International Comparators for the West Midlands

Identifying and learning from city-regions most similar to the West Midlands

West Midlands Combined Authority | Research and Insights

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Executive summary

Typically, UK city-regions have been compared against London, with prescriptions for UK productivity focused on a London-centric model of productivity growth. This work seeks to develop this approach by identifying international city-regions which, in the past, bore the closest resemblance to the West Midlands Combined Authority (WMCA) area in terms of its demographics, economic composition, and administration; but which have now outpaced and outperformed productivity growth rates in other regions in their own countries since.

This work has consisted of a four stage process consisting of a literature review, quantitative analysis, productivity analysis, and a five-factor qualitative analysis. This has resulted in the identification of a number of city-regions from which the WMCA could make useful comparisons and draw useful lessons.

The four identified city-regions are: **Lille**, France; **Greater Porto**, Portugal; **Saxony**, Germany; and **Lombardy**, Italy. Additionally, four city-regions in Mexico and Japan have been identified. Following further discussions with colleagues in Mexico and Japan, we will identify two additional comparator city-regions: either Guadalajara or Monterrey in Mexico, and Sapporo or Okayama in Japan.

Having identified this cohort of comparable international city-regions, further work will be undertaken to explore those factors that have facilitated more rapid productivity growth with a view to learning lessons for the West Midlands.

Purpose

This study aimed to identify international city-regions that once closely resembled the West Midlands Combined Authority (WMCA) area in terms of demographics, economic composition, and administration, but have since shown significant growth in relation to other regions in their respective countries, offering valuable lessons for the WMCA city-region.

Having identified this cohort of comparable international city-regions, further work will be undertaken to explore those factors that have facilitated more rapid productivity growth with a view to learning lessons for the West Midlands.

Background

This report forms part of *West Midlands Futures*, a process and conversation started in autumn 2023 about the future of the West Midlands. It is a process to generate a distinctive and shared story about our place in the national and global economy. The first phase of this work, called "clarify", identified a set of 'big questions' and 'grand challenges' through desktop research and stakeholder interviews. This report is part of the "Understand" phase in which we are developing a deep evidence base for future economic strategy.

Context

UK city-regions are typically compared to London and prescriptions for productivity growth are typically focused on a London-centric model of growth. This approach overlooks the unique economic opportunities of other city-regions and does not consider London's special status as a capital, and a global city with an international financial sector. Copying London's model for the WMCA area is not only impractical, but it ignores the specific strengths and challenges in the WMCA city-region.

By identifying a cohort of more similar international city-regions, the intention is to carry out a comparative analysis which identifies the reasons why such similar city-regions have seen such relative success within their national contexts and to identify lessons for the West Midlands.

These lessons will feed into the development of the forthcoming West Midlands Growth Plan, the West Midlands theory of growth and subsequent development of economic strategy and policy in the West Midlands as part of *West Midlands Futures*.

Methodology

A multi-stage quantitative and qualitative approach was undertaken. These are:
1. Literature review – existing comparative studies
2. Quantitative analysis – distance measure
3. Productivity analysis – regional productivity gap compared to the national average
4. Five factor qualitative analysis – incorporating polycentricity, industrial composition and median age

Analysis

Stage 1: Literature review

A literature review was conducted on existing English-language research that attempted to draw comparisons between international city-regions relevant to the research question. This review involved internet searches and consultations with national and international contacts and networks. It revealed that few prior published works have sought to address this topic.

The most relevant report is a report from **GLA Economics** in 2016 which produced the ***London in Comparison with other Global Cities*** report.[1] The purpose of GLA's work was to compare "London's economic structure with other global cities, particularly looking at its economic output, employment and productivity". Comparator cities were selected based on their perceived nature as "both traditional and emerging cities that compete with London". Selected cities included New York, Paris, Berlin, Tokyo, Singapore, Hong Kong, Shanghai, and Dubai. The report begins with an economic comparison before seeking to explain any differences between London and the other cities. This was, by far, the most appropriate comparator to the work this study attempts to answer – it looked at how the cities compared in 2006 across output, employment and productivity, and seen how these factors changed in each of those cities between 2006 and 2014.

There were several other works with elements which are comparable:

In 2012, the **Centre for Cities** produced a ***European Comparator City Report: York*** which compared York to cities in mainland Europe of a similar size population – that is, of 100,000-300,000 people.[2] The purpose of the report was to analyse York's competitiveness in terms of human capital, and entrepreneurialism. While York was ranked against other cities, there was no attempt to take a more longitudinal approach to comparators nor were reasons for success identified.

In 2023, the **Resolution Foundation** produced a report entitled ***Turnaround Cities***. This was concerned with understanding how large cities, which had struggled to thrive following the transition to a post-industrial economy, could reverse their fortunes.[3] Cities were selected because they were known by people in their own countries to have been in a bad condition but turned it around. The research examined seven case study cities and sought to find the necessary ingredients for a city to reverse long-term economic underperformance. Key insights included the need for complementarity between urban and economic development strategies, holistic economic promotion strategies, building on existing economic strengths, the importance of local leadership, long-term and stable funding, and collaboration among a diverse set of actors. This provided useful insights in terms of the factors leading to recovery, but its purpose was not to identify international comparator city-regions.

In 2024, the **West Midlands Growth Company** (an arms-length body of the West Midlands Combined Authority and its constituent local authorities) worked with **Connected Places Catapult** and the **Business of Cities** on a report entitled ***Innovation in the West Midlands: International Prospects and Place Partners***. This report draws international comparisons and aims to identify city-regions which have complementary

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[1] GLA Economics (2016). [London in comparison with other global cities](#).
[2] Centre for Cities (2012). [European Comparator City Report: York](#).
[3] Resolution Foundation (2023). *[Turnaround Cities: How post-industrial cities around the world have transformed their economies](#)*.

economies to the WMCA area – but it differed substantially from the purpose of this work to identify places with similar economic trajectories. The primary aim of the publication was to identify potential international partners for the West Midlands "to build relationships that have especially high potential to last over the long term and create mutual benefit" from an innovation perspective.[4] International comparators were compared along three 'core dimensions': shared identity, compatible strengths, and a desire to improve. The dimensions were derived from "innovation trends, performance indicators, and global strategies of other forward-thinking city-regions".[5] Potential partners that aligned with the West Midlands along all three dimensions were Ulsan, Minneapolis-Saint Paul, Saxony, Hyderabad, Lyon, and Rhine-Ruhr.

Consequently, works comparing UK city-regions with international comparator city-regions are limited – and reflected limited data availability – a matter noted by nearly all the above publications.

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[4] Connected Places Catapult, The Business of Cities, and the West Midlands Growth Company (2024). Innovation in the West Midlands: International Prospects and Place Partners – draft version 7, p.11.
[5] Connected Places Catapult, The Business of Cities, and the West Midlands Growth Company (2024). Innovation in the West Midlands: International Prospects and Place Partners – draft version 7, p.10.

Stage 2: Quantitative analysis

The quantitative analysis aimed to identify city-regions worldwide that, 10-15 years ago, most closely resembled the WMCA area in terms of demographics, economic composition, and administration.

The main source of data available for international comparisons are data from the United Nations (UN); data from the Organisation for Economic Co-operation and Development (OECD), and data from the European Union through Eurostats. As data at a cities and regions level is not available via the UN, and the next best available source was the OECD. There are limitations with OECD data as it focuses on OECD countries, however the research team felt this was a reasonable limitation given the need to compare places similar to a developed area such as the WMCA area. As data published by the OECD was not always available at the WMCA area geography, the research team undertook some data processing and data preparation work to create a 'WMCA' figure for each metric as well as selected polycentric urban areas.

The OECD's city statistics dataset was chosen as this was built up on 'functional urban areas' (FUA) which was an appropriate geography for comparison with other city-regions. Note that due to differences in how international organisations define 'city-regions' or 'functional economic areas' – particularly outside the European Union, there are limitations with missing data issues with the OECD city statistics dataset. The research team were able to fill these gaps using calculations from other variables or obtaining the data from additional sources. This is by no means a perfect exercise – for instance, our own 'virtual' WMCA includes swaths of the wider region resulting in a population of around 4.6 million, rather than the official 2.9 million population of the seven metropolitan districts of the constituent WMCA.

A basket of metrics was selected, focus not only on 'traditional' economic growth metrics, but also a consideration of the WMCA's socioeconomic objectives set out by the West Midlands Inclusive Growth fundamentals, which are, in turn, aligned to the United Nations Sustainable Development Goals.

The metrics chosen were:
- Population
- Population density (inhabitants per square kilometres)
- Total land area (in square kilometres)
- Urbanised area (built-up area or land for urban use in km^2)
- Urbanised area per capita (square metres per capita)
- Employment rate (employment of people aged 15-64 as a percentage of population aged 15-64)
- Unemployment rate (unemployment of people aged 15-64 as a percentage of population aged 15-64)
- Labour productivity (GDP per worker in USD at constant prices, at constant purchasing power parity [PPP], with a base year of 2015)
- National labour productivity (GDP per worker in USD at constant prices, at constant purchasing power parity [PPP], with a base year of 2015)
- National population density (population per square kilometres)

A distance measure was calculated using the following method:

$$\sum \sqrt{\left(\frac{x_i - x_{wmca}}{\sigma}\right)^2}$$

Where, for each metric:
- X_i is the metric value for a selected city-regions i;

- X_{WMCA} is the value for the WMCA area; and
- σ is the standard deviation of the variable.

In effect – this generates a 'distance measure' for each variable of each city-regions – which can then be aggregated to generate an average distance score as to the 'distance' (or similarity) for each city-regions to the WMCA area.

These scores were then normalised, so that a figure of "100" means a place is identical to a chosen place in a chosen year.

The year 2010 was picked as this represented almost 15 years ago, in line with our goal to compare our progress with somewhere 10-15 years ago. Taking WMCA (2010) as 100, the place that is most similar to the WMCA is Manchester, with a score of 92.33. The place that is most dissimilar to the WMCA is Los Angeles (score of 0.71), followed by Tokyo (17.71) and New York (18.14).
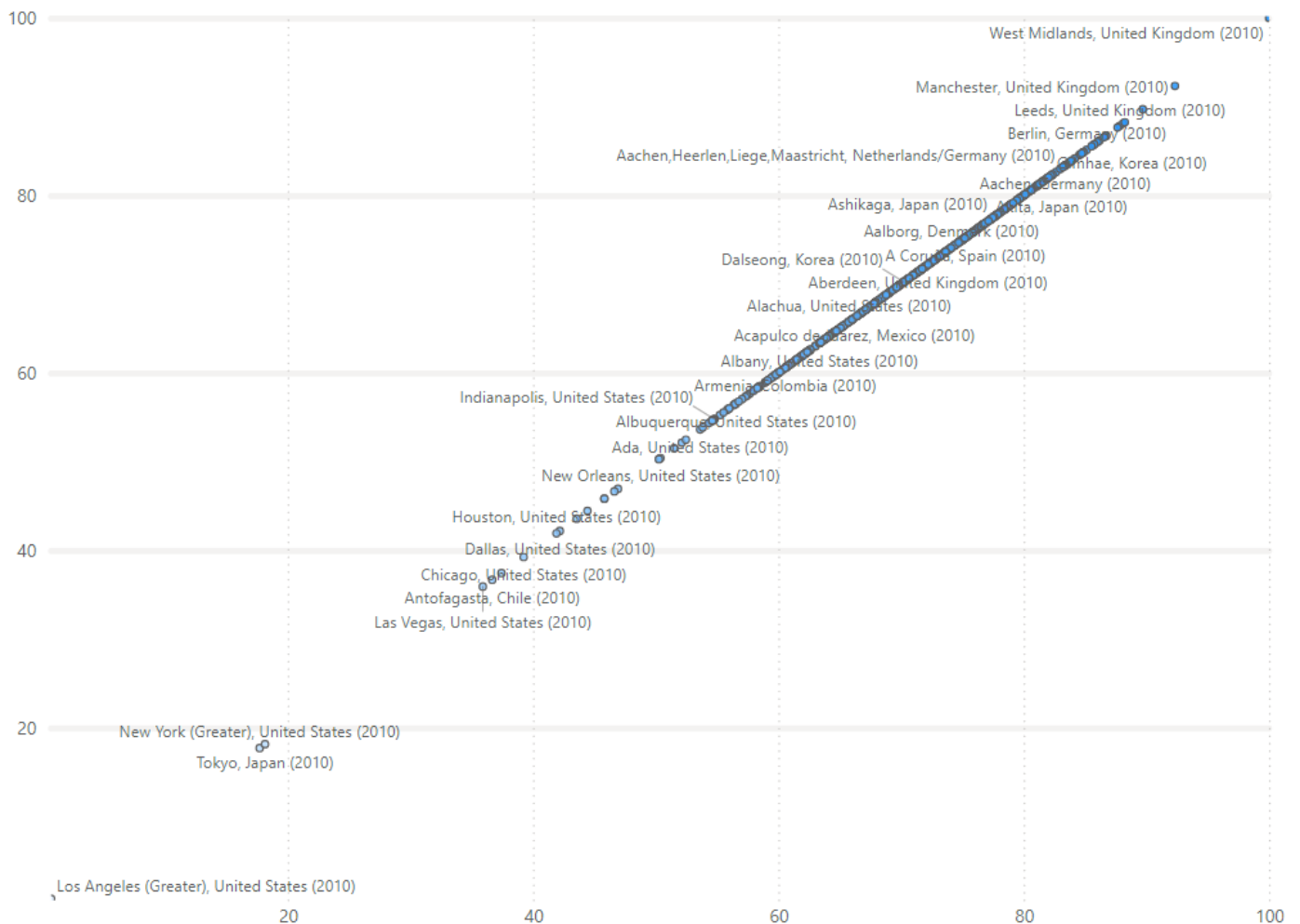
Now solely considering places within the UK – the places most similar to WMCA (2010) are Manchester (92.33), followed by Liverpool (89.71), Sheffield (88.24), Leeds (87.82). London is amongst the most dissimilar places to the WMCA, with a score of 68.56.
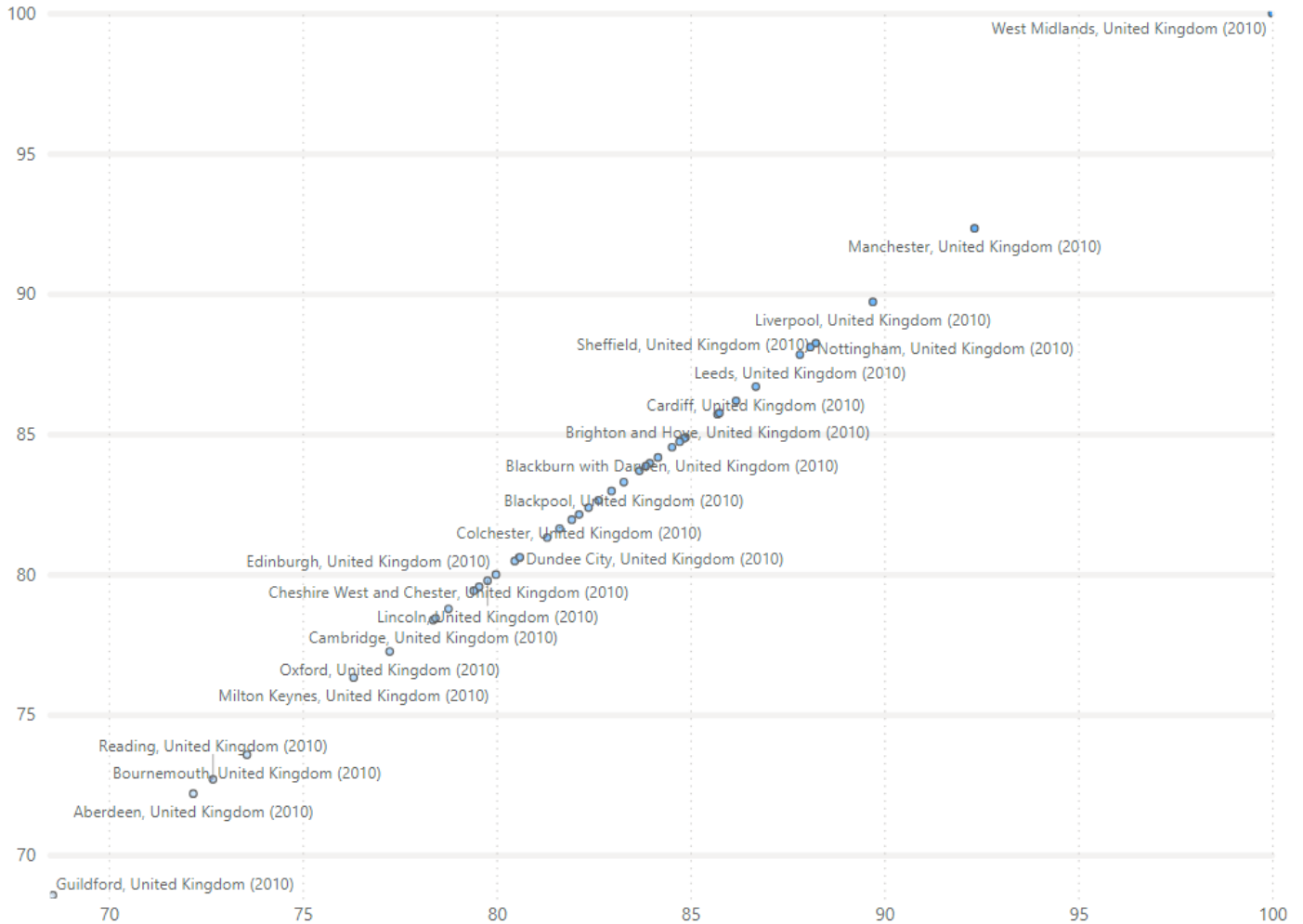
Excluding the UK, places that are most similar to the WMCA (2010) tend to be places in Germany and Japan.

