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Article

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NBB economic review

Provided in Cooperation with:
National Bank of Belgium, Brussels

NBB Economic Review

2024 No 2

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National Bank
OF BELGIUM

Eurosystem

Economic performance, competitiveness, and well-being in Wallonia: a comparative analysis with other European transition regions

P. Bisciari *

Introduction

Wallonia is often compared with Flanders and Brussels – especially with respect to economic issues.[1] Over recent decades, Wallonia has had a lower GDP per capita than the two other regions and grew less rapidly than Flanders. While it is increasing, Wallonia's employment rate is much lower than that of Flanders. The social conditions of Walloon households are also more precarious than those of their Flemish counterparts.

Regional development depends on many factors, including geography, history, public policy, and the actions of economic agents. In this context, it is notable that Wallonia is landlocked, and thus boasts no international seaports, nor is it home to the country's main international airport – the Brussels-National airport – and the economic activity that such large infrastructure typically engenders, such as attracting the head offices of major consultancy firms. Coalmining played a large role in the early development of Wallonia and shaped its urban areas, bringing steel and other industries close to many cities such as Liège, Charleroi, Mons and La Louvière. Most of Wallonia's heavy industry has since been shuttered. For many years now, political authorities have been trying to arrest the region's deindustrialisation and relative economic decline through development programmes.

An earlier article on regional convergence in the European Union between 1996-2018 (Bisciari *et al.*, 2020) showed that Wallonia's GDP per capita was below the EU average at the start of the period concerned and grew less than the EU average. Wallonia also saw lower average income growth than would be expected based on its initial level of GDP per capita. This difference was partly explained by the absence within the region of a metropolis equivalent in size to Antwerp and by the relatively large percentage of its working age population with a low level of educational attainment at the start of the period.

These findings were the motivation for further analysis of the situation in Wallonia, for a comparison of its economic performance, competitiveness and level of well-being with those of similar regions in the EU, and for the identification of its strengths, weaknesses and priority policy concerns. As economic performance

1 Throughout the article, Wallonia refers to the Walloon region, Flanders refers to the Flemish region, and Brussels refers to the Brussels-Capital region. Where Region is written in an upper case "R", we are referring to the institution rather than the geographical territory e.g. Brussels-Capital Region, the Walloon Region. The same applies with an upper case "C" for the French Community and the Flemish Community.

in Wallonia varies between its provinces, with Walloon Brabant performing much better than the other provinces, a more granular approach was used, comparing Walloon provinces with EU regions at a similar level of development. [2]

This comparative analysis is built on a literature in which competitiveness is considered to be a multi-faceted concept the assessment of which requires a battery of indicators. In the tradition of Porter's (1988) framework, competitiveness refers to the ability of economies to provide a high level of prosperity to their citizens on a sustainable basis. Under similar frameworks that are already being applied to countries worldwide, for example the World Economic Forum's Global Competitiveness Report or the International Institute for Management Development (IMD) World Competitiveness Yearbook, the focus is on variables that assess a broad range of factors affecting non-cost competitiveness and thereby productivity growth in the medium to long term. In addition, both the European Commission (EC) and the OECD are increasingly considering environmental and social sustainability when assessing competitiveness. Such an approach is adopted in this article, which examines economic performance (economic growth, demography, employment, and productivity), structural non-cost competitiveness, and well-being.

Section 1 contains a general description of Wallonia within the Belgian context and illustrates some of the key, documented challenges that the region is facing. Section 2 is devoted to data and methodological issues, in particular the selection of the regions with which Wallonia and its provinces are compared. Sections 3 to 5 present the results of the comparison of Wallonia and its provinces in terms of, respectively, economic performance, structural non-cost competitiveness, and well-being and environmental indicators. Section 6 sets out some conclusions.

1. Wallonia in a Belgian context

Wallonia, located in the southern part of Belgium, is the largest of the country's three regions, by area : the other two being the Flemish region and the very small – though highly populated – Brussels-Capital region. Wallonia borders Flanders to the north, France to the south, Germany to the east, Luxembourg to the southeast and shares a small border with the Dutch province of Limburg to the northeast. Its population was 3.67 million in 2022, or 31.5 % of the total Belgian population, and is on average younger than that of Flanders, but much older than that of Brussels.

The region is both urban and rural, and made up of five provinces : Hainaut and Liège are the most populated, with well over a million inhabitants, while the more rural Namur, Walloon Brabant and Belgian province of Luxembourg each number up to approximately 0.5 million inhabitants. Wallonia is polycentric and most of its cities and urban areas are located in a continuum forming the Walloon industrial backbone running through the Sambre and Meuse valley, from Tournai to Verviers, passing by Mons, La Louvière, Charleroi, Namur and Liège. According to the EU-OECD definition (Dijkstra *et al.*, 2019), the region includes three metropolitan areas of more than 250 000 inhabitants : Liège, Charleroi and Namur. None of these is a large metropolitan area (over 1.5 million inhabitants) but some Walloon *arrondissements*, or districts, are located close to Brussels, serving as hubs for many commuters. This is particularly true for Walloon Brabant, which is economically integrated into the Brussels metropolitan area. Some Walloon districts are also close to major urban hubs in neighbouring countries : in particular, the large metropolitan area of Lille in France, and the financial centre of (the Grand Duchy of) Luxembourg.

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2 Most of the analysis in this article is made at the NUTS2 level according to the Nomenclature of Territorial Units for Statistics as will be explained in Section 2.

Figure 1

Wallonia is a region in the south of Belgium
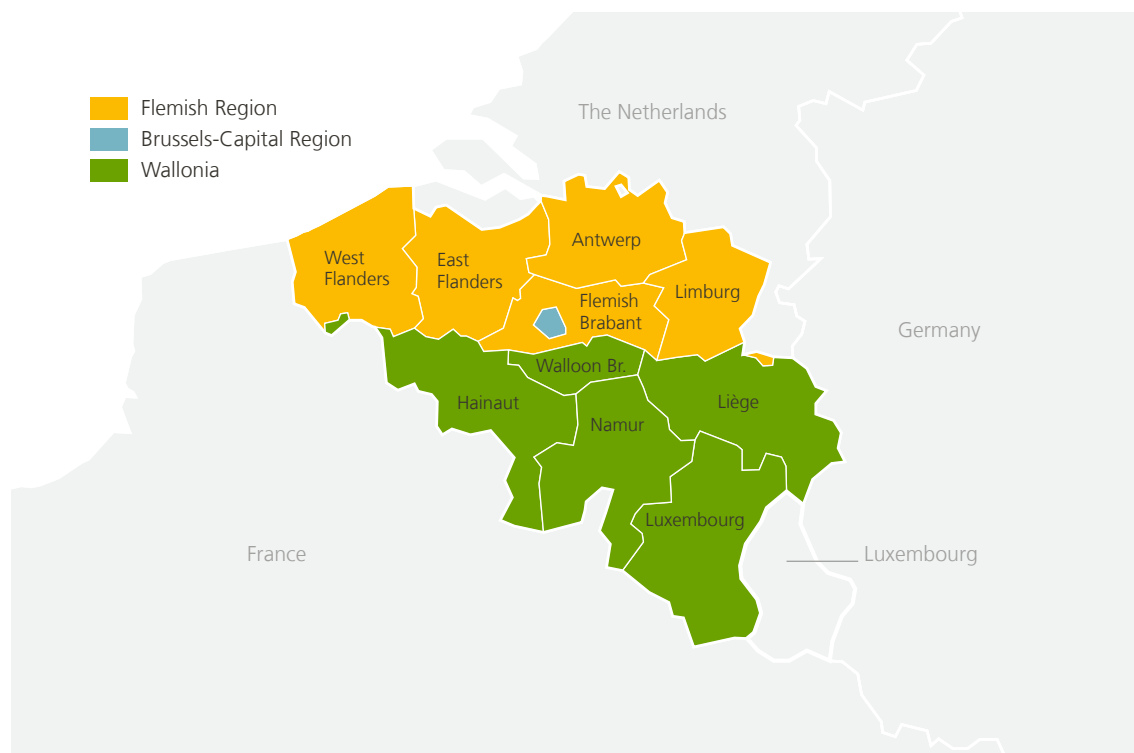
Wallonia enjoyed an early industrialisation and became the economic engine of the country in the 19th century. With its coal, steel and other heavy industries, Belgium became the second country in the world, after the United Kingdom, to industrialise, and the second powerful economy over the period 1810 to 1880. The situation changed as oil became the world's foremost source of energy after World War II. Coalmines were the first to close, with the last Walloon mine shutting down in 1984. Other industries, in turn, endured a steady decline : steel, cement, glass, paper, textiles... In 2019, the manufacturing industry accounted for barely 11.5 % of employment in Wallonia and agriculture 1.4 %. Within the former, heavy industry has in part been replaced by other industries, such as the so-called "competitiveness poles" [3]: life sciences, logistics and transport, mechanical engineering, aerospace, and agro-industry. Between 1996 and 2019, the share of employment in financial and business services as well as in non-market services increased – the latter including public administration and education and health services – while it decreased in other market services.

As a result of the deindustrialisation of Wallonia, Belgium's economic centre of gravity has gradually shifted to Flanders. [4] Indeed, over recent decades, regional real GDP increased less strongly in Wallonia than in the other two regions and regional GDP per capita in Wallonia amounted to only 72 % of the Belgian average in 2022. The level of regional GDP per capita is, however, strongly influenced by the very substantial commuter flows from both Flanders and Wallonia to the Brussels-Capital region. Significant commuter flows also exist between provinces, as well as between the province of Luxembourg and the Grand Duchy of Luxembourg.

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3   A competitiveness pole is a grouping of companies and research players (research centres and university departments) around a promising economic area.
4   Economic data for Belgium and its three regions are provided in Annex 1 Table 2 and public finance data in Annex 1 Table 3.

This commuting bias can be cancelled out by looking at primary income. In Wallonia, primary income per capita is 87 % of the national average : a divergence due to the low employment rate in Wallonia, which stood at 65.7 % in 2022 – marginally above that of Brussels but more than 10 percentage points below that of Flanders. The difference between Wallonia and Flanders is due to higher inactivity and unemployment rates in Wallonia. Disposable income per capita in Wallonia is 90.5 % of the level for Belgium as a whole. The fact that Wallonia's relative share of disposable income is higher than its relative share of primary income is a result of the impact of interregional transfers effected via the government budget, of which Wallonia is a net recipient.

The three Belgian regions have been found to be highly interdependent, with interregional economic flows being greater than flows with other countries. This is the case for labour, as well as for capital and trade in goods and services. According to Duprez and Nautet (2019), 55 % of Belgian firms sell to firms in at least one other region. In 2014, for firms established in Wallonia, 26 % of sales outside the region were destined for Flanders, by far Wallonia's primary customer, and 18 % for Brussels. Walloon firms were also found to be the second most important clients of Flemish firms, just after those in the Brussels-Capital region. Furthermore, the goods and services exported by one region often include value added created in another region, which is another sign that economic activity in the three regions of Belgium is deeply intertwined.

In Belgium, wages are automatically indexed with a lag to a so-called "health index" : this is a price index which excludes petrol, alcohol, and tobacco. As a result, collective bargaining concerns real wages. The Belgian system is highly centralised and coordinated between sectors. The 1996 Law on the Promotion of Employment and Preventive Preservation of Competitiveness imposes a cap on increases in hourly labour costs (known as the "wage norm"), aligning these with Germany, France, and the Netherlands. Such a wage-setting system is often thought be too rigid to account satisfactorily for regional productivity shocks.

Research published by the National Bank of Belgium (Ryckx et al., 2016) offers some insights in this regard. Based on 1999-2010 data, both hourly productivity and wage costs were highest in Brussels, followed by Flanders, and were lowest in Wallonia. As regional wage differentials are more compressed than differences in productivity, Brussels was found to have the greatest cost competitiveness, followed by Flanders, with Wallonia having the smallest. Taking account of composition effects – regional differences in human capital, labour contracts, occupations, sectors, firm size and capital intensity – and adding control variables, the inter-regional differences in productivity and wages were found to vanish almost totally. Ceteris paribus, wage cost and productivity differentials were therefore relatively well aligned between Flanders and Wallonia.

Social conditions in Wallonia are considered by Deprez et al. (2023) to be challenging. Between 2004 and 2021, the composite social situation index used in this IWEPS report barely progressed, while regional GDP per capita increased by 14 %. The report highlights several recent trends, set out thematically. In terms of education : the region has recorded an increasing number of adults with higher education qualifications, fewer adults without a higher education diploma, fewer young people dropping out of school (but an increase in school dropouts in 2022). In terms of employment : an increase in the employment rate and the median salary, but a sharp increase in workers on long-term incapacity for work (due, for example, to burn-out or depression) and a widening of the gap between the employment rate of highly qualified workers and that of low-qualified workers. In terms of health : fewer years of life lost but more chronic diseases. In terms of values : an increase in solidarity and generosity but lower life satisfaction. In terms of housing : ever more difficult access for vulnerable groups and a worsening of energy poverty. In terms of income : an increase in disposable income per capita but an increasing number of young people aged 18 to 24 receiving benefits from municipal social services. Overall, the report points to a strengthening of socio-economic imbalances and a sharp increase in social inequalities between 2016 and 2020.

From an administrative point of view, Wallonia coincides with the Walloon Region – the government and parliament of which are established in Namur. The Walloon administration settled in the city primarily after the 1988 state reform, which represented a major step in the decentralisation of the Belgian state. In the wake of

six state reforms, Belgium's regions have gained more and more power and fiscal autonomy. In practice, they exercise their powers in spheres such as land use, housing, the environment, public infrastructure, supervision over local authorities and their general financing, and certain aspects of policy concerning agriculture, energy, transport, employment, training and the economy.

Almost the entire Walloon population is French-speaking and, together with a large majority of inhabitants from the Brussels-Capital region, are served by the French Community – also known as the Wallonia-Brussels Federation. Several Walloon municipalities in the province of Liège and which are close to the border with Germany form the German-speaking community. Following a series of state reforms, communities have gained increasing powers with regards to so-called "personal matters", such as education and culture, but they have no fiscal autonomy.

In 2022, further to the COVID-19 pandemic, all Belgian regions and communities recorded substantial budget deficits: this stood at €2.6 billion for the Flemish Community, €0.8 billion for the French Community, and about €80 million for the German-speaking community. The deficit of the Brussels-Capital Region reached €1.3 billion, while that of the Walloon Region was close to €1.5 billion. Aside from the pandemic, in July 2021 the eastern part of Wallonia suffered serious flooding and the regional government decided to help the citizens and firms affected by financing reconstruction work.

Wallonia is the most indebted of the Belgian regions. Its debt equated to nearly three times its disposable revenue in 2022, as was also the case for the Brussels-Capital Region. Assuming that the debt of the communities were to be allocated to the regions, the debt ratio of a fictive Walloon entity would equate to 175 % of its disposable revenue, compared to 125 % for a fictive Brussels entity and 60 % for a fictive Flemish entity.

In a report published in November 2021, an *ad hoc* expert commission established by the Walloon government (the "Commission externe de la dette et des finances publiques") highlighted the Region's debt dynamics should economic policies remain unchanged, and suggested that a moderate yet sustained structural adjustment (of €150 million per year, an amount which then corresponded to 1 % of the Walloon Region's revenue) would be necessary to set debt on a downward course as from 2027, and without harming the post-pandemic recovery. Since then, the regional government has explicitly referred to that adjustment when presenting its initial and adjusted budgets. Over the 2022-2024 period, the adjustment was expected to reach €500 million.

Wallonia, in summary, has generated less economic growth than Flanders since World War II, its employment rate is much lower, and its social conditions are more precarious. Moreover, its government deficit and public debt are very high. All these elements create challenges and call for policy responses involving authorities at all levels of government.

2. Transition regions

The main contribution of this article is a benchmark comparison of Wallonia and its constituent provinces – in order to take into account their heterogeneity – with EU regions of similar population size and level of economic development. Benchmarking is done against reference categories grouping regions based on relative GDP per capita.

Hence, level two of the Nomenclature of Territorial Units for Statistics (NUTS2) is the starting point for selecting the geographical areas used for the exercise. In practice, this level corresponds with the provinces of Belgium and of the Netherlands, the regions of Italy, the (pre-2016) regions of France, and the autonomous communities of Spain, inter alia. As a reminder, the first level of the nomenclature (NUTS1) is made up of larger administrative

entities (the regions in Belgium, the post-2016 regions in France, the Länder in Germany, etc.), and the third level (NUTS3) of even smaller entities (districts or *arrondissements* in Belgium, departments in France, provinces in Spain and Italy, etc.).

Several reasons lie behind the decision to use NUTS2 regions. Firstly, this is the level used by the EC for the allocation of European Cohesion Policy funds and is well-known by (regional) governments. Secondly, it is commonly used in the literature. Thirdly, a lot of relevant data is available that can be disaggregated at this level, allowing us to analyse economic performance, competitiveness, and well-being. Fourthly, going beyond the NUTS1 level allows us to consider heterogeneity both within Wallonia and within the other EU NUTS1 regions.

