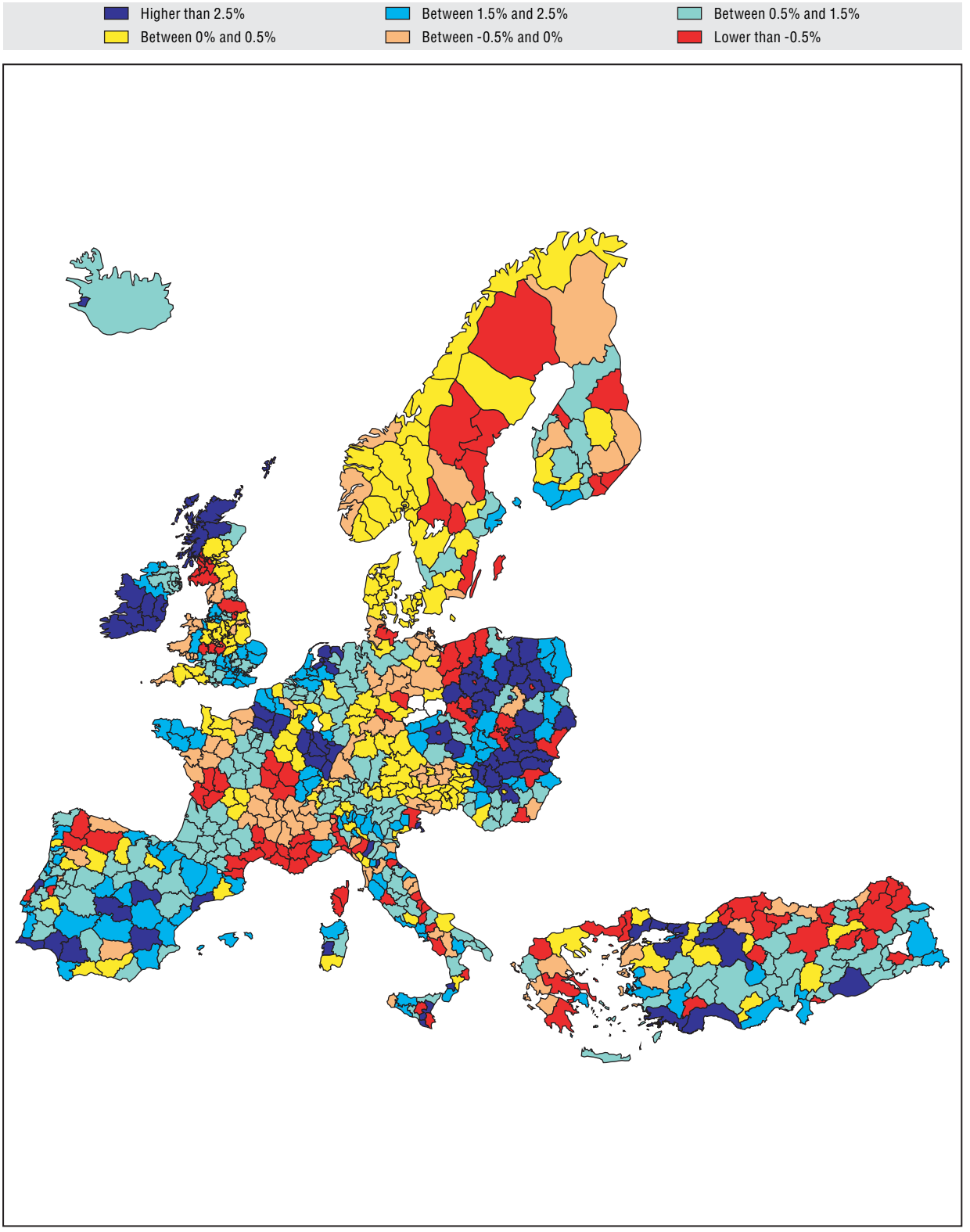
10.6. **Regional labour force growth: Europe TL3**

