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Article

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NBB economic review

Provided in Cooperation with:
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by P. Bisciari and S. El Joueidi

National Bank
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P. Bisciari
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Introduction

Most international comparisons of economic performance are between nations or regions. In the latter case, this means that the exceptionally small and densely populated Brussels-Capital Region (whose 19 municipalities cover 161 km²) is usually compared with other so-called NUTS2[1] regions, which can be very vast (for example, Andalusia, with an area of 87,597 km²) or predominantly rural. This makes little sense, especially since many economic variables, like GDP per capita, are significantly upwards biased in a small urban region like Brussels where commuters contribute to GDP but do not form part of the population.

This article sheds light on the economic performance of Brussels in a more meaningful way by comparing Brussels as a metropolis with its EU peers. Reasons for considering metropolises include the fact that economic competition takes place not only at the level of countries and regions but also of large cities. Moreover, the concept of a metropolis allows for better understanding and management of the relationship between the core and its periphery. For this reason, certain European Member States (Germany, France, Italy, the Netherlands, etc.) have created metropolitan institutional structures.[2] In addition, over the last two decades, several datasets regarding metropolises have been developed by international institutions, creating an opportunity for research on this subject.

This article benchmarks the economic performance, competitiveness and attractiveness of Brussels vis-à-vis 35 other EU27 metropolises, including 15 national capitals and two extended urban areas (the Ruhr in Germany and Katowice in Poland). To do so, we used the definitions for metropolitan area and metropolitan region adopted jointly by the European Commission (EC) and the OECD. We compared Brussels with both the entire sample and its best-performing peers. The focus is thus predominantly on the metropolitan areas and regions as a whole rather than on developments within the core or the periphery or between the core and the periphery.

Over the past two decades, a vast body of literature on the expansion of cities and their surrounding areas has emerged. Indeed, there is a global trend towards urbanisation (EC/OECD, 2020) which is somewhat less marked

in Western Europe (EC, 2016). As suggested by the OECD and the EC, capital cities and metropolitan areas contribute relatively more to national economic growth than other regions. What's more, capital regions tend to benefit from a growth premium over other metropolitan regions.[1] The fact that large cities drive development explains the interest from economists.

The usual suspects can explain high urban productivity: human capital, the quality of the business environment, entrepreneurship, institutional quality, market access, R&D and innovation. Several of these factors are reinforced by economies of agglomeration in urban centres. As a result, high-growth, innovative firms are often concentrated in cities. Amongst other factors, a creative and skilled workforce, a wide array of stakeholders, the presence of specialised clusters, universities and research institutions, and a growth mindset have been mentioned in the literature as possible explanations for why cities are often more innovative and dynamic.[2]

Matching, sharing and learning are the three main channels by which economies of agglomeration increase productivity (EC, 2016; Puga, 2010). First, a larger labour market leads to better *matches* between supply and demand. In large cities, workers usually find a job that is a better fit for their personal skills and qualifications. Secondly, larger cities allow for the more efficient *sharing* of infrastructure. The cost per user of an airport or railway is lower if more users share the infrastructure. Thirdly, large cities generate more ideas and innovation than small cities because people who live and work in proximity can *learn* more easily from each other than people separated by a greater distance.

This article is structured as follows. Section 1 introduces the concepts used and the methodological choices. Section 2 compares Brussels with its peers in terms of economic performance. Section 3 presents the main drivers of regional and urban growth. Sections 4 and 5 analyse, respectively, the competitiveness and attractiveness of Brussels. In Section 6, some lessons are drawn from case studies on performing metropolitan areas, with a focus on the role of metropolitan institutions and multi-level governance. Finally, Section 7 sets out the conclusion.

1. Concepts and methodological choices

1.1 Concepts

The OECD and the EC have jointly developed the concepts of metropolitan area and metropolitan region (OECD, 2012; Dijkstra *et al.*, 2019).

A **metropolitan area** comprises a city and all neighbouring municipalities where more than 15% of the workforce commutes to the core. In 2018, close to 3.3 million people were living in the 4,824 km² of the Brussels metropolitan area, consisting of the 19 municipalities of the Brussels-Capital Region (core) and a commuting area (119 municipalities, following implementation of the revision of arrondissements in Wallonia on 1 January 2019).

A **metropolitan region** (or "metro region" hereafter) is a proxy for metropolitan area based on (the grouping of) so-called NUTS3 regions, corresponding to arrondissements in Belgium, departments in France, provinces in Italy, *kreiss* in Germany, etc.[3] By way of example, the Brussels metropolitan region is made up of seven arrondissements, i.e. the Brussels-Capital Region (the core), Halle-Vilvoorde, Leuven, Nivelles, Aalst, Ath and Soignies.

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1 This result has also been confirmed by Bisciari *et al.* (2020).

2 See Ahrend *et al.* (2016), Ahrend *et al.* (2017) and Raspe *et al.* (2018), amongst others.

3 In practice, metropolitan regions are defined as NUTS3 regions or a combination of NUTS3 regions representing an agglomeration of at least 250,000 inhabitants. Each agglomeration is represented by at least one NUTS3 region. If more than 50% of the population in an adjacent NUTS3 region also lives within the agglomeration, it was included in the metro region.

Chart 1

Map of Belgium illustrating the concepts used for Brussels

Brussels-Capital Region (Core)
Metropolitan area
Metropolitan region
Borders of the provinces
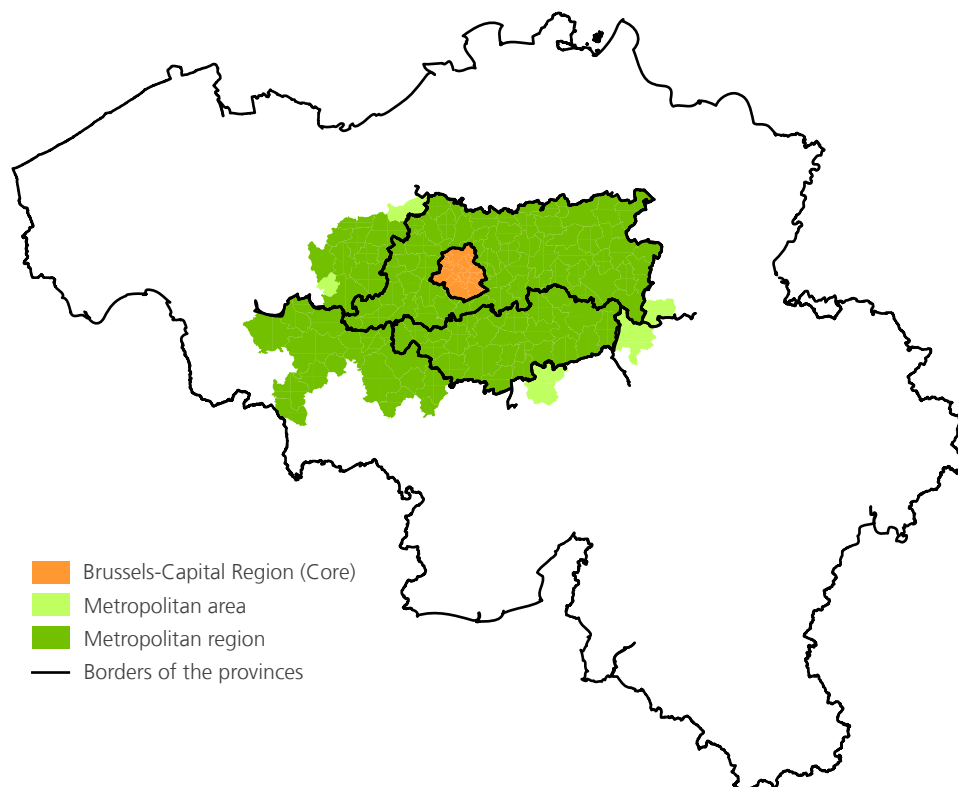
Sources: EC, Eurostat and OECD.

The concept of metro region is less accurate than metropolitan area from a geographical point of view but more data are available as it is based on the NUTS classification. It is also possible to obtain a breakdown for economic variables between the core and the periphery when the metropolitan region includes more than one NUTS3 region. Moreover, data are available for a longer period of time, namely 1980-2023 in the EC's ARDECO database. Therefore, we preferred to use this concept but limited our analysis to the period 1996-2019.

Some databases do not rely on either of these concepts. Therefore, for the analysis of competitiveness, we needed to consider NUTS2 regions or groupings as this is the geographical reference used in the EC's Regional Competitiveness Index (and some studies, e.g. Annoni *et al.*, 2019; Thissen *et al.*, 2013; Raspe *et al.*, 2018). For Brussels, the EC takes into account the former province of Brabant, which includes three NUTS2 regions (the Brussels-Capital Region, Walloon Brabant and Flemish Brabant).

1.2 Selection of the metropolitan areas

Population thresholds were applied to select metropolitan areas for analysis.

Sixteen national capitals were ultimately retained. Of the 27 EU Member States, we first excluded capital cities that were deemed too small, i.e. those with fewer than 500,000 inhabitants (Bratislava, Ljubljana, Nicosia,

Tallin and Valetta). [1] Nor did we consider capitals whose data are problematic (Bucharest and Dublin) [2] or that present too large catch-up effects (Vilnius, Riga, Sofia and Zagreb) since these drivers of convergence are far less prominent in an advanced city like Brussels.

We included all large metropolitan areas with a population in excess of 1.5 million as this is the classic definition, which we used in our previous article (Bisciari *et al.*, 2020). The Ruhr is considered an urban area (with Dortmund and Gelsenkirchen defined as being within the core), like Katowice. With respect to the population threshold, we made exceptions for Cracow, The Hague and Marseille. With 1.4 million inhabitants, Cracow benefitted from the partial delocalisation of a significant financial institution from Brussels and hence has become a competitor. Although The Hague metropolitan area has only around 1.1 million inhabitants, local authorities decided to merge it with the metropolitan area of Rotterdam (OECD, 2016). The two cities are however considered separately in the statistical databases. Finally, Marseille's population is around 1.3 million, but a conurbation has been created with Aix-en-Provence, adding another 0.3 million inhabitants. In the statistical databases, Marseille and Aix are considered part of the same NUTS3 metropolitan region (the Department of Bouches-du-Rhône).

The selected metropolitan areas range in area from 417 km² (The Hague) to 17,584 km² (Paris) (Table 1).