The main selection criterion for the benchmarking of NUTS2 regions is the classification used for EU Cohesion Policy funds – specifically the three categories used to allocate funding from the European Regional Development Fund (ERDF) and the European Social Fund (ESF+), and in practice, the list established for the most recent

Classification of regions for EU Cohesion Policy funds 2021-2027
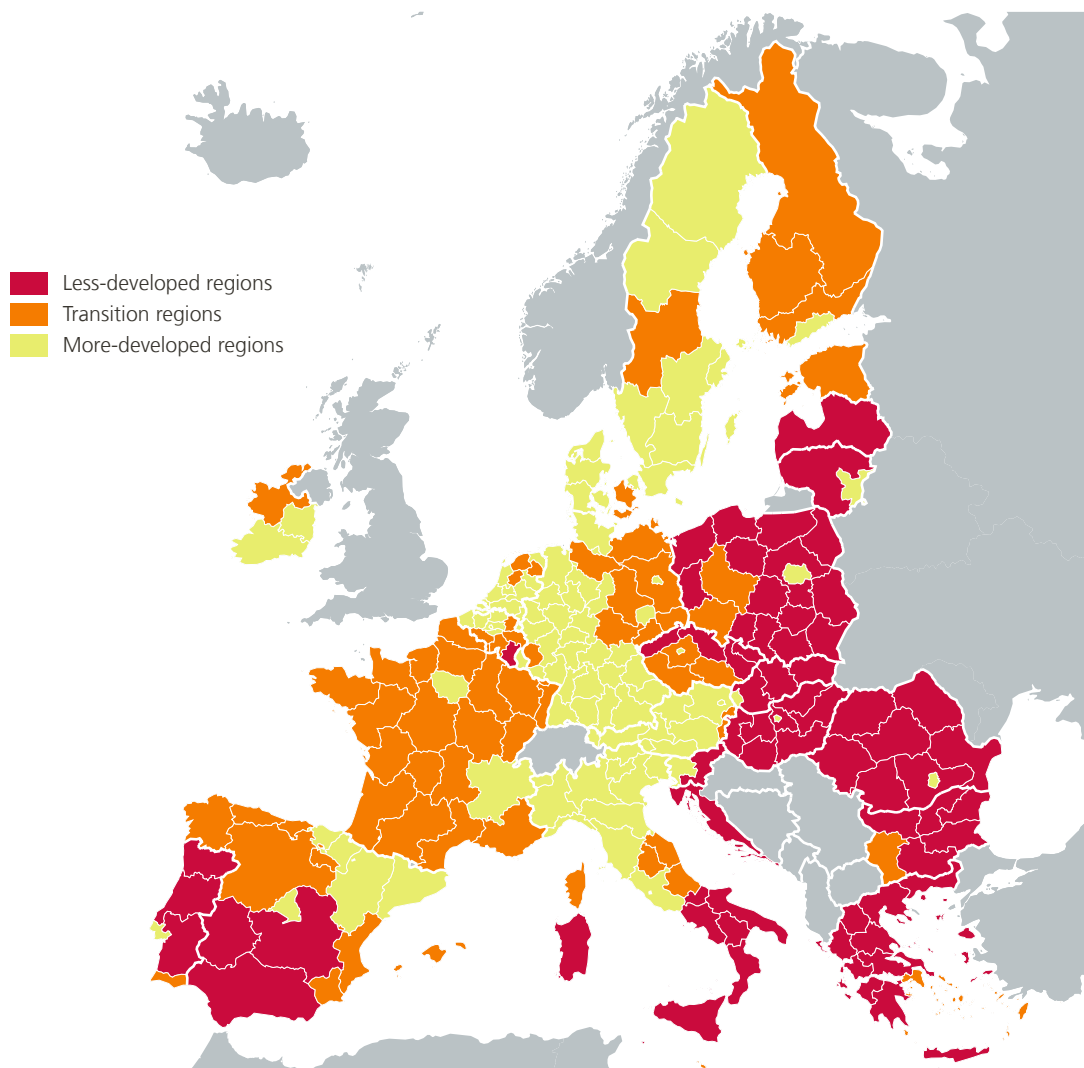
Source : EC (2022), 8th Report on Economic, Social and Territorial Cohesion.

programming period (2021-2027). Regions are thereby classified into three groups according to the ratio between their respective GDP per capita and that of the EU27 average expressed in Purchasing Power Standards (PPS)[5]: more-developed regions with a GDP per capita above the EU27 average over the period 2015-2017 (in yellow in Figure 2); transition regions with GDP per capita between 75 % and 100 % of the EU27 average (in orange); and less-developed regions with a GDP per capita below 75 % of the EU27 average (in red).

In this context, the three most populated Walloon provinces, Hainaut, Liège and Namur, are considered as transition regions. Belgian Luxembourg is classified as a less-developed region, however, given that its GDP per capita was close to the 75 % threshold, it will also be compared with the transition regions of other EU countries for the rest of this article. Walloon Brabant is a more-developed region and will be compared with high-performing regions.[6]

As GDP per capita evolves at different speeds over time across regions, the latter may move from one category to another. The map in Figure 3 shows the transition of NUTS2 regions between development categories from 2000 to 2019. Regions depicted in blue, all of which are in eastern Europe, advanced to a higher category over that period, with some help from EU Cohesion Policy funds. Red/orange regions were downgraded over this period, while the beige to yellow regions remained in the same category.

Only a few regions were able to move up to the category of more-developed regions between 2000 and 2019. Western Slovenia, with access to the sea and including the capital city of Ljubljana, succeeded in evolving from a transition region to a more-developed region, while Vilnius and Bucharest moved from being classified as less-developed regions to more-developed regions. All three regions contain national capitals. The strong performance of capital regions shows that these benefitted from a statistically significant growth premium (Bisciari *et al.*, 2020). Several regions, mainly in the Czech Republic and Poland, were upgraded from less-developed regions to transition regions.

In contrast, it is important to emphasise that no western European region succeeded in moving up to a higher category over that period. However, several were downgraded to a lower category. The latter group includes many French and Italian regions, as well as the province of Hainaut, which, with a GDP per capita slightly below the 75 % threshold in 2019, was downgraded to a less-developed region. This illustrates the development challenge facing Walloon provinces and other western European regions in industrial decline. It might take decades of stagnation or more before such regions succeed in their economic rehabilitation and return to more-developed region status.

Relative economic decline may happen at all development levels and is difficult to reverse. Transition regions – which includes most of Wallonia – have been found to have been in a *regional development trap* for most of the last two decades (Diemer *et al.*, 2022; Rodriguez-Pose *et al.*, 2023).[7] Such a trap can also affect less-developed regions, preventing them from thriving, and more-developed regions. The latter may have begun to decline relative to the EU as a whole and/or to the national average. This is notably the case for the Brussels-Capital region as well as most of the northern regions of France and Italy (Diemer *et al.*, 2022). The report of the High-Level Group on the Future of Cohesion Policy (2024) suggests that the regional development trap could be an additional criterion when deciding upon the allocation of future vintages of EU cohesion policy funds; the rationale being to act more rapidly when

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5 The PPS is used to correct for the differences in price levels across EU countries. However, PPS may create some biases within countries, especially when comparing levels of GDP per capita. Indeed, by dividing GDP by the same price level for the whole country, it overestimates GDP per capita in regions with a higher price level than the national average, most often in the capital region and in the richest regions, while it underestimates GDP per capita in regions with a lower price level than the national average, most often rural and the poorest regions, such as Wallonia.

6 This is a more restrictive concept than the more-developed regions, excluding more-developed regions that grew less than the total median over the 1996-2019 period and also disregarding regions that contain a national capital or a metropolis of more than 1.5 million inhabitants.

7 Diemer *et al.* (2022) define the regional development trap as "the state of a region unable to retain its economic dynamism in terms of income, productivity and employment, while also underperforming [in comparison with] its national and European peers [al]on[g] these same dimensions".

regions are slipping and to contain the risk of discontent in territories that, under the current rules, would not be supported (Rodriguez-Pose, 2023). [8]

8 The authors of the report also recommend that the reform of Cohesion Policy taps into the EU's economic potential, especially in less developed regions and vulnerable areas. In particular, it should address the main structural challenges of the EU: low development, long-term economic stagnation and lack of opportunities for people across all regions. It should also build bridges across the EU's internal and external borders by taking into account the potential impact that any future enlargement of the EU will have in regions bordering candidate countries. In practise, the proposed reforms would on top of funds being allocated to less developed region (possibly Hainaut and Luxembourg) also channel funds towards regions in development traps or at risk of falling into one, regions bordering candidate countries and regions whose population face a relatively high risk of poverty or social exclusion. The latter would include Hainaut and Brussels-Capital region, as well as many regions in Bulgaria, Romania, Greece and in the south of Italy and Spain. Conversely, these reforms could imply that transition regions such as Liège and Namur may no longer be supported on the basis of their relative GDP per capita. If applied at NUTS3 level, the development trap index would favour many French departments and Italian provinces and a limited number of Belgian districts including Brussels-Capital region and several Walloon districts.

Figure 3

In western Europe, no transition region was upgraded to more-developed region status between 2000 and 2019

(GDP per capita in PPS, index, EU average = 100)
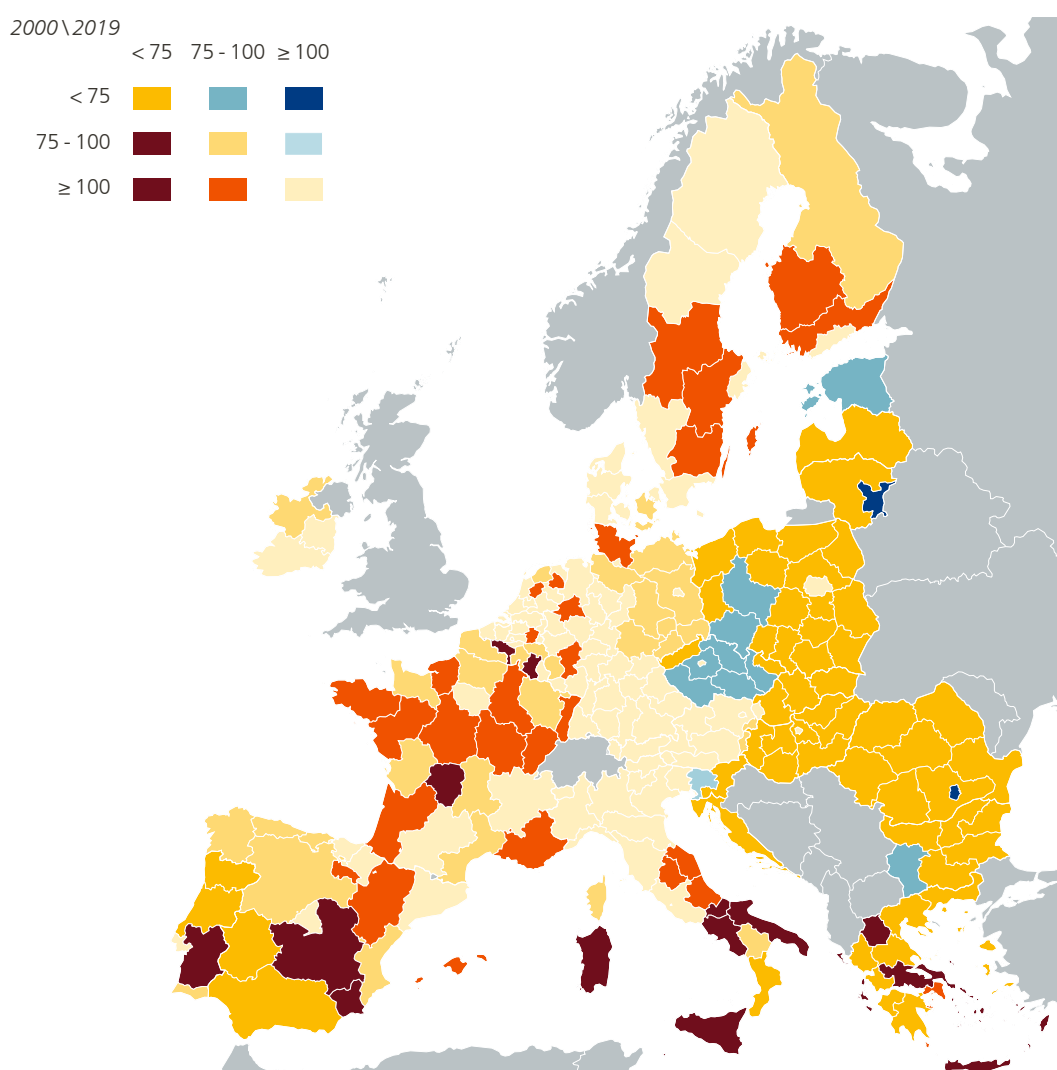
Note: The Southern Aegean Islands (EL42) is the only region where GDP per capita fell from over 100 % to less than 75 % of the EU27 average between 2000 and 2019.

3. Economic performance

The following analysis of economic performance considers, in turn, GDP per capita, demography, employment and productivity.[9] For reasons of data availability and quality, unless otherwise stated the period considered is 1996-2019, with growth measured as from 1997. This pre-COVID-19 period has been chosen in order to avoid distortions caused by the pandemic. Nevertheless, it should be noted that the methodologies used to compile regional data may vary from one country to another, despite the guidance provided by Eurostat (2013).

3.1 GDP per capita

For the EU27 as a whole, we distinguish between capital regions (represented by squares in Figure 4), large metropolitan regions with more than 1.5 million inhabitants (represented by triangles), and non-metropolitan regions (represented by dots), on the one hand, and the NUTS2 regions of Wallonia (orange provinces), the rest of Belgium (black), the rest of northern and western Europe (blue), southern Europe (red), and central and eastern Europe (green), on the other.

As a first step, Figure 4 shows a comparison of the regions in terms of GDP per capita at the end of the period (expressed in PPS, the y-axis) and of real growth in GDP per capita over the period since 1996 (the x-axis). The medians allow the NUTS2 regions to be allocated into four categories: in the top right quadrant, high-performing regions with high GDP per capita in 2019 and fast growth; in the bottom left quadrant, lagging-behind regions with low GDP per capita and slow growth; in the bottom right quadrant, regions with low GDP per capita but fast growth; and, finally, in the top left quadrant, regions with slow growth but high GDP per capita.

Looking at Walloon's provinces, Walloon Brabant stands out as a high-performing region, while the other four provinces are lagging behind.

In general, GDP per capita grew most rapidly in central and eastern European regions, which were in a process of catching-up. In this part of Europe, most capital regions managed to raise their level of GDP per capita above the median, while in other regions the level was still below the median in 2019. GDP per capita growth was also high in Dublin and southern Ireland, but GDP is considered in this specific context to be an inappropriate variable – even by Irish institutions – as it has been biased by several multinationals establishing European headquarters or offices there. Lastly, the level of GDP per capita in Luxembourg was boosted by commuter flows, mainly from Belgium, France, and Germany. It is, moreover, always difficult to include financial centres in international comparisons.

In the remainder of our analysis, we therefore exclude central and eastern Europe, Ireland and (the Grand Duchy of) Luxembourg. We also exclude the United Kingdom, as the country has left the EU. The resulting sample of countries is referred to as the "EU15", i.e. the fifteen countries in the European Union from 1 January 1995 to 1 May 2004, excluding Ireland, Luxembourg and the UK, and we consider 164 regions from the 12 countries.

Most Walloon provinces (excluding Walloon Brabant and Namur) were lagging behind EU15 NUTS2 regions during the 1996-2019 period. Real GDP growth was positive over that time span, but below the median. Meanwhile, GDP per capita at the end of the period, i.e. in 2019, was below the median for the regions represented. Namur is positioned at the edge of the quadrant of regions with fast growth but a level of GDP per capita below the median. This is because the median growth rate for the EU15 regions was below that of the EU27 regions in Figure 4.

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9   Henceforth, territories outside the European continent (the Canary Islands, Ceuta and Melilla in Spain, the French Overseas Territories, and Madeira and the Azores in Portugal) as well as the Finnish Åland islands are excluded.

