

THE DEMOGRAPHIC TRANSITION

- Population growth in the EU has been slowing for decades and the population is projected to decline in the coming years and decades. In 2021 and 2022, the EU recorded, for the first time, a reduction in population, although the COVID-19 pandemic played a role in this and a (temporary) recovery is expected.
- The slowdown in growth has been driven by a natural decline in population since 2012 and inward migration has not been sufficient to compensate for this. Already 40 % of people in the EU live in a region that lost population over the preceding decade and this is projected to increase. In rural regions the share is higher than in urban regions.
- In the EU, a process of urbanisation and suburbanisation has been going on since at least 1960, resulting in an increasing concentration of the population in fewer cities and large towns, and a diminishing proportion in rural areas. This tendency is not expected to go into reverse, though the pace of urbanisation is likely to moderate, especially in countries with already high levels of urbanisation.
- Because of increased life expectancy and the ageing of the baby-boom generation, the population aged 65 and over has increased in virtually all regions, while the number of working-age and young people has declined. These trends are projected to continue, posing policy challenges in terms of labour market shortages, fiscal sustainability, infrastructure provision, and access to essential and social services.
- These challenges are most acute in remote, predominantly rural regions – i.e. those a long way from the nearest city – where depopulation, ageing and a shrinking workforce are most prevalent.
- Some regions, in addition to the workforce shrinking, are affected by a small and stagnant share of the population with tertiary education, making it difficult to compensate for the loss of labour through higher labour productivity. These regions, which can be thought of as being in a ‘talent development trap’, are found in various parts of the EU, with some concentration in eastern Member States.
- Such regions tend to have relatively low GDP per head and employment, to be rural in nature with a large agricultural sector, and to have poor access to services and the internet. Targeted policy responses, such as the Harnessing Talent Initiative and the Talent Booster Mechanism, are needed to increase their resilience and attractiveness.

Chapter 6

The demographic transition

1. Demographic change in EU regions

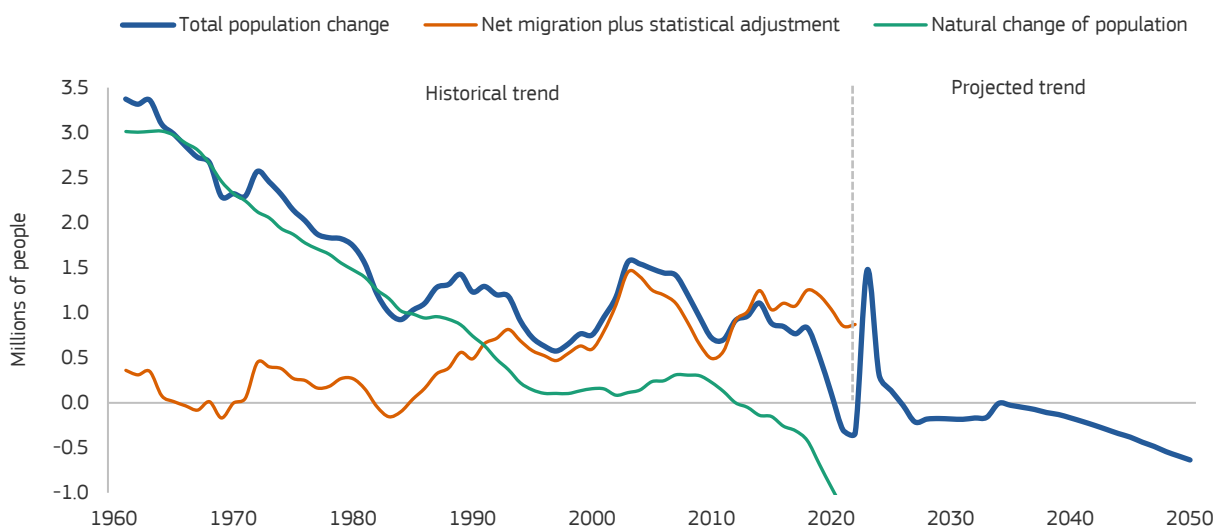
1.1 After decades of growth, the EU population has started shrinking, due to natural decline

The total population in the 27 present EU Member States has been growing since at least 1960. Up until the early 1990s, there was natural population growth in the EU, with births exceeding deaths. On average, between 1960 and 1992, natural growth added 1.8 million people a year to the population. However, natural growth was steadily declining over this period (Figure 6.1). Net inward migration (immigration less emigration) was small, adding only about 200 000 people a year on average to the total, and in some years more people moved out of the EU than moved in.

Since 1992, net inward migration has contributed more than natural growth to the population. In the 1990s and 2000s, natural growth added only 250 000 people a year to the population as against 800 000 a year from inward migration. From 2012, there was a natural reduction in the population of almost 500 000 a year, but this was more than offset by net migration. During 2020 a sudden surge in the mortality rate, because of the COVID-19 pandemic, led for the first time to a reduction in population despite the positive contribution of migration.

Population projections¹ show that, following a rebound in 2023, the total population is expected to decline from 2026 on.

Figure 6.1 Change in total population, natural change and net migration in the EU, 1961–2022 (three-year moving average) and population projections 2023–2050, millions



Source: Eurostat [demo_gind, proj_23_n].

¹ Eurostat's population projections (Eurostat[proj_23_n]) used here result from the application of a set of assumptions on future developments of fertility, mortality and migration to the official statistics provided by national statistical institutes. The projections should not be considered as forecasts but as 'what-if' scenarios that indicate how the population will change in future on these assumptions.

1.2 Drivers of population change vary between urban and rural regions

Since 2010, the EU population has increased on average by 1.5 per 1 000 each year (Table 6.1). This is much slower than in the 2000s, when the rate was 2.9 per 1 000. A natural reduction (of 0.7 per 1 000 a year) was offset by net inward migration (of 2.2 per 1 000 a year). Over this period, the highest growth was in the north-western EU² (4.2 per 1 000 a year) with both a natural increase in population and net inward migration³ (Map 6.1). Population growth in the southern EU was lower because of a natural reduction in population, but still positive because of net inward migration, which was similar in scale to that in the north-western Member States. The population in the eastern EU declined (by 2.6 per 1 000 a year) because of a significant natural reduction and net outmigration.

At the EU level, as well as in all three broad areas, natural change and net migration followed the same pattern over the 2010–2021 period as regards relative developments in urban and rural regions⁴. They were highest on average in the former and lowest (often negative) in the latter (Table 6.2). This reflects the smaller share of women of child-bearing age in rural regions than in urban ones, meaning that, despite having a higher fertility rate, they have a lower birth rate. This, in combination with higher mortality rates

because of an older population, contributes to lower natural population growth and in many cases a decline.

The differences in the structure of the population led to substantial differences in demographic trends, with relatively high total population growth in urban regions in the north-western EU (6 per 1 000 a year) and significant decline in rural regions in the southern and eastern EU (of 4–5 per 1 000 a year). There is a natural reduction, on average, in all types of regions in the EU – urban, intermediate and rural except for urban regions in the north-western EU.

There was net inward migration, on average, into all three types of regions at EU level, but much more so for urban than rural regions (3.1 per 1 000 a year, as against 0.9). Net inward migration outweighed a natural reduction in population in north-western rural and intermediate regions, southern urban regions and eastern urban regions. Only in eastern rural regions was there, on average, net outward migration, so adding to the natural reduction and contributing to a significant outflow in regions in countries such as Latvia, Lithuania and Croatia. The averages, however, conceal the fact that there was also net outward migration in some regions in the southern EU (mainly in Spain, Portugal and southern Italy) and in the north-western EU (mainly in northern France and Finland).

Table 6.1 Natural population change, net migration and total population change, 2010–2021

| | Total population change | Natural population change | Net migration |
|--|-------------------------|---------------------------|---------------|
| <i>Average annual change per 1 000 residents</i> | | | |
| EU-27 | 1.5 | -0.7 | 2.2 |
| North-western | 4.2 | 0.6 | 3.6 |
| Southern | 0.4 | -1.6 | 2.0 |
| Eastern | -2.6 | -2.2 | -0.4 |

Source: Eurostat [demo_r_gind], DG REGIO calculations.

- 2 See the glossary for definitions of north-western EU, eastern EU and southern EU.
- 3 Note that once the analysis focuses on different parts of the EU, migration figures also include movements between Member States and, in the case of regional population change, movements between regions. The data used do not enable the different flows to be distinguished. Hence, we use the term '(net) migration' to refer to the sum of these flows. This corresponds to the operating definition used by Eurostat, i.e. the part of population changes not attributable to births and deaths.
- 4 See Box 3.1 for a detailed explanation of the urban-rural typology based on population density. If data is available at a granular level, the analysis looks at rural or urban areas; otherwise, the level of analysis is higher and based on predominantly rural or urban regions. The urban-rural typology is particularly useful for studying population dynamics over time, as it is based on population clustering and density.

Table 6.2 Natural population change, net migration and total population change by urban-rural regional typology, 2010–2021

| | Total population change | Natural population change | Net migration |
|--|-------------------------|---------------------------|---------------|
| <i>Average annual change per 1 000 residents</i> | | | |
| EU-27 | | | |
| Urban | 3.9 | 0.8 | 3.1 |
| Intermediate | 0.9 | -1.3 | 2.3 |
| Rural | -1.6 | -2.5 | 0.9 |
| North-western | | | |
| Urban | 6.0 | 2.3 | 3.7 |
| Intermediate | 3.8 | -0.2 | 3.9 |
| Rural | 1.3 | -1.6 | 2.9 |
| Southern | | | |
| Urban | 2.1 | -0.5 | 2.6 |
| Intermediate | -0.5 | -2.2 | 1.7 |
| Rural | -4.7 | -5.2 | 0.4 |
| Eastern | | | |
| Urban | 1.5 | -0.9 | 2.4 |
| Intermediate | -2.5 | -2.5 | -0.1 |
| Rural | -4.1 | -2.5 | -1.6 |

Source: Eurostat [demo_r_gind], DG REGIO calculations.