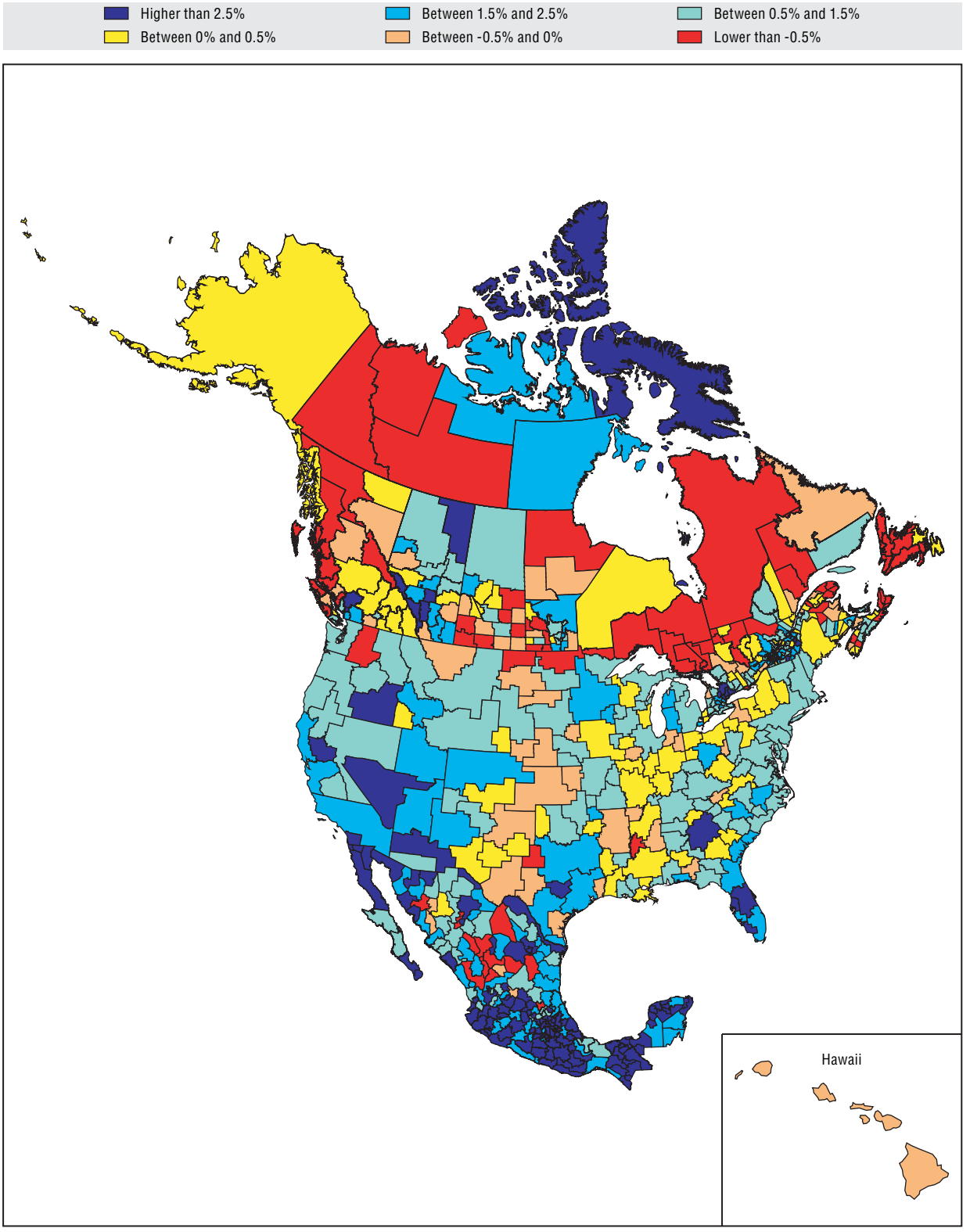
1996-2001



Source: OECD Territorial Database.

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

1996-2001



Source: OECD Territorial Database.

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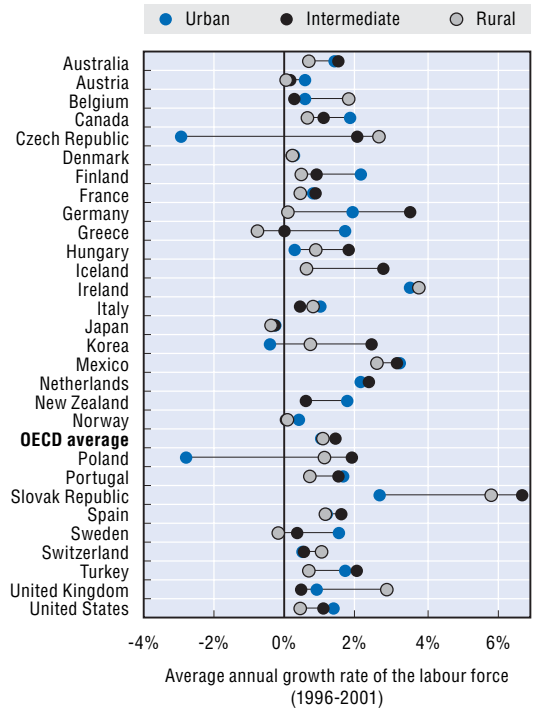
Urbanisation and ageing: what perspectives for the labour force in rural regions?

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**