Figure 4

Walloon Brabant is pulling away while the other four Walloon provinces are lagging behind EU27 NUTS2 regions

(GDP per capita)

Legend:
- North / West
- South
- East / Central
- Brussels or Flanders
- Wallonia
- ▲ Large metro regions
- ● Other regions
- ■ Capital regions
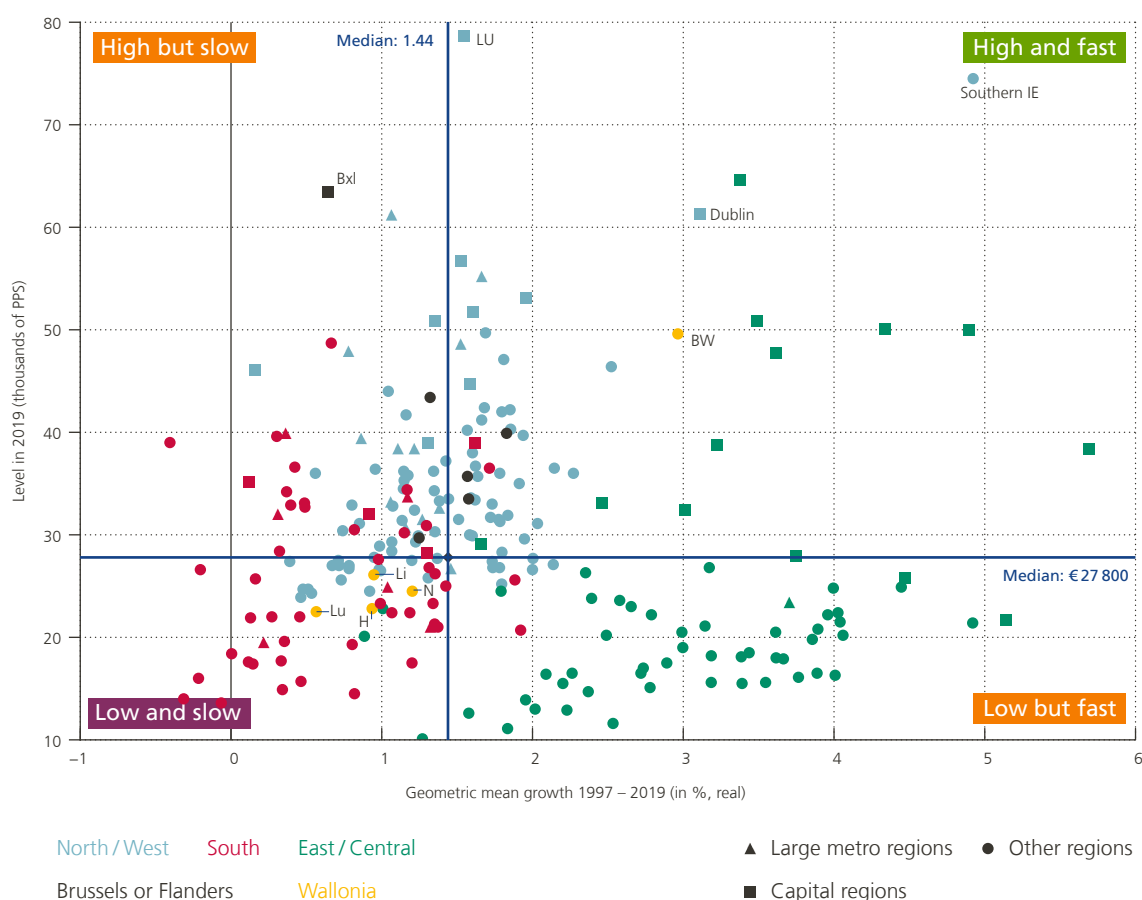
Sources: EC, ARDECO, Autumn 2022; Eurostat, February 2023.
Note: BW stands for Walloon Brabant, Bxl for the Brussels-Capital region, H for Hainaut, IE for Ireland, Li for the province of Liège, Lu for the Belgian province of Luxembourg, LU for the Grand Duchy of Luxembourg, and N for the province of Namur. Central Greece has been disregarded for the sake of clarity. In that Greek region, GDP per capita declined in real terms by around 1.1 % per year on average between 1996 and-2019.

For its part, Walloon Brabant was among the high-performing regions. Indeed, it was the fastest growing NUTS2 region between 1996 and 2019, after having recorded high growth over the preceding fifteen-year period as well. Its GDP per capita was also well above the EU15 median. This exceptional performance can be explained by several factors: suburbanisation from Brussels; construction from the ground up of the university town of Louvain-la-Neuve; and the development of high-performing businesses, including a major subsidiary of a multinational pharmaceutical company.

Applying the same analysis to the sub-sample of transition regions, we note that Liège and Hainaut are again located in the bottom left quadrant, meaning these two provinces grew less rapidly and achieved a lower level of GDP per capita than the median for transition regions. On the other hand, Namur is among the best-performing transition regions, defined as transition regions whose GDP per capita growth was higher than the median over the period 1997-2019. Between 1989 and 2018, Namur and Liège received fewer structural funds than Hainaut which was awarded funding amounting to barely 0.15 % of GDP on an annual basis.

Three Walloon provinces are lagging behind the EU15 NUTS2 regions

(GDP per capita, EU15 excluding the UK, IE and LU)
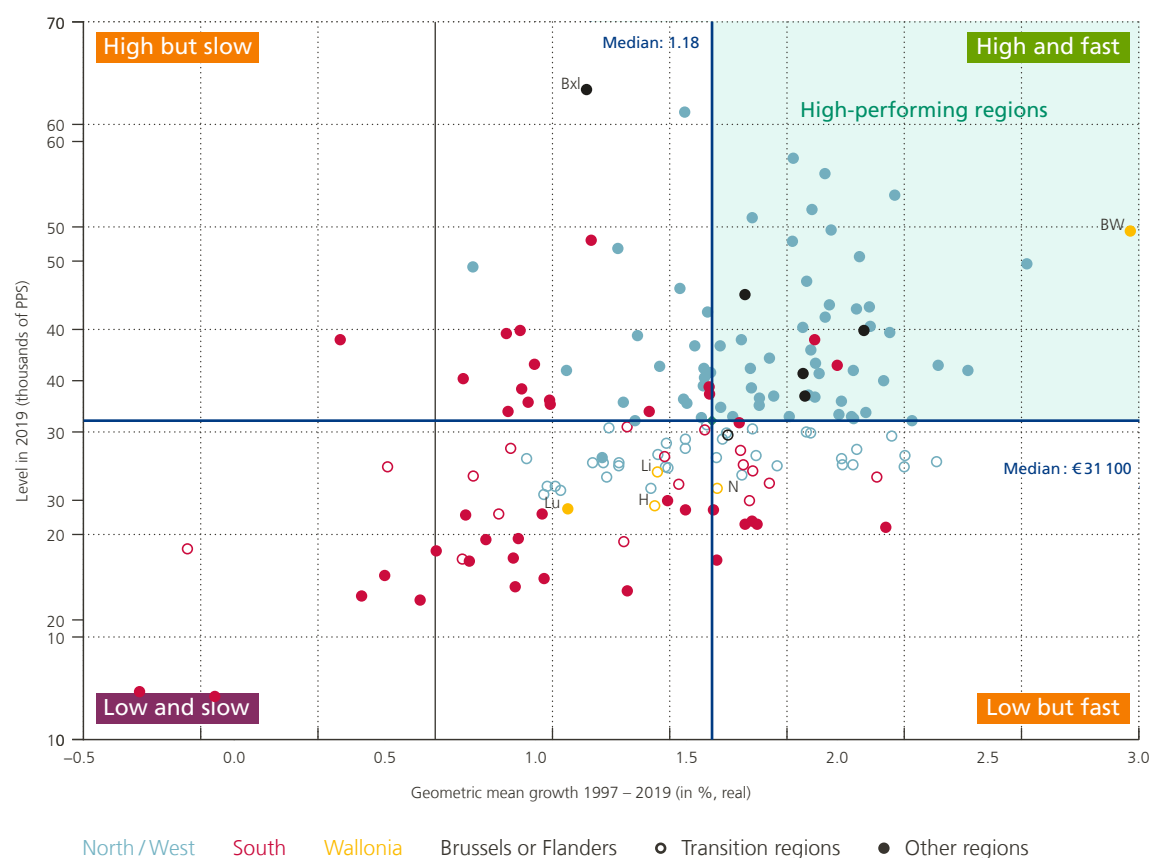
Sources: EC, ARDECO, Autumn 2022; Eurostat, February 2023.
Note: Throughout this article, BW stands for Walloon Brabant, Bxl for the Brussels-Capital region, H for Hainaut, Li for the province of Liège, Lu for the Belgian province of Luxembourg, and N for the province of Namur.
Central Greece has been disregarded for the sake of clarity. In that Greek region, GDP per capita declined in real terms by around 1.1 % per year on average between 1996 and 2019.

The East German Länder are also among this group of best-performing regions – with their strong performance only very partially due to the scale of EU structural funds they received between 1989 and 2018 (around 0.3 % of GDP). Indeed, these states were able to recover from the big bang transition from a planned economy to a market economy, marked by many closures and privatisations of state-owned enterprises in the early nineties. Moreover, they also benefited from fiscal transfers within the country after German reunification in 1990 – more so than regions in other countries including Belgium. In fact, in 2018, inter-regional transfers in Germany, calculated based on household accounts, were the highest in the EU15 at the level of NUTS2 as well as NUTS1 (Länder, in the case of Germany) (Cornille *et al.*, 2021). Thus, Chemnitz in Saxony and the state of Saxony-Anhalt are, respectively, the largest NUTS2 and NUTS1 recipients of interregional transfers in the EU15. Conversely, the degree of interregional redistribution appears to be relatively low in Belgium, particularly at the level of its regions.

In the rest of this article, we compare the performance, competitiveness, and well-being indicators of Wallonia and its provinces with those of high-performing regions (which are not home to national capitals or large metropolitan areas), transition regions, and the best-performing transition regions. More specifically, we compare Walloon Brabant with high-performing regions, Hainaut, Liège and Luxembourg with transition regions,

Figure 6

Unlike Namur, Liège and Hainaut are lagging behind EU15 transition regions

(GDP per capita, NUTS2 transition regions in the EU15)
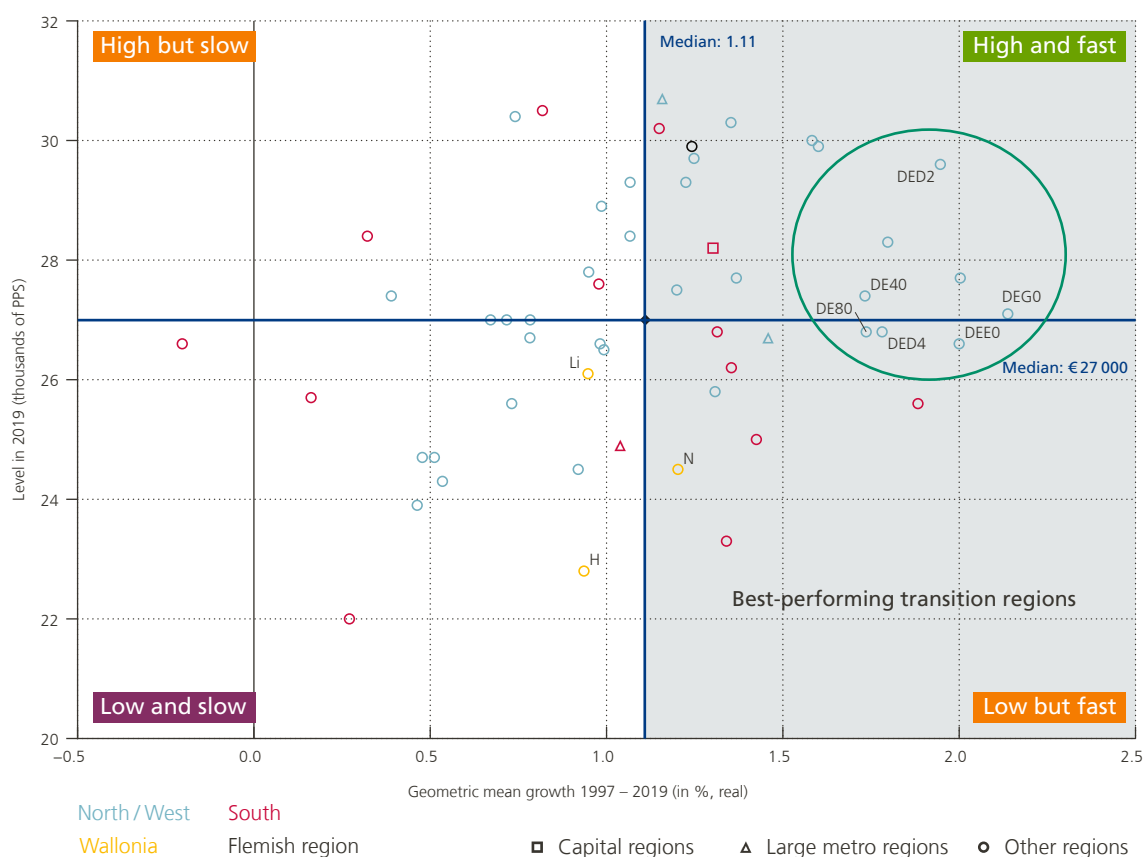
Sources: EC, ARDECO Autumn 2022; Eurostat, February 2023.
Note: DE40 stands for Brandenburg, DE80 for Mecklenburg-Western Pomerania, DED2 for Dresden, DED4 for Chemnitz, DEE0 for Saxony-Anhalt and DEG0 for Thuringia.

and Namur with the best-performing transition regions. Annex 2 contains the list of high-performing regions, together with some general statistics. Annex 3 provides the corresponding data for transition regions.

A sensitivity analysis (see Annex 4) shows that extending the period to 2021 does not significantly alter the composition of the groups of high-performing regions and transition regions. In this exceptional two-year Covid-19 period, the EU15 regions show neither convergence nor divergence. Walloon Brabant, despite having registered one of the biggest drops in value added across all regions considered, remains the NUTS2 region with the highest growth over the entire 1996-2021 period. The other four Walloon provinces were found to be resilient in 2020-2021 as they were all rebounding and had all fully recovered from the drop observed in 2020, which was not the case for half of the EU15 regions. [10]

10 Belgian data includes the January 2024 release of the regional accounts by the National Account Institute and thus the first estimates according to the so-called definitive method while, for other countries, the data are those published by Eurostat in February 2023 (preliminary method for the year 2021).

Annex 5 provides a more granular analysis of economic performance and population growth at the NUTS3 level, i.e. that of districts (*arrondissements*) in the case of Belgium. As such, it pays due credit to two characteristics of Wallonia : firstly, like many regions, Wallonia is heterogeneous as it includes both rural and urban areas. Secondly, although it is not itself home to a large metropolis (of more than 1.5 million inhabitants), it is close to two : first and foremost, Brussels, but also Lille, as well as other commuter hubs such as Luxembourg, Aachen, and Maastricht. Comparison of Belgian districts with their peer EU15 NUTS3 regions, taking into account their proximity to metropolitan areas or any urban centre of a considerable size (e.g. 50 000 inhabitants), shows that most Walloon districts lagged behind their peers in terms of both real GDP per capita growth over 1996-2019 and level of GDP per capita in 2019.

3.2 Demography

Demographic dynamics are, on average, more favourable in Wallonia than in other EU15 regions. Wallonia is not a "shrinking"[11] region : its population has continued to grow up to the present, even at the height of the COVID-19 pandemic, and indeed, from 1996 to 2019, it grew in all Walloon districts (see also Annex 5). Moreover, the working-age population (15-64) increased in all Walloon provinces between 2007 and 2019, contrary to the trends observed in more than half of EU15 regions.

According to the Federal Planning Bureau's baseline projection (2024) for Wallonia, this positive trend is expected to continue until at least 2040. This is because both internal migration – from Brussels – and international migration are expected to offset the natural balance, i.e. the difference between births and deaths, which has been negative since the mid-2010s. However, according to the same projection, the working-age population (15-64) is set to decline almost continuously between 2025 and 2070, from 2 351 000 in 2024 to 2 162 000 in 2070.

As is the case for the rest of the EU, Wallonia is ageing. Nevertheless, in 2022, the median age of the population was 41.7 years in Wallonia : this was well below that of high-performing regions (44.6) ; of all regions combined (45.35) ; of transition regions (45.6) ; and of the best-performing transition regions (46.4). In addition, the old-age dependency ratio, i.e. the proportion of the population aged 65 and over compared to people aged between 15 and 64, was 30 % in Wallonia in 2022. This is also below the median for high-performing regions (32.6 %), for all regions combined (35.5 %), for transition regions (39.25 %), and for the best-performing transition regions (40.3 %).
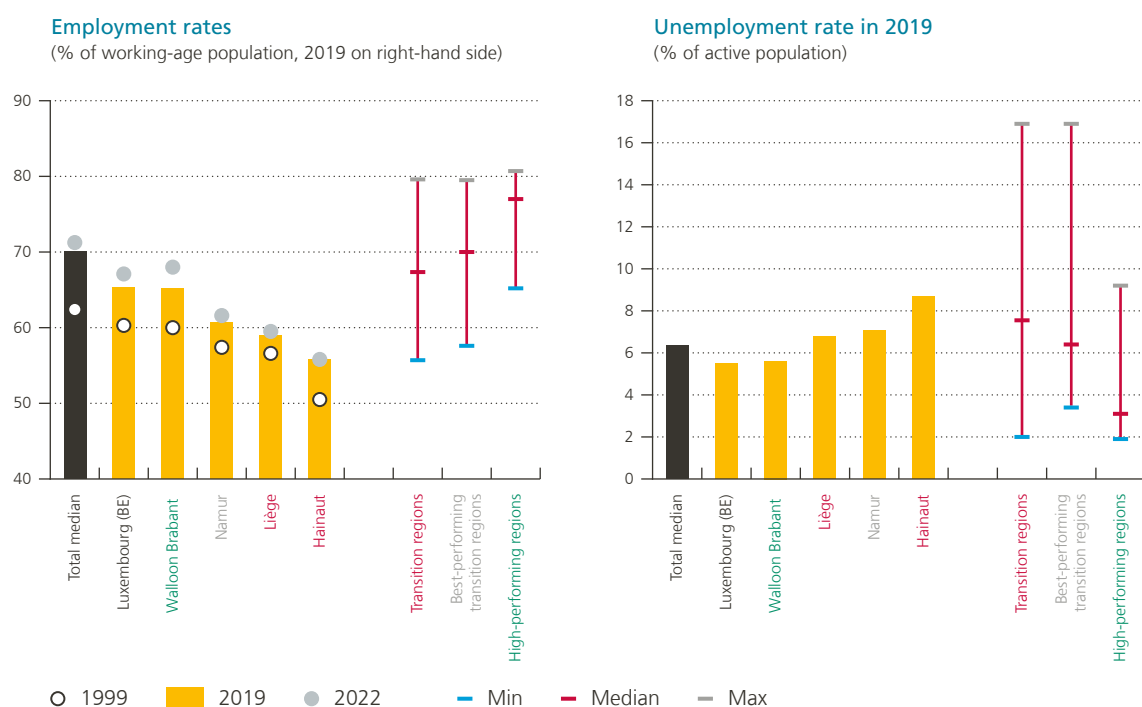
3.3 Labour market

In all Walloon provinces, including Walloon Brabant, employment rates were below the total median for EU15 regions in 2019. In Walloon Brabant, the employment rate was the lowest amongst high-performing regions. Thanks to commuter flows, the province of Luxembourg had an employment rate that year that was slightly higher than that of Walloon Brabant. In Hainaut the employment rate was particularly low, at 55.7 % – the lowest among transition regions. In Liège, it was 59 %, sitting between the minimum and median values (on the low side of the interval) for transition regions. At 60.8 %, the rate was higher in Namur but on the very low side of the interval for the best-performing transition regions.