In the case of rural and intermediate regions, their proximity to a city matters for demographic change (Table 6.3)⁵. In remote rural regions, the population shrank by 3.6 per 1 000 a year between 2010 and 2021, around 4 times more than in rural

regions close to a city, where the natural decline in population was partly offset by net inward migration. By contrast, there was very little net inward migration into remote rural regions, where the natural decline was greater.

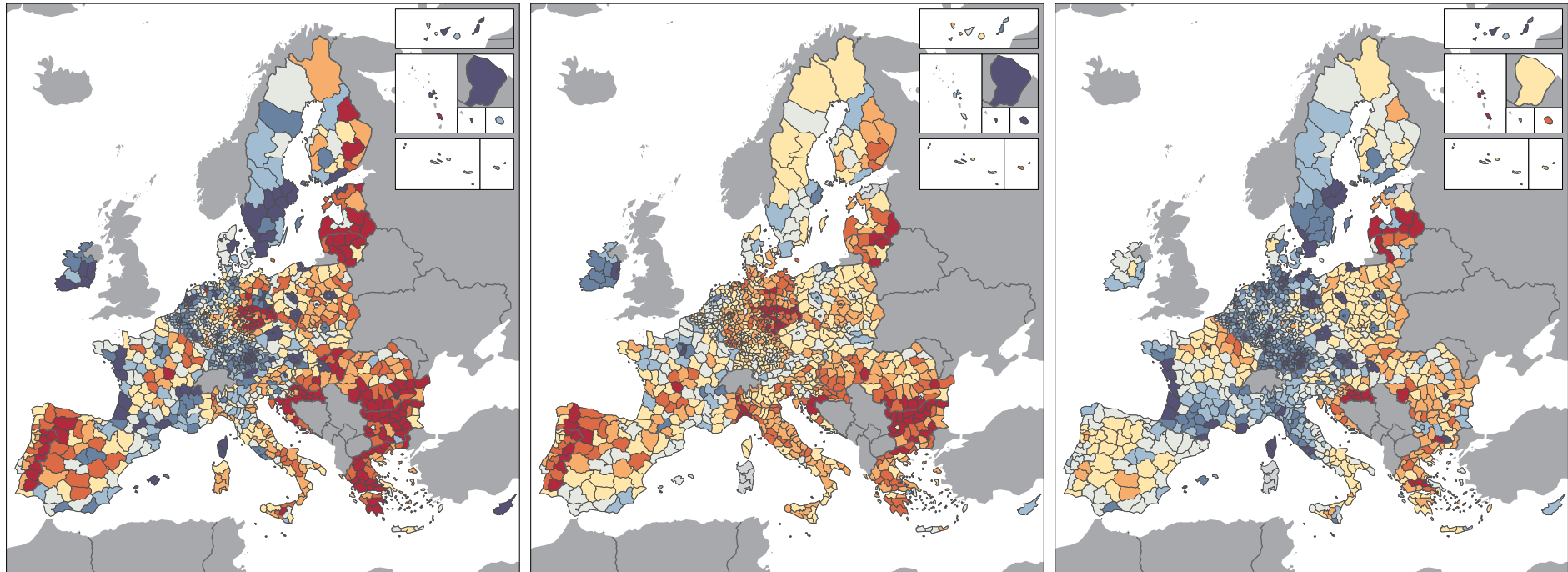
Table 6.3 Natural population change, net migration and total population change by urban-rural regional typology including closeness to a city, 2010–2021

| | Total population change | Natural population change | Net migration |
|--|-------------------------|---------------------------|---------------|
| <i>Average annual change per 1 000 residents</i> | | | |
| Urban | 3.9 | 0.8 | 3.1 |
| Intermediate | 0.9 | -1.3 | 2.3 |
| Close to city | 1.2 | -1.3 | 2.4 |
| Remote | -2.6 | -2.1 | -1.5 |
| Rural | -1.6 | -2.5 | 0.9 |
| Close to city | -0.8 | -2.1 | 1.3 |
| Remote | -3.6 | -3.5 | -0.1 |

Source: Eurostat [demo_r_gind], DG REGIO calculations.

⁵ The analysis here is based on a more detailed version of the urban-rural typology that further classifies intermediate and rural regions as either being 'close to a city' or remote. 'Close to a city' means that at least 50 % of the population is located inside areas within 45 minutes travel time to the centroid of a city of at least 50 000 inhabitants. 'Remote' means 50 % of the population is located outside such areas.

Map 6.1 Total population change, natural growth and net migration by NUTS 3, 2010–2021

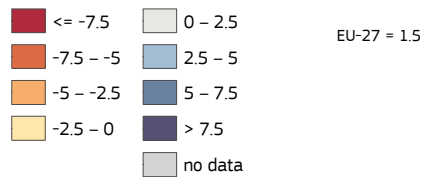


Population change

Natural growth

Net migration

Average annual change per 1 000 residents



EU-27 = -0.7

EU-27 = 2.2

Source: DG REGIO calculations based on Eurostat (demo_r_gind3) and Joint Research Centre (JRC) (ARDECO) data.

0 1 000 km

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Box 6.1 Long-term urbanisation trends in Europe

Urbanisation is associated with innovation and economies of scale, leading to higher productivity and socio-economic development. Because of the density of urban areas, they can also offer environmental advantages such as reduced use of land, energy and raw materials. On the other hand, the increasing population density and diversity of urban areas pose challenges of pollution, housing cost, congestion, crime and lack of social cohesion, potentially affecting the well-being of residents.

The concentration of population in urban areas is not a recent phenomenon. The urbanisation process in Europe, as elsewhere, was fuelled by industrialisation from the late 18th century on, with a shift from agrarian-based to industrial-based economies and, more recently, to services. This led to the movement of people from rural to urban areas and to the construction of infrastructure there.

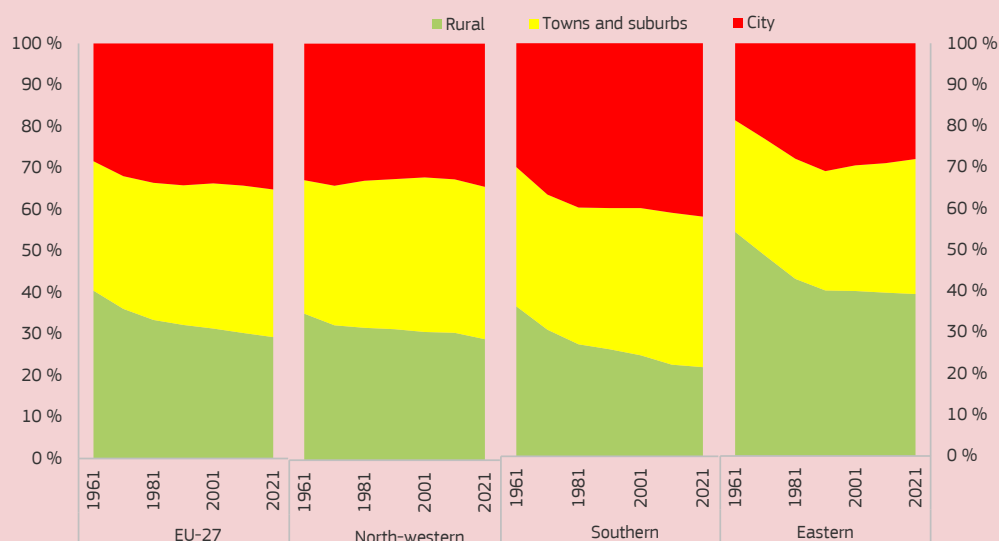
Between 1961 and 2021, the EU population increased from 359 to 456 million. This was accompanied by a steady process of urbanisation, with the population living in urban areas increasing from 59 % to 71 % of the total, and consequently the share in rural areas

falling to 29 % by 2021 (Figure 6.2)¹. The increase in the urban population was split between cities (7 pp) and towns and suburbs (5 pp).

However, current levels of urbanisation and trends over the 1961–2021 period differ between broad areas of the EU. Contrary to the population growth in the north-western and southern areas, in the eastern EU the population has declined steadily since 1991, with even the share in cities declining from 31 % to 28 %. In 2021, the eastern Member States remained the least urbanised, with 61 % of the population living in urban areas (cities plus towns and suburbs) as against 71 % in the north-western and 78 % in the southern EU.