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1 Luxembourg was thus included without any correction for international commuting flows (notably people living in the Belgian province of Luxembourg). It was found to be an international competitor to Brussels, home to a number of EU institutions (including Eurostat) and a financial centre.
2 At first, we thought the well-known issues affecting GDP data in Ireland were mainly limited to multinational companies established in or around Cork (Apple and others) but it turned out that the GDP data for Dublin were also unreliable.

Table 1

Selected metropolitan areas

Metropolitan Area	Population (2018)	Area (km²)
Paris	12 924 097	17 584
Madrid	6 791 667	7 888
Berlin	5 259 440	17 473
Ruhr	5 117 039	4 434
Barcelona	4 985 549	2 625
Milan	4 944 728	3 114
Rome	4 331 571	6 162
Athens	3 544 204	1 930
Naples	3 372 586	1 286
Hamburg	3 296 381	7 197
Brussels	3 260 987	4 824
Warsaw	3 154 440	8 595
Budapest	2 979 468	6 394
Lisbon	2 969 024	4 328
Vienna	2 967 197	9 634
Munich	2 882 464	5 501
Amsterdam	2 838 598	3 312
Stuttgart	2 778 315	3 651
Frankfurt am Main	2 693 488	4 296
Katowice	2 505 530	3 940
Stockholm	2 308 143	7 037
Prague	2 216 056	5 756
Lyon	2 113 104	3 606
Cologne	1 994 029	1 624
Copenhagen	1 919 370	3 231
Rotterdam	1 848 449	2 154
Turin	1 742 605	1 700
Valencia	1 733 606	1 737
Dusseldorf	1 550 191	1 201
Seville	1 545 862	4 699
Lille	1 518 544	1 682
Helsinki	1 490 142	4 686
Cracow	1 400 321	3 754
Marseille	1 284 351	2 482
The Hague	1 092 983	417
Luxembourg	598 995	2 593

Source : OECD, Metropolitan database.

2. Economic performance

2.1 GDP per capita

The Brussels metro region was found to be performing quite well : real GDP per capita in 2019 was higher than the median for the selected metro regions and the growth rate for 1997-2019 was marginally above the median. It therefore falls in the upper-right quadrant with high and fast-increasing real income (Chart 2).

Identification of high performers amongst the selected metropolitan regions

(real GDP per capita, 2015 prices, in euros)
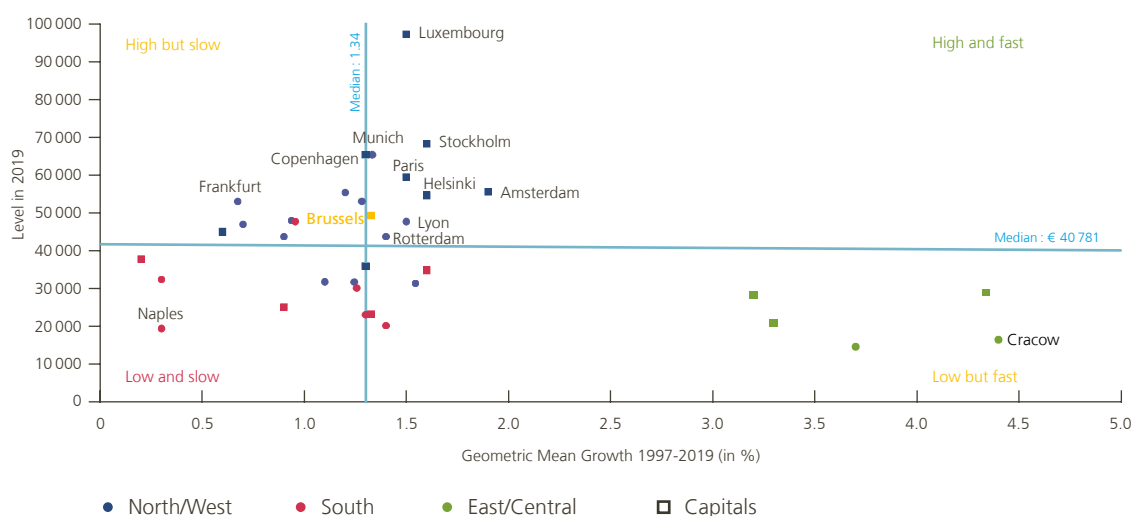
Source : Annual Regional Database of the European Commission's Directorate General for Regional and Urban Policy (ARDECO), spring 2022 forecast.

In 2019, the eastern European cities in the sample still had real GDP per capita lower than the median but are catching up quite quickly. With the exception of Milan, the level of real GDP per capita is also lower than the median in all southern metropolitan regions. Most of these also recorded slow growth over the entire period as they suffered more than their northern counterparts from the global financial crisis and the euro sovereign debt crisis. Northern and western metropolises can be found in all quadrants. In most cases, their GDP per capita is higher than the median. Some grew quite slowly in the period 1997-2019.

The high performers in the upper-right quadrant (rising fast, with high GDP per capita) are all in northern or western Europe. They include the three selected Nordic and Scandinavian capitals (Stockholm, Helsinki and Copenhagen), the capitals of three neighbouring countries (Paris, Amsterdam and Luxembourg), two other cities in these countries (Lyon and Rotterdam) and Munich. These cities are described as "high performers" – or simply "performers" – in the remainder of this article and are those with which most comparisons with Brussels are made.

Twenty-three of the metro regions analysed consist of more than one NUTS3 region, which allowed us to make a breakdown between core and periphery. [1]

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1 The 13 metropolises whose metro region contains only one NUTS3 region are the four in Spain (Madrid, Barcelona, Valencia and Sevilla), three in Italy (Roma, Naples and Turin), two in France (Lyon and Lille) as well as Helsinki, Luxemburg, Lisbon and Stockholm.

Chart 3

Income in Brussels is growing slowly in the core but rapidly in the periphery

(real GDP per capita, 2015 prices, in euros)
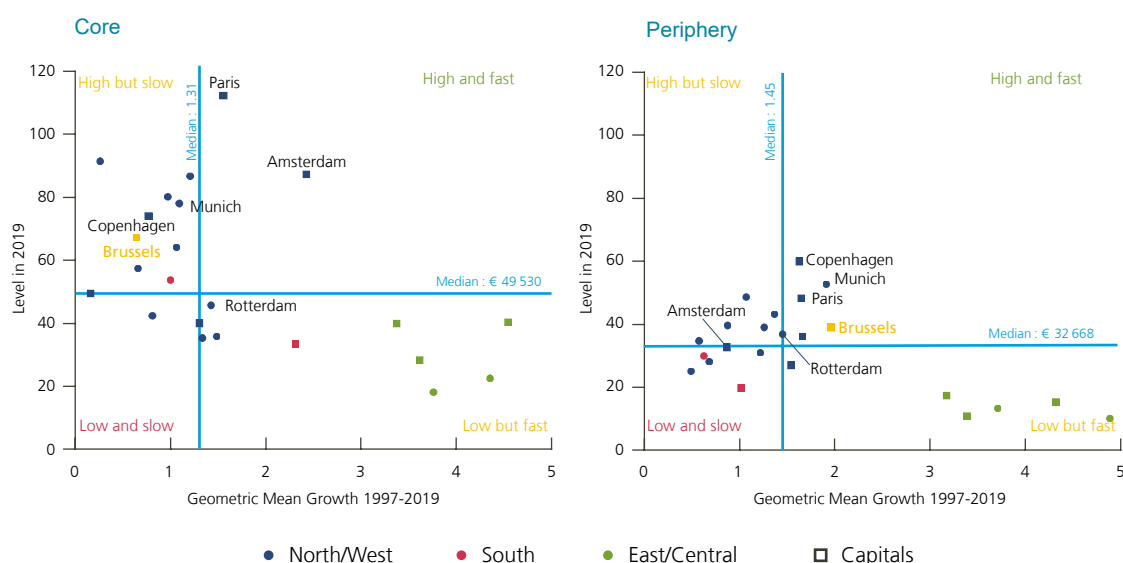
Source: ARDECO.

As expected, the core of Brussels, corresponding to the Brussels-Capital Region, had an above-median GDP per capita in 2019, albeit lower than that of several other metro cores, including four of the five high performers, namely Paris, Amsterdam, Copenhagen and Munich (Chart 3). Real income growth was much slower in the Brussels-Capital Region than in the performers.

In general, GDP per capita was much lower in commuting areas than in the cores in 2019. This could be due not only to commuting effects but also to the fact that corporate headquarters and public administration are more concentrated in the cores than in the peripheries. In this regard, it should be noted that, of the Belgian provinces, average (net taxable) income per capita in 2020 was lowest in the Brussels-Capital Region and highest in Flemish Brabant and Walloon Brabant (STATBEL, 2022).

In general, real GDP per capita nevertheless increased more rapidly in the peripheries than in the cores, as evidenced by a higher median growth rate which nonetheless masks substantial disparities across metro regions. The Brussels periphery performed very well, growing faster than all other non-eastern European metro regions.

From 1996 to 2019, the population of most metro regions increased (Chart 4), with a median growth rate of close to 0.6 %. This substantially contributed to GDP growth, with a median value of 1.9 %. As GDP per capita growth in Brussels was around the median and the population grew by 0.8 % on average in the Brussels metro region, real activity also grew faster than the median in Brussels. In general, population growth was more marked in commuting regions than in the cores, as expected from suburbanisation (Veneri, 2018). However, some affluent regions in more central locations have experienced more sustained population growth than peripheral regions. This was the case for Brussels, the three Dutch metro regions as well as Copenhagen, Frankfurt, Cologne and Vienna. In Brussels, migration contributed to higher population growth in the core.