The places in Germany that bore strongest resemblance to WMCA (2010) are Ruhrgebiet (87.65); Berlin (85.14), Koln (84.60), Monchengladbach (83.42) and Aachen (83.37).
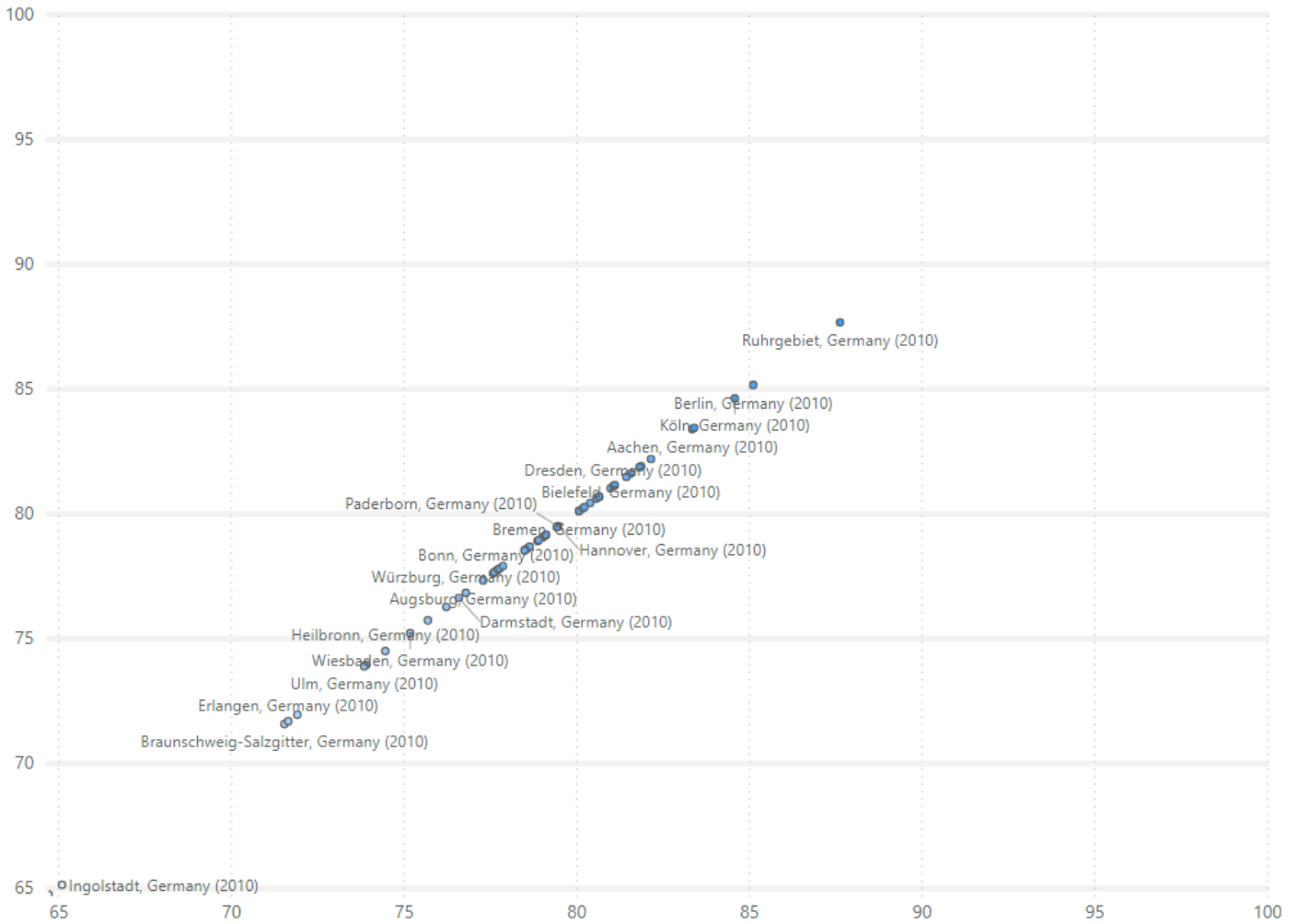
The places in Japan that were most similar to the WMCA (2010) were Sapporo (86.73), Fukuoka (86.56), Kitakyushu (86.01), Sendai (85.53) and Nagasaki (83.76).
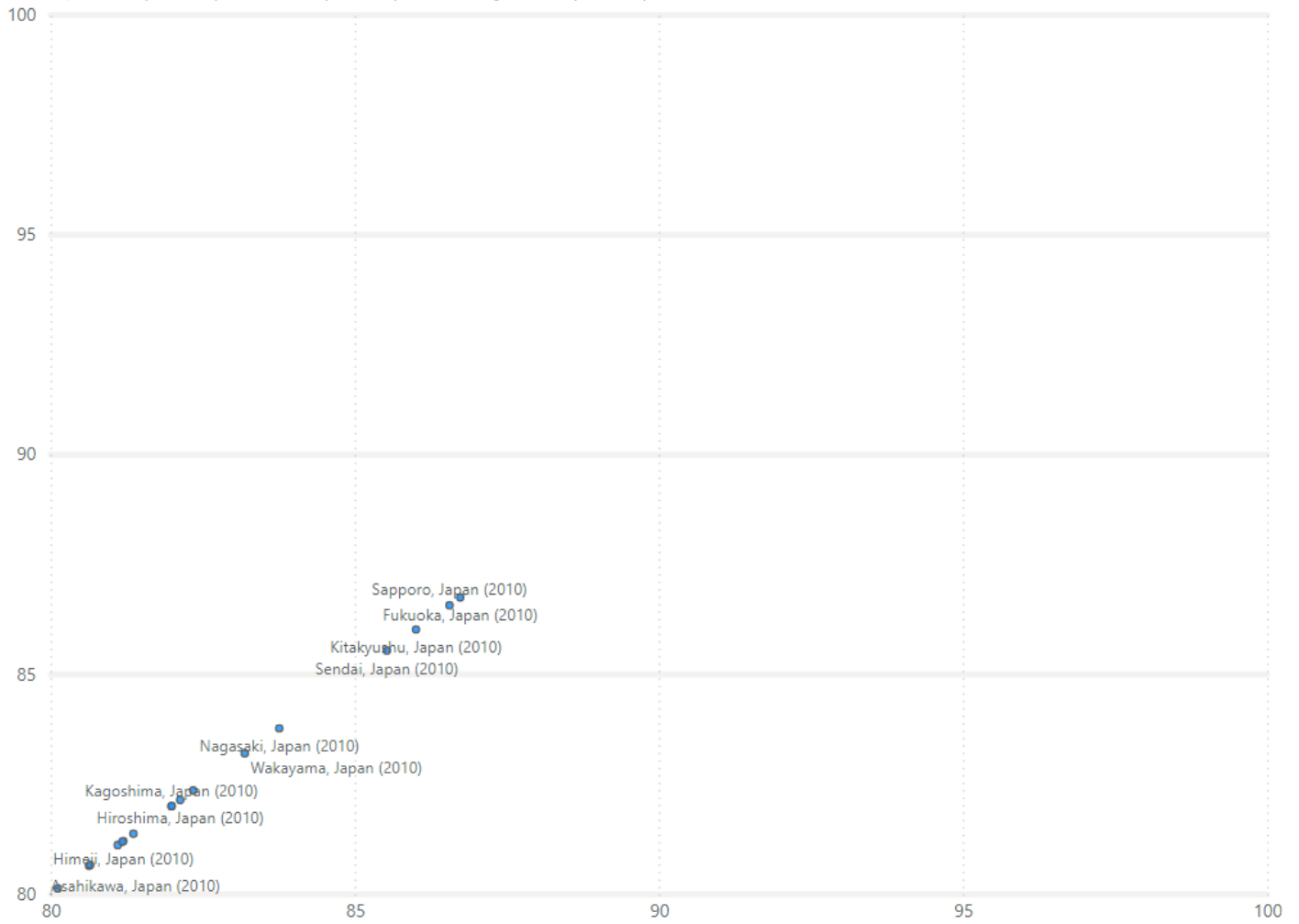
Excluding UK, Germany, and Japan, other similar places included Milano, Italy (83.45), Vancouver, Canada (83.28), the polycentric European region of Aachen/Heerlen/Liege/Maastricht (83.01), Gimhae, South Korea (82.25), and Porto, Portugal (82.21).
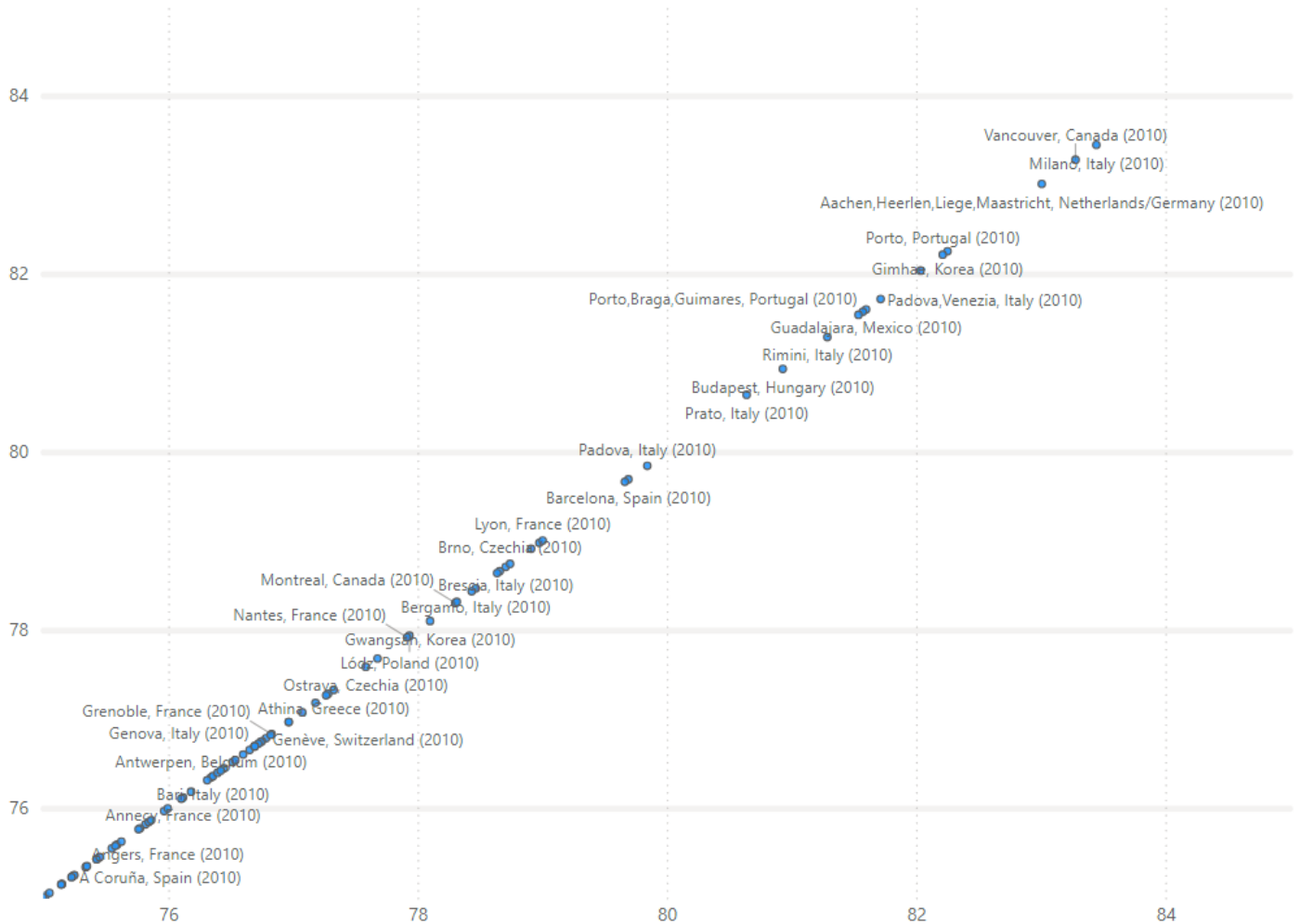
However, given that **capital cities** have unique economic drivers which cannot be replicated in other, non-capital regions; and that population has a disproportionate effect on economic possibilities, a decision was taken to exclude capital cities from the analysis, and focus on city-regions with a population of between 1.5 million and 5 million inhabitants as of 2010. This then resulted in the following list of 61 city-regions, from most similar to least similar to the WMCA (2010) where 100 = closest to WMCA, and 0 = furthest from WMCA.