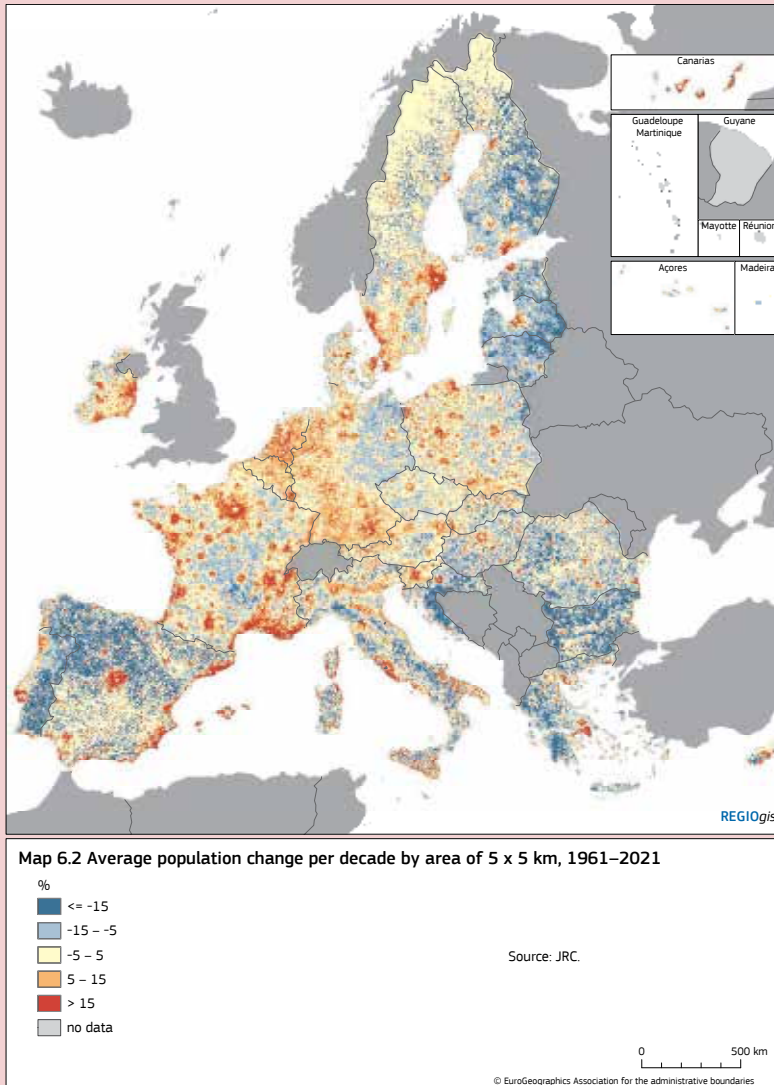
The decline in the rural population was particularly marked in the southern EU (from 36 % in 1961 to 22 %). The increase in the share of the population in cities was largest in the southern EU (12 pp), followed by the eastern EU (9 pp), while it barely increased at all in the north-western EU (1 pp). The population share in towns and suburbs increased most in the eastern (6 pp) and north-western EU (5 pp), while it increased much less in the southern EU (2 pp).

Figure 6.2 Share of population by degree of urbanisation (cities, towns and suburbs, and rural areas), in the EU-27 and per broad area, 1961 to 2021



Source: Batista e Silva and Dijkstra (2024) and DG REGIO calculations.

1 The degree of urbanisation from 1961 to 2021 is calculated using the degree of urbanisation grid tool developed by the JRC (global human settlement layer tools: <https://ghsl.jrc.ec.europa.eu/tools.php>). This produces a grid-level classification of settlements based on population grids at 1 square kilometre (km²) resolution, and according to the degree of urbanisation definitions (see Box 3.2). As input, a consistent time-series of population grids at this level of resolution, constructed for this period by the JRC, was used, with 10-year intervals in line with the census years.



The change in population between 1961 and 2021 differs between countries and is affected by geography (Map 6.2). Population growth and decline both tend to cluster in particular areas. In addition, there is a marked urban-rural divide across the EU. The population increased substantially over the period in or around the main cities, as well as coastal areas, especially in the southern EU. Rural areas lost population overall, but especially in the southern and eastern EU, with large, mainly rural, parts of Portugal, Spain, Croatia, Bulgaria, Romania and the Baltic countries.

This illustrates an ever increasing concentration of the EU population in cities and large towns, and an ever diminishing population in rural areas. There is no expectation that this trend will go into reverse, though on average the speed of urbanisation is likely to decline, especially in countries with already very high urbanisation levels.

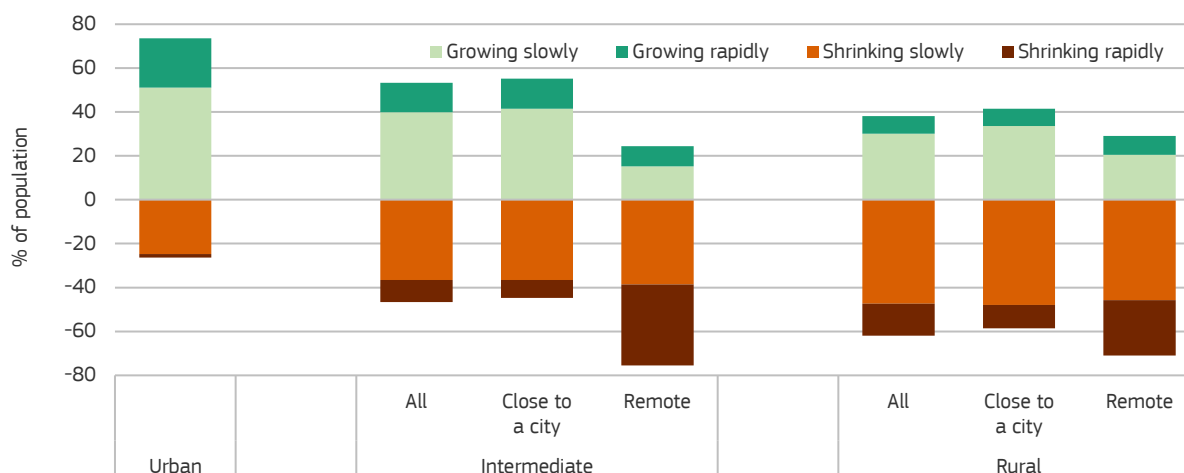
In the case of intermediate regions, the effect of proximity to a city is even more pronounced. In those close to a city, the population increased by 1.2 per 1 000 a year over the period, whereas in remote regions, it shrank by 2.6 per 1 000. Much of this can be attributed to differences in net migration, which was positive in regions close to a city and negative in remote regions, so reinforcing a larger natural population reduction in the latter.

The net outward migration from remote regions (e.g. some outermost regions such as Guadeloupe or Açores) results in part from a lack of economic and employment opportunities there, which together with a lack of access to essential services, such as education and training, childcare and healthcare facilities, makes them less attractive places to live,

both for migrants and the resident population (see also Chapter 3). In some outermost regions, however, the problem is rather the reverse: a sizeable inwards migration pressure from outside the EU. Mayotte, Guyane and Canarias are among the 10 EU regions with the highest share of non-EU-born migrants; in Mayotte more than 50 % of the population was born outside of the EU.

In 2022, 42 % of people in the EU lived in a region that lost population between 2010 and 2021. This was the case for only 26 % in urban regions, but for 47 % in intermediate regions and for 62 % in rural ones (Figure 6.3). The share of people living in a shrinking region was particularly large (around 75 %) in remote intermediate and rural regions. Rapid population decline (by at least 7.5 per 1 000

Figure 6.3 Share of EU population in 2022 by direction and rate of population change by urban-rural typology during 2010–2021



Note: Rapid growth/decline is defined as an increase/decline of at least 7.5 per 1 000 a year. Share of population relates to the share on 1 January 2022.

Source: Eurostat [demo_r_pjangrp3] and DG REGIO calculations.

a year) is also more likely to have been experienced in rural regions than in others over the period. In remote intermediate regions, the reduction was as much as 37 % over the 12 years.

The relatively large share of rapidly shrinking regions that are rural and remote is in line with the reduction in population that occurred on average in these regions. Nevertheless, there are also regions with rapid population growth in all the groups, especially the two French outermost regions of Guyane and Mayotte, where the population is projected to double by 2100.

Eurostat population projections for 2040⁶ indicate an increase in the share of people living in shrinking regions in all groups by around 18 pp, as compared to 2020.

1.3 The share of the population aged 0–29 relative to 30–59 varies markedly across the EU

In 2022, the EU population aged 0–29 was 139 million, and that aged 30–59 was 183 million. The difference of 44 million people constitutes a