Employment rates increased in all Walloon provinces between 1999 and 2019 as employment grew more rapidly than the working-age population, but by less than the four medians considered (total, transition regions, best-performing transition regions and high performers). The gap therefore widened with other EU15 regions.

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11 The concept of shrinking regions and cities has been widely developed as one fourth of OECD cities have shrunk and one third of regions have declined. Shrinkage means a sustained and strong decline in population (Monroy, 2023).

Figure 7

Employment rates are low to very low in Walloon provinces, while unemployment rates are closer to the median though with large discrepancies

Employment rates
(% of working-age population, 2019 on right-hand side)

Unemployment rate in 2019
(% of active population)

○ 1999   ▬ 2019   ● 2022   ─ Min   ─ Median   ─ Max

Source : Eurostat.
Throughout this section, the medians refer to the EU15 as defined above.

The employment rate rose by five percentage points in Walloon Brabant, Hainaut, and Luxembourg, but by only 3.4 percentage points in Namur and 2.4 in Liège.

From 2019 to 2022, the employment rate further increased in the provinces of Walloon Brabant, Namur, and Luxembourg while it effectively stagnated in Hainaut and Liège. Once again, progress was more pronounced for all medians, except that of the high performers, where the level was already very high in 2019 (77 %).

The poor labour market performance in Wallonia was not fully reflected in unemployment rates in 2019. Indeed, the latter varied from about 5.5 % in Walloon Brabant and Luxembourg to 8.6 % in Hainaut. In this regard, while the unemployment rate in Hainaut was still above the median for transition regions, this was not the case for Liège. In Namur, the rate stood at 7 %, marginally above the median for the best-performing transition regions. The difference between the conclusions that emerge from the analyses of employment and unemployment rates reflects a greater prevalence of inactivity in the Walloon provinces. [12]

Turning to jobs at the workplace level, between 1996 and 2019 employment in most Walloon provinces grew at a pace close to the median for all selected regions (Figure 8). Only Walloon Brabant registered much more robust employment growth; moreover, the province recorded the biggest productivity gains (per person

12 The extent of inactivity in Belgium more generally was the subject of a report by the High Council for Employment (2020). A more recent report from the High Council (2024) is dedicated to a specific issue within inactivity, i.e. incapacity for work. The proportion of employees on invalidity and incapacity leave is also higher in Wallonia than in the other two Belgian regions and, in Wallonia as in Flanders, the rate of absenteeism in the public sector is higher than in the private sector (Defeyt, 2024).

Figure 8

In Wallonia, employment grew at a relatively similar rate to the EU15 median but productivity gains were generally more limited

(at workplace level, geometric mean growth over the period 1997-2019)
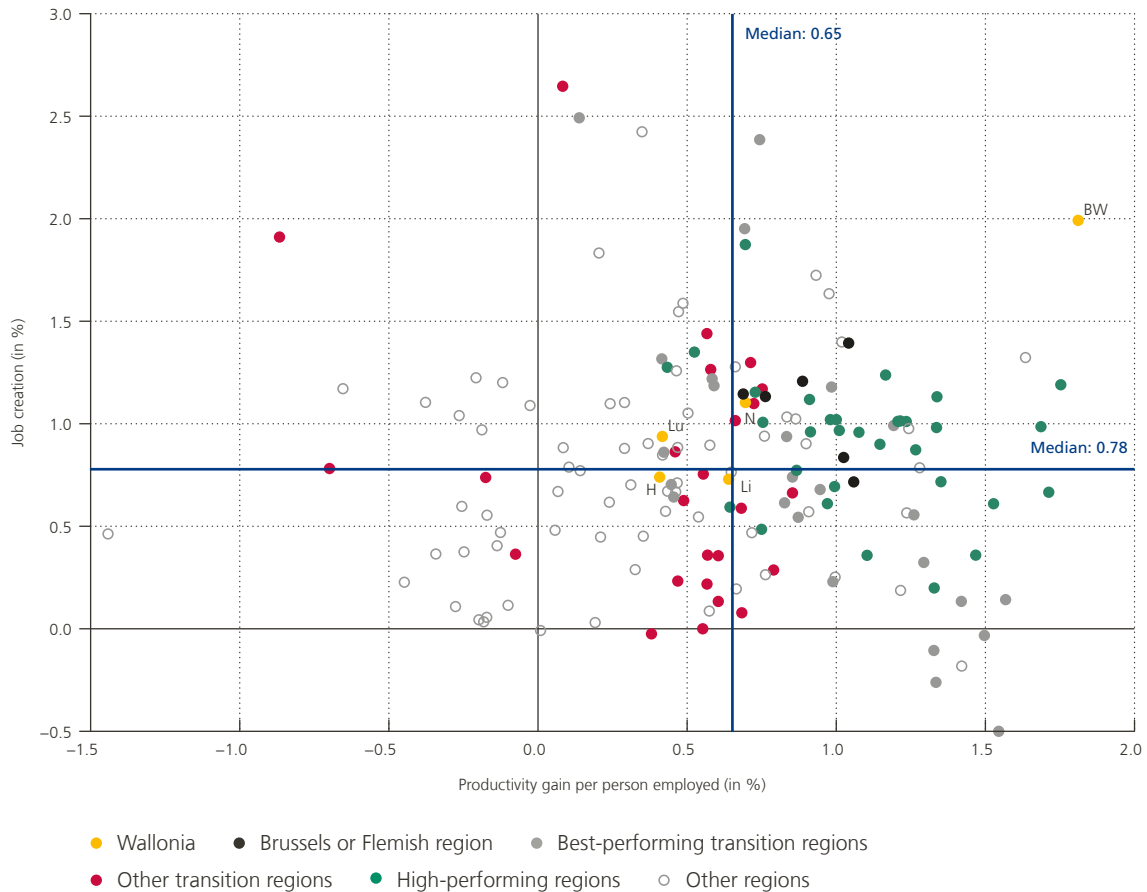
Source: EC, ARDECO, Spring 2023.

employed) among EU15 regions between 1996 and 2019, reflecting significant additional economic growth. Though still positive, productivity gains were more limited in the other provinces: below the median in Hainaut and Luxembourg and around the median in Liège and Namur. While productivity gains were more limited in Namur than in most other best-performing transition regions, employment grew more in Namur than in most of these regions.

Overall, employment in Wallonia grew at a similar rate to the EU15 regional median – rising slightly more slowly than in high-performing regions but slightly faster than in the (best-performing) transition regions. Compared with these benchmarks, relatively more (net) jobs were created in Wallonia in financial and business-related services, construction and, to a lesser extent, non-market services. On the other hand, more jobs were lost in industry while fewer jobs were created in market services except for in financial services. In agriculture, job losses were at a similar level to those in the reference region groups.

Looking at Walloon provinces, the exceptional growth in employment in Walloon Brabant between 1996 and 2019 (in the top five of the EU15) reflects solid results in all sectors except agriculture. Thanks in particular to the pharmaceutical industry, the province enjoyed the third highest increase in industrial employment in the

Figure 9

Financial and business services, non-market services and construction contributed to employment growth in Wallonia

(at workplace level, percentages, geometric mean growth over the period 1997-2019)
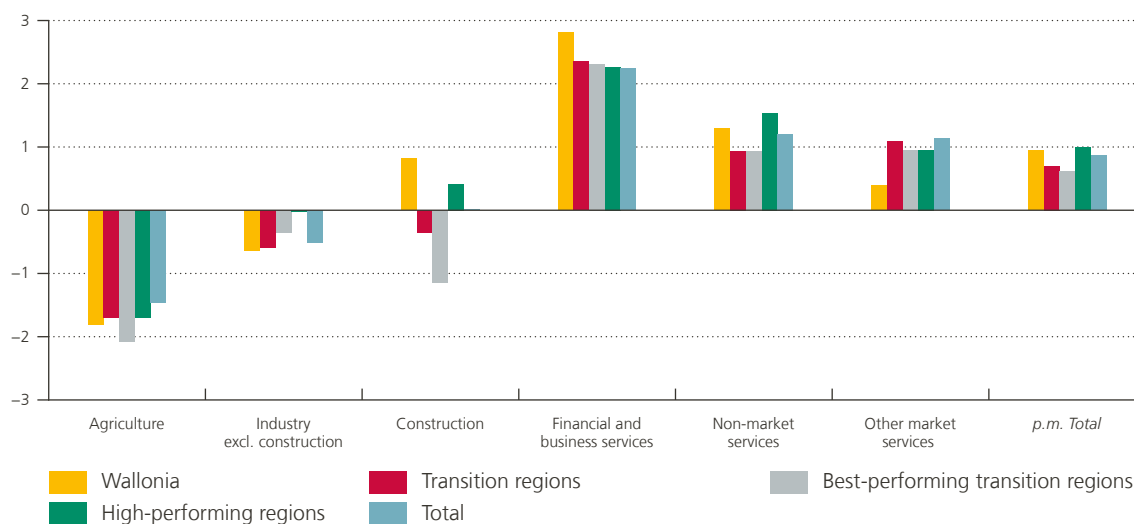
Source : EC, ARDECO, Spring 2023.

EU15 (after Corsica and Flevoland). In addition, there was very high growth in employment in financial and business services and relatively high growth in other market services and non-market services. As far as non-market services are concerned, the period was marked by the creation of provincial institutions and administrations following the division of Brabant in 1995, and the rapid expansion of the Catholic University of Louvain and of schools in a province undergoing a demographic boom.

Employment grew more in Namur than Wallonia as a whole and more than the average for the main reference categories. More jobs were generated in financial and business services and construction as well as, to a lesser extent, in the non-market sector, to which the development of the regional civil service in the capital of Wallonia may have contributed. In addition, Namur was more successful in limiting job losses in agriculture and industry.

All in all, Wallonia stands out for having a lower share of employment in market activity (around 60 % in 2019) than the EU15 average, and as compared to the three reference categories (transition regions, best-performing transition regions, high performers). Conversely, non-market services accounted for only 34 % of employment in the (best-performing) transition regions and 31 % in all regions and among the high performers. This share increased by a further three percentage points in Wallonia between 1996 and 2019, to almost 40 %. At 43.7 %, Namur had the highest share of employment in non-market services of the EU15 NUTS2 regions. Decentralisation in Belgium led to an increase in public sector employment in the city of Namur over the observation period, and even more so prior to this period, following the 1988-1989 third state reform. In addition, the province of Namur has two universities (Namur and Gembloux), several high schools, a university hospital, several other hospitals, and a number of military barracks. The proportion of non-market employment was also very high in the province of Luxembourg (42 %, +3.5 points compared to 1996) and in Hainaut (41 %, +4.5 points, the highest increase among the Walloon provinces). It also rose in Liège (+3.8 points), to almost 39 %. By contrast, the share of non-market employment was much lower in Walloon Brabant, falling slightly to 31 % in 2019 and in line with other high-performing regions.

Figure 10

The share of market employment is low in Wallonia

(at workplace level, 2019, as a % of total employment)
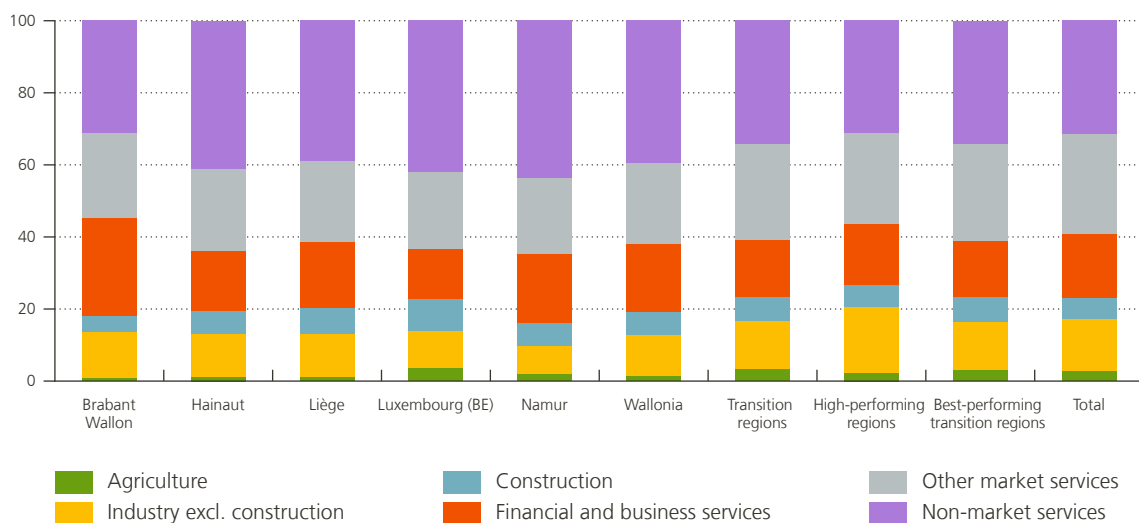
Source: EC, ARDECO, Spring 2023.

Notably, Wallonia also had a higher share of employment in financial and business services (19 %) in 2019 (+6.5 points compared with 1996) than the reference benchmark groups as a whole: this share was limited to 15.6 %-15.7 % in the (best-performing) transition regions, 16.7 % in the high-performing regions and 17.5 % overall. Ahead of Namur and Liège, this type of employment was particularly significant in Walloon Brabant (27 %), where business services made up the lion's share. Employers in the financial services sector in Walloon Brabant include Swift (with headquarters in La Hulpe) and, between 2002 and 2019, Euroclear (with a site in Braine-l'Alleud).

The construction sector in Wallonia, with the exception of Walloon Brabant, accounted proportionally for at least as many jobs (Hainaut and Namur) or slightly more (Liège and Luxembourg) than in the reference categories. Conversely, Luxembourg aside, agricultural employment in Wallonia accounted for a smaller share than the average for transition and high-performing regions. The share of employment in the industrial sector was also low in all Walloon provinces, particularly in Namur (less than 8 %), and was around 12 % in Hainaut and Liège, which had been heavily industrialised in the past. Thanks to the pharmaceuticals sector, Walloon Brabant is now the Walloon province with the highest share of industrial employment (12.7 %), but it is still below the medians in all reference categories: the median for high-performing regions even exceeded 18 % in 2019.

4. Structural, non-cost competitiveness

This section presents a benchmarking of the structural, non-cost competitiveness of Wallonia and its provinces with respect to the reference categories as defined in Section 2. Competitiveness is approached from a broad perspective, as discussed in the introduction. Sub-section 4.1 presents the results based on the Regional Competitiveness Index (RCI) developed by the European Commission Directorate-General for Regional and Urban Policy, allowing a benchmarking of competitiveness alongside other substantive dimensions. In the subsequent sub-sections, additional insights are provided with regards to regional public finance, education, and innovation.
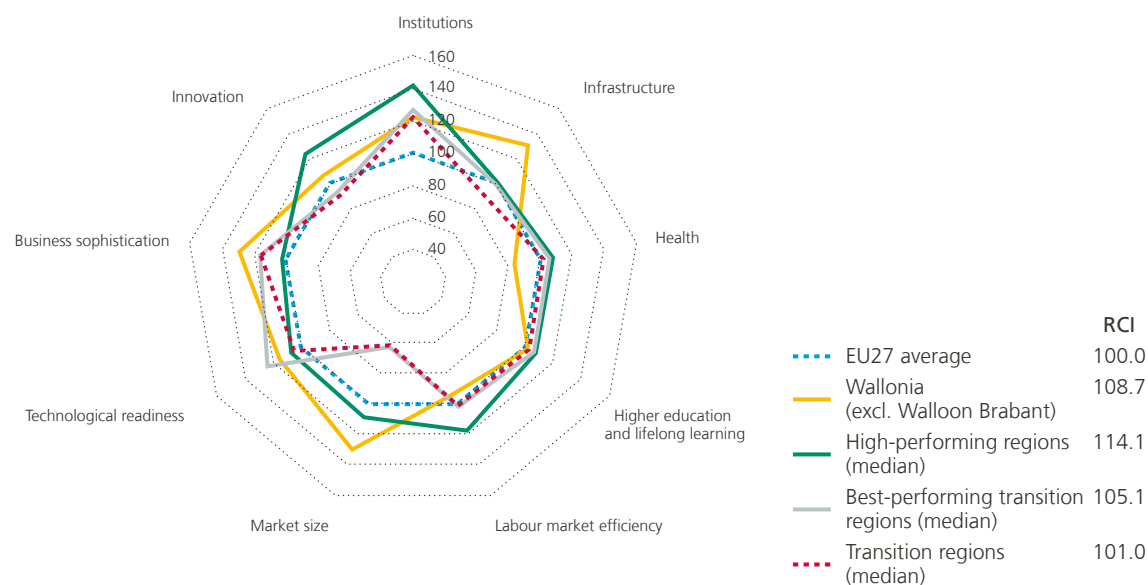
4.1 Overview

Here the focus is on identifying the relative strengths and weaknesses of Wallonia on the basis of the 2022 edition of the Regional Competitiveness Index (Dijkstra *et al.*, 2023). This index is composed of indicators grouped along eleven dimensions. The first five dimensions – the quality of institutions, macroeconomic stability, accessibility via infrastructure, health, and basic education – are seen as fundamental in the spirit of the Porter, WEF and IMD frameworks. The next four dimensions – higher education and lifelong learning, labour market efficiency, market size, and technological readiness – are seen as critical to achieving economic efficiency and thus for discriminating between regions that have already reached a certain level of development. Innovation and business sophistication are considered as factors that allow distinctions to be made between the most-developed regions.