Place	Distance from WMCA (100 = closest)
Fukuoka, Japan	86.73
Sapporo, Japan	86.56
Sendai, Japan	85.53
Köln, Germany	84.60
Milano, Italy	83.45
Vancouver, Canada	83.28
Gimhae, Korea	82.25
Torino, Italy	82.04
Guadalajara, Mexico	81.60
Greater Porto (Porto, Braga, Guimares), Portugal	81.57
Okayama, Japan	80.65
Hamburg, Germany	80.59
Barcelona, Spain	79.69
Stuttgart, Germany	79.44
Lyon, France	79.00
Frankfurt am Main, Germany	78.89
Katowice, Poland	78.66
Montreal, Canada	78.30
Gwangsan, Korea	78.10
Puebla, Mexico	77.68
Athina, Greece	77.33
Tijuana, Mexico	76.97
Marseille, France	76.74
Rotterdam, Netherlands	76.54
Monterrey, Mexico	76.00
Toluca, Mexico	75.45
Napoli, Italy	74.31
Valencia, Spain	74.07
München, Germany	73.93
Greater Melbourne, Australia	73.38
Greater Sydney, Australia	73.04
Barranquilla, Colombia	72.73
Greater Brisbane, Australia	71.56
Dalseong, Korea	70.23
Cali, Colombia	69.82
Austin, United States	68.75
Cuyahoga, United States	67.47
Columbus, United States	67.10
Milwaukee, United States	66.58
Sevilla, Spain	66.43

Place	Distance from WMCA (100 = closest)
San Antonio, United States	65.22
Orange, United States	65.08
Portland, United States	64.92
Charlotte, United States	64.58
Cincinnati, United States	63.85
Sacramento, United States	63.69
Denver, United States	61.93
San Diego, United States	60.94
New Haven, United States	60.94
Jackson (MO), United States	60.75
St. Louis, United States	60.72
Greater Perth, Australia	60.64
Medellin, Colombia	60.36
Minneapolis, United States	59.98
Boston, United States	59.95
Atlanta, United States	56.49
Detroit (Greater), United States	56.45
Indianapolis, United States	54.77
Seattle, United States	54.61
Phoenix, United States	54.33
Las Vegas, United States	35.90

Stage 3: Productivity analysis

In 2001, labour productivity per worker in West Midlands was USD$4,491 lower than the UK average (in constant 2015 prices) at USD$72,092 per worker in the West Midlands, compared to $76,583 for the UK. By 2006, this 'gap' has grown to USD$10,149 (that is, USD$72,166 per worker in the West Midlands compared to USD$82,315 per worker in the UK)– and this has, by and large, remained the same since. Since the Global Financial Crisis in 2007-2008, growth in the UK has been mostly driven by tradeable services in one sector – financial services – which can be seen in the difference between London and the rest of the country.

Labour productivity (GDP per worker in constant PPP prices 2015)
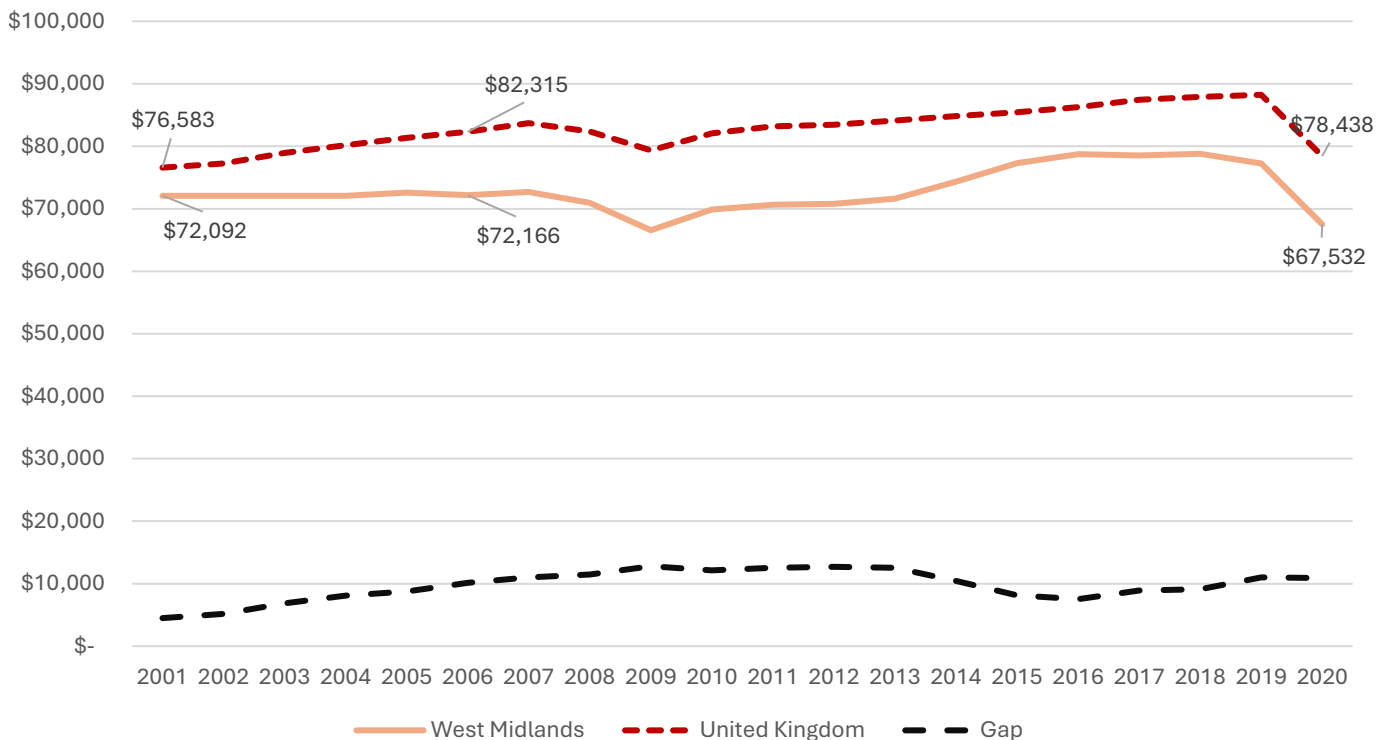
Consequently, since 2006, there has been no real divergence in productivity growth for the WMCA area compared to other places in the UK; just a consistent, long-term lack of growth in the WMCA area.

For the purposes of this study, merely resembling the West Midlands as it was in 2010 does not qualify a place as a suitable comparator. Given the purpose of this exercise is to explore relative rates of productivity, a further analysis was done to compare labour productivity in the region to nationally between the chosen year (2010) and the latest available data. 2010 was chosen – because, while there was no divergence within the UK before or after the financial crisis, there may be exogenous factors which influence this in other countries. For the latest available data 2019 was chosen because the pandemic from 2020 onwards significantly affected the dataset.

The steps taken for the regional productivity gap analysis are as follows:

1. The difference in labour productivity between national and regional figures for each year was worked out by subtracting the regional figure from the national figure;
2. The change between the chosen year (2010) and the latest year (2019 or earlier) was then worked out by subtracting the difference in labour productivity in the comparator year from the latest year;

3. The resulting figure, either a positive figure (indicating that regional productivity between the latest year and the comparator year was better than national productivity) or a negative figure (indicating that regional productivity was poorer than national productivity over the time period), is then normalised to between -100 and 100.

When considering the full dataset of 647 city-regions, 337 city-regions saw productivity growth greater than nationally between the chosen year (2010) and the latest available data (usually 2019, but occasionally 2018 or 2016); the remaining 310 saw growth that was no better than the national figure. WMCA saw a normalised value of 5 (a positive value) – a recognition that the gap in regional and national labour productivity narrowed slightly between 2010 and 2019.