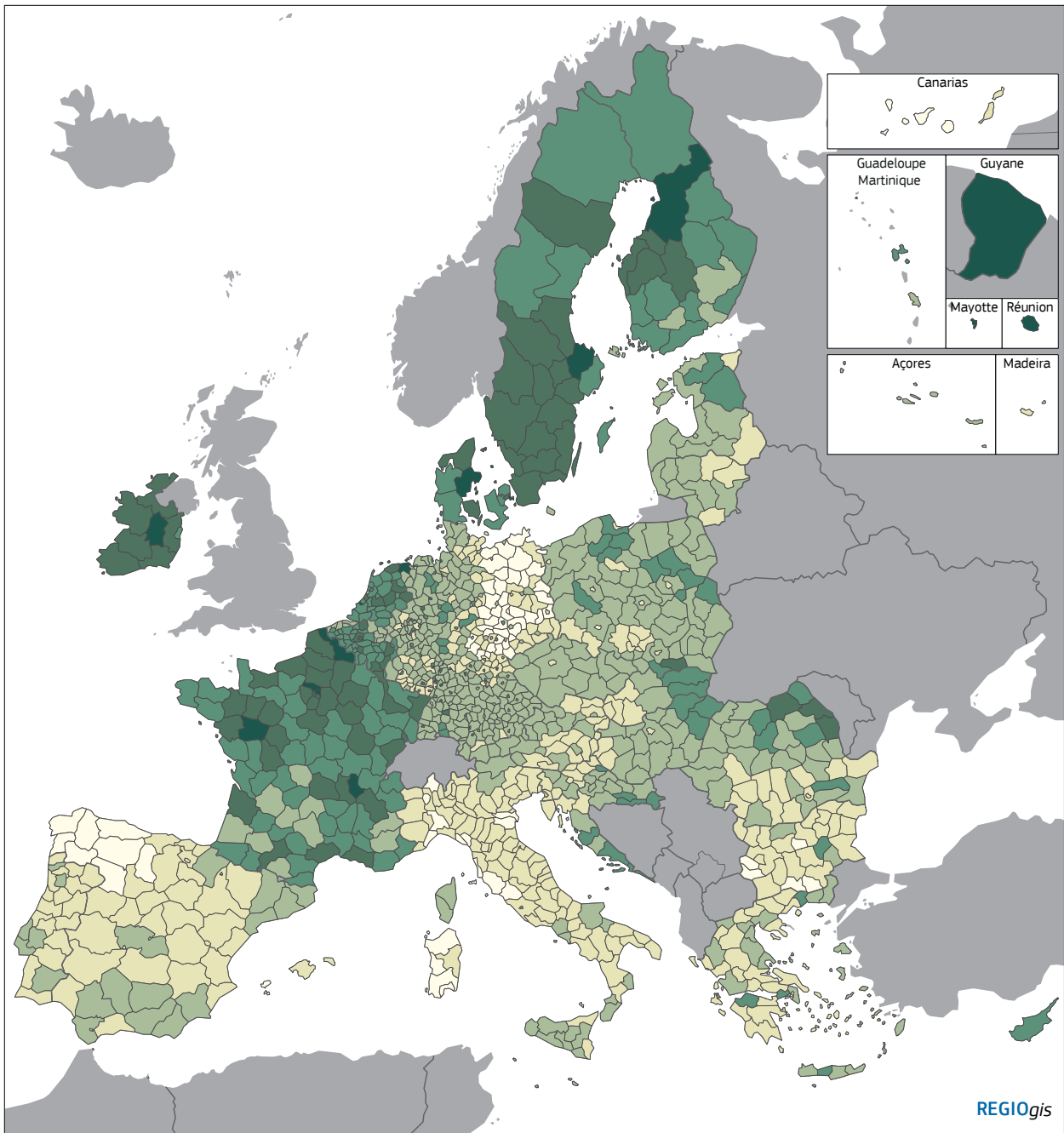
generation gap that is the equivalent of 10 % of the EU's total population. Inward migration is likely to reduce the difference in the future by adding to those aged 0–29, but is unlikely to eliminate it completely. In light of continued ageing and projected levels of fertility, this means that the total population is projected to decline in the coming years and decades, based on the latest Eurostat baseline projections.

The age structure of the population also affects the birth rate⁷. As the younger age group gets older over time, the number of women of child-bearing age will decline, leading to fewer births even if fertility rates remain unchanged.

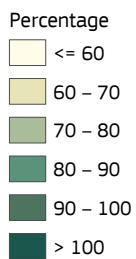
The difference between the two age groups exists in virtually all EU regions (Map 6.3), though the extent differs. For instance, in many regions in north-western Spain and eastern Germany as well as in a few regions in Italy and Bulgaria, the population aged 0–29 is 40 % or more smaller than that aged 30–59, implying an increasingly negative natural change in population and a rapid growth in the share of population aged 65 or over compared with other regions.

⁶ Eurostat [proj_19rp3].

⁷ Birth rate refers to the total number of births in a year per 1 000 individuals in a population. The fertility rate refers to the number of live births in a year per 1 000 women of reproductive age in a population.



Map 6.3 Population aged 0-29 relative to population aged 30-59 by NUTS 3, 2022

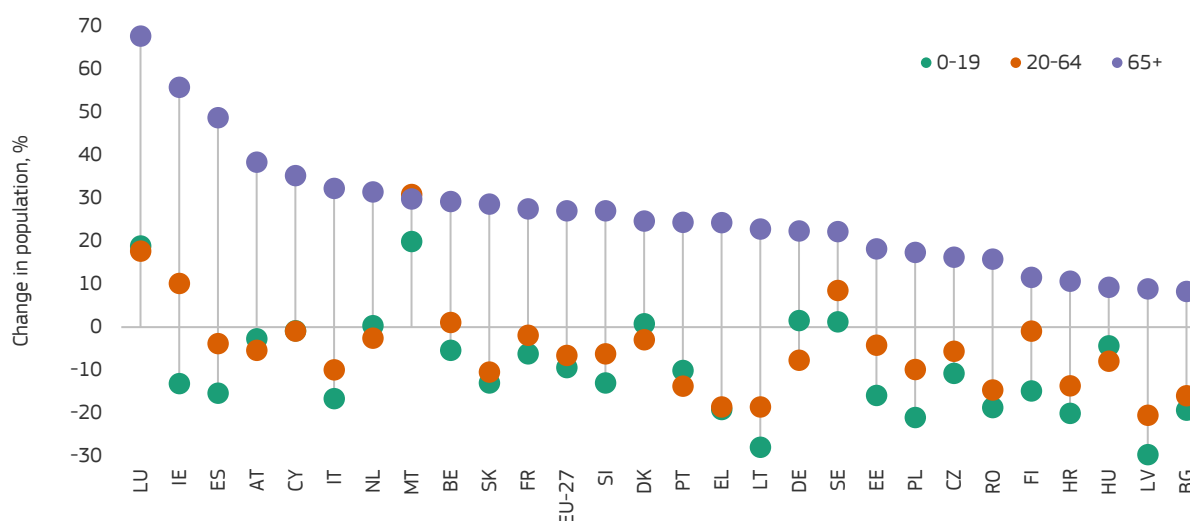


EU-27 = 76.0
 Source: Eurostat (demo_r_pjangrp3).



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Figure 6.4 Projected change in population by age group in EU Member States, 2023–2040



Source: Eurostat [proj_23n].

By contrast, a few regions in France (including some of the outermost ones), Ireland, Sweden, the Netherlands, Finland and Denmark have more people aged 0–29 than aged 30–59, meaning they are likely to experience a slower natural decline in the population or even an increase.

Despite regional variations, there are clear national patterns, with most north-western Member States, apart from Germany and Austria, having a relatively large share of the population aged 0–29 and southern Member States a relatively small share. Apart from higher outmigration of young workers, as concerns young women, in particular, the gap could be linked to lower birth rates because of differences in family policies, which are well developed in France and the northern Member States, and in the availability and affordability of early childhood education and care services. Difficult labour market conditions for young people seeking stable employment, as well as difficult economic conditions in general, might also play a role, resulting, for example, in women in Spain and Italy having their first child relatively late in life (see also Chapters 1 and 2).

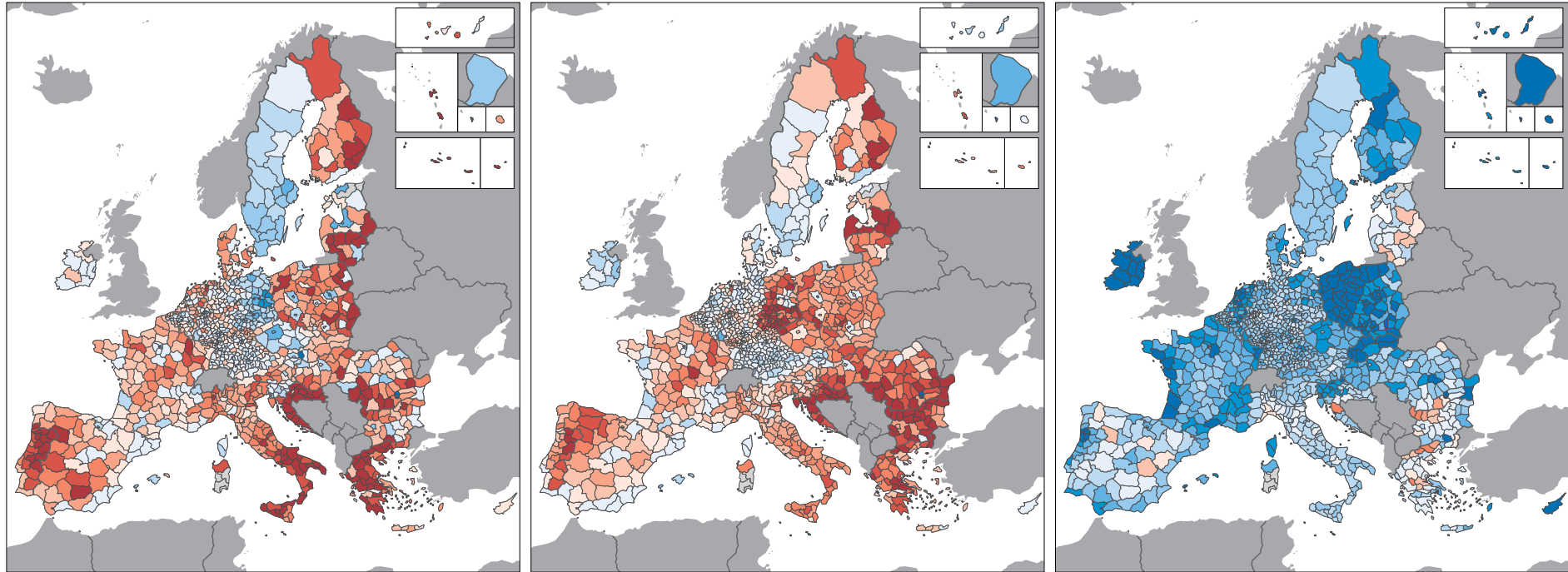
1.4 The older population is growing while other age groups are shrinking

The gradual slowdown in population growth in the EU masks significant differences in the trends for different age groups. Some age groups have started shrinking while others have continued to grow (Map 6.4). In particular, the population of working age (those aged 20–64) declined by 2.5 % over the 2014–2021 period, though by more in eastern and southern Member States, with some regions experiencing reductions of over 10 %⁸. This decline is expected to continue. At EU level, the working-age population is projected to fall by 6.5 % by 2040 (Figure 6.4). Some Member States are more affected than others. In Latvia, Lithuania and Greece, a reduction of around 20 % is projected. Assuming that the activity rates of people in various education groups (primary, secondary and tertiary) within each population subgroup (young, prime-age individuals, older people, female, male, mothers) remain constant, the number of active people is expected to follow a very similar pattern. After rising to a record 205 million in 2022, the number of active people is estimated to decline to 201 million in 2030, 192 million in 2040, and 184 million in 2050⁹.