The RCI is established at NUTS2 level (i.e. provinces in Belgium), with some adjustments made for national capitals that extend into one or more neighbouring NUTS2 regions. This is the case for Brussels, which is assumed to encompass Flemish Brabant and Walloon Brabant. A general overview for Wallonia is provided by the averages of the four other provinces, weighted by their population share. For each dimension as well as for the composite index, Wallonia is then compared with the median scores of high-performing regions, transition regions, and the best-performing transition regions. The EU27 average is also presented as it corresponds to the 100 value.

Scores against the indicators used for each dimension are primarily drawn from measurable, quantitative data, with survey responses used in only certain cases. Due to a lack of NUTS2 data for some dimensions, indicators had to be established at country level or NUTS1 level for data from the Regional Innovation Scoreboard. This is the case for the five indicators for macroeconomic stability, the three indicators for basic education, ten of the fourteen indicators for the institutions dimension, and two of the six indicators for technological readiness. For that reason, macroeconomic stability and basic education are disregarded here but some specific insights on these issues are presented in the next subsections.

Figure 11

Wallonia scores relatively well on regional, structural non-cost competitiveness

	RCI
EU27 average	100.0
Wallonia (excl. Walloon Brabant)	108.7
High-performing regions (median)	114.1
Best-performing transition regions (median)	105.1
Transition regions (median)	101.0

Source : EC (2023), Regional Competitiveness Index.

The composite RCI score for Wallonia (excluding Walloon Brabant) is 108.7. As such, Wallonia scores higher than the EU27 average and above the median score for both transition regions and the best-performing transition regions. However, it remains below the median for high-performing regions.
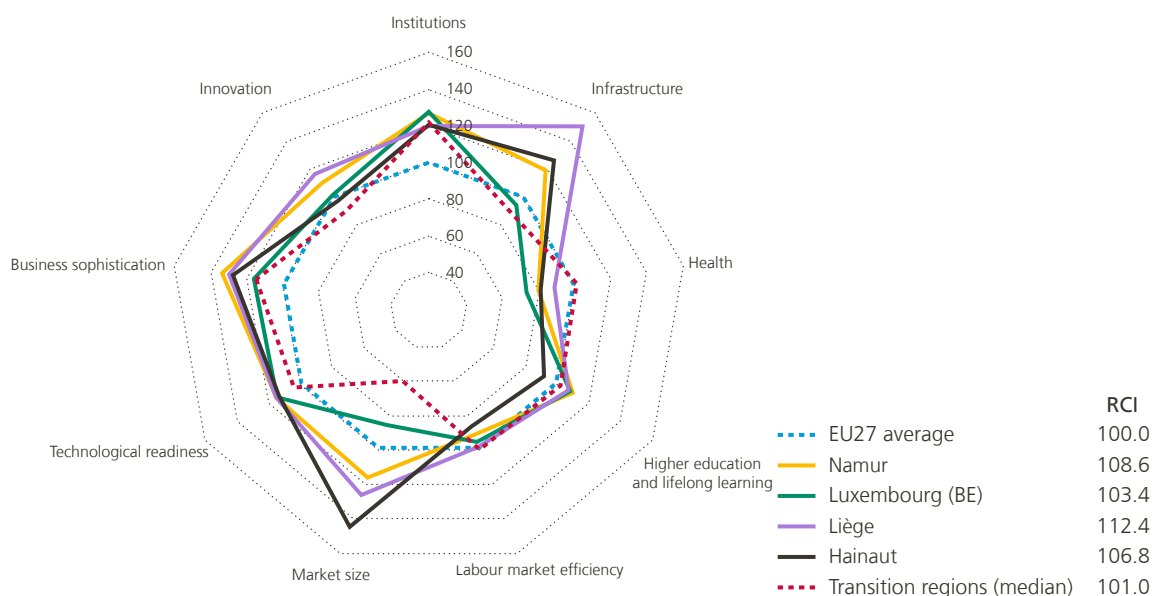
Wallonia achieves strong scores for infrastructure, market size and business sophistication. Across these dimensions, it even outscores the median for high-performing regions. Market size and infrastructure are strengths for Wallonia thanks to the fact that a wide range of markets and territories are accessible by train, road, and air transport. Indeed, the region is reachable in less than ninety minutes for the large number of people living within a radius of 120 kilometres. However, the quality of the infrastructure, notably the state of the road network, is not taken into consideration here. Wallonia benefits from its location within the so-called "blue banana", a corridor of urbanisation from Liverpool to Genoa through the Benelux and western Germany. Business sophistication mainly covers the share of value added and share of employment in certain private services.[13] Wallonia also receives relatively high scores for technological readiness (surpassed only by the best-performing transition regions) and innovation (surpassed only by the high-performers).

Wallonia performs poorly for health and labour market efficiency. For both these dimensions, its score is below the EU27 average and the medians of all reference categories. Its weakness in health can be explained by the relatively high number of deaths in road accidents per inhabitant (particularly in Belgian Luxembourg); a shorter healthy life expectancy and higher infant mortality (particularly in Hainaut for both indicators); a higher cancer death rate (particularly in Hainaut and Luxembourg); a higher heart disease death rate (particularly in Hainaut and Namur); and a higher suicide death rate (particularly in Luxembourg and Namur).

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13 These private services are those from the branches of activity under NACE codes K-N: financial and insurance activities; real estate activities; professional, scientific and technical activities; administrative and support service activities.

Figure 12

All Walloon provinces are more competitive than the median for transition regions

	RCI
EU27 average	100.0
Namur	108.6
Luxembourg (BE)	103.4
Liège	112.4
Hainaut	106.8
Transition regions (median)	101.0

Source : EC (2023), Regional Competitiveness Index.

Walloon also underperforms on labour market efficiency according to the RCI indicators. This confirms our previous results in terms of employment and unemployment rates. The percentage of the population aged 15-24 not in employment, education or training (NEET) is relatively high, especially in Hainaut, as is the level of long-term unemployment. In Hainaut and Liège, there is more slack [14] in the labour market and a higher prevalence of temporary employment than the median for transition regions. Conversely, except for Luxembourg, hourly productivity levels are relatively high in the Walloon provinces. In the three most populated Walloon provinces, these productivity levels exceed the EU27 average and the median levels for most of the reference categories. In Liège, they even reach the median for high-performing regions.

With respect to institutions, Wallonia scores well above the EU27 average. Namur and Luxembourg have scores just above the median of the best-performing transition regions while those for Hainaut and Liège are just below the median for transition regions. Looking at the variables that are differentiated by NUTS2 regions, citizens of the latter two Walloon provinces have a worse perception of the quality of government (in terms of quality of public services and corruption and impartiality in the provision of public services) than in Namur and Luxembourg. For higher education and lifelong learning, Wallonia also scores above the EU27 average and close to the median for all three regional reference categories.

In other words, Wallonia only scores below the median for transition regions and the EU27 average in the areas of health and labour market efficiency. The best-performing transition regions, however, also achieve higher scores than Wallonia for institutions, higher education and lifelong learning, and technological readiness.

The scores for the four Walloon provinces other than Walloon Brabant are generally quite homogeneous. The main differences relate to infrastructure, market size and health, with Luxembourg underperforming given its relatively remote location from urban areas and the fact that its terrain and dense woodland contribute to a higher incidence of road accidents than in the other provinces. Luxembourg is underperforming with respect to most dimensions except for institutions and higher education and lifelong learning. Meanwhile Hainaut scores below the other provinces for labour market efficiency, due to its lower employment rate and higher long-term unemployment rate.

The Regional Competitiveness Index does not, however, include every dimension that may be of relevance to businesses, such as the availability and cost of land, the cost of energy, the extent of subsidies and state aid, and labour costs, mainly due to the absence of data for all EU27 regions. In this regard, it is interesting note that, according to WalSpace, [15] there are 456 business parks and port areas in Wallonia, totalling 12 345 hectares of which 1 437 are available to investors and businesses.

Unit labour costs are the first best metric for analysing labour costs, but data are not immediately available in official databases. Based on data published by Orkestra, [16] unit labour costs across the entire economy tend to be higher in Wallonia than the medians of all our benchmark categories. While in Walloon Brabant they tend to be lower than the medians, notably including that of the high-performing regions, unit labour costs were above the medians of the reference categories in the other Walloon provinces. This most probably reflects composition effects, including the lower share of employment in the private sector in the latter (see also Figure 10). Unit labour costs in the manufacturing industry in Wallonia were generally lower in recent years than the medians for all EU15 regions and for transition regions as a group. Walloon Brabant had some of the lowest unit labour costs in the EU15, as it had both very high productivity per worker and, to a lesser extent, wage costs per worker.

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14 Slack is defined as the unmet demand for employment as a percentage of the extended labour force (persons aged 15-74).

15 WalSpace is a website which has been active since December 2023 and which maps land that is available for investment in Wallonia (see https://www.digitalwallonia.be/fr/publications/walspace-cartographie-terrains-activite-economique/).

16 The data from this research centre in the Basque Country differs in some respects with the unit labour costs used by the Bank for its macroeconomic forecasts, as the latter are calculated for the private sector and defined per hour and not per person.

4.2 Public finances

Macroeconomic stability is a fundamental element of structural competitiveness, and sound public finances are key to delivering it. The ratings of the long-term bonds issued by the regional governments may be considered as a good proxy indicator of how financial markets perceive the sustainability of regional public finances.

Compared to the transition regions, the ratings of the bonds issued by the Walloon Region and the French Community are lower than those issued by German Länder – which (except for Saxony-Anhalt) benefit from the AAA rating of German federal government bonds – and by French regions. Nevertheless, they are above those issued by Spanish autonomous communities and Italian regions. This shows that the ratings of bonds issued by regions are to a large extent determined by the ratings of sovereign bonds issued by the country in which they are located.

In Belgium, bonds issued by the Walloon Region have the lowest rating. Wallonia's debt has ballooned rapidly, especially after the COVID-19 pandemic and the July 2021 floods. The A- rating for these bonds is one notch lower than that of bonds issued by the French Community (A) although the latter has no fiscal autonomy. The Walloon Region also has greater scope to shift expenditures than the French Community. While still comfortably within investment grades, the bonds of both entities have lower ratings than those of the Flemish Community and the Brussels-Capital Region.

Table 1

The rating of Wallonia's bonds is below that of the other Belgian federated entities and the median for transition regions

(Territorial level 2 regions)

S&P-like rating	Transition regions and Belgian federated entities
AAA	Brandenburg, Mecklenburg-Vorpommern, Saxony and Thuringia
AA+	Saxony-Anhalt
AA	Pays-de-la-Loire and Provence-Alpes-Côte d'Azur
AA	**Flemish Community**
AA–	Bourgogne – Franche-Comté, Brittany, Centre – Val de Loire, Hauts-de-France, Nouvelle Aquitaine and Occitanie **Brussels-Capital Region**
A+	
A	**French Community**
A–	**Walloon Region** Balearic Islands
BBB+	Galicia, Asturias and Castilla and León
BBB	Marche
BBB–	Cantabria and La Rioja Umbria
BB+	Valencia and Murcia Abruzzo

Source : Bloomberg.
Ratings provided by Moody's (as is the case for the Walloon Region, for example) are converted into S&P/Fitch-like ones. Speculative grades are those below BBB–.
Ratings are shown for the transition regions for which they were found on 5 December 2023. They are reported for public authorities and thus at the territorial level 2 according to OECD terminology, i.e. at the level of Länder for Germany and of the post-2016 regions for France.

4.3 Education

The RCI score for basic education is based on results for the entire country, reflecting not only the performance of Wallonia but also of the Flemish and Brussels-Capital regions. Hence, other indicators were considered for this dimension, in particular those used in the PIRLS and PISA studies. [17]

17 PIRLS stands for Progress in Reading Literacy Study. This international study is coordinated by the International Association for the Evaluation of Educational Achievement (IEA). The survey targets pupils in their fourth year of primary school. PISA tests are performed by students aged 15 and the results are published by the OECD. Therefore, they tend to penalise school systems characterised by high redundancy rates as is the case for the French community. Nevertheless, this rate has declined somewhat since 2015 and it is expected to decline further with the introduction of the common curriculum (*tronc commun*) (aSPE, 2023).

Figure 13

French-speaking Belgian pupils score poorly in reading, maths, and science

(average performance of students, relative to a mean value of 500 among a larger sample of countries)

Sources: OECD-PISA, PIRLS.

[1] Asturias, [2] Balearic Islands, [3] Basque Country, [4] Cantabria, [5] Castile and Leon, [6] Valencia, [7] Galicia, [8] La Rioja, [9] Murcia.

In 2021, French-speaking Belgian pupils received the worst average PIRLS score for reading among EU15 countries: this was just below the score received by Flemish pupils (Schillings *et al.*, 2023), and was also the worst score awarded since the quinquennial survey began in 2006. The score for French-speaking Belgian pupils saw a limited decline compared to that received in 2016, while the average score dropped significantly in the Flemish community and in most EU15 countries.

According to the latest PISA study (OECD, 2023), the average scores of 15-year-olds in the French community (Brussels and Wallonia taken altogether) for reading literacy, maths and science are also weak – as is the case, to a lesser extent, for school students in the German-speaking community. As a result of COVID-19 pandemic-related school closures, scores fell in comparison with the last survey (held in 2018) in all three Belgian communities as well as in most countries.

Both PISA and PIRLS allow for more sophisticated analyses, as it is possible to breakdown average scores according to the level of disadvantage of schools and of students, by gender, origin, or whether a student has repeated a grade. Notably, in Belgium, disparities in performance associated with parental background are substantially larger than those between the two main linguistic communities. In both communities, "the average socio-economic environment of schools is even more important than parental background, in that the academic performance of students is more influenced by the average socio-economic status of parents of other students

Figure 14

The English proficiency of Walloon adults is relatively low but it is not worse than that of the French

(average performance of adults, relative to a mean value of 500 among a larger sample of countries)
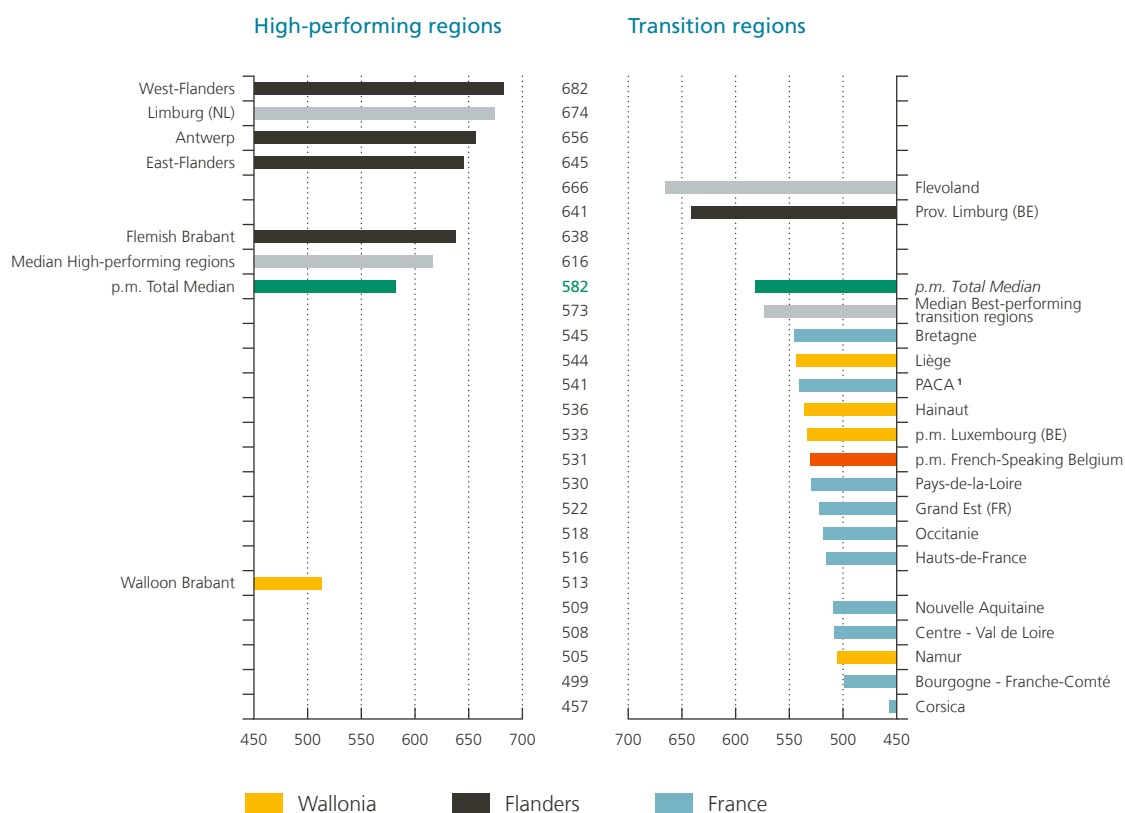
Source: Education first, English proficiency index 2023.
1 Provence-Alpes-Côte d'Azur corresponds to the median for transition regions.

in the same school than by their own parents' socio-economic status. Attending a school with students from more advantaged socio-economic backgrounds is associated with better test scores in all OECD countries, but the effect is particularly strong in Belgium" (OECD, 2022). The latest PISA results have confirmed that the impact of social inequalities on the scores of the pupils are very large in the French community and that they have increased further since the previous 2018 survey in line with the OECD average (aSPe, 2023).