The top five city-regions in terms of their productivity growth are: Cork, Ireland (100), San Francisco, United States (87), Wolfsburg, Germany (60), San Juan del Rio, Mexico (54), and Queretaro, Mexico (49). In the following two-by-two matrix – places towards the top of the table have seen regional productivity growth outpacing the national figures; and places towards the right of the matrix are most similar to the WMCA (2010).
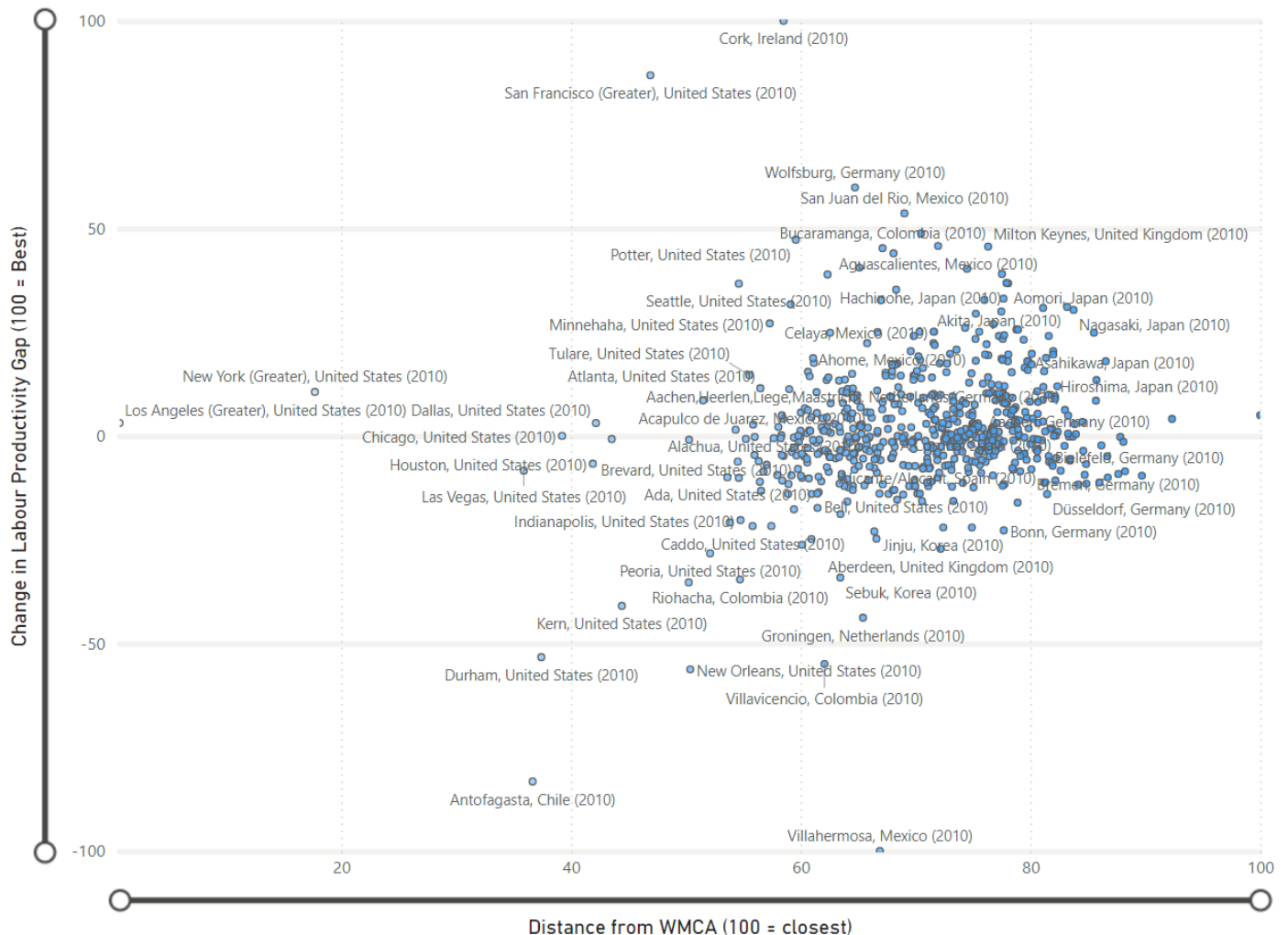
As with the similarity analysis, it was important to focus on places of between 1.5 million and 5 million people, and that are not capital cities. Places that saw the greatest productivity growth compared to the national average Seattle, United States; Monterrey, Mexico; Sendai, Japan; Guadalajara (Mexico); and Sapporo (Japan). This is shown on the following matrix.
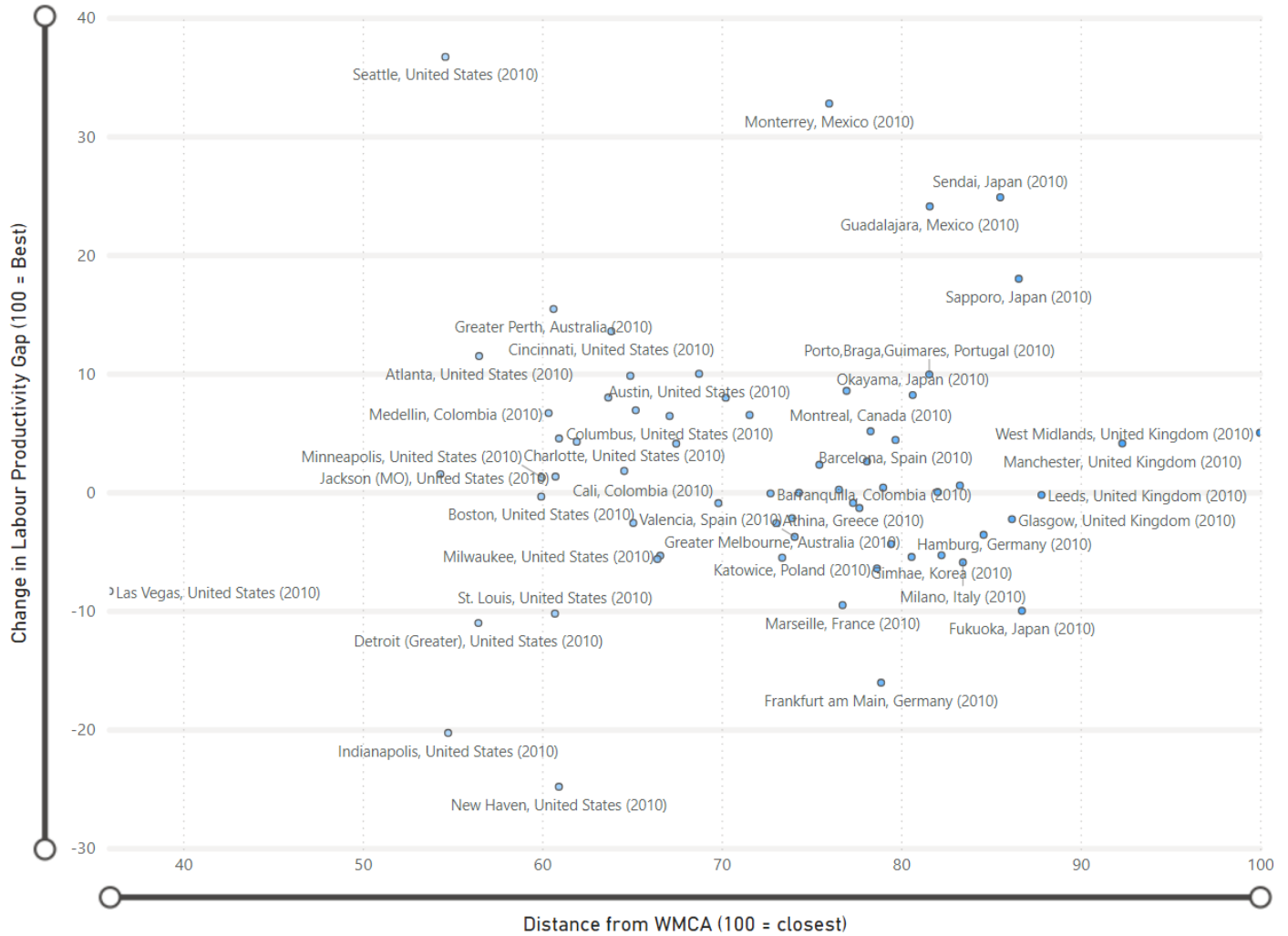
However, places such as Seattle are rather different from the WMCA – making them less suitable as comparators. 'Zooming' in on the chart reveals these six places that are both relatively similar to the WMCA and saw good relative labour productivity growth. The following places all have productivity growth that outpaced their national results between 2010 and 2019; and score at least 70 or over in terms of similarity with the WMCA.
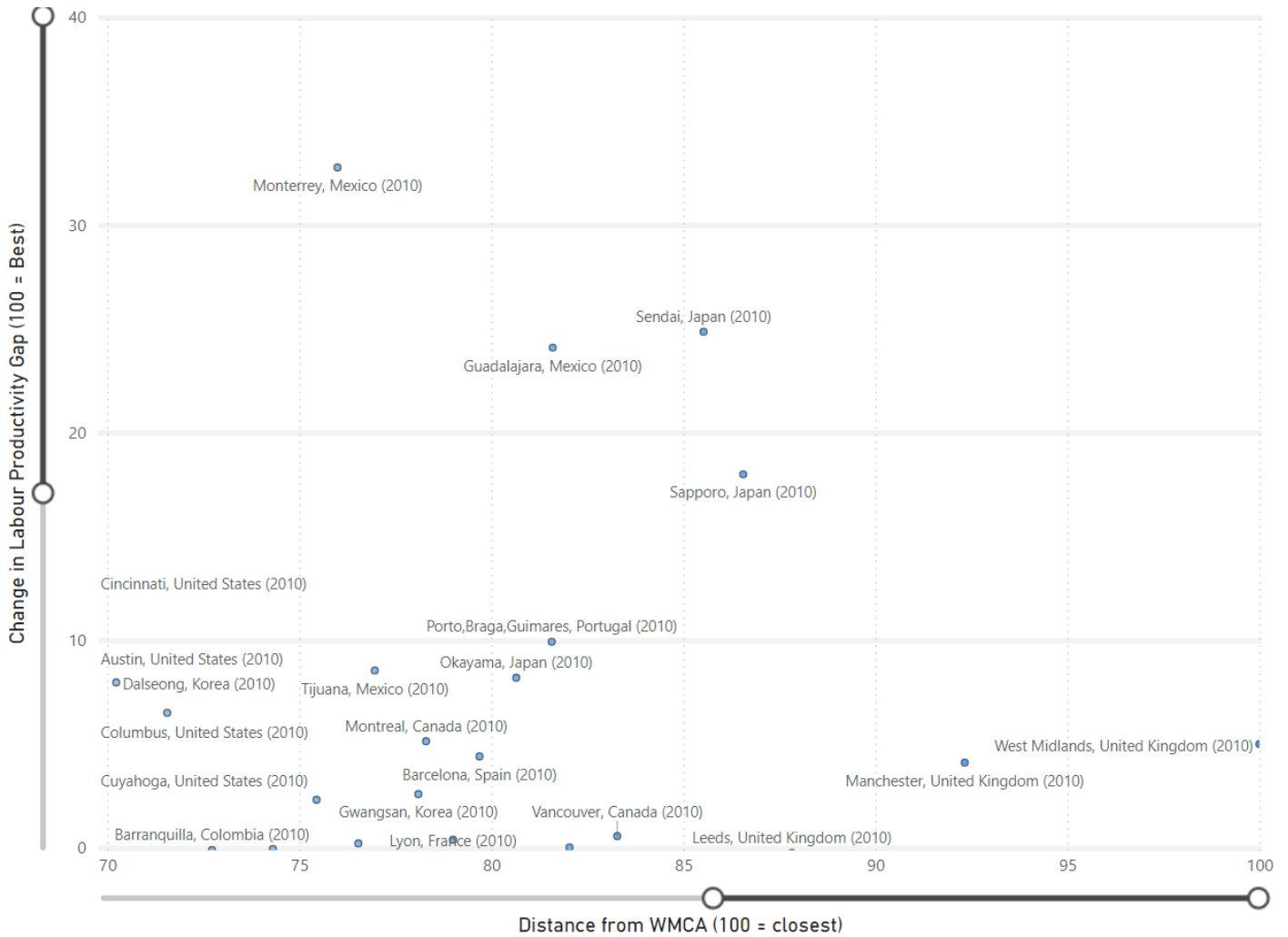
Focusing only on places that have seen *greater* progress than the WMCA, then this narrows the list down further:
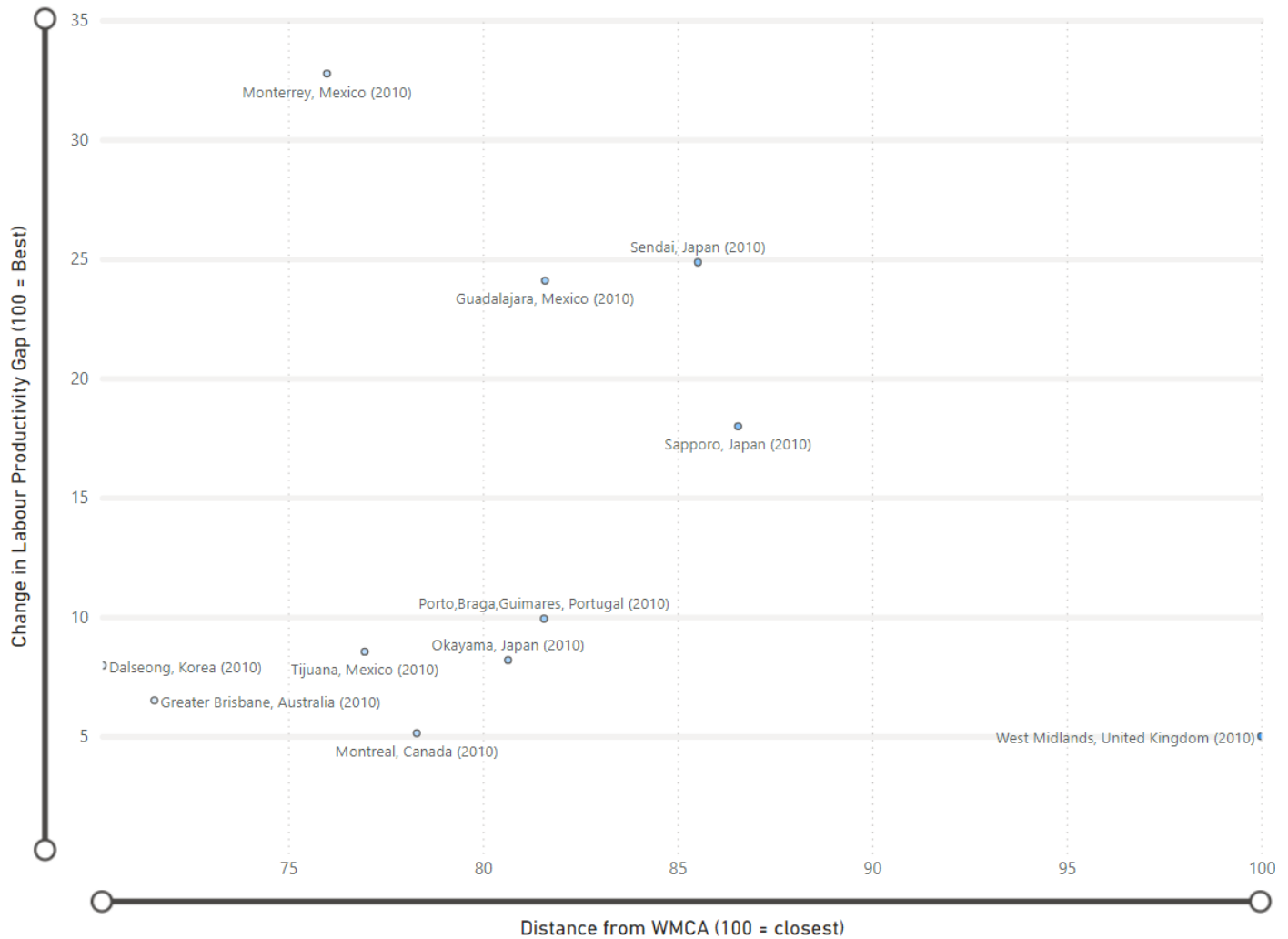
The ten places that are most similar to the WMCA area and saw regional productivity growth that is greater than the national between 2010 and the latest available period are set out in the table below.

| Place	Distance from WMCA (100 = closest)	Change in Labour Productivity (100 = Best)
Sapporo, Japan	86.56	17.98
Sendai, Japan	85.53	24.85
Guadalajara, Mexico	81.60	24.08
Greater Porto, Portugal	81.57	9.92
Okayama, Japan	80.65	8.19
Montreal, Canada	78.30	5.13
Tijuana, Mexico	76.97	8.54
Monterrey, Mexico	76.00	32.76
Greater Brisbane, Australia	71.56	6.50
Dalseong, Korea	70.23	7.96

Productive analysis discussion

It may be argued that there are, perhaps, some unexpected results in this analysis. For instance, none of the ten places are city-regions in Germany or France. This discussion section sets out why this is the case in our particular analysis.

Germany

The following sets out all the regions in Germany included in this analysis. The place that is closest to the WMCA in 2010 is Ruhrgebiet; and the place that has seen regional productivity growth that is greater than the national is Leipzig.
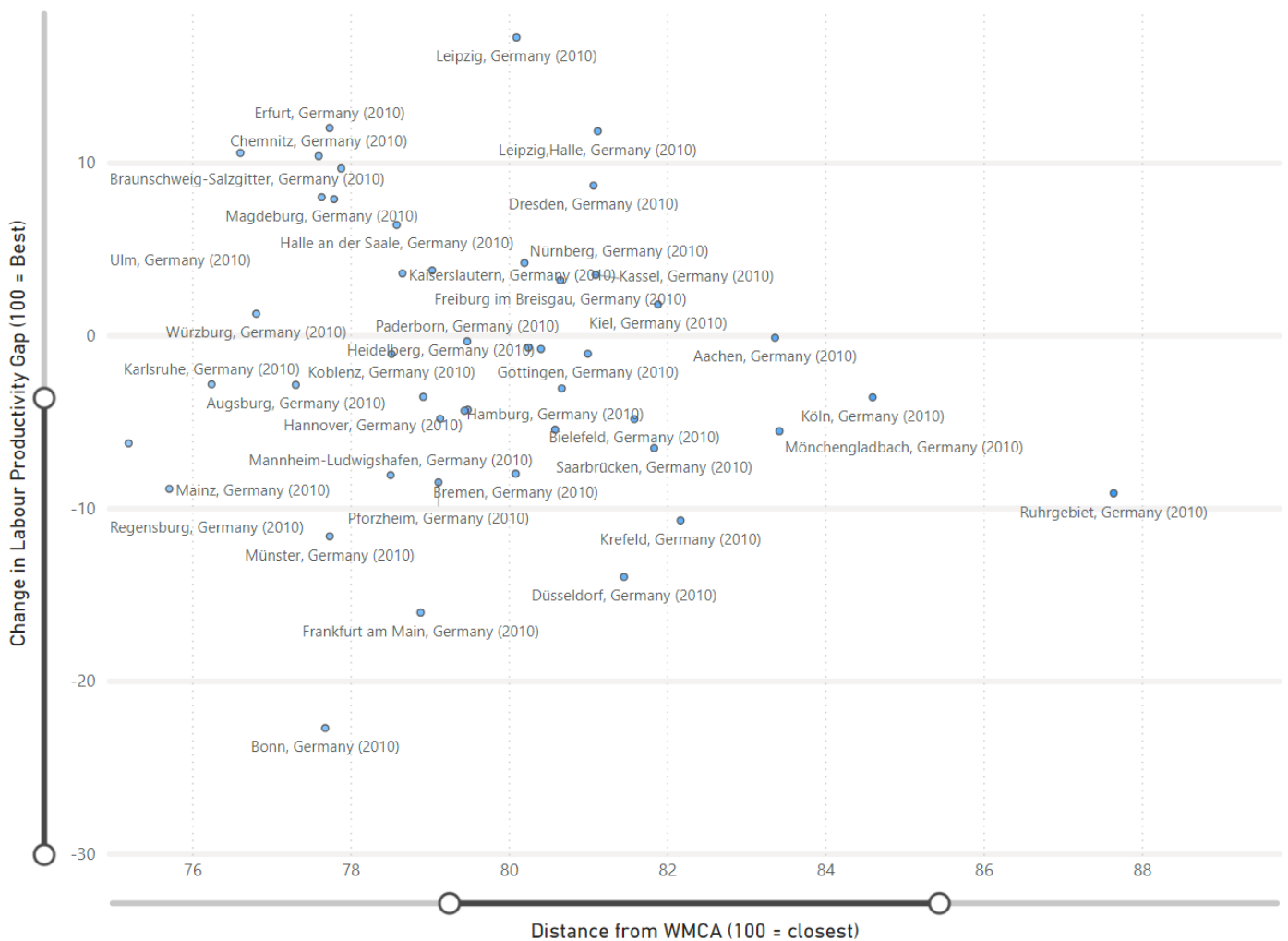
In the *West Midlands Growth Company* report, Rhine-Ruhr and Saxony regions were identified as complementary economies to the West Midlands.

Ruhrgebiet: The closest match to Rhine-Ruhr in our international comparators study is the polycentric region of Ruhrgebiet. This region saw labour productivity grow (in constant 2015 prices) from US$78,210 in 2001 to $84,557 in 2010; peaking at $86,135 in 2011, but declining to $83,928 in 2019. Throughout the period 2001 to 2019, the Ruhrgebiet region's productivity lagged the German average. But most importantly, *while the region's economy did grow, its regional growth rate lagged the national rate of growth between 2010-2019* largely on account of the rapid growth in cities of the former East Germany driving up the national average.

Between 2001 and 2019, the region did see employment rate growth and its unemployment rate decreased – but unlike the West Midlands, it also experienced a decline in its population. Consequently, while the Ruhrgebiet region may be a complementary economy to the West Midlands as identified in the *West Midlands Growth Company* report, its below-average pace of growth means that it is not a place with lessons for the West Midlands.

Dresden and Leipzig-Halle, Saxony: The closest match for the Saxony region considered in our international comparators study is Dresden, and the Leipzig-Halle polycentric region. Dresden's labour productivity increased from US$67,129 in 2001 to $70,937 in 2010, to $78,614 in 2019; while Leipzig-Halle saw an increase from US$70,866 in 2010 to $79,867 in 2019. Both regions saw productivity grow faster than the German average; population growth; employment growth; and reduced unemployment – and would be the sole German region that fit the criteria set out in this report. However, the OECD data and polycentric region literature treats Dresden and Leipzig-Halle as two separate functional economic geographies – and on their own, they are smaller than the cut-off of 1.5 million people chosen for our analysis – and thus they are not currently included in our list.