⁸ For future implications for the size of the labour force in a number of Member States, see European Commission (2023b), Chapter 2.

⁹ Source: DG EMPL calculations, based on Eurostat and Organisation for Economic Co-operation and Development (OECD) data and EUROPOP2023 population statistics.

Map 6.4 Percentage change in population by age group by NUTS 3, 2014–2021

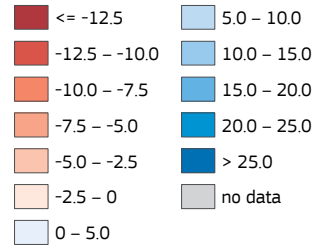


Ages 0–19

Ages 20–64

Ages 65 and over

Total change (%)



EU-27 = -1.2

EU-27 = -2.5

EU-27 = 14.0

Source: Eurostat (demo_r_pjangrp3),
DG REGIO calculations.

0 1,000 km

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The reduction in the working-age population has a significant negative impact on the size of the EU's labour force and poses a risk to economic growth and fiscal sustainability, especially given the projected increase in the population aged 65 and over (see below). Labour market policies can mitigate this decline of Europe's labour force. In a scenario where the activity of women in the EU converged to the target value in the three top-performing Member States for this group, an additional 17.3 million women would enter the EU labour market. Under the same assumption for men, an additional 8.8 million men would join the EU workforce.

There was a slightly smaller decline over the 2014–2021 period in the 0–19 age group at EU level (of 1.2 %), though in many southern and eastern regions the reduction was over 10 %. By contrast, there was an increase in several regions in Sweden, Czechia and the eastern part of Germany, as well as in capital city regions in many other Member States. The projection is for the population aged 0–19 to decline by over 9 % by 2040, though by more in some eastern Member States (Lithuania, Latvia, Poland, Romania, Croatia and Bulgaria) as well as in Italy and Spain. Large and persistent reductions in this age group tend to imply a reduction in the need for schools, which can lead children having to travel longer distances to the nearest one as schools are closed down – especially in rural areas, where distances are already relatively long¹⁰ – posing significant challenges to ensuring fair access (see Section 2).

By contrast, the vast majority of regions in the EU experienced a substantial increase in the population aged 65 and over between 2014 and 2021. This was particularly so in Poland, Slovakia, Ireland and Cyprus, where in most regions the increase was over 25 %. In Finland, the Netherlands, France, Romania and Portugal, there were also some regions with growth this high. On the other hand, in a number of regions in Bulgaria, Greece, Spain, Lithuania and Latvia, the population of 65 and over declined. The projection is for this age group to increase by 27 % across the EU by 2040, though in Luxembourg, Ireland and Spain by 50 % or more. This can be expect-

ed to lead to increased demand for healthcare and long-term care and a consequent need for an expansion in capacity and, accordingly, in expenditure. If the domestic working force is shrinking, there may be a need for migrant workers to fill staff shortage gaps in the care sector.

1.5 In rural regions the share of older people is higher and the share of the working-age population lower

While, in the short term, the age structure of the population in the EU as a whole can only be changed by migration from and to the rest of the world, in individual regions it is also affected by movements to and from other parts of the EU. The likelihood of such movements occurring, and their direction, can be expected to depend, among other factors, on people's ages. Those aged 20–39 may be more likely to move from rural regions to urban ones, while among those aged 40–64 and 65 or over migration from urban regions to rural or intermediate ones may also be expected. These migration patterns would mitigate the ageing of the population in urban regions because of younger people moving in and (possibly) older people moving out; in rural regions they would exacerbate ageing as the reverse occurs.

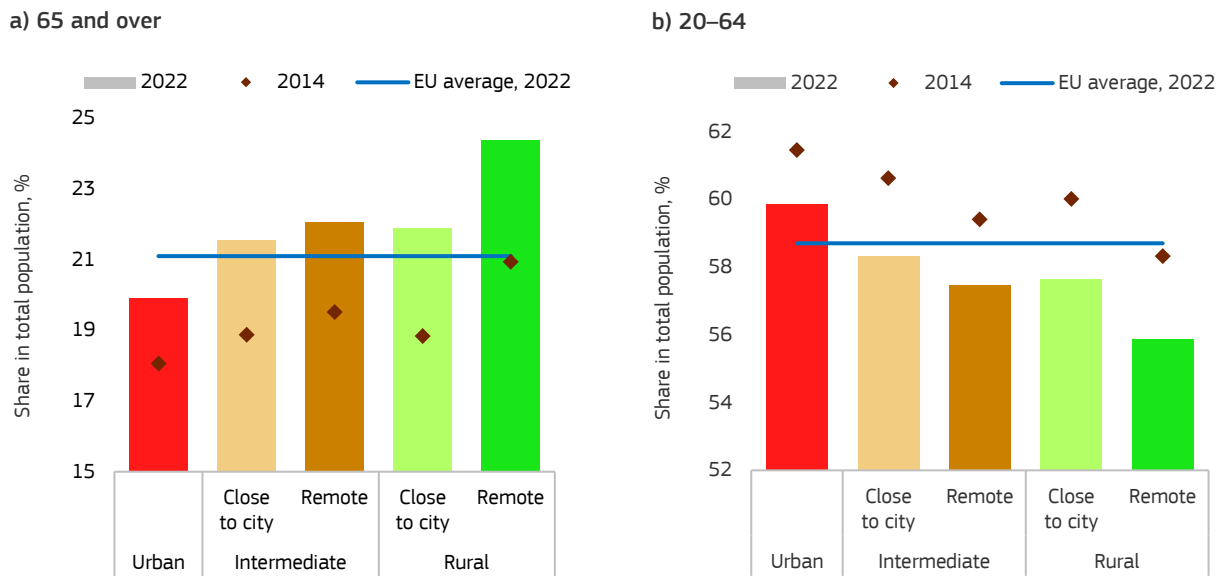
In the EU as a whole, 21 % of the population was aged 65 or over in 2022 (Figure 6.5a). This is 2.4 pp more than in 2014 and the projection is for it to continue to increase, reaching 27 % by 2040¹¹. This, coupled with a decline in the working-age population, poses ageing-related challenges, including increased healthcare and long-term care needs and so increased pressure on public budgets, social (including inter-generational) and territorial cohesion, investment, entrepreneurial activity and productivity. The extent of population decline and ageing, and the associated challenges, are likely to vary significantly between urban and rural regions.

In rural regions, the share of the population aged 65 or over tends to be relatively large, especially in remote regions, where it exceeded the EU

¹⁰ OECD (2021).

¹¹ Eurostat[proj_23n].

Figure 6.5 Share of different age groups in the total population by urban-rural typology, 2014 and 2022



Source: Eurostat [demo_r_pjangrp3].

average share by 3.3 pp in 2022. The share grew more quickly than in other regions over the 2014–2021 period, and it is expected to continue to do so in the future¹². The share of the population of working age¹³, conversely, is smaller than average in rural regions, again especially in remote ones (Figure 6.5b), and declined by more over the 2014–2021 period. Accordingly, rural regions can be expected to face more serious ageing-related challenges from a shrinking potential workforce and more people aged 65 or over.

Conversely, in urban regions, the share of people of working age tends to be larger than the EU average and the share of those aged 65 or over smaller (by 1.2 pp). The changes in both also tend to be smaller than in rural and intermediate regions, so that urban regions can be expected to be able to cope better with, or possibly avoid altogether, the challenges indicated above.

It is important to note that the extent of these challenges depends on the proportion of the working-age population that is employed, which in 2022 varied from 83 % in the Netherlands to 65 % in Italy. In addition, there is a strong tendency across the EU for employment rates among older age groups to increase¹⁴. This is partly driven by increases in the age of retirement, but also by more older people choosing to work because of better health, higher education levels, better working conditions, and less arduous jobs than in the past (see also Section 2).

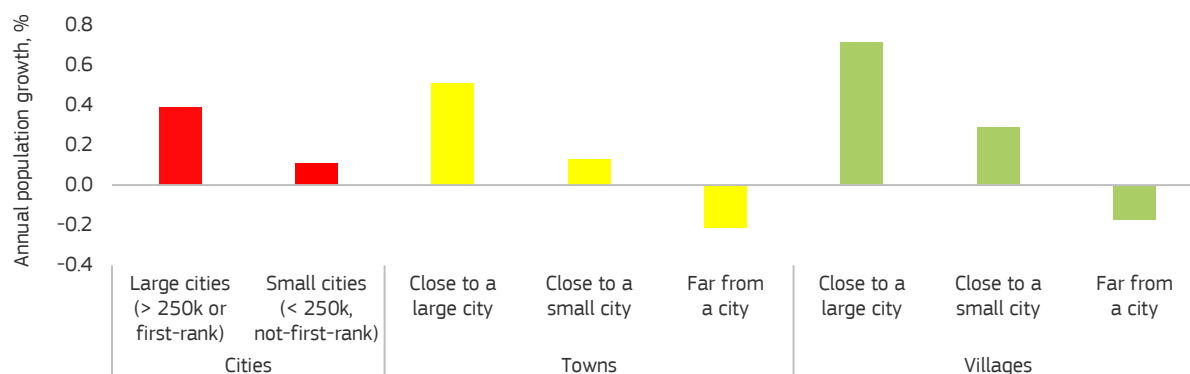
The employment rate in the EU for those aged 60–64 increased from 35 % to 49 % in the eight years 2014 to 2021, while the rate for those aged 65–74 increased from 8 % to 11 %. These rates vary considerably across the EU, the latter from 28 % in Estonia in 2022, and 19 % in Sweden, to 3 % in Romania, implying there is significant scope for more of those aged 65 or over to be employed in the future.