With regard to higher education and lifelong learning, the median position of Wallonia in the RCI stems from contrasting results. On the one hand, all Walloon provinces except Hainaut score reasonably well for higher educational attainment, as the share of the population aged 25-34 with a tertiary education diploma is relatively high. Also, nearly all Walloon citizens can reach a university campus within 45 minutes by car; a substantially higher proportion than the medians of our benchmark categories. On the other hand, participation in lifelong learning is relatively low among 25-64-year-olds; the share of early school leavers aged 18-24 years old (i.e. those having reached at most lower secondary school) and the share of the population aged 25-64 that has completed only lower secondary education are relatively high in most Walloon provinces, particularly Hainaut. Namur and Luxembourg nevertheless score somewhat better regarding early-school leavers.

The relatively high share of the adult population who have completed only lower secondary education confirms previous research that found this to be a factor in regional growth underperformance in Wallonia (Bisciari *et al.*, 2020). This share has nevertheless been decreasing in all Walloon provinces since 2000, and with the exception of Hainaut, the improvements have been greater than in the benchmark group medians. The share in Walloon Brabant is now below the median for high-performing regions, and in Luxembourg and Namur it is, respectively, below or close to that for transition regions.

An additional finding is that the English proficiency of Walloon adults is relatively low. With the exception of Liège, all Walloon provinces scored worse than the median for transition regions. English proficiency is, however, slightly better in general among adult Walloons than among adults from transition regions in France. It is worth noting here that French-speaking Belgian pupils have, in previous decades, favoured Flemish over English as a first non-native language to study in secondary education. Also, due to cultural influences from France and the tendency for foreign-language films to be dubbed into French rather than subtitled, Walloons are less exposed to English than their Dutch-speaking peers.
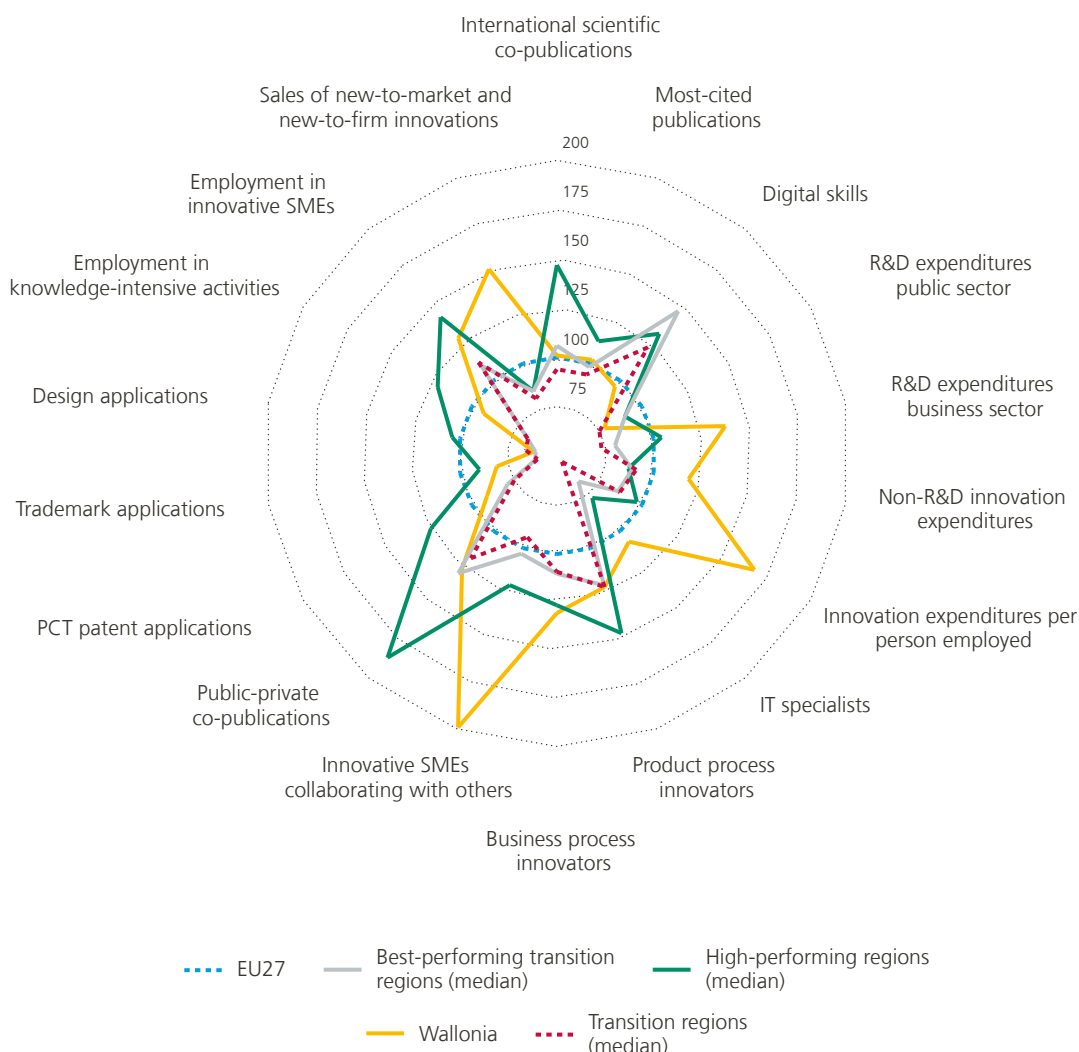
4.4 Innovation

To assess relative levels of innovation, indicators used in the recent EC Regional Innovation Scoreboard 2023 are considered alongside those used in the Regional Competitiveness Index. The scoreboard focuses on NUTS2 regions, except for three countries for which results are provided at the wider NUTS1 level: Austria, Belgium, and France. For the latter two, this corresponds to their regions (the post-2016 regions in the case of France). The results for Wallonia include data relating to the province of Walloon Brabant, contrary to the RCI.

According to the Regional Innovation Scoreboard 2023, Wallonia is a "strong innovator" which translates to the fifth rung on a twelve-rung ladder. Furthermore, its regional innovation index of 113.5 is higher than the EU27 average (100), the EU15 median (100.8), the median for transition regions (95.8) and the median for best-performing transition regions (99.3). It is also close to the median for high-performing regions (115.5).

Wallonia has several strengths with respect to innovation: firms operating in the region invest significantly more in R&D; SMEs spend more on non-R&D-related innovation; and a larger share of innovative SMEs collaborate with each other in Wallonia relative to the medians for most of the reference groups. As a result, innovation expenditure per person employed in Wallonia is – on average – very high compared to most other regions. Wallonia also has a higher share of ICT specialists in total employment, and in terms of impact, a larger share of persons employed by SMEs work for an innovative firm and a larger share of SME turnover stems from new-to-market and new-to-firms innovations. The RCI also makes reference to Wallonia's strengths in human resources

Figure 15

Wallonia scores higher on most innovation-related indicators than the transition region median

Source : EC (2023c), Regional Innovation Scoreboard.

in science and technology and core creative class employment; however, it is important to note that Hainaut is performing less well than the other Walloon provinces in this regard. The high share of business investment in R&D in Wallonia overall, expressed as a percentage of GDP, is due in part to the strong contribution of certain multinationals operating in the region, particularly in Walloon Brabant.

At the same time, there are weaknesses in the general level of digital skills and in public sector R&D expenditure in Wallonia. The share of individuals with digital skills above basic level in the population aged 16-74 is below the EU27 average and the medians for our benchmark groups. Meanwhile, the public sector in Wallonia allocates a lower share of GDP to R&D expenditure than the EU27 average and the median for the best-performing transition regions. It is nevertheless slightly higher than the median for transition regions. The number of individual design applications made to the European Union Intellectual Property Office relative to regional GDP is also much lower in Wallonia than the EU27 average, but it is in line with the median for the best-performing transition regions.

5. Well-being and environmental indicators

5.1 Well-being

Over the past few years, the OECD has developed a new workstream to measure regional well-being, [18] scoring regions on their performance in relation to several topics (including health, housing, and access to services). Data are available for large regions (OECD Territorial Level 2, TL2), i.e. regions for which there are regional authorities, meaning the initiative covers a mix of NUTS2 regions (such as autonomous communities in Spain, regions in Italy, and provinces in the Netherlands) and NUTS1 regions in three cases: the Länder in Germany, the three regions in Belgium, and the post-2016 regions in France.

Comparing Wallonia against the medians for the three reference region categories confirms its weaknesses regarding health, jobs, income, and education. Wallonia also scores below the medians with respect to accessibility to services, community, life satisfaction, safety, and the environment. The region does, however, receive a significantly higher score for housing.

It is, however, important to exercise caution when interpreting the scores under each of these topics, as in most cases they are derived from only a single indicator. The score for housing, for example, is based on the number of rooms per person in the region. As a result of urban sprawl, houses in Wallonia tend to contain more rooms than (the median) in other regions. This does not mean that Walloon housing is free of problems. For example, there are more houses with poor energy efficiency in Wallonia than in Flanders. Other dimensions measured by a single indicator

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18 See https://www.oecdregionalwellbeing.org/.

Figure 16

Wallonia scores poorly for well-being

Source: OECD (2023), Regional well-being online database.

include : safety (the homicide rate) ; life satisfaction (self-assessment via surveys) ; community (the perception of a supportive social network) ; income (household disposable income per capita on a purchasing power parity basis) ; education (the share of the population with at least secondary education) ; and environment (air pollution). Three dimensions are based on two indicators. The poor performance of Wallonia relative to other regions on health can be attributed to a higher mortality rate and a lower life expectancy (Figure 17). The low result for jobs is related to a considerably lower employment rate and, to a lesser extent, a higher unemployment rate. Finally, the poor score for accessibility to services was mainly due to a low internet download speed at the end of 2021 given that the share of households with broadband access was similar to the median for the transition regions.

Assessing Wallonia against the indicators of poverty used by Eurostat confirms the precarious social conditions in the region. Indeed, in 2022, no less than 18 out of 100 people were at risk of poverty in Wallonia, compared

Figure 17

Life expectancy is very low in Wallonia, especially in Hainaut

(at birth, 2021)
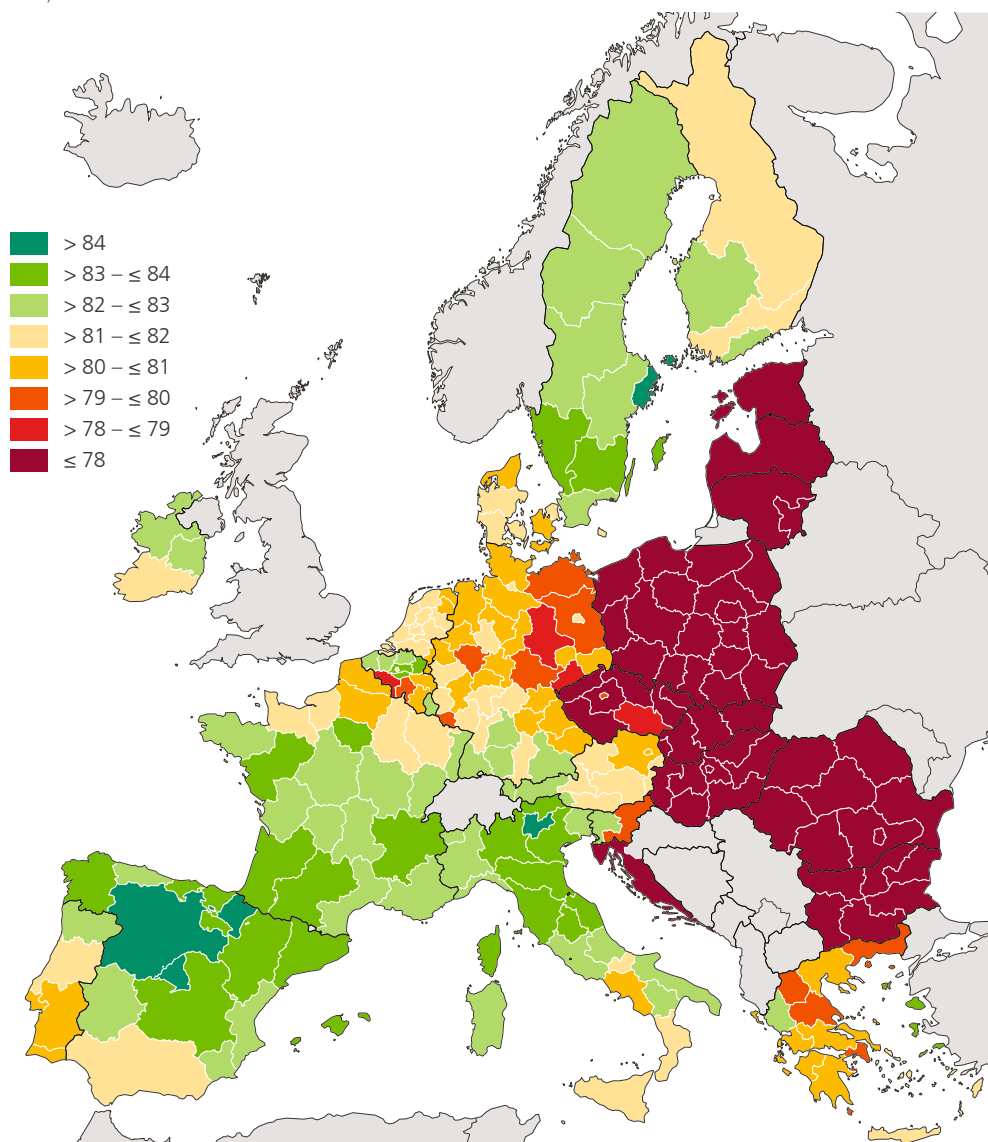
Source : Eurostat.

to only 14 in the median transition region. These are persons with an equivalised disposable income below the risk-of-poverty threshold, which is set at 60 % of the national median equivalised disposable income (after social transfers). If we add severely materially deprived persons or persons living in households with very low work intensity, then the share of people at risk of poverty or social exclusion in 2022 was as high as 27 % in Wallonia, substantially above the median transition region (21 %) and the total median in the EU15 (20 %). These two precarity criteria were once again higher in Hainaut, respectively 20 % and 30 %, than in the other Walloon provinces. In Namur and Luxembourg, they were below the Walloon average. In Walloon Brabant, the risk of poverty was as low as 10 %, well below the median for high-performing regions (13 %) but the risk of poverty or social exclusion stood at 22.5 % – as high as in Namur and Luxembourg, and well above the for high-performing regions (16.5 %).

5.2 Selected environmental indicators

Analysis of a selection of regional OECD environmental indicators and other indicators published by the EC (2022) provides insight into the position of Wallonia in terms of pollution and climate challenges.

In general, Wallonia has been less negatively affected by climate change to date and is expected to suffer less from global warming in the future compared to other regions. Indeed, the number of days of strong heat stress (with temperatures above 32°C) was lower than the median for the EU15 regions when considering the 2016-2020 average, and increased more slowly with respect to the 1981-2010 average than the median. The change in human exposure to heatwaves under a global warming scenario of 3°C by 2100 is projected to be lower in western Wallonia than the median. In the eastern part of the region, however, the projected impact is higher than the median. In July 2021, exceptional floods severely damaged some parts of Wallonia, especially in the province of Liège.

Levels of pollution in Wallonia appear worse than the medians of the EU15 regions and of our benchmark categories. Wallonia emitted more greenhouse gases (in tonnes of CO_2 equivalent) per capita in 2018, with more CO_2 from fossil fuels per capita. Since 1990 emissions have decreased in all provinces except Namur and Luxembourg. Supported by the closure of heavy industries, they have fallen by around 30 % in Hainaut and Liège, which is twice the median rate of decline (15 %). Wallonia also had a higher concentration of nitrogen dioxide (NO_2) than the median, except in the Ardennes. As a result of these figures, a higher share of the Walloon population was exposed to concentrations of the most harmful fine particulate matter (PM2.5). Nevertheless, the share of the population exposed to concentrations above 10 µg/m3 decreased.

In most Walloon districts, concentrations of ozone were between the EU27 average (111 µg/m³) and the median for selected districts in the EU15 (113.7 µg/m³). Hainaut nevertheless recorded lower concentrations of ozone than the EU27 average.