France
The following sets out all the regions in France included in this analysis. The place that is closest to the WMCA in 2010 is Lyon, followed by Lille.
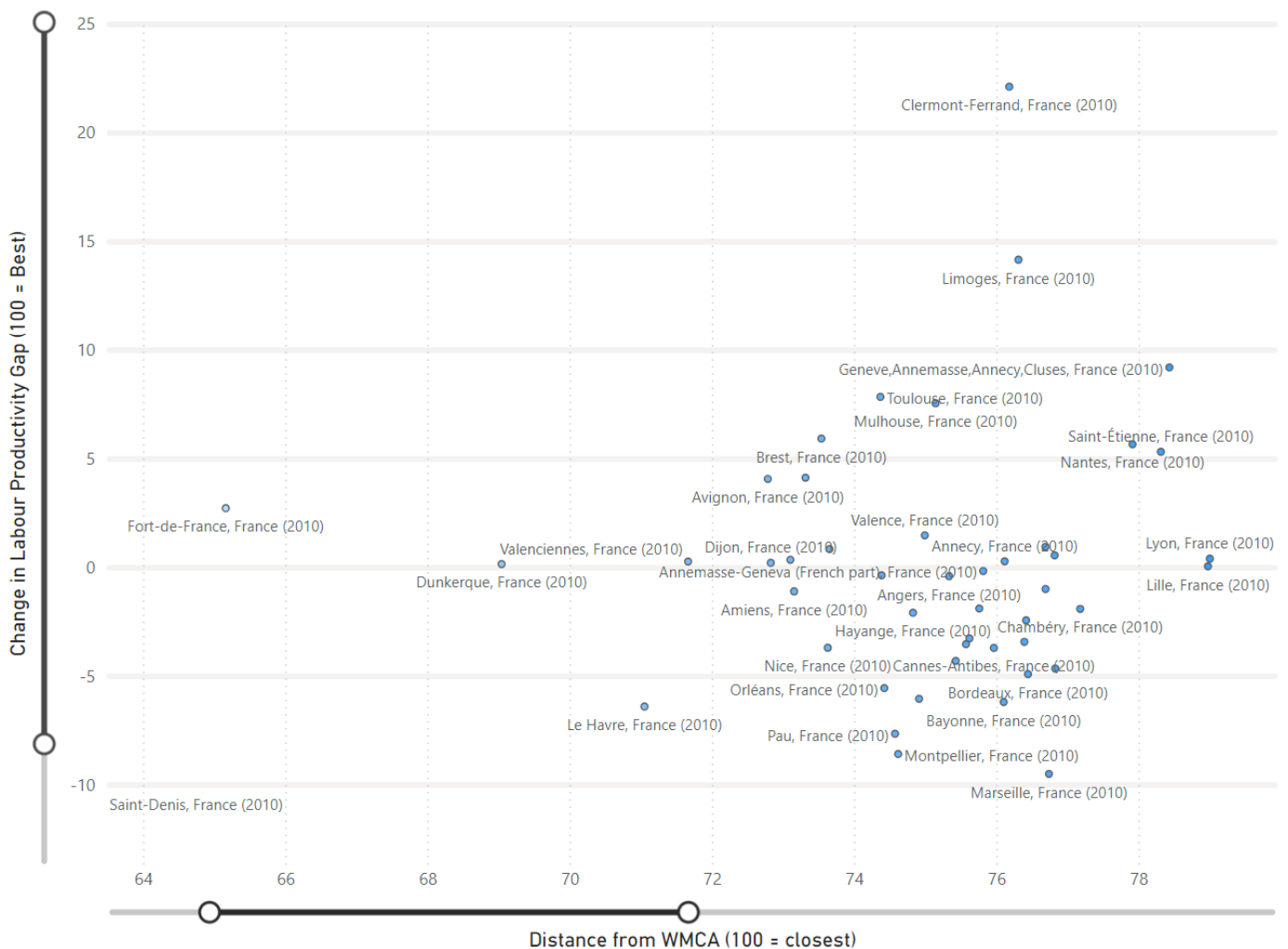
Lyon: The *West Midlands Growth Company* analysis identified Lyon as a region as one complementary to the West Midlands. The region saw productivity growth from $98,911 in 2006 to $101,074 in 2010, and $107,698 in 2019. It has consistently outpaced national productivity in France. Its employment and unemployment rate has remained relatively static throughout the period considered. *However*, the rate of productivity growth in the region *has not outpaced the national rate in France* in 2010-2019, which would exclude it from our particular analysis.

There are three other city-regions that are all reasonably similar to the WMCA area, have labour productivity below the national average, but saw regional labour productivity since 2010 outpacing the French national average. These are:

- **Clermont-Ferrand** – however, its population is only 500k;
- **Limoges** – however, its population is similar to Coventry's (300k);
- **Geneve-Annemasse-Anncy-Cluses (France/Switzerland)** – however, its population is slightly below the threshold of 1.5 million selected for our analysis;
- **Mulhouse** – however, its population is around 400k.

Stage 4: Five factor qualitative analysis

The next stage taken is to combine both the *similarity score* from the quantitative analysis stage 2 and the *productivity analysis* from stage 3 with a factor analysis. Three additional factors were chosen:

- **geographical factor** – to what extent does the city-region exhibit **polycentricity**;
- **economic factor** – to what extent are there similarities in the city-region's **industrial composition** and history; and
- **demographic factor** – to what extent is the **median age** of the city-region similar to the West Midlands?

Together, a factor analysis was created against a selection of places that scored highly in both stage 2 and stage 3. For completeness, we have included some *capital cities* and other places excluded in the earlier stages. This is illustrated in the table below, where *green* illustrates that it is more comparable to the WMCA; *amber* illustrates it is less comparable; and *red* illustrates that it is different from the WMCA:

City-Region	Similarity	Relative Productivity	Polycentric?	Industrial Composition	Demographics - Median Age	Overall score out of five
WMCA	100	5	Yes	Manufacturing (automotive, advanced engineering) - accounts for larger share than nationally but declining in importance; services (finance, business, retail, education)	35.9	5.0
Guadalajara	81.6	24.08	Yes - 2x Brum sized (Guadalajara, Zapopan); 3x 500k cities	ICT (Mexico's Silicon Valley - software development), electronics manufacturing and design, automotives, and tequila production	28.7	5.0
Lille	79	0.03	Yes - Lille-Roubaix-Tourcoing	Retail, logistics, manufacturing (automotive, textiles), and food processing	29.1	4.5
Monterrey	75.99	32.76	Yes - Monterrey-Apodaca	Manufacturing (heavy industry - steel, cement, glass, automotive), and finance	29.5	4.5
Greater Porto	81.59	9.92	Yes	Textiles, footwear, wine production (Port wine), tourism, and port activities; manufacturing accounts for 23% of Portugal industry; growing ICT and automotive sectors	43.5	4.0
Meuse-Rhine	83.04	6.27	Yes	Logistics (due to the Rhine), manufacturing (automotive, metalworking), and chemicals	41.2	4.0
Sapporo	86.58	17.98	Yes - Sapporo-Ebetsu-Ishikari	Food processing (especially beer), tourism (especially winter sports), and ICT	44.3	4.0
Tijuana	76.98	8.54	No	Manufacturing (electronics, medical devices), and tourism	27.8	4.0
Brescia	78.72	6.91	Yes - if Milan-Bergamo added - HOWEVER productivity will go down	Manufacturing (especially metalworking, machine tools, and automotive components), textiles, and agriculture	42.1	3.5
Okayama	80.67	8.19	Yes - made up of towns merged in the late 2000s	Manufacturing (machinery, textiles, electronics), agriculture (fruit production), and transportation -- stronger on agriculture	45.2	3.5
Saxony	75.34	11.76	Yes	Manufacturing (automotive, machinery), microelectronics, and tourism	47.1	3.5

City-Region	Similarity	Relative Productivity	Polycentric?	Industrial Composition	Demographics - Median Age	Overall score out of five
Brussels-Leuven	72.35	1.83	Yes	Government/EU institutions, services (finance, consulting), brewing, chemicals, textiles, steel, and food processing, pharmaceuticals, and technology (especially in Leuven) -- far stronger on government institutions	36.6	3.5
Copenhagen	77.27	4.1	Yes if we include Malmo	Shipping/logistics, pharmaceuticals, renewable energy, ICT, life sciences, cleantech, logistics, and design -- stronger on shipping/logistics and energy production	33.6	3.5
Grand Geneve	78.46	9.18	Yes	Banking and finance, trading and shipping, international organisations, luxury goods (watches), life sciences, tourism -- unique financial and luxury focus	39.5	3.5
Lombardy	82.5	-4.55	Yes	Manufacturing (especially metalworking, machine tools, and automotive components), textiles, and agriculture	42.1	3.0
Dalseong	70.27	7.96	Yes - made up of seven regions	Manufacturing (especially textiles and electronics), renewable energy, and agriculture -- much more rural than WMCA	42.2	3.0
Greater Brisbane	71.58	6.5	No	Advanced manufacturing, mining, tourism, agriculture, and services (finance, education, health, logistics) -- far stronger on mining	36.0	3.0
Montreal	78.33	5.13	No	Aerospace, ICT, finance, pharmaceuticals, and cultural industries	40.6	3.0
Sendai	85.55	24.85	No - next biggest area is 12% of Sendai	Manufacturing (electronics, machinery), food processing especially fishing	42.5	3.0
Ruhrgebiet	87.64	-9.15	Yes	Historically coal mining and steel, now diversified into manufacturing (machinery, automotive), logistics, and technology	44.8	3.0
Gothenburg	72.9	2.79	No	Automotive, manufacturing, shipping/logistics, services (finance), and associated R&D	40.6	2.5
Krakow	75.03	3.09	No	Tourism, ICT, business processes outsourcing, and manufacturing (especially machinery and metal products) -- stronger on tourism and outsourcing	34.2	2.5
Lyon	79.2	0.38	No	Manufacturing (chemicals, pharmaceuticals), services (finance, business services), and biotechnology	37.5	2.5
Barcelona	79.7	4.4	No	Tourism, logistics, pharmaceuticals, automotive, food and beverages processing, ICT, and creative industries; chemicals and plastics, motor vehicles, and life sciences -- much stronger on Tourism	42.7	2.0
Budapest	80.94	-6.13	No	Manufacturing (automotive, electronics), tourism, finance, and ICT -- growing tourism sector, less focus on traditional industries	40.9	2.0
Vancouver	83.32	0.56	No	Natural resources (forestry, mining), tourism, film production, technology -- stronger focus on natural resources	39.7	2.0

Results and next steps

Based on the analysis above, a qualitative shortlist of places to learn from has been developed. These locations were selected using the five factor analysis and the intuitive insights of colleagues working on an economic theory of change for the West Midlands:

- **Lille, France**: although the rate of growth in Lille has not exceeded that of France overall, labour productivity in France well exceeds that of the UK, and there are lessons to be learned. While other places, e.g., Lyon, also exhibit some similarities to the WMCA area, Lille is more similar due to its polycentric nature, and a median age that is even younger than Birmingham's. Additionally, Lille is connected to London and Paris via Eurostar; similar to the potential gains of HS2 for Birmingham.

- **Greater Porto, Portugal**: Porto scores similar to WMCA, is polycentric, and has similarities in its industrial clusters around ICT, automotive. It also plays the role of a "second city" to Lisbon, similar to the West Midland's role in relation to London.

- **Saxony, Germany**: of the German regions, Saxony has seen growth exceeding the national average in 2010 to 2019, as the former East Germany states catch-up. The growth rates in other similar places – notably the Ruhrgebiet – has been below the German average in that period; while another potential comparator, the international Meuse-Rhine region, has significantly different governmental set-ups that make it a less appropriate comparator.

- **Lombardy, Italy**: the region exhibits a very high similarity score, is polycentric (Milan-Bergamo-Brescia), and has similarities in its industrial composition. While its regional productivity growth rate, with the exception of Brescia, has lagged behind the average Italian growth rate, there are potentially lessons for both the WMCA area and Lombardy as it seeks to return to growth.

As a set of "international" (rather than just European) comparators, we also took a decision to include some places that are, perhaps, less familiar. The intention is to identify one area in Mexico, and one area in Japan – however, a desktop analysis alone is unable to ascertain which is the best comparator. For that reason, we have included two for each, with a view that a future "phase 2" piece of work would include consideration as to which might be added to the comparator cohort. The areas shortlisted are:

- **Guadalajara, Mexico** OR **Monterrey, Mexico**: both areas are outstanding comparators for the WMCA area, as they score highly in terms of its similarity to the WMCA area, as well as its regional growth rate versus the Mexican average in 2010-2019. Their focus on manufacturing industries – as well as growing tertiary industries in ICT and finance – make them good comparators for the WMCA area too. Furthermore, both city-regions are polycentric (indeed, Guadalajara is made up of two Birmingham-sized cities, and three cities of 500k), and have a relatively young population. Of note – Monterrey is the chosen site for a Tesla Gigafactory – perhaps playing a similar role to Coventry's proposed 'Greenpower' Giga Park – although Elon Musk has currently paused this investment as it assesses the impact of President Donald Trump's tariffs on electric vehicles manufactured outside of the United States.

- **Sapporo, Japan** OR **Okayama, Japan**: both areas are polycentric regions that play an important role in their regional economy. While Osaka may be the more 'obvious' (and also polycentric) 'second city' comparator – and indeed, like Birmingham, it was *the* industrial centre in the 19th century and early 20th century, it does not feature in our analysis because its 'similarity' score in our quantitative analysis suggests that it is less similar than Sapporo or Okayama; and importantly, its growth rate between

2010-2019 has lagged the Japanese average. There are reasons to include both Sapporo and Okayama – Okayama perhaps is more similar because it is on the largest of the four main islands of Japan – Honshū island – although Sapporo has perhaps more similar industries to the WMCA area.

Contact information

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Appendicies

Appendix 1: Location maps of comparator city-regions

The following maps illustrate the comparator city-regions and their main public transport routes to nearby cities and places. The inset image provides a close-up view of the city-region itself.