GDP growth in the Brussels metropolitan region benefitted from strong population growth

(geometric mean growth over the period 1997-2019)
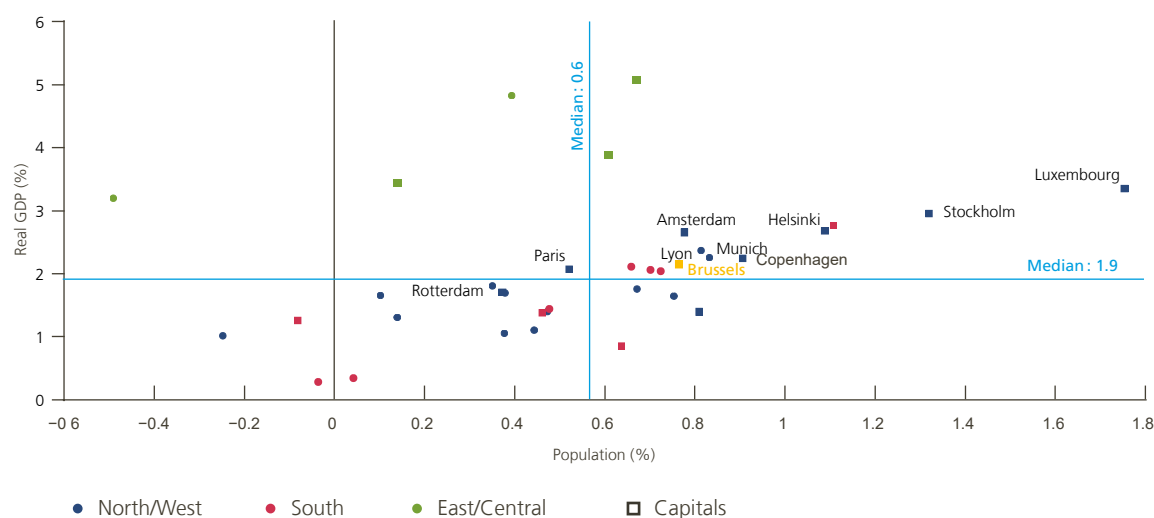
Source: ARDECO.

However, population growth was even faster in most high performers than in Brussels.[1] As GDP per capita growth was also higher in the performers, faster population growth widened the gap in real GDP growth between them and Brussels.

2.2 Other economic variables

Over the same period, economic growth in the metro regions benefitted more from job creation at workplace level (with a median of close to 1.1%) than from productivity gains (with a median of above 0.6%) (Chart 5).

Brussels enjoyed strong productivity gains of 1.1%, above the median values for both the entire sample and the high performers. Only Stockholm, Paris and Copenhagen did significantly better than the Belgian capital. In 2019, Brussels had the fifth highest productivity per worker of the metro regions, behind the three aforementioned capital regions and Luxembourg.[2]

Over the same period (1997-2019), job creation in Brussels stood at around the median value for the sample, but under that of the high performers. Amongst these, only Copenhagen, Paris and Rotterdam created fewer jobs than Brussels. In contrast, economic growth in Luxemburg can be entirely explained by strong job creation without significant productivity gains.

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1 Luxembourg benefitted from both a high natural increase in population and migration inflows, mainly from other EU Member States.

2 The ranking of the Brussels metropolitan area in terms of productivity per worker was even better in 2015 according to the OECD's In-Depth Productivity Review of Belgium (2019). The extension of the metro area could partially explain the downgrade of Brussels, as productivity is lower in the extended commuting area than in the core.

Chart 5

The Brussels metropolitan region improved more in terms of productivity growth than job creation

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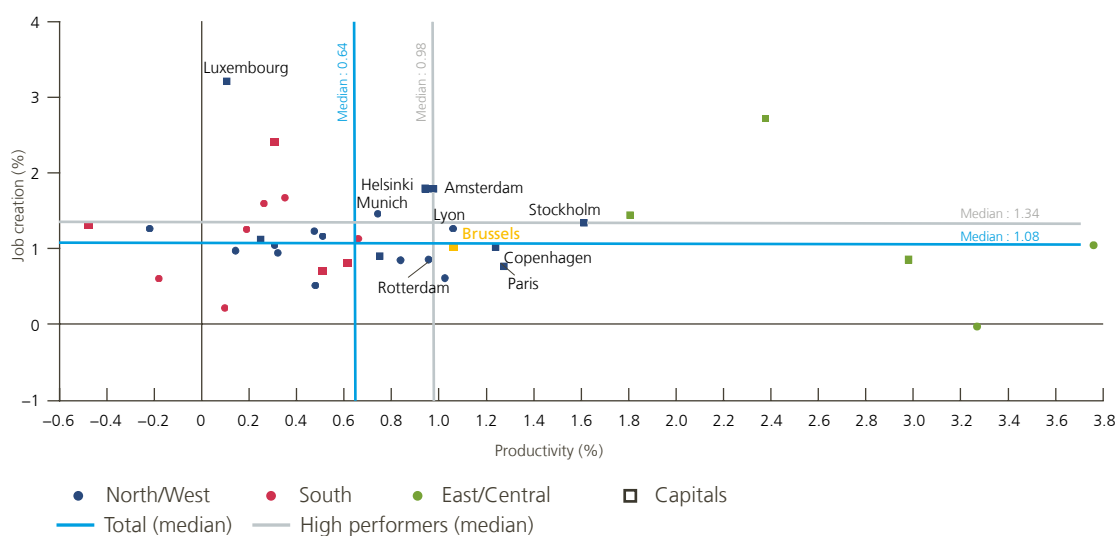
Source : ARDECO.

Job creation in Brussels was not exceptionally strong. Moreover, not all jobs are filled by residents and job creation has to keep pace with the active population. Looking at labour market statistics for the population, over the period 2015-2017, the unemployment rate was on average higher than both the median for the entire sample of 36 metropolitan areas and for each high performing metro area (Chart 6). Symmetrically, the employment rate was lower in the Brussels metro area. This was mostly due to the very poor performance of the Brussels-Capital Region (the red bar in Chart 6). The better labour market performance of the six other arrondissements making up the Brussels metro region was not sufficient to bring it up to the level of the sample median.

The Brussels metro area's disappointing employment rate nevertheless masks dynamic developments in terms of employment and the working age population over the period 2007-2016 (Chart 7). Both rose at a similarly high pace of around 1 % per year on average.

Chart 6

Employment and unemployment rates in the Brussels metropolitan area are worse than the median for the selected EU metropolitan areas

(2015-2017 averages, 15-64 years of age)

Employment rate
(% of the working-age population)

Unemployment rate
(% of active population)

Total (median)   High performers (median)
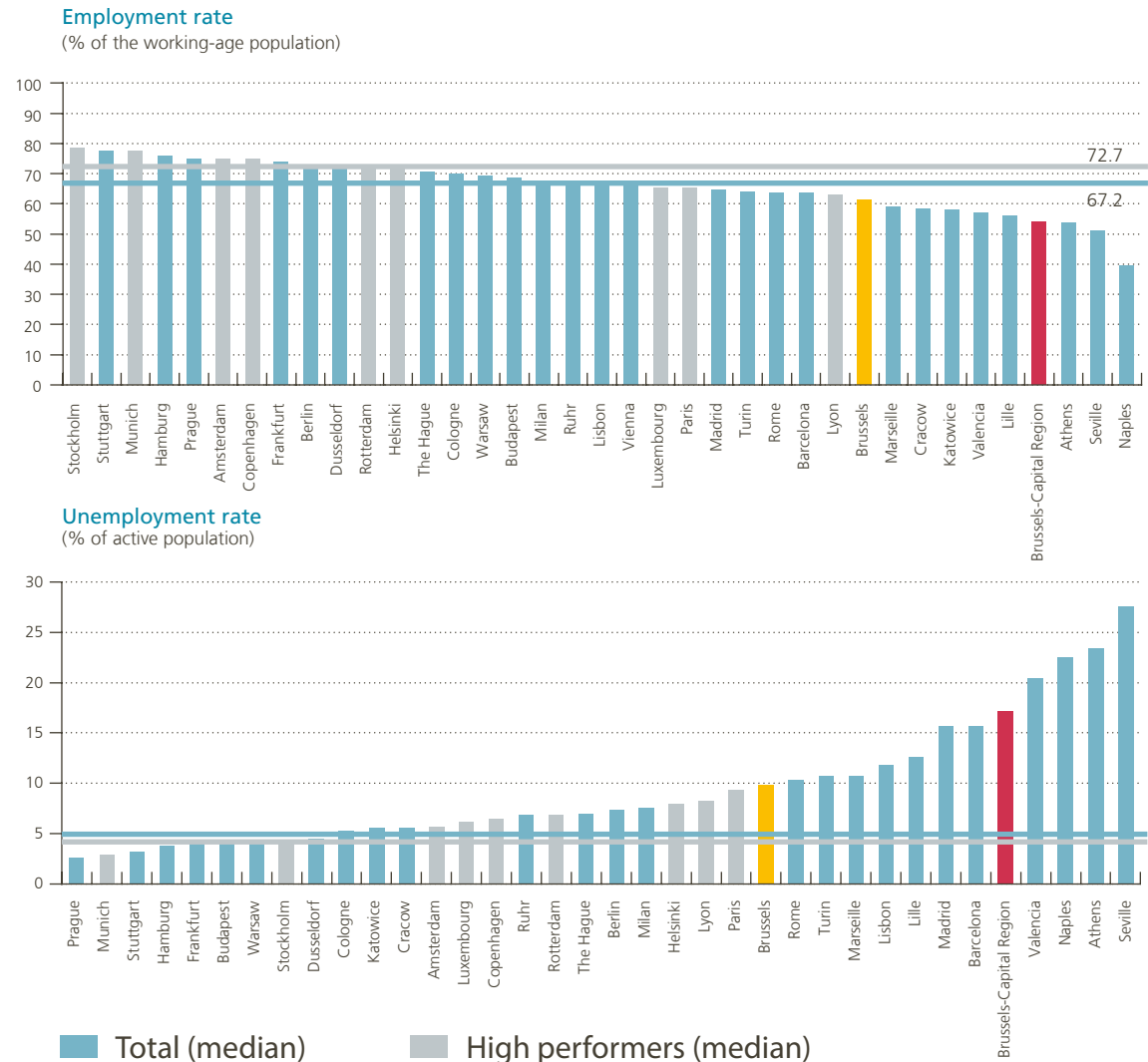
Source : OECD, Metropolitan database.

Chart 7

Growth in employment and the working-age population in the Brussels metropolitan area were above the median over the period 2007-2016

(15-64 years of age, geometric mean growth over the period 2007-2016)

Source : OECD, Metropolitan database.