With regard to waste management, Wallonia is recycling a higher share of municipal waste than the median for all EU15 regions. In 2020, its share was close to the median of the high performers. A recent composite indicator of 29 variables (Kruse and Wedemeier, 2023) tends to confirm that Walloon provinces were already performing well with regard to the circular economy in 2018, with Walloon Brabant scoring better than the median for high-performing regions and Namur at the median position of the best-performing transition regions. Luxembourg and Liège are around the median for transition regions and Hainaut is slightly below the latter median. Bachtrögler-Ungler *et al.* (2023) also identified a higher revealed comparative advantage and a high potential for Walloon provinces with respect to certain green technologies as opposed to digital technologies.[19]

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19 For example, greenhouse gas capture is seen as having the highest potential in developing twin technologies in Hainaut, Liège and Walloon Brabant. There is also a high potential for the development of advanced materials and nanomaterials in Hainaut and Walloon Brabant while there is a high potential for developing both bio-fertilizers and biocides in the provinces of Liège and Namur.

According to the Regional Green Transition Vulnerability Index which maps regions with the highest exposure to climate and pollution mitigation measures. Hainaut, Liège and Walloon Brabant all belong to the 25 % of NUTS2 regions in the EU27 that are the least vulnerable to the green transition (Rodriguez-Pose and Bartalucci, 2023). Namur is in the second quartile while Luxembourg is in the third quartile.

6. Policy recommendations

Compared with our reference transition regions, Wallonia and its provinces score poorly on economic performance (except for Walloon Brabant) and the majority of well-being indicators, while structural non-cost competitiveness is relatively good. From the analysis, several policy recommendations can be drawn.

Firstly, Wallonia's main structural weaknesses are related to social variables in view of its lower – though increasing – employment rate, poorer health and higher risk of poverty or social exclusion. All these variables are interconnected. Poor health may lead to disability and thus inactivity and lower income. Together with environmental factors (notably air quality), poverty, unemployment and inactivity may in turn contribute to poor physical and mental health. These challenges need to be addressed in a comprehensive manner; which is all the more necessary given that population ageing is expected to further drive up health expenditures and contribute to a decline in the working-age population from 2025 onwards, reinforcing the risks of labour shortages. Given that the latter are already at significant levels, authorities should encourage inactive persons to join the labour market and tackle the mismatches between supply and demand of labour. In order to further incentivise new parents to continue working or resume work, more childcare facilities should be made available in all employment areas.

Secondly, education and training deserve particular attention. Both are negatively affected by social conditions and are essential levers to improve labour market efficiency. Compared to the benchmark region groups, the share of adults in Wallonia with at most a lower secondary school diploma is even higher. Moreover, the relatively high numbers of early-school leavers tend to become so-called NEETs (Not in Education, Employment, or Training) or inactive adults, thereby feeding skill mismatches and labour shortages. These issues are particularly acute in Hainaut. Education should be improved in terms of quality and equality. Indeed, the average scores of French-speaking pupils on international tests in mathematics, reading and science are low, with wide differences between schools and pupils. Teacher shortages are a source of concern in this regard. For adults, participation in lifelong learning should be encouraged, notably targeting English proficiency and digital skills.

Thirdly, productivity gains were more limited between 1996 and 2019 than in most EU15 regions with the notable exception of Walloon Brabant. The other Walloon provinces are now less industrialised and non-market services represent a much larger – and increasing – employment share. Raising human capital is key to ensuring a sufficient supply of qualified labour. The twin – green and digital – transition will also require reskilling. In addition, private and public investment is needed to improve the quality of existing transport infrastructure and to develop new infrastructure. The diffusion of innovation beyond innovative and productive large enterprises should also help to boost productivity.

Improving labour force participation, education and productivity is needed to better capitalise on many of Wallonia's strengths in terms of its structural competitiveness. It has access to a large and rich potential market, its share of adults with a tertiary education diploma is relatively high and, thanks to its infrastructure, a large number of people can easily travel within a radius of 120 kilometres in less than ninety minutes. Its economic structure is strongly innovative and service-oriented. Land is still available for investment in business parks and port areas. Wallonia is found to be less vulnerable to climate change and to the green transition than the reference regions. Moreover, Wallonia has a comparative advantage in some green technologies such as recycling

and carbon capture and storage. Relative to the EU15 regional median, the Walloon population is younger, and its old-age dependency ratio is lower.

All these challenges need to be addressed in a context of weaker public finances, as reflected by the lower ratings of long-term Walloon bonds compared with those issued by German Länder and French regions. Therefore, the fiscal trajectory recommended by the *Commission externe de la dette et des finances publiques* should be implemented and adjusted if needed. The public finances of the French Community also need to remain sustainable.

7. Conclusion

This article contributes to the literature by comparing Wallonia as a whole and its provinces with equivalent regions at a similar stage of economic development in countries that were members of the European Union before the 2004 enlargement (the "EU15"). The focus of the comparison has been on economic performance, structural non-cost competitiveness, well-being and environmental indicators.

Wallonia is highly heterogeneous, with large differences between its provinces.

Walloon Brabant is a high performer. With GDP per capita above the median of the EU15 regions and indeed the EU27 average, it even enjoyed the highest GDP per capita growth of all EU15 regions between 1996 and 2019. Despite significant outward commuter flows toward Brussels, economic activity expanded substantially, supported by net job creation and productivity gains. The establishment and development of Louvain-la-Neuve – and its university – contributed to this strong performance, together with suburbanisation from Brussels and the strong development of certain multinationals, notably in the pharmaceutical sector.

Hainaut, Liège, and Namur are considered by the EU as transition regions for the purposes of allocating EU Cohesion Policy funds (as their GDP per capita was between 75 % and 100 % of the EU27 average over the period 2015-2017). In the province of Luxembourg, GDP per capita is slightly below 75 % of the EU27 average, but this is largely explained by a high share of residents working in the Grand Duchy of Luxembourg. Overall, despite a relatively good position regarding structural non-cost competitiveness, these four Walloon provinces score poorly with respect to well-being and economic performance.

The Walloon provinces other than Walloon Brabant have not significantly improved their relative position in terms of overall economic activity in recent decades. But they are not the only ones to have been affected by stagnation or relative decline. Elsewhere in western Europe, economic revivals are not frequent, take a very long time to materialise and require substantial resources. Between 2001 and 2019, no transition region was upgraded to the more developed region category, while many were downgraded.

Policy at all levels of government must be aimed at promoting the economic development of Wallonia. This analysis, which centres on a comparison of Wallonia with other transition regions, has identified labour market efficiency, education, and productivity growth as priority areas. Such a focus is also necessary to ensure that Wallonia's strengths are used to the best possible extent for economic development. At the same time, the fiscal trajectory should be sustainable.

Annex 1: Selected statistics on Belgian regions

Selected economic variables

	Flemish region	Walloon region	Brussels-Capital region	Belgium
Income in 2022 (in €)				
GDP per capita	49 122	34 385	78 342	47 595
Primary income per capita	32 857	26 263	27 581	30 218
Disposable income per capita	26 567	22 513	22 588	24 867
(index, Belgium = 100)				
GDP per capita	103.2	72.2	164.6	100.0
Primary income per capita	108.7	86.9	91.3	100.0
Disposable income per capita	106.8	90.5	90.8	100.0
Real GDP growth beween 1997 and 2019 (in %)	2.03	1.74	1.78	1.91
Population in 2022 (inhabitants)	6 736 844	3 672 040	1 231 906	11 640 790
Area (km²)	13 626	16 901	162	30 689
Population density (inhabitants/km²)	494	217	7 604	379
Shares (in % of total)				
< 20 years	21.5	22.7	24.6	22.2
20-64 years	57.6	58.0	62.3	58.2
> 64 years	20.9	19.3	13.1	19.6
Labour market in 2022				
Employment rate (20-64)	76.3	65.7	65.0	71.7
Unemployment rate (15-64)	3.2	8.2	11.7	5.6
Activity rate (15-64)	73.5	65.3	67.6	70.2

Sources: EC, NAI, NBB.

Table 3

Key regional public finance variables for the main communities, regions and comparable entities

	Budget balance		Contribution to gross consolidated debt	
	2019	**2022**	**2019**	**2022**
(millions of euros)				
Flemish Community	104.6	−2 575.6	18 577	32 347
Walloon Region	−516.5	−1 479.3	23 135	34 212
Brussels-Capital Region	−702.7	−1 300.6	5 533	10 365
French Community	−350.7	−791.0	7 974	11 496
German-speaking Community	−19.2	−81.1	475	775
Flemish entity [1]	100.9	−2 484.8	17 919	31 206
Walloon entity [2]	−817.3	−2 194.9	30 014	44 208
Brussels entity [3]	−792.2	−1 596.1	7 917	13 990
(in % of disposable revenue) [4]				
Flemish Community	0.2	−4.8	38.8	59.9
Walloon Region	−4.3	−11.8	193.0	272.1
Brussels-Capital Region	−19.3	−34.8	152.1	277.5
French Community	−2.6	−5.2	58.9	74.8
German-speaking Community	−5.7	−20.9	139.7	199.3
Flemish entity	0.2	−4.8	38.8	59.9
Walloon entity	−3.5	−8.7	129.4	174.9
Brussels entity	−7.9	−14.3	79.0	125.4

Sources: ICN, NBB calculations based on the Cornille *et al.* (2022)'s methodology.
1 Imputed share of Flemish Community to the Flemish region.
2 Walloon Region, imputed share of French Community to the Walloon Region, German-speaking Community.
3 Brussels-Capital Region, three Community Commissions (Cocom, Cocof and VGC) and imputed shares of French and Flemish Communities to the Brussels entity.
4 Revenue has been adjusted by subtracting transfers paid to other public administrations. In this way, revenue ultimately intended to finance other entities is excluded, and the analysis is limited to the disposable revenue that is actually available for policy implementation. This adjustment also makes it possible to avoid including the same resources in the ratios of two distinct entities (Cornille *et al.*, 2022).

Annex 2: Descriptive statistics for high-performing regions

NUTS2 name	GDP per capita [1] Level in 2019 (PPS)	GDP per capita [1] Geometric mean growth (real)	Population (inhabitants)	Area (km²)	Density	Provincial, regional capital or main city	Metropolis	Corresponding TL2 name
Walloon Brabant	49 600	2.96	405 500	1 091	372	Nivelles	Part of **Brussels**	**Wallonia**
Braunschweig	46 400	2.52	1 595 660	8 100	197		Braunschweig-Salzgitter-Wolfsburg and Göttingen	Lower Saxony
West Sweden	36 000	2.27	2 049 980	30 934	66	Göteborg	Göteborg	West Sweden
Upper Norrland	36 500	2.14	521 000	164 077	3			Upper Norrland
Oberpfalz	39 700	1.94	1 110 690	9 690	115	Regensburg	Regensburg	Bavaria
Limburg (NL)	35 000	1.91	1 116 150	2 209	505	Maastricht		Limburg (NL)
Upper Austria	40 300	1.86	1 486 150	11 980	124	Linz	Linz	Upper Austria
Vorarlberg	42 200	1.85	395 950	2 601	152	Bregenz		Vorarlberg
South Sweden	31 900	1.84	1 529 980	14 341	107	Malmö	Malmö	South Sweden
Flemish Brabant	39 900	1.83	1 151 600	2 106	547	Leuven	Part of **Brussels**	Flemish region
Salzburg	47 100	1.81	556 630	7 156	78	Salzburg	Salzburg	Salzburg
Tyrol	42 000	1.80	755 700	12 640	60	Innsbruck	Innsbruck	Tyrol
Småland with Islands	31 300	1.78	867 000	35 382	25			Småland with Islands
Styria	36 000	1.78	1 244 480	16 401	76	Graz	Graz	Styria
East Middle Sweden	31 500	1.78	1 718 990	41 204	42	Uppsala	Uppsala	East Middle Sweden
Lower Austria	33 000	1.73	1 680 580	19 186	88	St-Pöllen	Some of it is part of **Vienna**	Lower Austria
Central Norrland	31 700	1.72	376 000	76 709	5			Central Norrland
Basque Country	36 500	1.71	2 181 900	7 228	302	Vitoria/Gasteiz	Vitoria/Gasteiz, Guipúzcoa and Bilbao	Basque Country
Utrecht	49 700	1.69	1 313 000	1 449	906	Utrecht	Utrecht	Utrecht
Mittelfranken	42 400	1.68	1 772 790	7 245	245	Nuremberg	Nuremberg	Bavaria
Tübingen	41 200	1.66	1 860 250	8 918	209		Reutlingen, Ulm	Baden-Württemberg
Oberfranken	35 700	1.64	1 066 450	7 231	147		Bayreuth	Bavaria
Niederbayern	36 700	1.62	1 241 360	10 329	120		Some of it is part of Regensburg	Bavaria
Overijssel	33 400	1.62	1 159 000	3 421	339	Zwolle	Enschede and Zwolle	Overijssel

Sources: EC, Eurostat, OECD.
1 The regions are ranked in decreasing order of the geometric mean growth of real GDP per capita.

NUTS2 name	GDP per capita [1]		Population	Area	Density	Provincial, regional capital or main city	Metropolis	Corresponding TL2 name
	Level in 2019 (PPS)	Geometric mean growth (real)	(inhabitants)	(km²)				
Unterfranken	38 000	1.60	1 317 380	8 531	154		Aschaffenburg, Schweinfurt and Würzburg	Bavaria
Carinthia	33 600	1.59	561 070	9 538	59	Klagenfurt		Carinthia
East-Flanders	33 500	1.58	1 521 300	2 982	510	Ghent	Ghent	Flemish region
West-Flanders	35 700	1.57	1 199 600	3 144	382	Bruges		Flemish region
North-Brabant	40 200	1.57	2 554 000	5 082	503	Eindhoven	Eindhoven, Breda and Tilburg	North-Brabant
Zeeland	31 500	1.51	383 000	2 933	131	Middelburg		Zeeland
Gelderland	33 500	1.44	2 079 000	5 136	405	Arnhem	Arnhem and Nijmegen	Gelderland
Schwaben	37 200	1.43	1 893 620	9 993	189	Augsburg	Augsburg	Bavaria
Weser-Ems	33 300	1.38	2 529 660	14 971	169		Oldenburg and Osnabrück	Lower Saxony
Kassel	34 300	1.35	1 219 650	8 289	147	Kassel	Kassel	Hesse
Freiburg	36 200	1.34	2 267 930	9 357	242	Freiburg	Freiburg, Offenburg, Konstanz and part of Basel	Baden-Württemberg
Antwerp	43 400	1.32	1 866 800	2 867	651	Antwerp	Antwerp	Flemish region
Gießen	32 400	1.22	1 047 960	5 381	195	Gießen	Gießen and Wetzlar	Hesse

Sources: EC, Eurostat, OECD.
1 The regions are ranked in decreasing order of the geometric mean growth of real GDP per capita.

Annex 3: Descriptive statistics for transition regions[1]

Name of the NUTS2 Region	GDP per capita		Best transition regions	Population	Area	Density	Provincial, regional capital or main city	Metropolis[2]	Corresponding TL2 name
	Level in 2019 (PPS)	Geometric mean growth (real)							
Thuringia	27 100	2.14	1	2 138 280	16 202	132	Erfurt	Erfurt	Thuringia
Burgenland	27 700	2.00	1	293 860	3 962	74	Eisenstadt	Part of it belongs to Vienna	Burgenland
Saxe-Anhalt	26 600	2.00	1	2 201 570	20 452	108	Magdeburg	Magdeburg and Halle an der Saale	Saxe-Anhalt
Dresden	29 600	1.95	1	1 597 380	7 931	201	Dresden	Dresden and Görlitz	Saxony
Galicia	25 600	1.88	1	2 698 900	29 575	91	Santiago de Compostela	La Coruña and Vigo	Galicia
Eastern and Northern Finland	28 300	1.80	1	1 281 440	227 150	6			Eastern and Northern Finland
Chemnitz	26 800	1.78	1	1 431 420	6 524	219	Chemnitz	Zwickau	Saxony
Mecklenburg-Vorpommern	26 800	1.74	1	1 608 910	23 213	69	Schwerin	Rostock, Schwerin and Neubrandenburg	Mecklenburg-Vorpommern
Brandenburg	27 400	1.73	1	2 516 890	29 654	85	Potsdam	Parts of it belong to **Berlin**	Brandenburg
North Middle Sweden	29 900	1.60	1	857 000	69 148	12			North Middle Sweden
Western Finland	30 000	1.58	1	1 379 200	64 763	21		Tampere	Western Finland
Nord-Pas-de-Calais	26 700	1.46	1	4 087 070	12 414	329	Lille	Lille – Dunkerque – Valenciennes	Hauts-de-France
Asturias	25 000	1.42	1	1 020 000	10 603	96	Oviedo	Oviedo-Gijon	Asturias
Friesland (NL)	27 700	1.37	1	649 000	5 749	113	Leeuwarden	Leeuwarden	Friesland
Cantabria	26 200	1.35	1	581 900	5 327	109	Santander	Santander	Cantabria
Southern Finland	30 300	1.35	1	1 150 760	35 378	33		Turku	Southern Finland
Murcia	23 300	1.34	1	1 495 100	11 314	132	Murcia	Murcia	Murcia
Castile and León	26 800	1.31	1	2 402 600	94 227	25	Valladolid	Valladolid	Castile and León
Corsica	25 800	1.31	1	343 240	8 680	40	Ajaccio		Corsica
Attica	28 200	1.30	1	3 740 560	3 814	981	Athens	**Athens**	Attica
Limburg (BE)	29 700	1.25	1	878 200	2 422	363	Hasselt		Flemish Region
Midi-Pyrénées	29 900	1.24	1	3 099 290	45 348	68	Toulouse	Toulouse	Occitanie

Sources: EC, Eurostat, OECD.
1 The regions are ranked in decreasing order of the geometric mean growth of real GDP per capita.
2 Metropolises in bold are either national capitals or large metropolitan areas (more than 1.5 million inhabitants).