West Midlands, United Kingdom
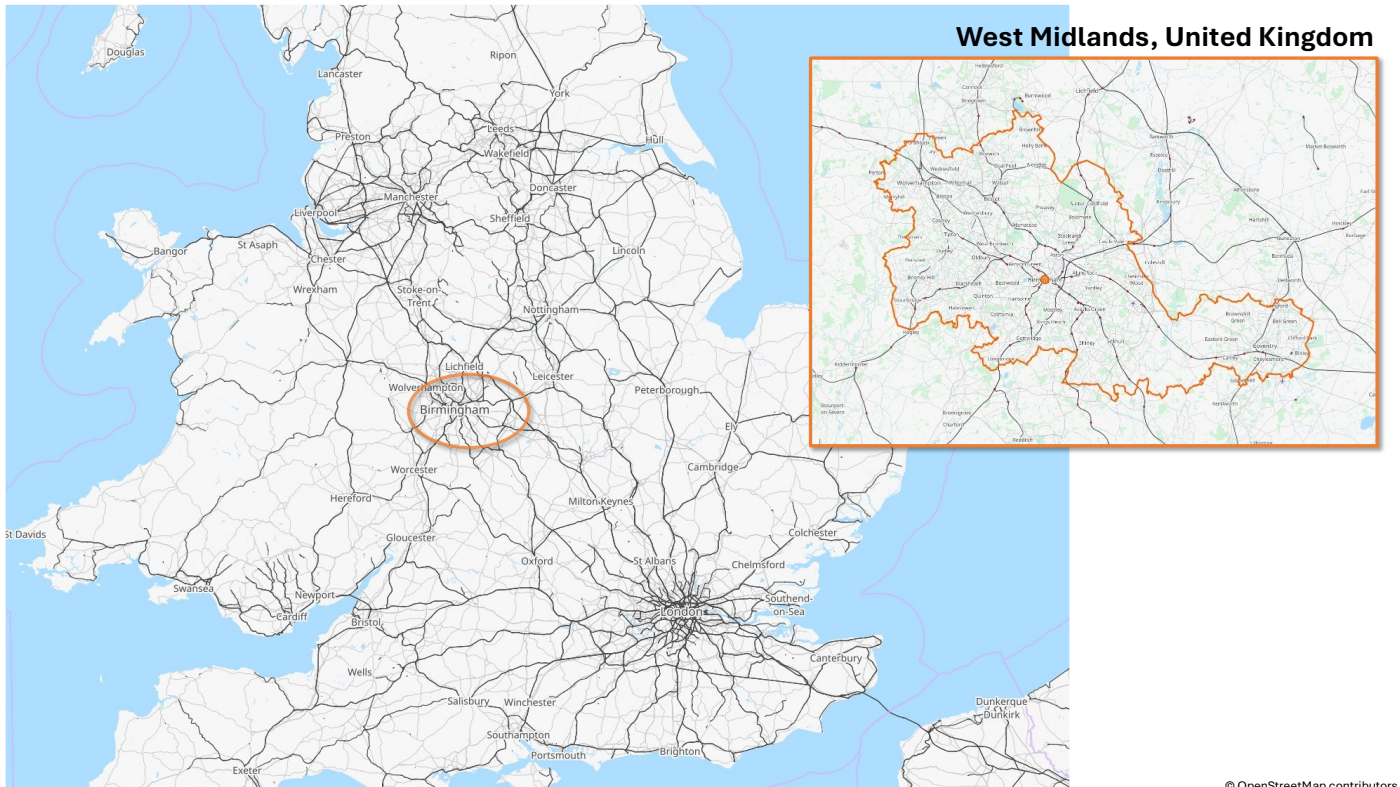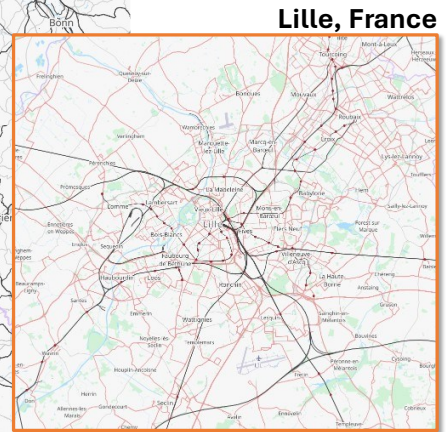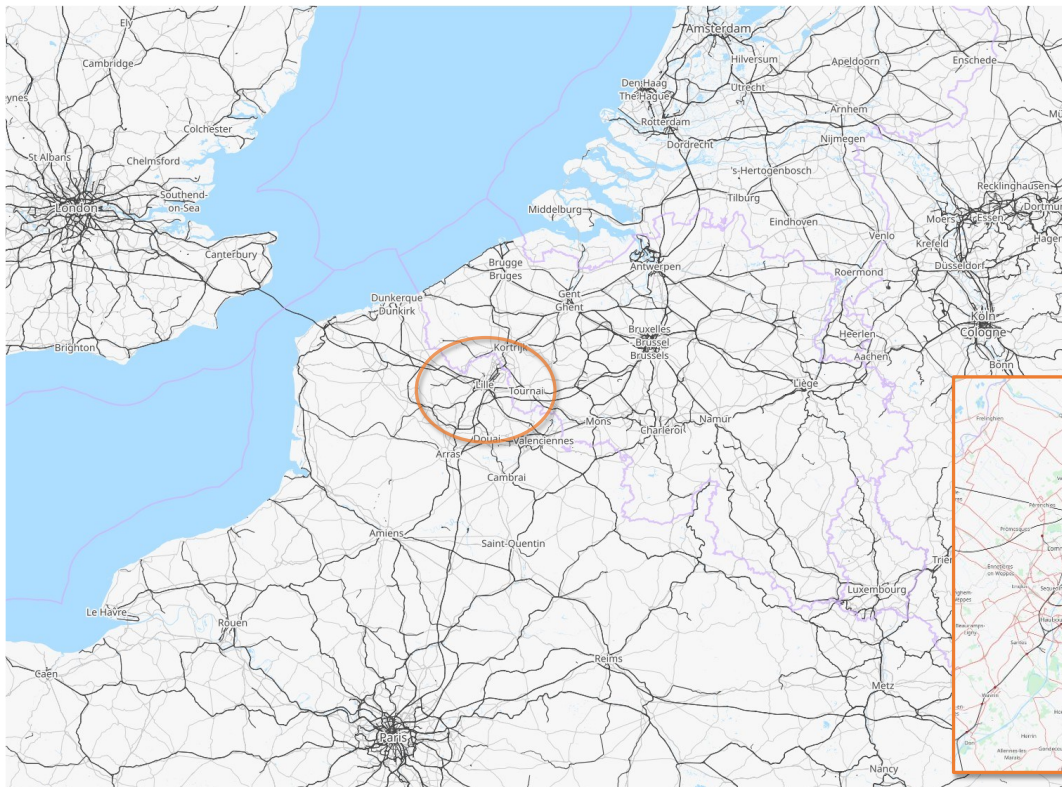
Lille, France

Lille, France

© OpenStreetMap contributors

Greater Porto, Portugal
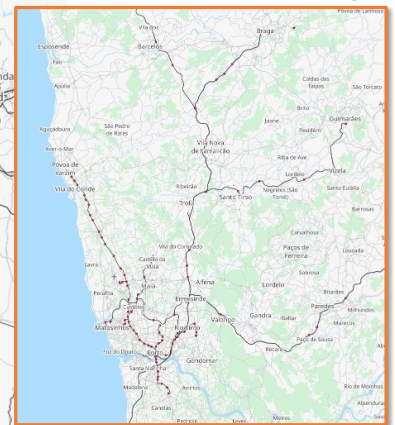
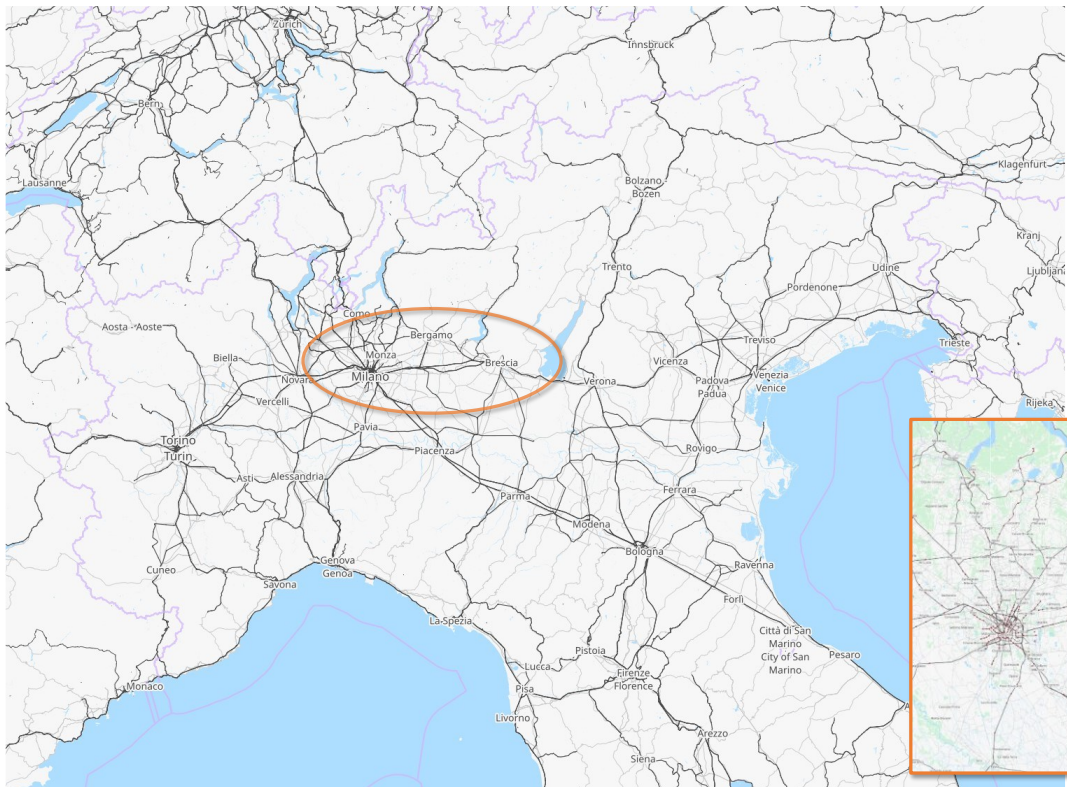**Greater Porto, Portugal**

© OpenStreetMap contributors

Saxony, Germany
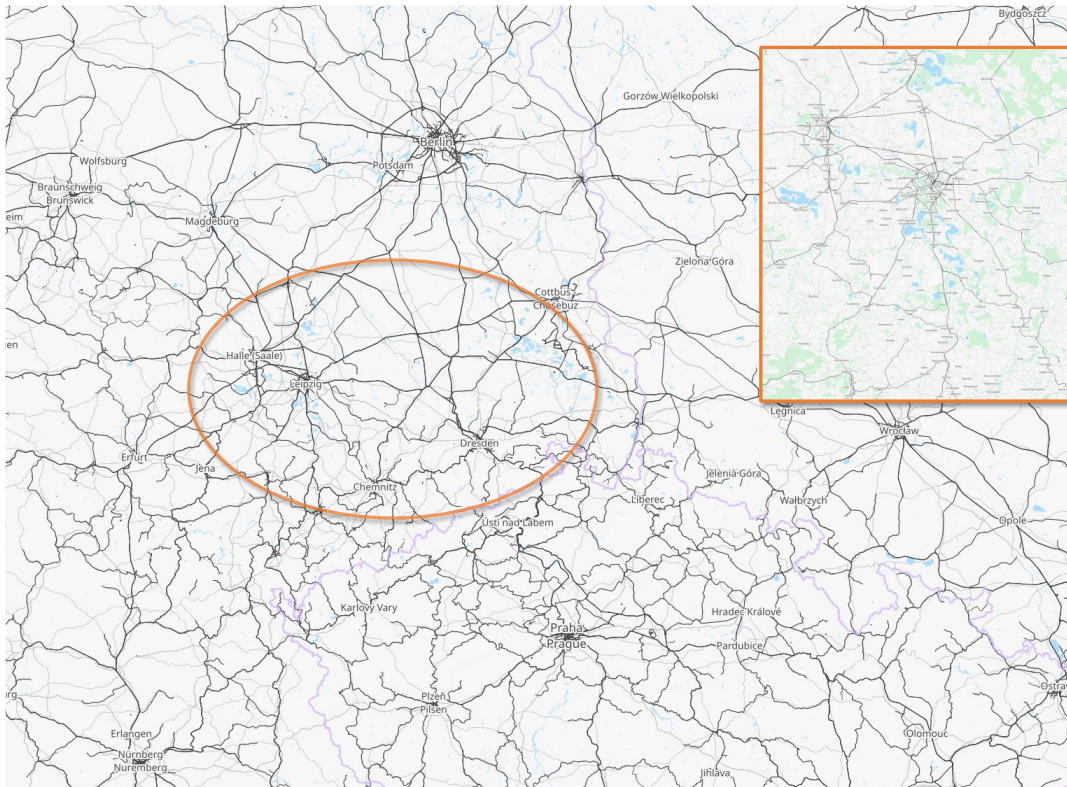
Saxony, Germany
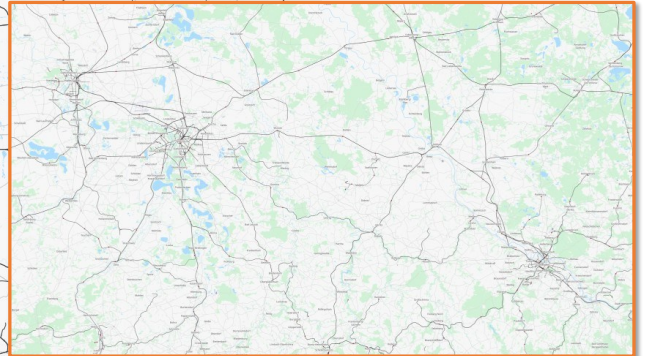
© OpenStreetMap contributors

Lombardy, Italy

Lombardy, Italy
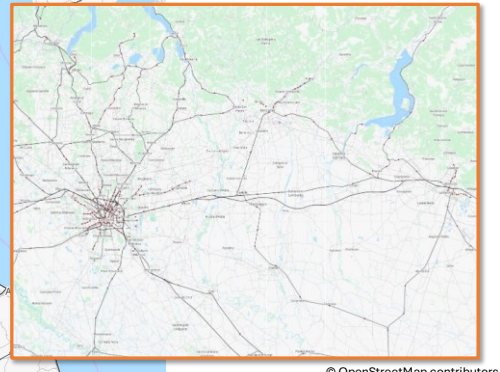
© OpenStreetMap contributors