2.3 Economic structure

In 2019, a higher share of value added in Brussels was generated by financial, business and non-market services than in the performing metro regions. Conversely, less value added stemmed from agriculture, the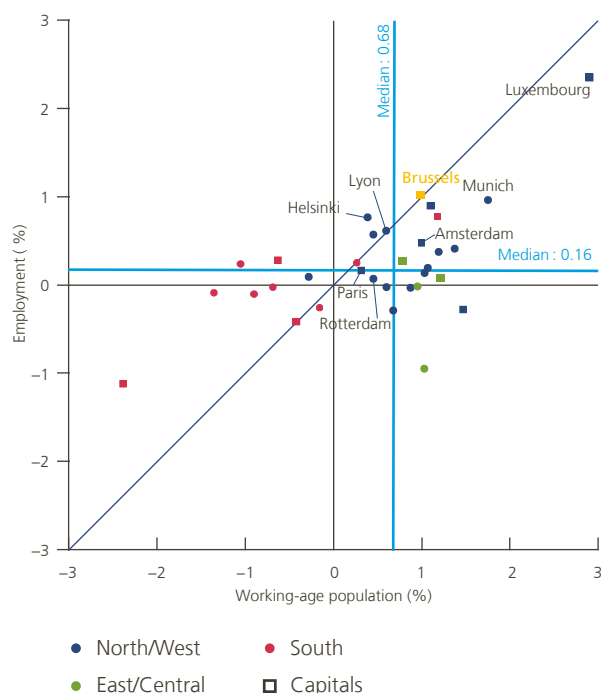 manufacturing industry, the building industry and other market services in Brussels than in the other metro regions taken as a whole. High performers had a lower share of non-market services and a higher share of market services, other than financial and business services.

Over the period 1996-2019, Brussels achieved higher growth of value added in both financial and business services and non-market services. In the latter case, this could be due to the fact that many EU institutions as well as NATO are headquartered in Brussels (and expanded during the period in question)[1] and to consecutive state reforms, which increased the powers and number of public servants of federated entities based in the capital.[2]

Brussels also reported a decline of value added in the agriculture sector, which was not observed in either the sample as a whole or in the high-performing metro regions. This was especially true in the periphery and could evidence the outward expansion of Brussels from its core. Indeed, the urban exodus of the middle-class

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1 For an estimate of the impact of the presence of these institutions and related groups on the Brussels-Capital Region's economy, see Dotti *et al.* (2022).
2 Brussels is the capital not only of Belgium but also of the Flemish and French Communities as well as the Brussels-Capital Region and is therefore home to a number of satellite institutions (Cocom, Cocof and VGC).

has been well documented (IBSA, 2012). The inclusion of Ath and Soignies in the Brussels metro region is yet more evidence to this effect. When it comes to business migrations, firms usually migrate short distances. For Brussels, the median distance is five kilometers (Wilmotte, 2022a). The figures for migrations in and around the Brussels-Capital Region are particularly high : 6,300 firm migrations took place within the region and, as is the case with Belgium's other main cities, most of other migrations were within the urban region[1] (Wilmotte, 2022b), thus within the Brussels metropolitan region.

Brussels also grew less rapidly in the manufacturing industry and in other service sectors, in which the best-performing metro regions achieved the strongest growth. High performers also reported more rapid growth than Brussels and other metro regions in the building industry.

Chart 8

In Brussels, more value added was created in financial, business and non-market services

(in % terms, current prices, PPS)

Geometric mean growth 1997-2019

Share in 2019

Brussels   High performers   Total
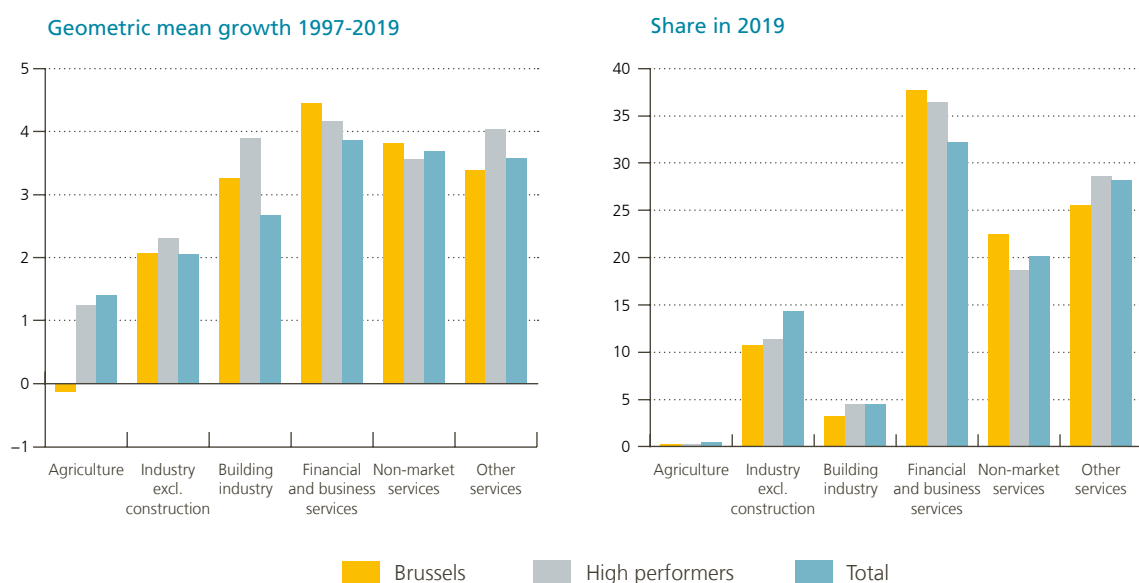
Source : ARDECO.

3. Drivers of regional and urban growth

Various studies have analysed the factors driving regional and urban economic growth. According to Raspe *et al.* (2018), only a few of the 70 variables included in their estimation significantly affected employment and/or productivity growth across nearly 800 regions in 27 countries in Europe over a period of more than 20 years. Most affect both employment and productivity growth (Table 2). Economic growth is stimulated by factors such as human capital, attractive conditions for living and working with a range of facilities (quality of education and numerous cultural amenities and restaurants) and good physical and digital accessibility. Conversely, growth is hampered by a high cost of living (including unaffordable housing), air and noise pollution and congestion.

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1 Over the period 2009-2020, the Brussels-Capital Region lost, in net terms, 818 head offices of Belgian firms employing at least one person. As a result of periurbanisation, the number of new establishments (2,123) was insufficient to make up for the number of firm departures (2,941). Most business migrations occurred between the Brussels-Capital Region and its peripheral areas in Flanders and Wallonia.

Table 2

Most significant factors positively and negatively affecting employment and productivity growth

	Employment [1]	Productivity [1]	Both [1]
Positive factors	Population density Air connectivity Road connectivity Individual liberty	Private-sector share of R&D	Internet access Life expectancy Employment Quality of education Share of population with higher education Patents Accessibility Cultural venues and restaurants Government effectiveness Housing affordability Recreational possibilities
Negative factors			Initial levels of employment and productivity Cost of living Congestion Specialisation (and clustering) in agriculture Labour force participation

Source : Raspe *et al.* (2018); own summary.
1 The factors listed under Employment have a more significant effect on Employment than Productivity and vice versa with respect to the factors listed under Productivity. The factors listed under Both have a significant effect on both Employment and Productivity.

One lesson from this research is that efficient policies should focus on robust factors that affect both employment and productivity, positively or negatively. Another lesson is that economic growth is often context-specific (urban or rural area, etc.) and hence interaction between factors is important. For example, in densely populated regions, the impact of knowledge and culture on economic growth is particularly strong. The impact of population density is also more marked in cities with good international connectivity.

In the next two sections, Brussels is compared with its metropolitan peers, in particular the high performers, for most of the variables presented in Table 2, considering first those included in the Regional Competitiveness Index and then addressing the main factors related to attractiveness, specifically those associated with quality of life, with reference to the EC's survey on the "Perception of Quality of Life in European Cities". In this way, we were able to combine the more quantitative indicators from the former with the survey data from the latter in our analysis.

4. Competitiveness

Since 2010, the EC has published every three years a Regional Competitiveness Index (RCI). This index analyses the major factors of competitiveness for all NUTS2 regions across the European Union. It measures the ability of a region to offer an attractive and sustainable environment for firms and residents to live and work (Annoni and Dijkstra, 2019). Inspired by the World Economic Forum's framework, the RCI integrates the perspective of both businesses and residents, balancing the goals of business success and societal well-being. It also considers the concept of sustainability, which relates to a region's capacity to provide an attractive environment in both the short and long term. The RCI is intended to measure a region's long-term potential.

Chart 9

Competitive strengths and weaknesses of Brussels

(indices)
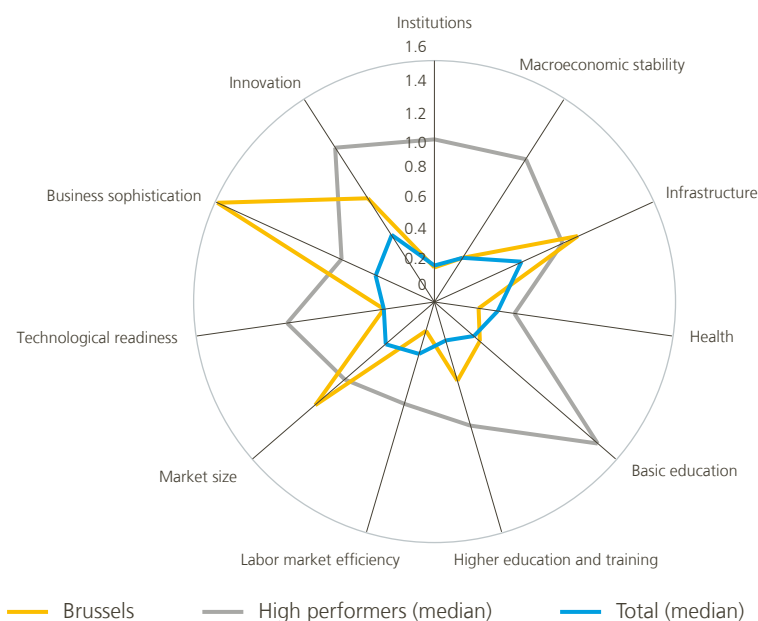
Source : EC, Regional Competitiveness Index 2019.

For our research, we used the fourth and most recent index, the RCI 2019, which tracks the performance of 268 NUTS2 regions in the EU Member States. However, for purposes of our analysis, we considered only the NUTS2 regions in the selected metropolitan areas (see Section 1). For seven capitals, NUTS2 groupings were considered with a view to encompassing the metropolitan region. In the case of Brussels, as already mentioned, the provinces of Flemish Brabant and Walloon Brabant were considered with Brussels.

The RCI covers 74 indicators from the period 2014-2018, grouped under 11 pillars or dimensions of regional competitiveness. [1] Analysis of these dimensions helps to highlight the strengths and weaknesses of each region, with the possibility to compare each to its peers. It should be noted that some indicators are only available or make sense at the national level. This paper focuses on regional factors.