12 Eurostat[proj_19r]. See also the 2024 Ageing Report (European Commission and European Policy Committee, forthcoming).

13 Although the age group 20–64 is referred to here as the population of working age, it should be noted out that the actual age of people in work varies widely across regions. Employment rates differ widely across regions, as do legal retirement age limits, which in some Member States are below age 65. The age of retirement is increasing across the EU, so that a growing proportion of people aged over 64 are in employment. In addition, some of those younger than 20 are also in work, though the proportion is tending to decline.

14 See European Commission (2023a), Chapter 2.

Figure 6.6 Population growth in EU settlements, by settlement type and travel time to cities (annual average growth rates), 2011–2021



Note: Annual growth rates are computed as compound annual growth rates for the period 2011–2021. Values exclude settlements that did not exist in 2011. First-rank cities are the largest city in each country. Towns or villages are ‘close to a city’ if they are within a 30-minute drive (or less) from a city’s boundary, and far from a city otherwise. Towns or villages are close to a large city even if they are also close to a small city.

Source: OECD calculations based on EU GEOSTAT data.

2. Access to high-quality services in the face of a shrinking population and the costs involved

Given the demographic trends noted above, many settlements and regions will experience population decline over the next decade. Already half of the villages and over 40 % of towns in the EU lost population over the 2011–2021 period. These were mainly places more than 30 minutes travel from cities, whereas towns and villages close to cities experienced on average an increase (Figure 6.6)¹⁵.

Places losing population face difficult choices about how to adapt public services to fit their smaller populations and budgets¹⁶. While policies need to ensure all citizens have access to essential services, outside cities they are required to balance accessibility – in terms of availability and the

ease with which services can be reached – against the cost of provision¹⁷.

Recent country case studies on population shrinkage in Estonia and Latvia show that shrinking places might also need to strategically consider ‘rightsizing’ their built environments to reduce the oversupply and decay of existing housing and other infrastructure¹⁸ as well as to contain the cost of maintenance of older buildings.

2.1 How will demographic change affect school operations and accessibility?

Estimates from a cross-country study¹⁹ show that schools in sparsely populated rural areas tend to be smaller than those in cities and that they already have higher average costs per child²⁰ – around 20 % higher in sparsely populated rural areas and 10 % higher in villages (Figure 6.7a).

15 The definition of ‘close to a city’, as applied here to settlements, differs from the one used above in the urban-rural typology, where it refers to the share of the population in a NUTS 3 region living in proximity to a city.

16 Shrinking places may need to find creative solutions for services, involving either providing them virtually or co-operating with nearby towns or cities to provide them.

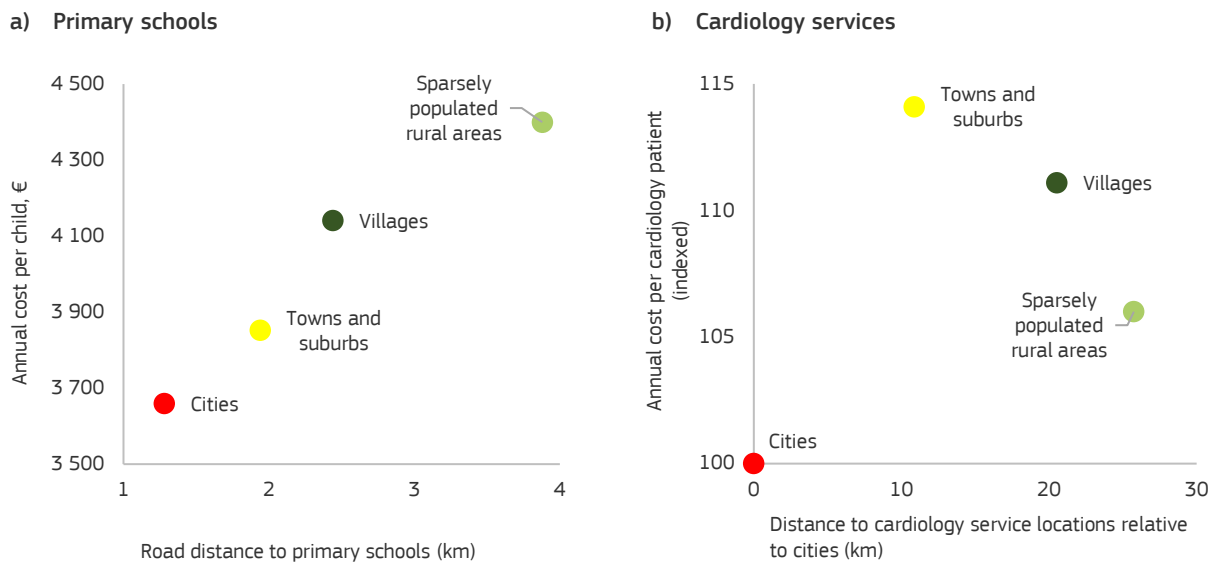
17 The European Commission measures access to services and amenities by certain travel modes within fixed travel time intervals: see European Commission (2021), Box 4.2.

18 OECD (2022).

19 OECD/EC-JRC (2021).

20 The costs per child of small schools are generally higher than for large schools because fixed costs (e.g. for administrative staff and maintenance) are spread across fewer students.

Figure 6.7 Access and cost estimates for specific services by degree of urbanisation, 2021



Source: OECD/EC-JRC (2021).

As population declines and ageing and other demographic trends such as urbanisation take hold, the OECD estimates that keeping primary school networks unchanged over the next decade will increase costs per child by 60 % in villages across the EU by 2035, and double this in sparsely populated rural areas. These costs will be even higher in countries where non-metropolitan areas are losing population more quickly²¹. Moreover, children in sparsely populated rural areas already travel much longer distances to school than those in cities.

The geographical accessibility of primary schools and early childhood education and care facilities also has an impact on labour markets, as it influences parents' decisions to work. For parents of young children, and for single parents in particular, the ease and flexibility of access to childcare determines decisions on taking up employment, as well as the number of hours worked. Analysis of several Member States shows that childcare providers are frequently inaccessible by a short walk, but can usually be reached with a short drive. The geographic accessibility of childcare facilities tends to be much higher in urban settings, probably reflecting higher demand and/or population density.

2.2 How will demographic change affect healthcare and long-term care services costs and accessibility?

Staff shortages are likely to deepen in long-term care, which is labour-intensive but already at a disadvantage in competing for staff with more attractive sectors. The challenge will be particularly acute in rural areas, characterised by an ageing-related increase in long-term care needs and shrinking human resources. Regarding healthcare, work in progress at the OECD has estimated the accessibility of some specialist medical treatment. For cardiology services, a 1 % reduction in the population served by the average centre is estimated to be associated with over 0.5 % higher costs per patient²². People in sparsely populated rural areas and villages typically travel over 20 km more to access these services than those in cities (Figure 6.7b). People in towns also travel an average of 10 km more than those in cities to access them. To address the health needs of ageing populations, the OECD recommends²³ that rural and remote places bolster their primary and integrative care systems, which are usually more accessible than specialist centres.

21 European Commission (2021), Box 6.1.

22 OECD/EC-JRC (2021).

23 OECD (2021).

Accessibility is an important consideration in how public services are distributed and their role in territorial cohesion. Inward migration and internal movements within the EU cannot ensure population growth in all places. Population loss is a demographic reality for which many EU regions need to prepare, especially by planning the adaptation of essential service provision to population change²⁴. At the same time, a loss of services can accelerate depopulation and foster discontent. National and regional governments should, therefore, help to co-ordinate and fund efforts to limit territorial inequalities in access to services. Shared mobility solutions for rural areas, such as those supported by the Smarta-NET project²⁵ managed under DG MOVE of the European Commission, can play a role in this.

3. Harnessing talent to address demographic change

The previous section showed that the decline of the working-age population is widespread, with more than half of people in the EU living in regions where it is occurring. In some regions, it is combined with additional structural challenges.

Some regions are faced with the combined challenges of population ageing, a small and stagnant share of people with tertiary education, and outward migration of the young and well educated. This puts them at risk of falling into a talent development trap, which interferes with their capacity to build sustainable, competitive and knowledge-based economies.

3.1 Many regions in the EU are in a talent development trap²⁶ or at risk of falling into one

Compared with the EU average, some regions have a significantly smaller share of tertiary-level educated people, with young people (aged 20–24) less likely to be enrolled in tertiary education and more likely to move away to enrol somewhere else. Moreover, while the proportion of people aged 25–64 with tertiary education is growing in the EU at large – because more of those in younger age cohorts have this level of education than in older ones – in these regions it is growing more slowly than in others.²⁷ The regions, therefore, will be less able to compensate for a declining population of working age by having a better qualified labour force capable of raising labour productivity. If the issue is left unaddressed, it is likely to reduce the regions' competitiveness and widen the talent gap with other regions²⁸.

Tertiary education can make a significant contribution to regional dynamism and attractiveness. However, a lack of career prospects, possibly linked to the lack of demand for qualified workers from companies and institutions in those regions, may discourage young people from investing in education and training or lead them to seek opportunities elsewhere. Accordingly, it is equally important to create economic opportunities, capitalising on a region's strengths, to retain and attract talent and to match available skills to current and prospective market needs.