Guadalajara, Mexico

Guadalajara, Mexico
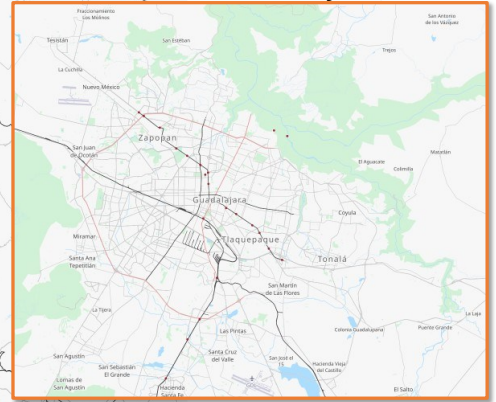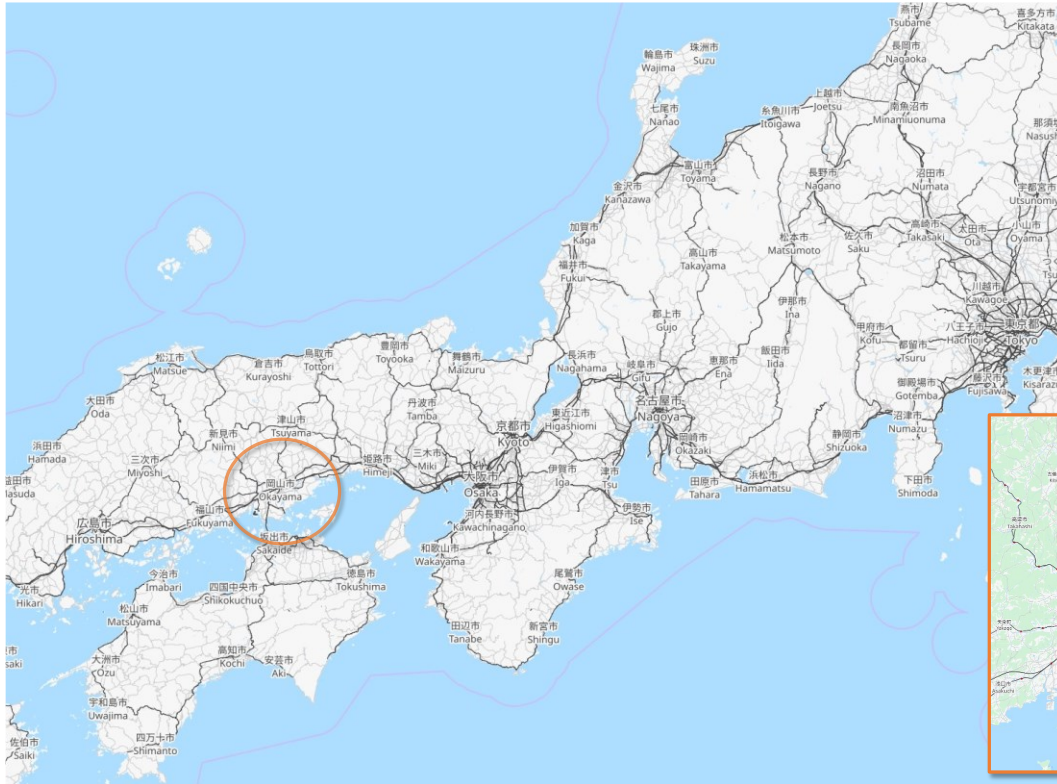
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Monterrey, Mexico
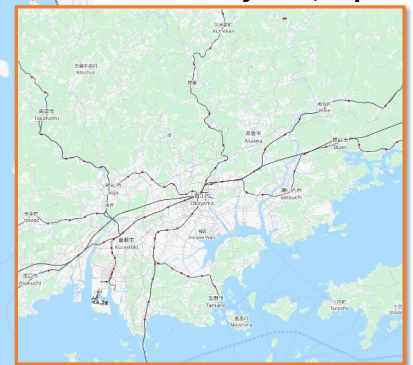

Monterrey, Mexico
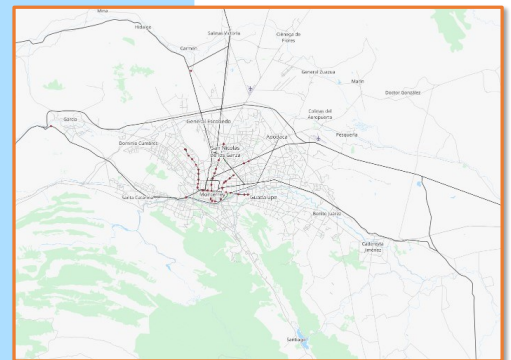
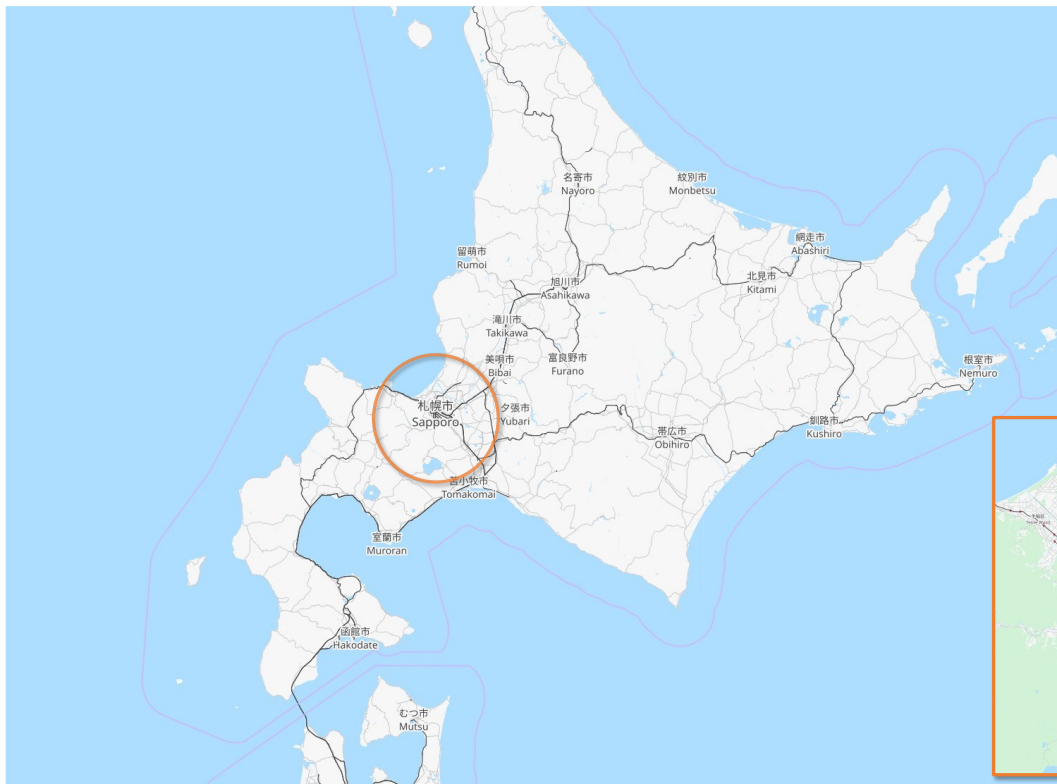© OpenStreetMap contributors

Okayama, Japan

Okayama, Japan

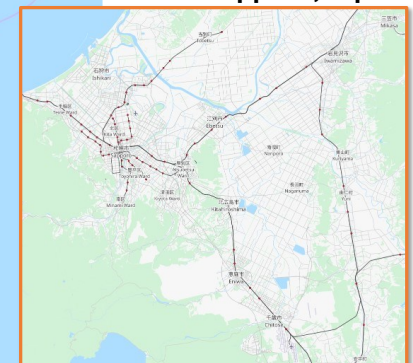© OpenStreetMap contributors

Sapporo, Japan

Sapporo, Japan

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Appendix 2: Flash cards of the longlist of comparator city-regions

West Midlands
United Kingdom

Population
Main city 1,142,494
Metro area 2,919,654
Country 67,596,281

Land
Land area 2,965 km²
Density 1,452 km²

Employment
Employment rate 69.75%
Unemployment rate 4.54%

Labour productivity
Region $67,532/worker
National $78,438/worker

Connectivity
Distance from capital 190 km
Road travel time 02:45 hours
Rail/public transport travel time 01:30 hours

Inclusive Growth
Climate — 10.30 µg/m³ exposure to PM2.5 air pollution
Inclusive economy — $21,491 household disposable income per capita
Power and participation — 64.66% voter turnout
93.70% have friends/relatives to rely on
Affordable and safe places — 1.5 homicides per 100,000 people
2.1 rooms per person
Connected communities — 98.0% with broadband infrastructure
-18.50 download speed vs OECD average
Education and learning — 78.10% labour force with secondary education
Health and wellbeing — 80.8 years life expectancy at birth
7.2/10 average life satisfaction score

Guadalajara
Mexico

Population
Main city 1,385,629
Metro area 5,235,846
Country 129,875,529

Land
Land area 3,423 km²
Density 1,552 km²

Employment
Employment rate 59.80%
Unemployment rate 5.10%

Labour productivity
Region $44,885/worker
National $43,441/worker

Connectivity
Distance from capital 551 km
Road travel time 07:00 hours
Rail/public transport travel time 08:40 hours

Inclusive Growth
Climate — 12.90 µg/m³ exposure to PM2.5 air pollution
Inclusive economy — $4,275 household disposable income per capita
Power and participation — 48.30% voter turnout
80.50% have friends/relatives to rely on
Affordable and safe places — 25.9 homicides per 100,000 people
1.1 rooms per person
Connected communities — 82.2% with broadband infrastructure
-63.65 download speed vs OECD average
Education and learning — 43.56% labour force with secondary education
Health and wellbeing — 75.6 years life expectancy at birth
6.4/10 average life satisfaction score

Lille
France

Population
Main city 236,234
Metro area 1,510,079
Country 66,609,007

Land
Land area 1,669 km²
Density 905 km²

Employment
Employment rate 55.20%
Unemployment rate 10.60%

Labour productivity
Region $92,961/worker
National $102,309/worker

Connectivity
Distance from capital 220 km
Road travel time 02:30 hours
Rail/public transport travel time 01:00 hours

Inclusive Growth
Climate — 10.60 µg/m³ exposure to PM2.5 air pollution
Inclusive economy — $20,678 household disposable income per capita
Power and participation — 78.23% voter turnout
93.80% have friends/relatives to rely on
Affordable and safe places — 1.3 homicides per 100,000 people
1.9 rooms per person
Connected communities — 87.0% with broadband infrastructure
59.26 download speed vs OECD average
Education and learning — 79.30% labour force with secondary education
Health and wellbeing — 80.4 years life expectancy at birth
6.5/10 average life satisfaction score

Monterrey
Mexico

Population
Main city 1,142,994
Metro area 5,225,345
Country 129,875,529

Land
Land area 7,255 km²
Density 720 km²

Employment
Employment rate 57.90%
Unemployment rate 5.50%

Labour productivity
Region $73,843/worker
National $43,441/worker

Connectivity
Distance from capital 910 km
Road travel time 10:00 hours
Rail/public transport travel time 13:00 hours

Inclusive Growth
Climate — 14.10 µg/m³ exposure to PM2.5 air pollution
Inclusive economy — $5,523 household disposable income per capita
Power and participation — 51.18% voter turnout
81.80% have friends/relatives to rely on
Affordable and safe places — 15.9 homicides per 100,000 people
1.2 rooms per person
Connected communities — 84.2% with broadband infrastructure
-54.76 download speed vs OECD average
Education and learning — 44.11% labour force with secondary education
Health and wellbeing — 76.0 years life expectancy at birth
6.7/10 average life satisfaction score

Porto, Braga, Guimares
Portugal

Population
Main city
Metro area
Country

Land
Land area 1,447 km²
Density 1,056 km²

Employment
Employment rate 68.20%
Unemployment rate 7.00%

Labour productivity
Region $61,349/worker
National $69,171/worker

Connectivity
Distance from capital 342 km
Road travel time 03:15 hours
Rail/public transport travel time 03:30 hours

Inclusive Growth
Climate — 8.30 µg/m³ exposure to PM2.5 air pollution
Inclusive economy — $15,865 household disposable income per capita
Power and participation — 56.50% voter turnout
88.30% have friends/relatives to rely on
Affordable and safe places — 0.6 homicides per 100,000 people
1.6 rooms per person
Connected communities — 81.4% with broadband infrastructure
15.66 download speed vs OECD average
Education and learning — 54.10% labour force with secondary education
Health and wellbeing — 81.3 years life expectancy at birth
5.9/10 average life satisfaction score

Sapporo
Japan

Population
Main city 1,959,750
Metro area 2,184,840
Country 126,266,568

Land
Land area 2,655 km²
Density 823 km²

Employment
Employment rate 72.10%
Unemployment rate 3.80%

Labour productivity
Region $99,294/worker
National $107,248/worker

Connectivity
Distance from capital 1160 km
Road travel time 16:00 hours
Rail/public transport travel time 09:00 hours

Inclusive Growth
Climate — 11.10 µg/m³ exposure to PM2.5 air pollution
Inclusive economy — $21,489 household disposable income per capita
Power and participation — 58.80% voter turnout
83.20% have friends/relatives to rely on
Affordable and safe places — 0.5 homicides per 100,000 people
1.9 rooms per person
Connected communities — 57.1% with broadband infrastructure
5.42 download speed vs OECD average
Education and learning — N/A% labour force with secondary education
Health and wellbeing — 83.7 years life expectancy at birth
5.9/10 average life satisfaction score

Tijuana
Mexico

Population
Main city 1,922,523
Metro area 3,494,200
Country 129,875,529

Land
Land area 1,239 km²
Density 1,551 km²

Employment
Employment rate 56.70%
Unemployment rate 2.80%

Labour productivity
Region $51,773/worker
National $43,441/worker

Connectivity
Distance from capital 2750 km
Road travel time 30:00 hours
Rail/public transport travel time 1 day 16 hours

Inclusive Growth
Climate — 16.40 µg/m³ exposure to PM2.5 air pollution
Inclusive economy — $5,744 household disposable income per capita
Power and participation — 38.47% voter turnout
86.60% have friends/relatives to rely on
Affordable and safe places — 77.6 homicides per 100,000 people
1.1 rooms per person
Connected communities — 86.8% with broadband infrastructure
-37.85 download speed vs OECD average
Education and learning — 44.32% labour force with secondary education
Health and wellbeing — 76.1 years life expectancy at birth
7.0/10 average life satisfaction score

Brescia
Italy

Population
Main city 672,822
Metro area 1,265,964
Country 59,146,260

Land
Land area 603 km²
Density 792 km²

Employment
Employment rate 63.90%
Unemployment rate 4.50%

Labour productivity
Region $91,891/worker
National $85,310/worker

Connectivity
Distance from capital 556 km
Road travel time 05:40 hours
Rail/public transport travel time 05:54 hours

Inclusive Growth
Climate — 19.70 µg/m³ exposure to PM2.5 air pollution
Inclusive economy — $24,961 household disposable income per capita
Power and participation — 76.84% voter turnout
87.50% have friends/relatives to rely on
Affordable and safe places — 0.4 homicides per 100,000 people
1.3 rooms per person
Connected communities — 91.0% with broadband infrastructure
-21.22 download speed vs OECD average
Education and learning — 64.90% labour force with secondary education
Health and wellbeing — 83.1 years life expectancy at birth
6.7/10 average life satisfaction score

Okayama
Japan

Population
Main city 700,940
Metro area 1,510,596
Country 126,266,568

Land
Land area 2,737 km²
Density 552 km²

Employment
Employment rate 74.80%
Unemployment rate 3.10%

Labour productivity
Region $102,775/worker
National $107,248/worker

Connectivity
Distance from capital 656 km
Road travel time 08:30 hours
Rail/public transport travel time 04:27 hours

Inclusive Growth
Climate — 12.10 µg/m³ exposure to PM2.5 air pollution
Inclusive economy — $21,900 household disposable income per capita
Power and participation — 54.49% voter turnout
88.40% have friends/relatives to rely on
Affordable and safe places — 0.7 homicides per 100,000 people
2.0 rooms per person
Connected communities — 63.3% with broadband infrastructure
-11.00 download speed vs OECD average
Education and learning — N/A% labour force with secondary education
Health and wellbeing — 84.2 years life expectancy at birth
5.9/10 average life satisfaction score

Saxony
Germany

Population
Main city 2,266,995
Metro area 16,147,618
Country 84,669,326

Land
Land area 6,052 km²
Density 375 km²

Employment
Employment rate 75.07%
Unemployment rate 7.24%

Labour productivity
Region $77,438/worker
National $89,338/worker

Connectivity
Distance from capital 193 km
Road travel time 02:21 hours
Rail/public transport travel time 01:49 hours