Chart 9 shows how Brussels compares across the 11 RCI pillars with the 35 other selected metropolitan areas (see Table 1). As can be seen, Brussels performs well compared to other metropolises in infrastructure, market size and business sophistication.

The infrastructure dimension consists of three indicators : road accessibility, railway accessibility and passenger flights. Road and railway accessibility compares the population that can be reached within 90 minutes by road or rail with the population within a 120-km radius. A high score indicates that the region is highly accessible. The third indicator refers to the daily number of passenger flights. Brussels outperforms its high-performing peers for all three indicators, with a relatively greater advantage for passenger flights (see the left-hand panel in Chart 10). High-quality infrastructure provides easy access to other regions and countries, facilitates the transport of goods and people and thus helps to better integrate peripheral regions. Being the capital of the

1 For the list of indicators, see Annoni and Dijkstra (2019).

Chart 10

Brussels has good infrastructure accessibility and a large potential market

Infrastructure
(left-hand side : % ; right-hand side : daily number)

Market size
(EU28 indices = 100)

- Brussels
- High performers
- Total
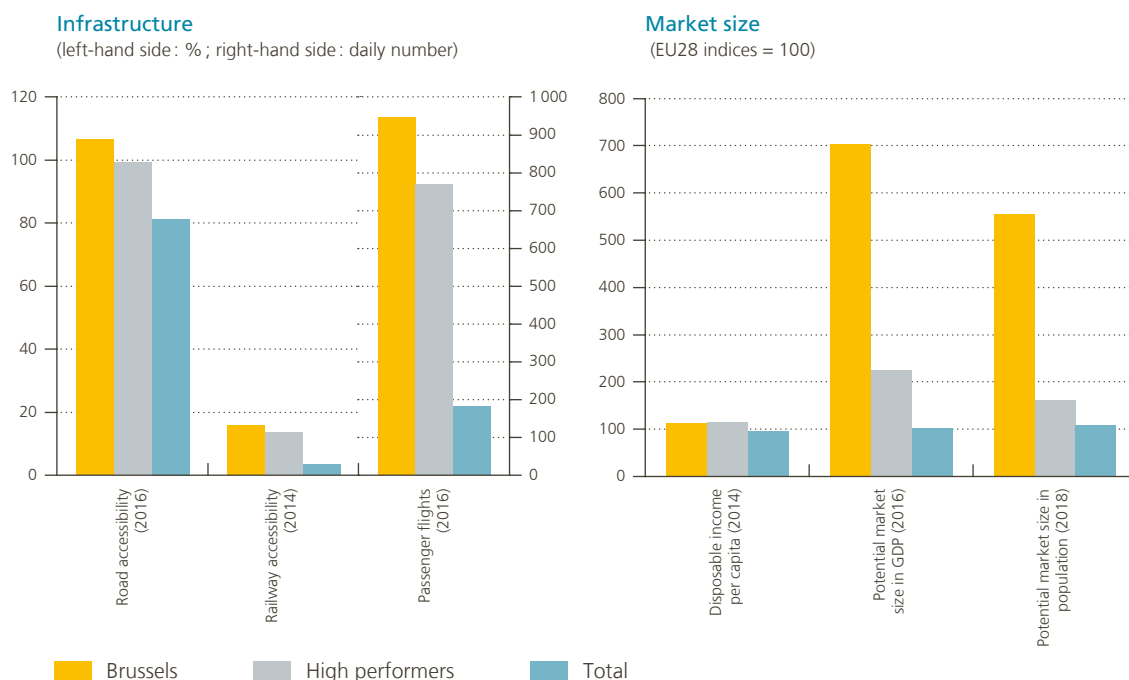
Source : EC, RCI 2019.

European Union is a factor that pushed Brussels to develop its accessibility. Brussels has extended and improved its rail transport infrastructure in the last few decades with the construction of the Réseau Express Régional (RER) and a connection to the airport. Furthermore, it is possible to travel between Brussels and Paris in less than 90 minutes by high-speed train.

Market size includes indicators such as disposable income per capita, potential market size in GDP and potential market size in terms of population. Brussels enjoys a larger potential market than the high performers. In addition to robust and stable demand, a large market may increase incentives to innovate since firms are encouraged to develop further in order to fully benefit from economies of scale.

The business sophistication pillar analyses the importance of financial and insurance, real estate, professional, scientific and technical activities and administrative and support services of the regions in terms of employment and growth of value added. Specialisation in the above-mentioned sectors, which generates high value added, is expected to contribute positively to the competitiveness of a region. As can be seen in Chart 8, Brussels specialises in financial, business-related and non-market services, implying a comparative advantage in terms of business sophistication.

According to the RCI 2019, Brussels presents some regional weaknesses in the following areas : institutions, healthcare, higher education and training, technological readiness and innovation (Chart 9).
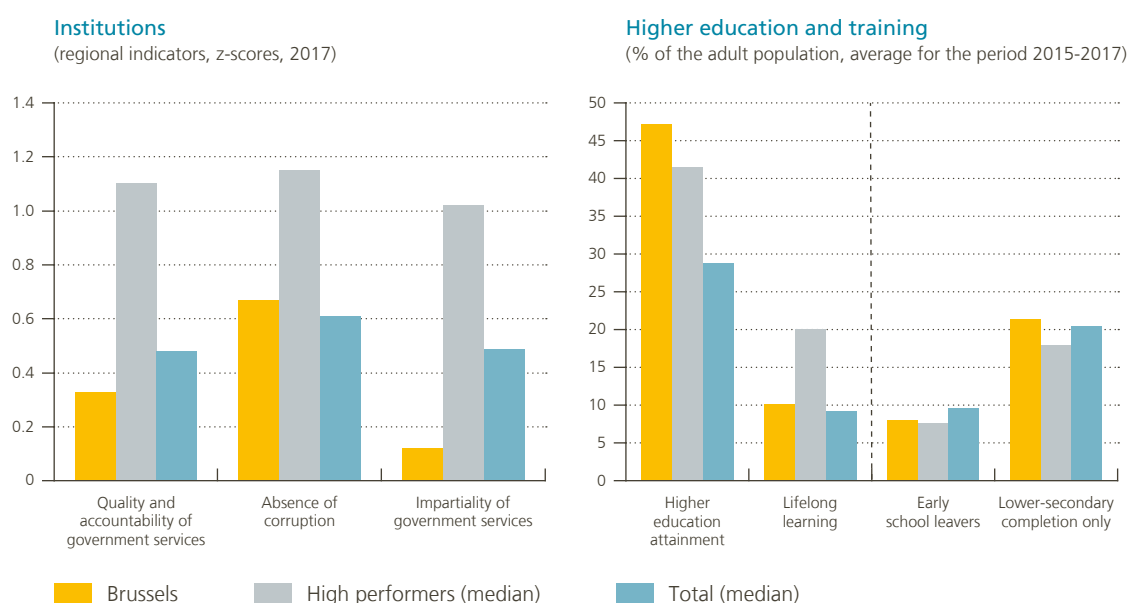
The institutions pillar measures how favourable the institutional climate is for businesses, how easy it is to open new businesses, how much trust people have in the city's regulatory system and the effectiveness thereof.

Brussels underperforms with regard to three regional indicators[1]: quality and accountability of government services, absence of corruption and impartiality of government services, with a particular low score in the last category (see Chart 11, left-hand panel).

For higher education and training (see Chart 11, right-hand panel), analysis of the first indicator reveals that Brussels has the best score compared to the median for all selected regions. Indeed, 47 % of the adult population in the Brussels region has some higher education. This is important because a well-educated population boosts innovation. However, Brussels lags behind in terms of lifelong training and has a relatively high percentage of adults with only a lower-secondary degree. The level of early school leavers in Brussels is nevertheless close to the median value for the high performers.

Chart 11

Brussels underperforms in terms of institutional quality and lifelong learning

Institutions
(regional indicators, z-scores, 2017)

Higher education and training
(% of the adult population, average for the period 2015-2017)

Brussels   High performers (median)   Total (median)
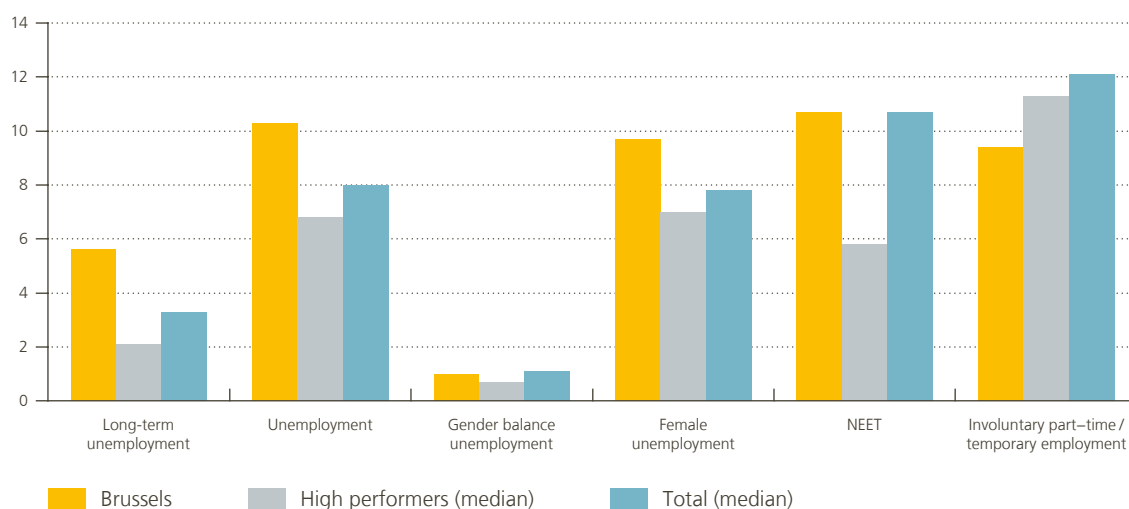
Source : EC, RCI 2019.