The European Commission²⁹ has formulated a method of identifying regions that are in a talent development trap³⁰ or at risk of falling into one (see Box 6.2). Some 46 regions are identified according to this method as being in a talent development

24 In addition to public services such as education, training and hospitals, places with a declining population face challenges in maintaining existing infrastructure that is too big (and too expensive) for the population that remains.

25 <https://www.smarta-net.eu/>.

26 See Box 6.2 for an explanation of the talent development trap.

27 Eurostat [proj_19r].

28 Note that, in addition to tertiary education, vocational education and training are also important for a labour force with sufficient relevant skills (see also Chapter 2).

29 European Commission (2023a).

30 This concept is distinct from that of the development trap discussed in Chapter 1.

Box 6.2 Identifying regions in a talent development trap or at risk of falling into one

The method used to identify regions that are in a talent development trap or at risk of falling into one is applied at the NUTS 2 level.

A region is considered to be in a **talent development trap** if:

- the annual average reduction in the population aged 25–64 was greater than 7.5 per 1 000 between 2015 and 2020;
- the share of the population aged 25–64 with tertiary education was below the EU average in 2020; and
- the share of the population aged 25–64 with tertiary education increased by less than the EU average between 2015 and 2020, i.e. 4.3 pp.

A region is considered to be **at risk of falling into a talent development trap** if it is not in a talent development trap but:

- the annual average net outward migration rate of those aged 15–39 was greater than 2 per 1 000 between 2015 and 2020.

trap (Map 6.5, in red). These regions, which are mostly in Bulgaria, Romania, Hungary, Croatia, the south of Italy, Portugal, eastern Germany and the north-east and outermost regions of France, have a working-age population that is increasingly declining and a small and stagnant number of people with tertiary education. Together, they account for 16 % of the EU population.

A second group of 36 regions is identified as being at risk of falling into a talent development trap because of the significant exodus of people aged 15–39 (Map 6.5, in orange). These are mainly in Latvia, Lithuania, eastern Poland, Slovakia, Greece, inland Spain, the north of Portugal, the northern half of France and Finland and account for 13 % of EU population. Together, around 30 % of people in the EU live in the two groups of regions³¹.

3.2 Which types of regions are in a talent development trap?

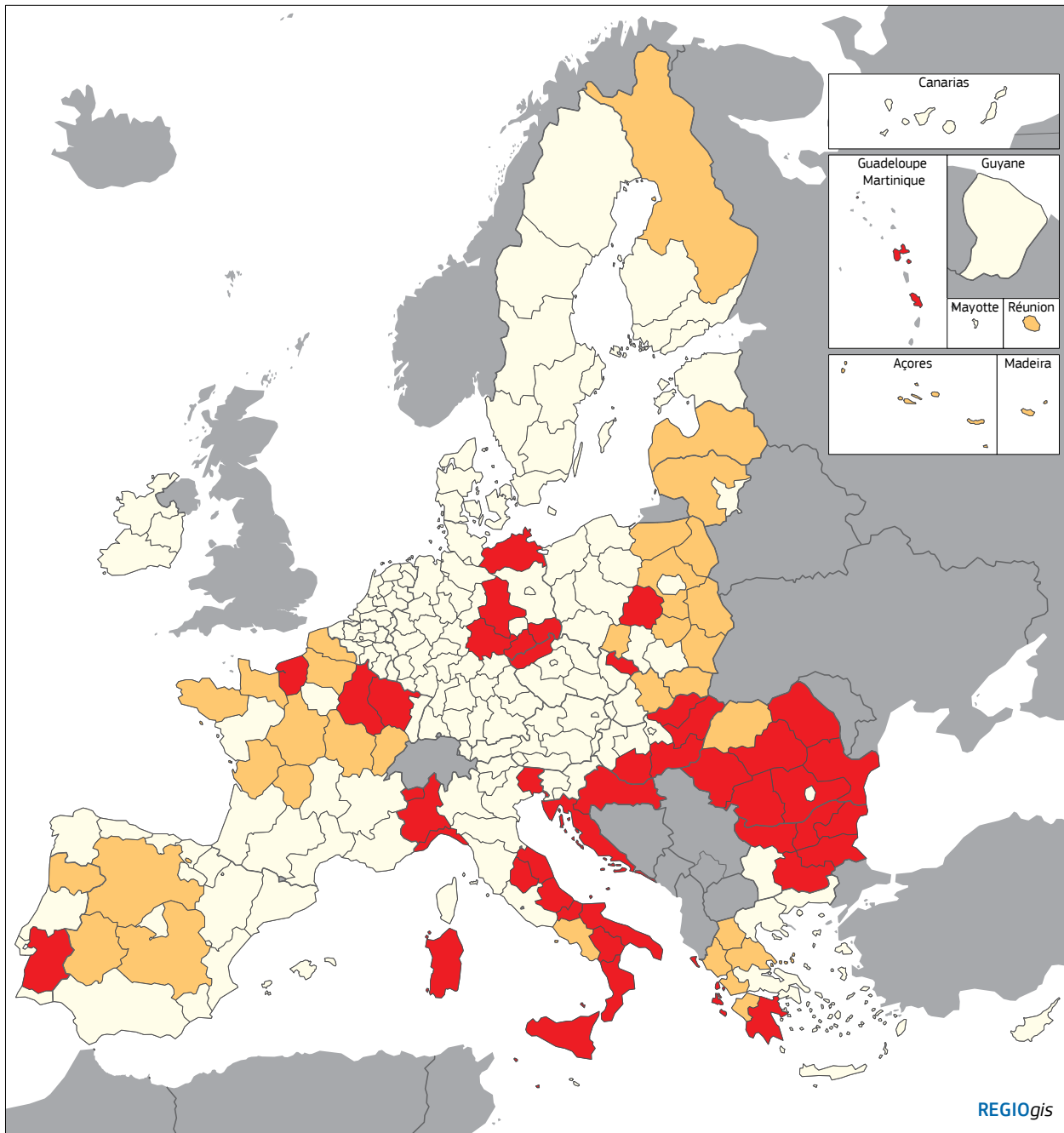
Regions in a talent development trap have lower GDP per head than others (Figure 6.8). This might reflect the small share of tertiary-educated people, which, with the relatively large share of agriculture in GDP, results in lower GDP per person employed and which, in turn, is reflected in lower wages and lower disposable income per head.

Regions at risk of falling into a talent development trap have similarly low levels of GDP per head, wages and disposable household income. In combination with lower employment rates, the low wages and low income relative to other regions are an important driver of outward migration of the population aged 15–39.

The employment rate of the working-age population was 7 pp lower in 2020 in regions in, or at risk of falling into, a talent development trap than in other regions. (This is a substantial difference, which should be seen in the context of a smaller and declining working-age population.) The employment rates of the population aged 25–64 with tertiary education were also lower but the difference from other regions was smaller at only 2 pp. The difference in employment rates, therefore, mainly affects people with only basic or secondary education. The unemployment rates for those aged 15–34 were correspondingly higher in trapped regions, and even higher in the regions at risk of falling into a trap. The share of jobs that are skilled was also smaller in both groups than in other regions, adding to the motivation of young people, who tend to be more highly educated than the older generation, to move away.

Over 80 % of the population in regions that are in a talent development trap or at risk of falling into one are living in a predominantly rural or intermediate region as against 50 % of people in other regions (Figure 6.9). Accordingly, people in such regions have a higher probability of being in a trapped or at-risk region. People in regions at risk are more often in a rural region than those in

31 Note that there is considerable overlap in practice between the two categories. Many regions with a shrinking working-age population and a small proportion of tertiary-educated people also experience net departure of people aged 15–39. These are classified here as being in the first group, i.e. in a talent development trap.



Map 6.5 Regions in a talent development trap and regions at risk of falling in a talent development trap

Category

- Shrinking working-age population and lagging level of tertiary education
- Net out-migration of people aged 15–39
- Other regions

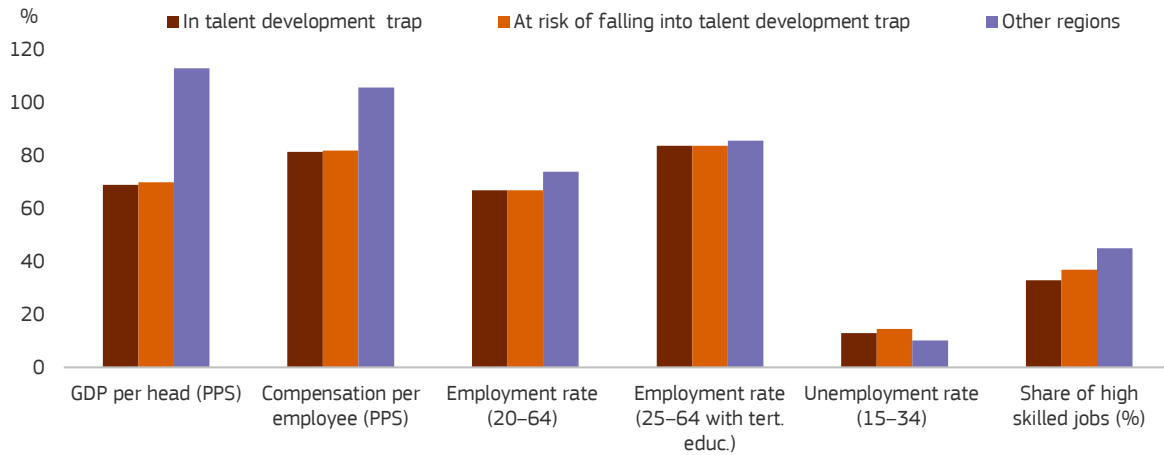
A region is in a talent development trap if it has
 (a) a shrinking working-age population,
 (b) a below-average and stagnant level of tertiary education and/or
 (c) net out-migration of people aged 15–39.