Name of the NUTS2 Region	GDP per capita		Best transition regions	Population	Area	Density	Provincial, regional capital or main city	Metropolis[2]	Corresponding TL2 name
	Level in 2019 (PPS)	Geometric mean growth (real)							
Flevoland	29 300	1.22	1	420 000	2 412	174	Lelystad	belongs to **Amsterdam**	Flevoland
Namur	**24 500**	**1.20**	1	498 200	3 666	136	Namur	Namur	**Wallonia**
Zealand	27 500	1.20	1	837 000	7 223	116	Sorø	part of it belongs to **Copenhagen**	Zealand
Provence-Alpes-Côte d'Azur	30 700	1.16	1	5 107 930	31 400	163	Marseille	**Marseille** and Nice	Provence-Alpes-Côte d'Azur
La Rioja	30 200	1.15	1	314 400	5 045	62	Logrono		La Rioja
Pays-de-la-Loire	29 300	1.07	0	3 830 610	32 082	119	Nantes	Nantes, Angers and Le Mans	Pays-de-la-Loire
Trier	28 400	1.07	0	532 050	4 924	108	Trier		RheinPfalz
Valencia	24 900	1.04	0	4 999 600	23 257	215	Valencia	**Valencia**, Alicante and Elche	Valencia
Lüneburg	26 500	0.99	0	1 713 680	15 496	111	Lüneburg	parts of it belong to Bremen, Bremerhaven and **Hamburg**	Lower Saxony
Aquitaine	28 900	0.99	0	3 488 280	41 308	84	Bordeaux	Bordeaux and Pau	Nouvelle-Aquitaine
Poitou-Charentes	26 600	0.98	0	1 824 530	25 810	71	Poitiers	Poitiers	Nouvelle-Aquitaine
Algarve	27 600	0.98	0	438 640	4 997	88	Faro	Algarve	Algarve
Brittany	27 800	0.95	0	3 374 300	27 208	124	Rennes	Rennes and Brest	Brittany
Liège	**26 100**	**0.95**	0	1 112 100	3 862	288	Liège	Liège	**Wallonia**
Hainaut	**22 800**	**0.94**	0	1 348 200	3 786	356	Mons	Charleroi	**Wallonia**
Languedoc-Roussillon	24 500	0.92	0	2 874 610	27 376	105	Montpellier	Montpellier, Nîmes and Perpignan	Occitanie
Balearic Islands	30 500	0.82	0	1 198 100	4 992	240	Palma (de Mallorca)	Palma (de Mallorca)	Balearic Islands
Drenthe	27 000	0.78	0	493 000	2 680	184	Assen		Drenthe
Auvergne	26 700	0.78	0	1 376 170	26 013	53	Clermont-Ferrand	Clermont-Ferrand	Auvergne-Rhône-Alpes
Alsace	30 400	0.74	0	1 917 250	8 280	232	Strasbourg	Strasbourg and Mulhouse	Grand Est (FR)

Sources: EC, Eurostat, OECD.

1 The regions are ranked in decreasing order of the geometric mean growth of real GDP per capita.
2 Metropolises in bold are either national capitals or large metropolitan areas (more than 1.5 million inhabitants).

Name of the NUTS2 Region	GDP per capita		Best transition regions	Population	Area	Density	Provincial, regional capital or main city	Metropolis[2]	Corresponding TL2 name
	Level in 2019 (PPS)	Geometric mean growth (real)							
Lower Normandy	25 600	0.73	0	1 473 490	17 589	84	Caen	Caen	Normandy
Burgundy	27 000	0.72	0	1 629 140	31 582	52	Dijon	Dijon	Bourgogne – Franche-Comté
Centre–Val de Loire	27 000	0.67	0	2 580 990	39 151	66	Orléans	Orléans and Tours	Centre-Val de Loire
Picardy	24 300	0.53	0	1 937 320	19 400	100	Amiens	Amiens	Hauts-de-France
Limousin	24 700	0.51	0	730 350	16 942	43	Limoges	Limoges	Nouvelle-Aquitaine
Franche-Comté	24 700	0.48	0	1 183 520	16 202	73	Besançon	Besançon	Bourgogne – Franche-Comté
Lorraine	23 900	0.46	0	2 335 020	23 547	99	Nancy	Nancy	Grand Est (FR)
Champagne-Ardenne	27 400	0.39	0	1 322 580	25 606	52	Reims	Reims	Grand Est (FR)
Marche	28 400	0.32	0	1 516 500	9 401	161	Ancona		Marche
Notio Aigaio	22 000	0.27	0	345 770	5 305	65	Ermoupoli		Notio Aigaio
Abruzzo	25 700	0.16	0	1 297 300	10 833	120	L'Aquila		Abruzzo
Umbria	26 600	–0.20	0	872 000	8 464	103	Perugia	Perugia	Umbria

Sources: EC, Eurostat, OECD.
1 The regions are ranked in decreasing order of the geometric mean growth of real GDP per capita.
2 Metropolises in bold are either national capitals or large metropolitan areas (more than 1.5 million inhabitants).

Annex 4: Sensitivity analysis

Most Walloon provinces proved to be resilient during the 2019-2021 pandemic, except for Walloon Brabant

(GDP per capita, NUTS2 regions, EU15 excluding the UK, IE, and LU)
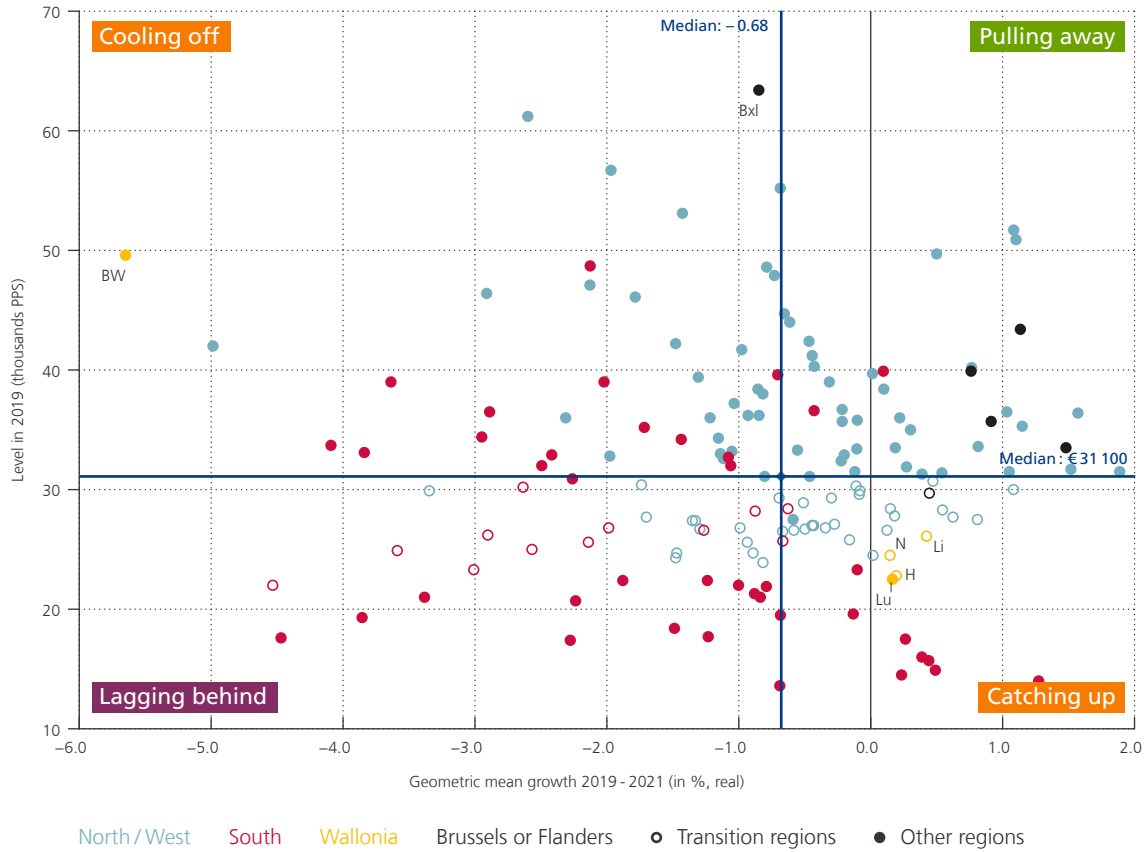
Sources: EC, ARDECO, Autumn 2023; Eurostat, February 2023; NAI, January 2024.

Note: BW stands for Walloon Brabant, Bxl for the Brussels-Capital region, H for Hainaut, Li for the province of Liège, Lu for the Belgian province of Luxembourg, and N for the province of Namur.
For the sake of readability, we excluded some outliers. Indeed, in the tourism-dependent Balearic Islands (ES) and Algarve (PT), real GDP per capita plummeted by more than 8% per year over these two years (2019-2021). Central Greece recovered part of the loss it had endured over the 1996-2019 period. Real GDP (per capita) also jumped by 5% per year over 2019-2021 in Rheinhessen-Pfalz thanks to the COVID19 vaccines discovered by BioNTech in Mainz. These four regions were, however, taken into account for the calculation of the medians.

Annex 5: Economic performance and demography of Walloon districts *(arrondissements)* compared with similar NUTS3 regions in terms of proximity to a metropolitan area or urban centre.

At the NUTS3 level, metropolitan Walloon districts are compared with the metropolitan districts of other EU15 countries, and rural Walloon districts with their counterparts in the EU15. A new OECD typology (Fadic *et al.*, 2019) distinguishes five categories of NUTS3 regions: large metropolitan districts (districts within a metropolitan area with more than 1.5 million inhabitants), medium-sized metropolitan districts (districts within a metropolitan area with between 250 000 and 1.5 million inhabitants), non-metropolitan districts near a metropolitan area (with more than 250 000 inhabitants), non-metropolitan districts near a small urban area with between 50 000 and 250 000 inhabitants, and remote (rural) non-metropolitan districts.

For these five categories of NUTS3 regions, two types of analysis are carried: one focusing on GDP per capita by comparing real growth over the longer term with the level at the final point of the observation period (2019) and the other comparing the two components of real GDP growth over the longer term (1996-2019) – real GDP per capita and population. Here, also, medians are used as benchmarks. Figure 19 illustrates the comparison between medium-sized metropolitan districts: corresponding figures for the other categories of NUTS3 regions are available in the dataset provided on the Bank's website, with the main findings summarised here, in Table 4.

Table 4

Most Walloon districts lag behind districts with similar urban characteristics.

	High but Slow	High and Fast	Low and Slow	Low but Fast
Large metro	*p.m. Brussels-Capital region*	Walloon Brabant	Soignies	Ath
Medium metro			Liège Charleroi Huy-Waremme Philippeville	Namur Thuin
Non-metro near metro area			Mons German-speaking community Verviers Dinant Bastogne La Louvière Arlon Virton	Tournai-Mouscron
Non-metro near small urban area		Marche		
Remote non-metro		Neufchâteau		

Sources: EC, Ardeco Autumn 2022 and Eurostat.
In green: real GDP per capita was growing fast; in red: real GDP per capita declined.

Figure 19

Most medium-sized Walloon metropolitan districts are lagging behind, except for Namur and Thuin

(NUTS3 medium-sized metropolitan regions, [1] EU15)

GDP per capita

Geometric mean growth 1997 - 2019
(in %)

North / West   South   Wallonia   Flemish region   ● Core metro regions   ○ Close to metro regions

Sources: EC, ARDECO, Autumn 2022.
1 Wolfsburg and Ingolstadt are not shown.
Note: Cha stands for Charleroi, Lie for the district of Liège, Nam for the district of Namur, Phi for Philippeville, Thu for Thuin and War for Waremme.

Medium-sized metropolises in Wallonia, with between 250 000 and 1.5 million inhabitants, include Liège, Charleroi, and Namur, as well as their surrounding areas – namely Huy and Waremme for Liège, and Philippeville and Thuin for Charleroi. Despite all having seen growth in both GDP per capita and population, all are lagging behind similar medium-sized metropolitan districts; however, Namur and Thuin are slowly catching up. Demographic growth was slightly below the median in Liège and Thuin, and very limited in Charleroi.

Brussels is the only large metropolitan area in Belgium. The Brussels metropolitan region is made up of seven districts: the Brussels-Capital region (BCR), three Flemish districts (Aalst, Halle-Vilvoorde and Leuven), and three Walloon districts (Ath, Nivelles (equal to the province of Walloon Brabant), and Soignies). As indicated in Bisciari

and El Joueidi (2022), the BCR, the core of the metropolis, is a region with a higher level of GDP per capita than the median for large metropolises: regional GDP per capita is inflated by commuters and multinationals. However, its growth has been lower than the median of 1.26 % reported for all large metropolitan districts. Nivelles is a high-performing district, with the strongest growth in the sample and a higher level of GDP per capita than the median for NUTS3 regions belonging to large metropolitan areas. In this sample, Ath is a district that is catching up, with strong growth since 1996 but GDP per capita in 2019 still below the median, while Soignies is lagging behind, with falling GDP per capita that remained below the median. Nevertheless, the population has grown in all three Walloon districts, at a rate at least equivalent to that of the median. Thus, Soignies is not a shrinking district.

Most Walloon non-metropolitan districts near to metropolitan areas are lagging behind their EU15 peers, except for Tournai-Mouscron. In the latter district, GDP per capita in 2019 was lower than the median for its EU15 counterparts, but it grew slightly faster in real terms than the median. On the contrary, Arlon and Virton were the only northern or western EU15 NUTS3 regions near to metropolitan areas in which GDP per capita declined over the period 1996-2019. All Walloon districts in this category nevertheless experienced population growth which, aside from Mons, was above the median – most notably for those situated in the province of Luxembourg (Bastogne, Arlon and Virton).

Marche is the only Walloon non-metropolitan district near a small urban area with between 50 000 and 250 000 inhabitants. Both its growth and level of GDP per capita at the end of the period were close to the median for this type of NUTS3 region, while its population grew significantly more than the corresponding median. Neufchâteau is the only remote Walloon non-metropolitan district. It has been pulling away somewhat from its NUTS3 peer regions, while also enjoying substantial population growth.

All in all, the population grew in all Walloon districts over the period 1996-2019, although only very slightly in Charleroi and Mons. As such, no districts were "shrinking". Real GDP per capita declined only in Arlon, Soignies and Virton. Nevertheless, most Walloon districts lagged behind their peers in terms of real GDP per capita growth and level of GDP per capita in 2019.

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Conventional signs

%	per cent
e.g.	*exempli gratia* (for example)
et al.	*et alia* (and others)
etc.	*et cetera*
i.e.	*id est* (that is)

List of abbreviations

Countries or regions

Ar	Arlon
Bas	Bastogne
BW	Walloon Brabant
Bxl	Brussels-Capital region
DED2	Dresden
DED4	Chemnitz
DE40	Brandenburg
DE80	Mecklenburg-Western Pomerania
DEE0	Saxony-Anhalt.
DEG0	Thuringia
Din	Dinant
EU15	European Union of 15 countries, prior to 2004 enlargement. In this article, the UK, IE and LU are excluded.
EU27	European Union of 27 countries
Ger	German-speaking Community
H	Hainaut
IE	Ireland
Li	Liège
Llv	La Louvière
LU	Grand-Duchy of Luxembourg
Lu	Belgian province of Luxembourg
Mon	Mons
N	Namur
TM	Tournai-Mouscron
Ver	Verviers
Vir	Virton
UK	United Kingdom

General

ARDECO	Annual Regional Database of the European Commission's Directorate General for Regional and Urban Policy
aSPe	Service d'Analyse des Systèmes et des Pratiques d'enseignement
COVID-19	Coronavirus disease 2019
EC	European Commission
EC DG	European Commission Directorate-General
ERDF	European Regional Development Fund
ESF	European Social Fund

EU	European Union
Eurostat	European Statistical Office
GDP	Gross domestic product
IEA	International Association for the Evaluation of Educational Achievement
IWEPS	Institut wallon de l'évaluation, de la prospective et de la statistique
NEET	Not in employment, education or training
NUTS1	Nomenclature of territorial units for statistics (First level)
NUTS2	Nomenclature of territorial units for statistics (Second level)
NUTS3	Nomenclature of territorial units for statistics (Third level)
OECD	Organisation for Economic Cooperation and Development
PIRLS	Progress in Reading Literacy Study
PISA	Programme for International Student Assessment
PM	Particular matter
PPS	Purchasing power standard
RCI	Regional Competitiveness Index
R&D	Research and development
RIS	Regional Innovation Scoreboard
SME	Small and medium-sized enterprise
Statbel	Belgian Statistical Office
TL2	Territorial Level 2
Ulg	University of Liège