Labour market efficiency is another important indicator since it contributes to the optimal allocation of resources and, thus, to economic growth. The Brussels labour market (see Chart 12) is not as effective as those of the high performers or the median for the sample as a whole. Brussels has a higher share of adults who are not employed or in education or training than the other regions. Furthermore, labour market integration is more difficult for women and the long-term unemployed. However, the unemployment rate by gender is more balanced in Brussels than in its peers. For this pillar, performance can differ significantly between the core and the periphery. These differences apply to other social indicators as well. For example, the risk of poverty or social exclusion was found to be no higher than 10.6 % for Flemish Brabant and 16 % for Walloon Brabant but as high as 37.8 % for the Brussels-Capital Region (STATBEL, 2020). Even within the Brussels-Capital Region, there may be vast disparities (Hermia and Treutens, 2021 ; Joie, 2022). Indeed, intra-urban disparities are common in advanced cities (OECD, 2018). In some cities, there may also be an "urban paradox" in that "a high concentration of job opportunities coexists alongside a large number of disengaged people who remain outside the labour market" (EC, 2016).

1 These three indicators are from the Quality of Government Index, compiled by the Quality of Government Institute at the University of Gothenburg.

Chart 12

Brussels is weak in most labour market variables

(in % terms, average for the period 2015-2017)

Source: EC, RCI 2019.
NEET: Neither in employment nor in education and training.

Concerning technological readiness (Chart 13), Brussels scored above the median value for all regions for all three indicators but lags behind the high performers. The accessibility and use of the internet could be improved in order to narrow the gap with the latter. Finally, the innovation pillar aims to capture potential to innovate and the actual performance of a region. Brussels performed above the median value for the sample as a whole but below its high-performing peers. However, research and development (R&D) expenditure and investment in human resources in science and technology are quite substantial in Brussels.

Chart 13

Brussels lags behind on the technological and innovation front

Technological readiness
(%, 2018)

Innovation
(%, except for scientific publications which are in thousands, average for the period 2015-2017)

Brussels   High performers (median)   Total (median)
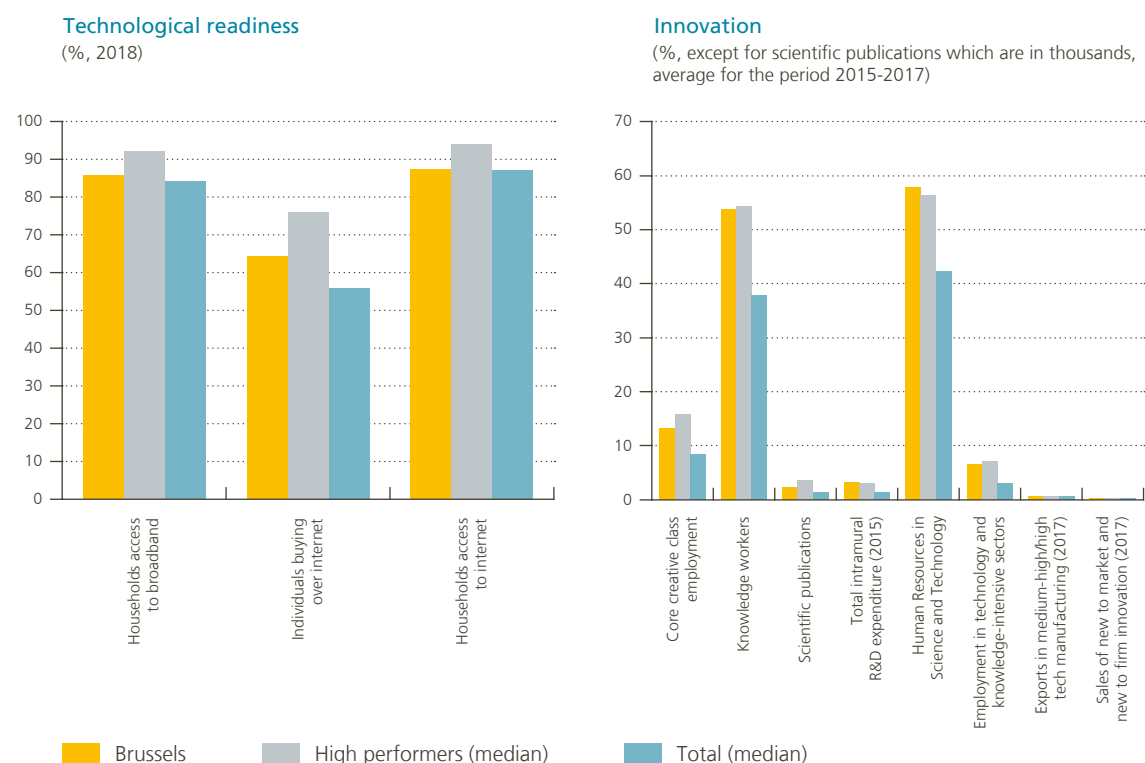
Source: EC, RCI 2019.

5. Attractiveness

The OECD has developed a wide array of attractiveness indicators but, unfortunately at this stage, they are mostly for regions in a limited number of EU countries and there are currently no data for Belgium.[1] Nonetheless, interest in regional attractiveness has increased for several reasons, including a growing awareness of the role that amenities and quality of life play in driving economic growth and attracting young, highly skilled workers. Indeed, according to OECD research based on micro-level data (Ahrend and Lembcke, 2016), workers are more productive and earn more in larger metropolitan areas, although the cost of living in these areas is higher. However, non-income-related factors are also important and may vary significantly from one city to another. This variation can largely be explained by the quality of local amenities (seaside access, theatres, universities, etc.) or disamenities (such as air pollution). People are thus prepared to pay a premium to live in more attractive cities.

In order to compare Brussels with its peers in terms of attractiveness, we focused on several dimensions related to quality of life. To this end, we used the EC's latest "Perception of Quality of Life in European Cities" survey.[2] This survey was conducted between June and September 2019 and targeted residents of 83 cities. Data are

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1 OECD (2022a), OCDE (2022b).
2 Quantitative indicators, notably for air pollution, are also available in databases of international institutions. In the case of Brussels-Capital Region, we may also refer to perspective.brussels (2022).

Chart 14

Certain aspects of quality of life are perceived as unsatisfactory in Brussels

(% of very and somewhat satisfied respondents in 2019)
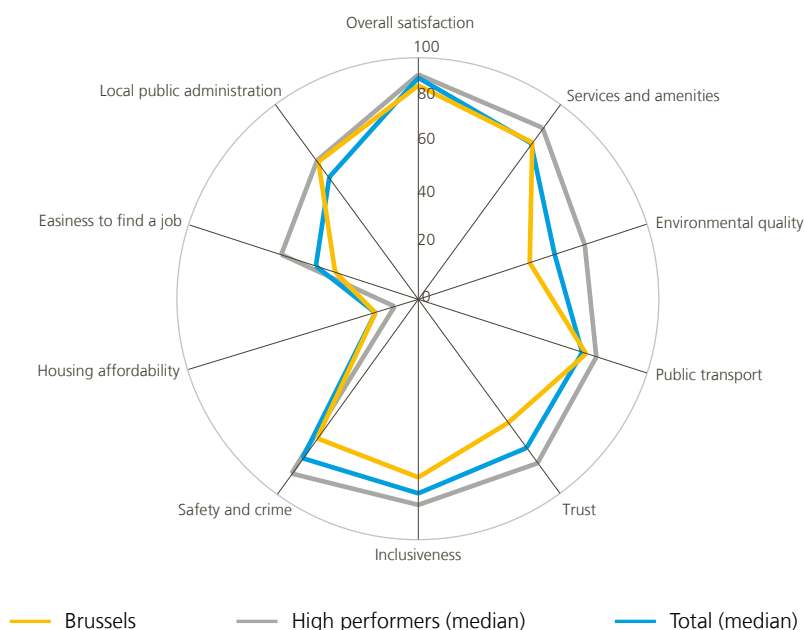
Source: EC, European Urban Audit, "Perception of Quality of Life in European Cities" survey 2019.

available for most of the selected metropolitan areas.[1] For most cities, the survey was limited to the core.[2] In the case of Brussels, people residing in the 19 municipalities of the Brussels-Capital Region were surveyed.

Chart 14 presents the results for various questions, grouped into categories. Brussels appears to have satisfaction levels lower than the median for both our subset of cities and the high performers, with significant relative weakness in the areas of overall satisfaction, ease of finding a job (as reflected by a lower employment rate), environmental quality (air and noise pollution and cleanliness), trust (in people living in the city and in the neighbourhood), inclusiveness (the city is a good place to live for members of the LGBTQ+ community, immigrants, racial and ethnic minorities, the elderly and families with children) and safety and crime (feeling safe to walk at night, for example).

A higher percentage of those surveyed in Brussels than in the high performers believe that housing is affordable, although this is a weakness of all advanced cities. Brussels scores equally well as the performers on perception of the quality of local public administration. In particular, more respondents in Brussels are pleased with the response time of local administrations than in both the "all cities" and "high-performing cities" subsamples.

For public transport as well as services and amenities, the score of Brussels was equal to the median for the entire sample but lower than that of the high performers, with some significant differences depending on the question in these two categories. For instance, more people are satisfied with healthcare in Brussels than in the other cities, while fewer are satisfied with schools and other educational facilities. Brussels also scored

1 Valencia, Sevilla, Lyon, The Hague and Katowice are missing, while the Ruhr is covered by Dortmund and Essen. Darmstadt was also considered, along with Frankfurt.
2 Exceptions include Copenhagen, Helsinki, Paris, Naples, Amsterdam, Rotterdam, Barcelona and Stockholm, for which the survey covered the "greater" city.

Chart 15

Brussels underscores in services and amenities, with the exception of healthcare

(% of very and somewhat satisfied respondents in 2019)
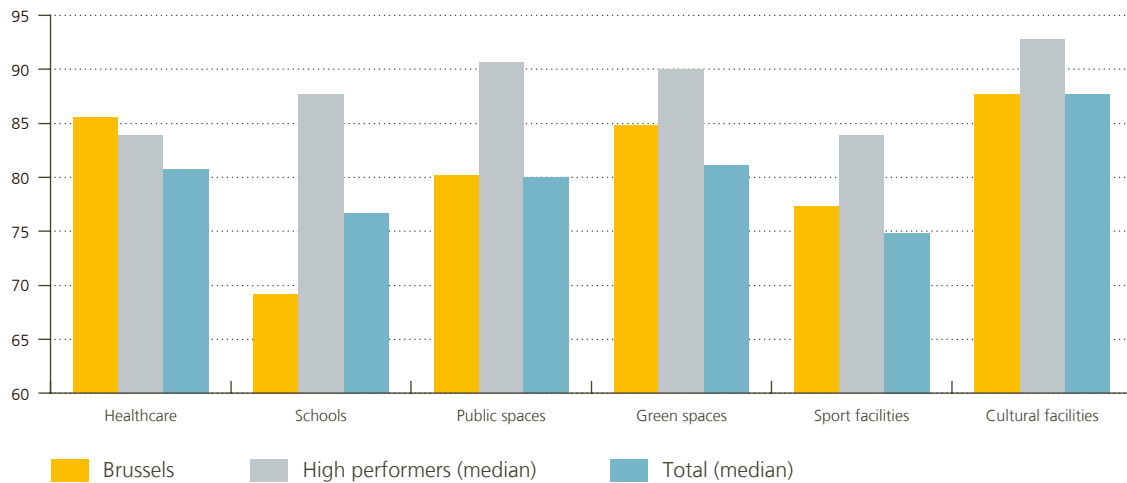
Source: EC, European Urban Audit, "Perception of Quality of Life in European Cities" survey 2019.

below the high performers in terms of satisfaction with green and public spaces as well as for sport and cultural facilities (Chart 15).