Source: DG REGIO based on Eurostat data
 (demo_r_d2jan, demo_r_magec, lfst_r_lfsd2pop).

0 500 km

© EuroGeographics Association for the administrative boundaries

Figure 6.8 Productivity and employment indicators in regions in a talent development trap, regions at risk of falling into a talent development trap and other regions, 2020



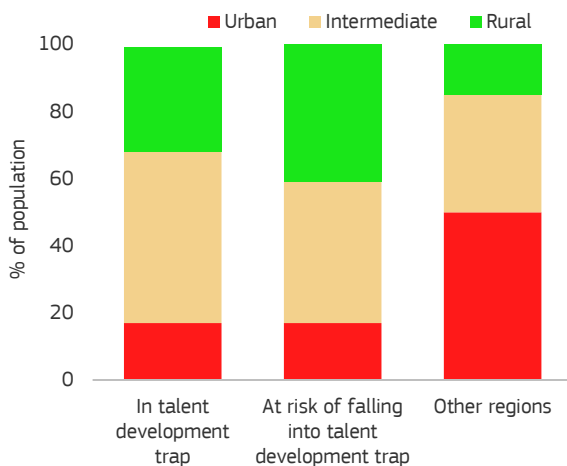
Note: Compensation per employee relates to 2019. GDP per head and compensation per employee are expressed in PPS with EU average=100.
 Source: Eurostat [nama_10r_2gdp, nam_10r_2hhinc, nama_10r_2coe, lfst_r_lfsd2pwc, lfst_r_lfe2eedu, lfst_r_lfp2act] and DG REGIO.

a region already in a trap, reflecting the relatively high net outward migration of people aged 15–39.

Regions in a talent development trap or at risk of being so also have a comparatively large share of people working in agriculture – 3–4 times more than in other regions in 2020 – where productivity and growth potential tend to be lower (Figure 6.10).

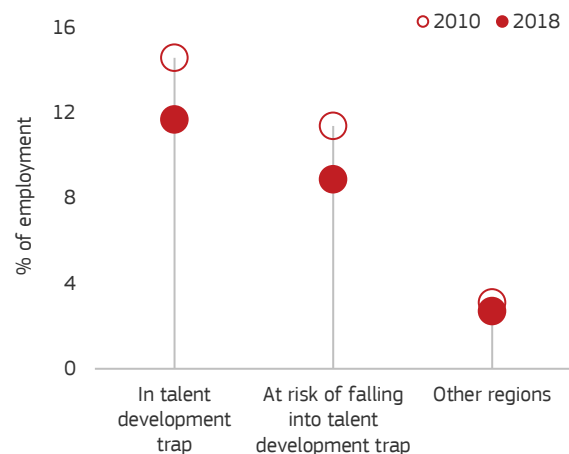
Over the 2015–2020 period, all regions experienced a reduction in the share of agriculture, but this was much larger in those in a talent trap or at risk of falling into one (2.5–3 pp) than in others (0.5 pp). The small proportion of people with tertiary education tends to diminish employment prospects further in trapped regions, leading to more outward migration and a consequent further decline in the working-age population.

Figure 6.9 Urban-rural composition of regions in a talent development trap, regions at risk of falling into a talent development trap, and other regions, 2020



Source: Eurostat [demo_r_pjanagr3] and DG REGIO.

Figure 6.10 Share of employment in agriculture in regions in a talent development trap, regions at risk of falling into a talent development trap, and other regions, 2010 and 2018



Source: DG REGIO, JRC and Ardeco.

Table 6.4 Quality of government and innovation capacity in talent development-trapped, at risk of being talent development-trapped and other regions, 2020 and 2021

| | European Quality of Government Index | Regional Innovation Scoreboard | Population with broadband access, % | Population with bb speed > 100 Mbps. % |
|---|--------------------------------------|--------------------------------|-------------------------------------|--|
| In talent development trap | 65 | 60 | 82 | 26 |
| At risk of falling into talent development trap | 85 | 71 | 86 | 40 |
| Other regions | 107 | 115 | 92 | 48 |

Note: Data on broadband access are for 2021. Data on other indicators: 2020.

Source: Eurostat [isoc_r_brod_h], RIS 2021, Ookla for good (TM), European Quality of Governance Index, DG REGIO.

The quality of governance and innovation capacity are important enabling conditions for sustained economic development. Less developed regions tend to show a relatively poor performance in these areas (Table 6.4). This also holds for regions that are in a talent development trap and, to a lesser extent, those at risk of falling into one. The European Quality of Government Index score and the Regional Innovation Scoreboard are both substantially lower for these regions than for others. Moreover, the population with access to broadband is also smaller and the speed of internet connections slower.

Transport connections also tend to be poorer in regions that are in a talent development trap, or at risk of being so, than in others. Transport performance³² by car in trapped regions was 62 % in

2021, meaning that 62 % of the population living within 120 km can be reached within 90 minutes (Table 6.5), and in regions at risk of being trapped, 68 %, both well below the average for other regions (82 %). For rail connections, the differences are equally large. In trapped and at-risk regions, only 8 % of the population within 120 km could be reached within 90 minutes by train in 2019, as against 19 % in others.

Poorer transport connections also affect a region's access to services such as education and healthcare facilities. Under 80 % of people lived within a 45-minute drive of a university in regions in a talent development trap or at risk of falling into one, compared with 93 % in others. A similar difference holds for the share of people living within a 15-minute walk of a primary school,

Table 6.5 Transport performance and access to services in regions in a talent development trap, regions at risk of falling into a talent development trap, and other regions, 2019 and 2021

| | Road performance | Rail performance | University < 45 min. driving, % | Primary school > 15 min. walking, % | Distance to nearest hospital, km |
|---|------------------|------------------|---------------------------------|-------------------------------------|----------------------------------|
| In talent development trap | 62.4 | 7.9 | 78.4 | 56.0 | 11.7 |
| At risk of falling into talent development trap | 67.5 | 8.1 | 79.5 | 58.3 | 10.7 |
| Other regions | 82.2 | 19.1 | 95.9 | 65.7 | 8.6 |

Note: Road performance is for 2021, rail performance for 2019.

Source: DG REGIO, based on Eurostat and TomTom data.

³² See Box 3.3 for a more detailed description of the transport performance indicator.

Box 6.3 The Talent Booster Mechanism

Helping regions in a talent development trap, or at risk of falling into one, to become more resilient and attractive is a crucial part of the EU's commitment to leaving nobody and no place behind as development takes place. If traps are left unaddressed, this will widen territorial disparities in the working-age population and skills as times goes on, so hampering the resilience and competitiveness of the EU as a whole.

This is why the Commission has launched the Talent Booster Mechanism to provide support to regions affected by a declining working-age population to train, retain and attract people with the skills and competences needed to address the impact of the demographic transition. The mechanism consists of eight pillars, as follows.

- **A pilot project launched in 2023** to help regions in a talent development trap, selected on the basis of an open call, to formulate, consolidate, develop and implement tailored and comprehensive strategies, and to identify relevant projects to train, attract and retain skilled workers.
- **A new initiative on 'smart adaptation of regions to demographic transition'** was implemented in 2023 to help regions with high rates of exodus of young people to adapt to the demographic transition and invest in talent development through tailored place-based policies. Regions were again selected on the basis of an open call.
- **The Technical Support Instrument** provides support to Member States to implement reforms at national and regional level to address the decline in the working-age population and lack of skills and to respond to local market needs.
- **Cohesion Policy** programmes and Interregional Innovation Investments are intended to stimulate innovation and high-skill job opportunities and so help to improve the possibility of retaining and attracting talent in the regions concerned.
- **A new call for innovative action is to be launched under the European Urban Initiative** to test place-based policy measures, led by shrinking cities, to address the challenge of developing, retaining and attracting skilled workers.
- **EU initiatives** that support the development of talent are to be **signposted on a dedicated webpage** to provide easier access to information for interested regions on EU policies in areas such as research and innovation, training, education and youth mobility.
- **A means will be established for exchange of experiences and dissemination of good practice**, and regions will have the possibility of setting up thematic and regional working groups to address specific employment and territorial challenges.
- **The analytical knowledge** required to support and facilitate evidence-based policies on regional development and migration will be further developed.

which was on average around 57 % in trapped and at-risk-of-being-trapped regions, as against 66 % in others. Equally, the distance to the nearest hospital was almost 12 km for people living in trapped regions, whereas in others it was under 9 km.

Poor transport connections and access to services may simply reflect the more rural and sparsely populated nature of regions in a talent development trap or at risk of falling into one (see also Figure 6.9). Poor connectivity and digital infrastructure may also contribute to a less favourable

socio-economic environment that causes net outward migration of the young and prevents a region from attracting tertiary-educated people from outside.

Ensuring that regions in a talent development trap become more resilient and attractive is central to the EU's commitment to leave nobody and no place behind as development takes place (see Box 6.3). As highlighted in the Communication³³, on a demography toolbox, a range of financing instruments are available at the EU level to

33 European Commission (2023c).

support Member States in managing demographic change. In the partnership agreements 2021–2027, 26 Member States have identified demography as a major challenge for their territories to be addressed with the support of Cohesion Policy funds, such as the European Social Fund Plus. These measures complement other policy tools supporting Member States, including relevant regulatory instruments and policy frameworks.

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