Inclusive Growth
Climate 10.70 µg/m³ exposure to PM2.5 air pollution
Inclusive economy $23,389 household disposable income per capita
Power and participation 76.50% voter turnout
89.10% have friends/relatives to rely on
Affordable and safe places 0.7 homicides per 100,000 people
2.0 rooms per person
Connected communities 89.0% with broadband infrastructure
-35.46 download speed vs OECD average
Education and learning 94.30% labour force with secondary education
Health and wellbeing 80.5 years life expectancy at birth
6.8/10 average life satisfaction score

Brussel/Leuven
Belgium

Population
Main city 196,828
Metro area 2,132,180
Country 11,712,893

Land
Land area 4,818 km²
Density 682 km²

Employment
Employment rate 58.50%
Unemployment rate 9.50%

Labour productivity
Region $134,041/worker
National $113,975/worker

Connectivity
Distance from capital N/A
Road travel time N/A
Rail/public transport travel time N/A

Inclusive Growth
Climate 12.90 µg/m³ exposure to PM2.5 air pollution
Inclusive economy $21,774 household disposable income per capita
Power and participation 83.46% voter turnout
84.60% have friends/relatives to rely on
Affordable and safe places 2.0 homicides per 100,000 people
1.5 rooms per person
Connected communities 93.0% with broadband infrastructure
-19.72 download speed vs OECD average
Education and learning 75.90% labour force with secondary education
Health and wellbeing 79.4 years life expectancy at birth
6.6/10 average life satisfaction score

Geneve, Annemasse, Annecy, Cluses
France/Switzerland

Population
Main city Not applicable
Metro area 1,324,071
Country Not applicable

Land
Land area 3,502 km²
Density 378 km²

Employment
Employment rate 61.67%
Unemployment rate 7.90%

Labour productivity
Region $102,569/worker
National $104,636/worker

Connectivity
Distance from capital N/A
Road travel time 05:30 hours
Rail/public transport travel time 03:45 hours

Inclusive Growth
Climate 9.50 µg/m³ exposure to PM2.5 air pollution
Inclusive economy $23,398 household disposable income per capita
Power and participation 79.33% voter turnout
95.20% have friends/relatives to rely on
Affordable and safe places 0.9 homicides per 100,000 people
1.8 rooms per person
Connected communities 88.0% with broadband infrastructure
23.21 download speed vs OECD average
Education and learning 85.00% labour force with secondary education
Health and wellbeing 82.7 years life expectancy at birth
6.8/10 average life satisfaction score

Lombardy
Italy

Population
Main city 1,417,597 (Milan)
Metro area 5,775,250
Country 59,146,260

Land
Land area 3,904 km²
Density 1,479 km²

Employment
Employment rate 66.32%
Unemployment rate 5.55%

Labour productivity
Region $104,768/worker
National $85,310/worker

Connectivity
Distance from capital 590 km
Road travel time 06:15 hours
Rail/public transport travel time 03:30 hours

Inclusive Growth
Climate 19.70 µg/m³ exposure to PM2.5 air pollution
Inclusive economy $24,961 household disposable income per capita
Power and participation 76.84% voter turnout
87.50% have friends/relatives to rely on
Affordable and safe places 0.4 homicides per 100,000 people
1.3 rooms per person
Connected communities 91.0% with broadband infrastructure
-21.22 download speed vs OECD average
Education and learning 64.90% labour force with secondary education
Health and wellbeing 83.1 years life expectancy at birth
6.7/10 average life satisfaction score

Dalseong
Korea

Population
Main city 267,473
Metro area 2,410,206
Country 51,667,029

Land
Land area 882 km²
Density 2,732 km²

Employment
Employment rate 61.80%
Unemployment rate 3.90%

Labour productivity
Region $53,002/worker
National $79,355/worker

Connectivity
Distance from capital 300 km
Road travel time 03:30 hours
Rail/public transport travel time 02:00 hours

Inclusive Growth
Climate 25.40 µg/m³ exposure to PM2.5 air pollution
Inclusive economy $19,547 household disposable income per capita
Power and participation 66.70% voter turnout
76.50% have friends/relatives to rely on
Affordable and safe places 1.0 homicides per 100,000 people
1.7 rooms per person
Connected communities 99.9% with broadband infrastructure
22.52 download speed vs OECD average
Education and learning 91.77% labour force with secondary education
Health and wellbeing 82.7 years life expectancy at birth
5.7/10 average life satisfaction score

Greater Brisbane
Australia

Population
Main city 1,270,000
Metro area 2,706,966
Country 27,204,809

Land
Land area 15,887 km²
Density 161 km²

Employment
Employment rate 71.40%
Unemployment rate 7.30%

Labour productivity
Region $87,397/worker
National $97,489/worker

Connectivity
Distance from capital 1200 km
Road travel time 21:00 hours
Rail/public transport travel time 21:00 hours

Inclusive Growth
Climate 6.40 µg/m³ exposure to PM2.5 air pollution
Inclusive economy $28,195 household disposable income per capita
Power and participation 91.22% voter turnout
90.70% have friends/relatives to rely on
Affordable and safe places 0.9 homicides per 100,000 people
2.3 rooms per person
Connected communities 86.3% with broadband infrastructure
-47.21 download speed vs OECD average
Education and learning 83.90% labour force with secondary education
Health and wellbeing 82.5 years life expectancy at birth
7.1/10 average life satisfaction score

Montreal
Canada

Population
Main city 1,895,211
Metro area 4,615,154
Country 40,097,761

Land
Land area 12,140 km²
Density 382 km²

Employment
Employment rate 68.00%
Unemployment rate 8.80%

Labour productivity
Region $82,147/worker
National $91,668/worker

Connectivity
Distance from capital 200 km
Road travel time 02:15 hours
Rail/public transport travel time 02:00 hours

Inclusive Growth
Climate 7.70 µg/m³ exposure to PM2.5 air pollution
Inclusive economy $23,311 household disposable income per capita
Power and participation 76.00% voter turnout
93.10% have friends/relatives to rely on
Affordable and safe places 1.0 homicides per 100,000 people
2.5 rooms per person
Connected communities 88.1% with broadband infrastructure
9.73 download speed vs OECD average
Education and learning 90.00% labour force with secondary education
Health and wellbeing 82.6 years life expectancy at birth
7.3/10 average life satisfaction score

Sendai
Japan

Population
Main city 1,098,335
Metro area 1,522,796
Country 126,266,568

Land
Land area 1,908 km²
Density 798 km²

Employment
Employment rate 70.60%
Unemployment rate 3.50%

Labour productivity
Region $105,446/worker
National $107,248/worker

Connectivity
Distance from capital 370 km
Road travel time 16:57 hours
Rail/public transport travel time 12:18 hours

Inclusive Growth
Climate 10.50 µg/m³ exposure to PM2.5 air pollution
Inclusive economy $20,647 household disposable income per capita
Power and participation 58.29% voter turnout
90.10% have friends/relatives to rely on
Affordable and safe places 0.5 homicides per 100,000 people
2.0 rooms per person
Connected communities 63.6% with broadband infrastructure
-11.86 download speed vs OECD average
Education and learning N/A labour force with secondary education
Health and wellbeing 83.5 years life expectancy at birth
5.8/10 average life satisfaction score

Ruhrgebiet
Germany

Population
Main city 5,083,219
Metro area 10,680,783
Country 83,199,069

Land
Land area 4,399 km²
Density 1,156 km²

Employment
Employment rate 68.70%
Unemployment rate 11.00%

Labour productivity
Region $81,513/worker
National $89,338/worker

Connectivity
Distance from capital 500 km
Road travel time 05:00 hours
Rail/public transport travel time 04:00 hours

Inclusive Growth
Climate 11.30 µg/m³ exposure to PM2.5 air pollution
Inclusive economy $25,498 household disposable income per capita
Power and participation 76.40% voter turnout
88.30% have friends/relatives to rely on
Affordable and safe places 0.6 homicides per 100,000 people
1.8 rooms per person
Connected communities 91.0% with broadband infrastructure
-15.84 download speed vs OECD average
Education and learning 80.90% labour force with secondary education
Health and wellbeing 80.8 years life expectancy at birth
7.2/10 average life satisfaction score

Kraków
Poland

Population
Main city 804,237
Metro area 1,423,965
Country 137,636,508

Land
Land area 3,754 km²
Density 379 km²

Employment
Employment rate 62.50%
Unemployment rate 2.70%

Labour productivity
Region $72,820/worker
National $72,931/worker

Connectivity
Distance from capital 290 km
Road travel time 03:30 hours
Rail/public transport travel time 02:30 hours

Inclusive Growth
Climate 24.10 µg/m³ exposure to PM2.5 air pollution
Inclusive economy $16,778 household disposable income per capita
Power and participation 63.78% voter turnout
90.60% have friends/relatives to rely on
Affordable and safe places 1.0 homicides per 100,000 people
1.1 rooms per person
Connected communities 90.2% with broadband infrastructure
6.68 download speed vs OECD average
Education and learning 93.20% labour force with secondary education
Health and wellbeing 77.6 years life expectancy at birth
6.1/10 average life satisfaction score

Lyon
France

Population
Main city 522,250
Metro area 2,280,845
Country 65,003,384

Land
Land area 4,628 km²
Density 493 km²

Employment
Employment rate 63.80%
Unemployment rate 6.90%

Labour productivity
Region $107,698/worker
National $102,309/worker

Connectivity
Distance from capital 465 km
Road travel time 04:30 hours
Rail/public transport travel time 02:00 hours

Inclusive Growth
Climate 9.50 µg/m³ exposure to PM2.5 air pollution
Inclusive economy $23,398 household disposable income per capita
Power and participation 79.33% voter turnout
95.20% have friends/relatives to rely on
Affordable and safe places 0.9 homicides per 100,000 people
1.8 rooms per person
Connected communities 88.0% with broadband infrastructure
23.21 download speed vs OECD average
Education and learning 85.00% labour force with secondary education
Health and wellbeing 82.7 years life expectancy at birth
6.8/10 average life satisfaction score

Barcelona
Spain

Population
Main city 1,701,891
Metro area 5,111,749
Country 47,898,352

Land
Land area 2,617 km²
Density 1,953 km²

Employment
Employment rate 63.60%
Unemployment rate 12.70%

Labour productivity
Region $86,453/worker
National $81,674/worker

Connectivity
Distance from capital 620 km
Rail/public transport travel time 02:30 hours

Inclusive Growth
Climate 11.60 µg/m³ exposure to PM2.5 air pollution
Inclusive economy $22,801 household disposable income per capita
Power and participation 72.17% voter turnout
93.60% have friends/relatives to rely on
Affordable and safe places 0.7 homicides per 100,000 people
1.9 rooms per person
Connected communities 96.9% with broadband infrastructure
45.00 download speed vs OECD average
Education and learning 65.70% labour force with secondary education
Health and wellbeing 82.3 years life expectancy at birth
6.6/10 average life satisfaction score

Budapest
Hungary

Population
Main city 1,142,494
Metro area 2,919,654
Country 67,596,281

Land
Land area 6,395 km2
Density 471 km2

Employment
Employment rate 74.40%
Unemployment rate 3.20%

Labour productivity
Region $67,071/worker
National $63,570/worker

Connectivity
Distance from capital N/A
Road travel time N/A
Rail/public transport travel time N/A

Inclusive Growth
Climate 15.70 µg/m3 exposure to PM2.5 air pollution
Inclusive economy $23,190 household disposable income per capita
Power and participation 75.42% voter turnout
90.60% have friends/relatives to rely on
Affordable and safe places 0.7 homicides per 100,000 people
1.6 rooms per person
Connected communities 96.0% with broadband infrastructure
43.48 download speed vs OECD average
Education and learning 95.40% labour force with secondary education
Health and wellbeing 77.9 years life expectancy at birth
6.1/10 average life satisfaction score

Vancouver
Canada

Population
Main city 1,922,523
Metro area 3,494,200
Country 129,875,529

Land
Land area 2,986 km²
Density 914 km²

Employment
Employment rate 66.20%
Unemployment rate 9.00%

Labour productivity
Region $92,006/worker
National $91,668/worker

Connectivity
Distance from capital 4400 km
Road travel time 45:00 hours
Rail/public transport travel time 3 days 2 hours

Inclusive Growth
Climate 5.70 µg/m³ exposure to PM2.5 air pollution
Inclusive economy $28,475 household disposable income per capita
Power and participation 76.00% voter turnout
93.90% have friends/relatives to rely on
Affordable and safe places 2.4 homicides per 100,000 people
2.4 rooms per person
Connected communities 94.5% with broadband infrastructure
44.39 download speed vs OECD average
Education and learning 94.00% labour force with secondary education
Health and wellbeing 82.4 years life expectancy at birth
7.1/10 average life satisfaction score

Göteborg
Sweden

Population
Main city 604,616
Metro area 1,051,345
Country 10,636,303

Land
Land area 4,242 km²
Density 248 km²

Employment
Employment rate 72.40%
Unemployment rate 7.90%

Labour productivity
Region $97,262/worker
National $102,485/worker

Connectivity
Distance from capital 470 km
Road travel time 05:00 hours
Rail/public transport travel time 03:00 hours

Inclusive Growth
Climate 6.00 µg/m³ exposure to PM2.5 air pollution
Inclusive economy $22,467 household disposable income per capita
Power and participation 87.24% voter turnout
91.70% have friends/relatives to rely on
Affordable and safe places 0.8 homicides per 100,000 people
1.8 rooms per person
Connected communities 93.0% with broadband infrastructure
14.28 download speed vs OECD average
Education and learning 87.80% labour force with secondary education
Health and wellbeing 83.0 years life expectancy at birth
7.4/10 average life satisfaction score

København
Denmark

Population
Main city 659,350
Metro area 2,092,889
Country 5,932,654

Land
Land area 3,619 km²
Density 578 km²

Employment
Employment rate 74.00%
Unemployment rate 5.60%

Labour productivity
Region $111,973/worker
National $101,863/worker

Connectivity
Distance from capital N/A
Road travel time N/A
Rail/public transport travel time N/A

Inclusive Growth
Climate 9.20 µg/m³ exposure to PM2.5 air pollution
Inclusive economy $21,600 household disposable income per capita
Power and participation 85.25% voter turnout
94.70% have friends/relatives to rely on
Affordable and safe places 0.8 homicides per 100,000 people
1.7 rooms per person
Connected communities 94.0% with broadband infrastructure
52.06 download speed vs OECD average
Education and learning 86.50% labour force with secondary education
Health and wellbeing 81.5 years life expectancy at birth
7.6/10 average life satisfaction score

Meuse-Rhine
Netherlands/Germany

Population
Main city Not applicable
Metro area 842,434
Country Not applicable

Land
Land area 1,030 km²
Density 818 km²

Employment
Employment rate 73.55%
Unemployment rate 5.35%

Labour productivity
Region $90,063/worker
National $94,591/worker

Connectivity
Distance from capital 130 km
Road travel time 01:50 hours
Rail/public transport travel time 01:47 hours

Inclusive Growth
Climate 10.30 µg/m³ exposure to PM2.5 air pollution
Inclusive economy $21,586 household disposable income per capita
Power and participation 86.63% voter turnout
91.60% have friends/relatives to rely on
Affordable and safe places 1.8 homicides per 100,000 people
2.3 rooms per person
Connected communities 89.0% with broadband infrastructure
-30.58 download speed vs OECD average
Education and learning 78.80% labour force with secondary education
Health and wellbeing 78.9 years life expectancy at birth
6.8/10 average life satisfaction score

West Midlands Combined Authority

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