With regard to public transport, a greater percentage of respondents was happy with the reliability and affordability of public transport in Brussels than in the other cities, while the opposite holds for frequency and satisfaction.

Chart 16

For public transport, Brussels scores relatively high in the areas of reliability and affordability but lower for satisfaction and frequency

(% of very and somewhat satisfied respondents in 2019)

Source: EC, European Urban Audit, "Perception of Quality of Life in European Cities" survey 2019.
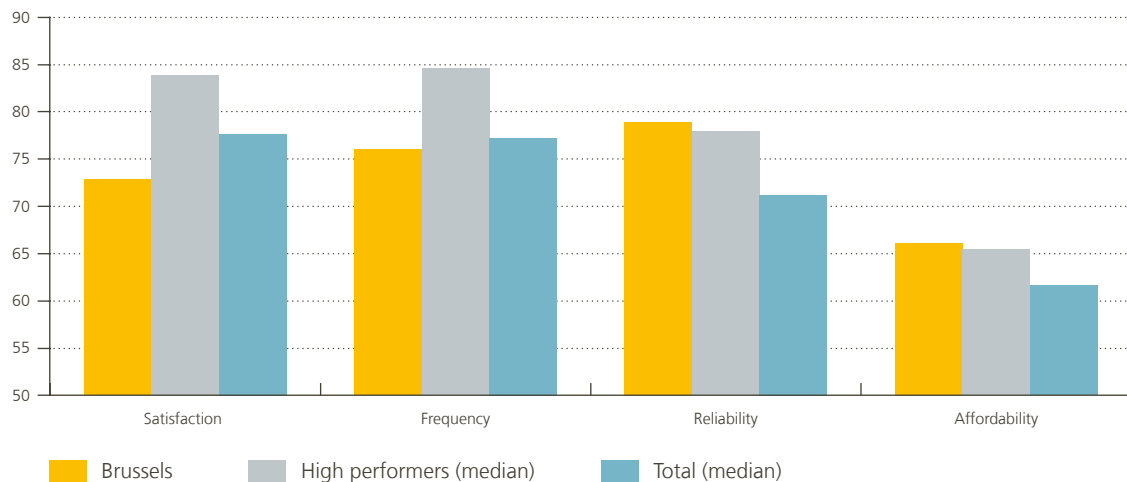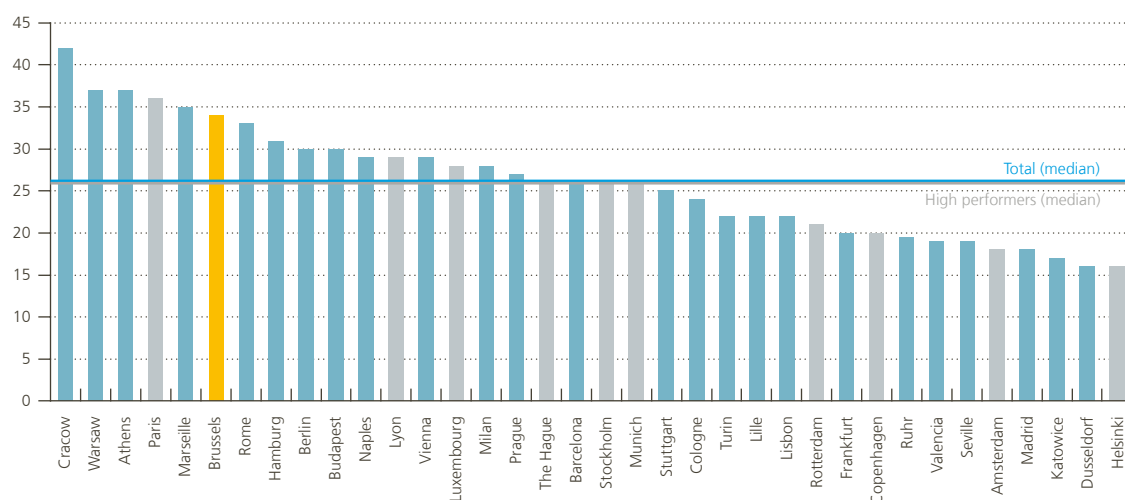
Chart 17

Brussels is one of the most congested advanced metropolitan areas

(average % of additional time at peak hours relative to normal traffic, 2021)

Source : Tom Tom traffic index 2021.
1 Ruhr was calculated as the average of West Ruhr and East Ruhr.

Data from GPS provider Tom Tom confirm the perception of citizens that Brussels is amongst the most congested metropolitan areas in the sample (Chart 17). In 2021, Paris was the sole high-performing metropolitan area more congested than Brussels.

6. Lessons from case studies of performing metropolitan areas

In the preceding sections, we benchmarked Brussels compared to other large European cities. There are, however, two major caveats. First, these analyses are static in nature : they tell us how well cities are currently performing compared to others and present us with a snapshot, without telling us how they got there. Indeed, performing cities today may have stagnated (Munich) or even declined (Amsterdam) in the past. Amsterdam, for instance, lost close to 200,000 inhabitants between 1960 and 1985, and economic growth was dismal in Munich in the first part of the 1990s. Success is by definition fleeting. Second, statistics and surveys, despite how valuable they are, do not show interaction between and the dynamics of the drivers of performance. To remedy this, some literature resorts to case studies. In this section, we look at some of the key ingredients for high performance as mentioned in the case studies.

6.1 Ingredients for success

Economic geographers suggest that the origins and trajectory of growth are shaped by a multitude of structures, processes and events (Waite, 2022). There is no such thing as a uniform path to economic success, as regional and urban developments are context-specific and vary widely. Geography and history matter. Amongst the initial conditions, the location on the Baltic Sea of Copenhagen, Stockholm and Helsinki, the centralisation towards Paris, the presence of an international port in Rotterdam and an international airport in Amsterdam (Schipol), the decision by Siemens after World War II to move from Berlin to Munich, and

Amsterdam's historical specialisation in trade, logistics and financial and business services and culture are all noteworthy.

Nevertheless, as mentioned, several robust factors stimulate economic growth (Raspe *et al.*, 2018) including the quality of governance (in terms of both administration and how effectively the various levels work together). The latter point is also advanced by Parkinson (2022). Compared to UK cities, EU27 cities have more responsibility for a wider range of functions which affects their competitiveness; they have more diverse forms of local revenue which makes them less fiscally dependent on the national government and, thanks to their combination of powers and resources, they are therefore more proactive, entrepreneurial and competitive. According to Parkinson, the most successful cities in Europe are in Germany due to a combination of substantial powers and resources and sophisticated, cooperative and productive relationships between the three levels of government (federal, state and local). Munich is an example of full multi-level governance across actors (large and small, the market and the government), sectors and administrative levels. Investment in innovation contributed to the emergence of the *Munich Mix* – close interconnectedness between sectors and large and small firms – and *institutional thickness*, meaning strong links between public and private sectors (Raspe *et al.*, 2018). In addition, the federal state of Bavaria exerted strict control, ensuring coordination between the region and the city of Munich itself. Moreover, the national government was also involved in developing the *Perspektive München* strategy (1998/2001).

In successful cities and regions, policies cover several areas, and a coherent policy mix is carried out over a lengthy period of time, albeit with some flexibility. One example is the choice made by Amsterdam to develop attractive facilities and an appealing residential environment in order to draw highly qualified human resources to the city. In this regard, authorities in the Dutch capital were proactive and implemented this course of action based on a report by the Andriessen Committee (1980). At that time, a decision was taken to prioritise the physical quality of the residential environment in order to make the city a more attractive place to live. The focus was on ensuring a compact and mixed structure through urban regeneration (the redevelopment of brownfield sites and disused port areas). Later, the aim became to facilitate growth towards a creative knowledge economy, notably by investing in culture and entertainment.

Another example is Munich, the only one of the six cities studied by Raspe *et al.* (2018) to have prioritised all engines of urban growth. The city's policies have strengthened and developed clusters, the quality of human capital, the knowledge infrastructure (universities, knowledge centers, etc.) and financing, forming a coherent innovation system.

6.2 The role of metropolitan institutions

In many EU countries, municipal borders were set in the nineteenth or twentieth century. At that time, horses were still used as a means of transport. Since then, daily patterns of human activity have evolved and geographically expanded thanks to population growth, economic development, better transport connections and the diffusion of communication technologies. Therefore, "today's administrative urban boundaries rarely correspond to the actual functional relations between people and activities over space" (EC, 2016).

Addressing mismatches between administrative and functional boundaries is necessary for economic, social and political reasons (EC, 2016). In many cases, it is more efficient to organise the provision of public services jointly for multiple municipalities so as to internalise the costs and benefits (externalities) and take advantage of economies of scale. Effective regional/metropolitan spatial planning prevents local authorities from pursuing mutually detrimental policies (OECD, 2020f). Global competition between cities often also requires the upscaling of governance to a larger geographical level, for example the metropolitan area. Furthermore, the importance of metropolitan and functional urban areas for national economies and the coexistence of different governance levels call for coordination and cooperation between public authorities. In this regard, whether transport,

environmental or social issues are at stake, a key concern is finding a "problem owner" who can address these issues on an appropriate spatial and administrative scale (ESPON, 2018).

The impact of cities extends far beyond their municipal borders and commuting distances have increased, further extending the reach of these economies. As mentioned above, urban cores reap the benefits of economies of agglomeration, but cities and towns in the commuting zone can benefit from "borrowed size", meaning that, due to their proximity to the core, they can become more productive than their size alone could predict (EC, 2016). If these interactions are well managed, it can be beneficial for both the core and the periphery, notably by matching labour and housing markets, residents and workers.

According to the OECD (2022c), the number of metropolitan governance authorities increased fourfold between 1970 and 2018, from 38 (concentrated in 15 countries worldwide) to 99 in 2000 (in 39 countries) and 165 in 2018 (in 42 countries). The expansion of metropolitan and urban government is thus a relatively recent phenomenon. In general, the areas governed by metropolitan institutions are smaller or significantly smaller in size than functional urban areas.

Many of the metropolitan areas in our sample have established some kind of metropolitan institution. These include all four Italian ones, all four in France, all German ones but Berlin and Dusseldorf as well as Warsaw and Katowice, Barcelona, Lisbon, Copenhagen, Amsterdam and Rotterdam-The Hague.[1] Most of the high performing metropolitan regions are governed by some form of metropolitan institution. In Brussels, a metropolitan community was planned by the sixth state reform in 2011, with the aim of establishing cooperation for an area covering the 111 municipalities comprising the former province of Brabant, but it was never implemented.

In metropolitan areas, different types of cooperation arrangements are possible, ranging from soft coordination (such as dialogue platforms) to intermunicipal, supra-municipal or metropolitan bodies (OECD, 2015).[2] Metropolitan institutions may be created from the bottom up, at the urging of municipalities, or top down, at the initiative of the central (or regional) government.

Important policy areas for which inefficient outcomes are likely at municipal level include land use and transportation, which greatly benefit from adequate metropolitan coordination. Descriptive evidence suggests that the presence of metropolitan governance bodies is associated with less sprawling development and that transport authorities at metropolitan level ensure better quality public transport (Ahrend et al., 2014). According to a metropolitan governance survey covering 263 metro areas with more than 500,000 inhabitants, around 80 % of metropolitan governance bodies are involved in regional development, over 70 % in transport, over 60 % in urban planning and more than half are active in all three areas (OECD, 2015). Furthermore, the fields covered may vary from one metropolitan institution to another within the same country.[3]

Of the high performing regions studied, Amsterdam has defined both an economic strategy and planning at the metropolitan scale (OECD, 2016).

Most metropolitan governance reforms in the OECD countries have triggered intense political debate and tend to be controversial as they touch on national and municipal history as well as cultural and socio-institutional frameworks. Various factors explain the resistance to such reforms: strong local identities and antagonisms, vested interests, a lack of trust between municipalities which have "historically competed over residents,

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1 In the Netherlands, the OECD found the opposite trend in that eight city-regions, which had managed a range of metropolitan-scale functions since 1950, were abolished in January 2015. Their responsibilities and budgets were transferred to the provinces and municipalities (OECD, 2016). However, a metropolitan area was maintained in Amsterdam, while Rotterdam and The Hague decided to create a common metropolitan region with 21 other surrounding municipalities.

2 Metropolitan institutions may vary in terms of democratic processes (elected members or not), leadership (president or director), budget size, financing sources, fiscal autonomy and stakeholder participation (involvement of private sector actors, etc.).

3 For example, the Amsterdam metropolitan authorities deal with spatial planning, but not those in Rotterdam-The Hague (OECD, 2016).

enterprises and jobs" and opposition from regional governments which may compete with metropolitan bodies[1] (OECD, 2022c). Problems may also arise when uncertainties in legal and spatial definitions are not resolved, and friction in metropolitan governance is common due to the sheer multiplicity of stakeholders, their divergent levels of power and sometimes conflicting agendas (EC, 2016).

Several key ingredients to ensure effective metropolitan governance have been formulated in EC (2016) and OECD (2022c) recommendations: political representation, engagement by political leaders with various actors, geographic boundaries aligned insofar as possible with the boundaries of the economic region (functional areas), high levels of trust amongst partners, a clear identification of the responsibilities and tasks of the partners, efficient service delivery and the involvement of a wider range of stakeholders and the public. These factors improve policy effectiveness which in turn inspires more trust and involvement, thereby creating a virtuous cycle (EC, 2016). Cooperation between the relevant authorities at national, regional and local levels is also critical. Political commitment and support from higher levels of government (e.g. the national level) is also very welcome. A winning formula is top-down policy incentives combined with bottom-up cooperation and implementation (ESPON, 2018). When a metropolitan body is formalised as an institution, international organisations recommend ensuring sufficient autonomy and funding, including some fiscal autonomy, as well as a clear allocation of expenditure responsibilities, revenue sources and decision-making power.

To sum up, "the status of the relationship between the municipalities is not in itself a determining factor for effective metropolitan planning in as far as it leads to a joint metropolitan strategy" (ESPON, 2018). What matters is to consider the scale of the metropolitan area in regional development, transport and planning. This can be done through an *ad hoc* metropolitan institution or more informal channels. In Brussels, recent examples of soft coordination include the roll-out on 1 February 2021 of the Brussels XL Zone, a zone with a radius of 11.5 kilometres around the Brussels-Capital Region, encompassing the 19 municipalities of Brussels and 11 suburban municipalities, in which travel is possible with a single ticket, valid on four public transport operators (SNCB-NMBS, STIB-MIVB, TEC and De Lijn).

Conclusion

This article benchmarks the economic performance, competitiveness and attractiveness of Brussels compared with 35 other EU metropolises. However, as opposed to other studies, our comparison is mainly at metropolitan level, i.e. the cities and their commuting areas, rather than on a regional scale.

GDP per capita was high in Brussels in 2019, for both the core (corresponding to the Brussels Capital-Region) and the periphery. However, over the period 1997-2019, real income growth throughout the entire Brussels metropolitan region hovered close to the median value for our EU sample, and higher growth was recorded in eight metropolitan regions (Copenhagen, Helsinki, Luxembourg, Lyon, Munich, Paris, Rotterdam and Stockholm).

Comparing Brussels with the sample as a whole and with high-performing peers allowed us to identify certain strengths and weaknesses of the Brussels metropolitan area. Since 1996, Brussels has enjoyed considerable productivity gains and dynamic labour market developments. Nevertheless, Brussels, especially the core, still lags behind its best-performing peers in terms of employment and unemployment rates and other labour market efficiency variables (long-term unemployment, NEET, etc.).

1 In Italy, for example, regional governments originally opposed the creation of metropolitan governments as the regions thought this would weaken their position. To counterbalance this opposition, metropolitan governments were subordinated to regional administrations, on which they depend for financing (OECD, 2022c).

Brussels benefits from positive agglomeration effects. Indeed, a large and rich potential market and a large pool of highly educated people contribute to the good position of Brussels. Road, rail and air transport infrastructure ensure easy accessibility. The level of and access to healthcare are also appreciated. While the cost of living is high and housing affordability low, as in all advanced cities, the situation is worse in the high-performing metropolitan areas.

Brussels could improve its position by reducing negative agglomeration effects, such as pollution and road congestion. For example, satisfaction with public transport could be enhanced by increasing frequency, and household internet access could be expanded. Efforts are still needed to foster innovation. We also noted a poor perception of inclusiveness, safety and trust between citizens. Finally, perception of amenities, schools and institutions is also worse in Brussels than in the high performers.

Being the capital of the European Union is an asset and an opportunity for the Brussels metropolitan area. The government of the Brussels-Capital Region has significant powers at its disposal, in terms of taxation, housing, territorial development, urban planning and so on.

While metropolitan institutions are common in the high-performing regions, they are not necessary or sufficient for success. What matters is for large cities to develop and implement strategies at the metropolitan scale, especially in the areas of regional development, spatial planning and transport. More importantly, managing relations between the core of Brussels and its hinterland, defined in terms of the commuting area, requires coordination between the governments of the Brussels-Capital Region, the Flemish Region, the French Community and the Walloon Region as well as the federal and local governments. The renewed interest in the Concertation Committee (*Comité de Concertation* or Codeco) since the start of the pandemic is an encouraging sign.

In the article, we refer to evidence of migration of firms and of the middle class from the core of Brussels to the periphery. Looking at all Belgian provinces, the median income of inhabitants is lowest in Brussels-Capital Region and highest in the two Brabant provinces (Flemish Brabant and Walloon Brabant). Brussels is thus characterised by a poor core and a wealthy periphery which attracts both businesses and the middle class. Future research may look into the drivers of such trends and how to avoid them and may investigate the question whether this picture is unique to the Brussels metropolitan area or common to other metropolitan areas.

In addition, it could be interesting to analyse whether Brussels and the high-performing metro regions were more resilient to recent systemic shocks (Covid-19 and the war in Ukraine) than other metro and non-metro regions.[1] According to the OECD (2022e), in 2020, growth fell less sharply in metro regions than in regions outside or far from a metro area. Another interesting question is how prepared metro regions are to face major trends such as climate change, land scarcity, population ageing and global value chain developments.[2]

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1 See OECD (2022d) for a preliminary analysis of the impact of the war in Ukraine on OECD regions.
2 Some reflections can already be found in Cainelli *et al.* (2019), EC (2019), EC/OECD (2020) and OECD (2022e).

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Conventional signs

%	per cent
et al.	*et alia* (and others)
i.e.	*id est* (that is)
km²	square kilometre

List of abbreviations

Countries or regions

NL   The Netherlands

UK   The United Kingdom

EU   European Union

Abbreviations

ARDECO   Annual Regional Database of the European Commission's Directorate General for Regional and Urban Policy

BCR   Brussels-Capital Region

Cocof   Commission communautaire française
Cocom   Commission communautaire commune

De Lijn   Flemish Transport Company

EC   European Commission

FUA   Functional Urban Area

GDP   Gross Domestic Product
GPS   Global Positioning System

JRC   Joint Research Centre

MIVB   Maatschappij voor Intercommunal Vervoert te Brussel

NATO   The North Atlantic Treaty Organization
NEET   Neither in employment nor in education and training
NMBS   Nationale Maatschappij der Belgische Spoorwegen
NUTS   Nomenclature of territorial units for statistics

OECD   Organisation for Economic Cooperation and Development

PPS   Purchasing Power Standards

R&D	Research and development
RCI	Regional Competitiveness Index
RER	Réseau Express Régional
SNCB	Société nationale des chemins de fer belges
STIB	Société des Transports intercommunaux de Bruxelles
TEC	Transport en commun (Wallon Transport Company)
VGC	Vlaamse Gemeenschapscommissie

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ORGANISATION
BRUSSELS ENVIRONMENT

02.2019