

# Prosperity, Inclusivity and Sustainability across UK Regions

Written by: Charlotte Hoole and Simon Collinson, City-Region Economic Development Institute (City-REDI), University of Birmingham

- Economic prosperity is highest in London and the South East, however London is amongst the least inclusive regions in the UK. The most inclusive region is the West of England.
- Assessing performance change across regions shows low levels of economic prosperity growth in the North and East of England compared to average-to-good improvements in the South. Also revealed are several high-growth hot-spots, including the West Midlands. On measures of sustainability, London and surrounding areas, the West of England, Manchester and Tees Valley perform well.
- While typically the most prosperous areas are also the most inclusive, there are wide variations over the short-term in the performance of UK regions towards achieving inclusive growth outcomes.
- Some regions achieving high growth on measures of economic prosperity are also managing to achieve greater equality across socio-economic groups and/or increase levels of sustainability.
- For other regions achieving high growth on measures of economic prosperity there appear to be trade-offs involved with no or low improvement in inclusivity and/or sustainability.
- The results indicate different economic growth trajectories across regions, revealing the most *dynamic, emerging, marginalised* and *declining* regions in the UK. These provide insight for targeting support as well as from where lessons can be learnt for regions looking to improve prosperity.

Local Institutions, Productivity, Sustainability and Inclusivity Trade-offs (LIPSIT) is an ESRC (Economic and Social Research Council) funded collaborative project. The aim of the project is to identify institutional and organisational arrangements at the regional level that tend to lead to the 'good' management of policy trade-offs associated with increasing productivity, and to make recommendations based on this.



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#### Introduction

This policy briefing reports on a study to assess economic growth, inclusivity and sustainability across UK regions in terms of both current performance (in 2018) and change in performance (between 2013 and 2018). We developed a regional typology from proxy measures of economic prosperity, inclusivity and sustainability. These key indicators, plus a description of the method we adopted can be found in the Technical Annex.

#### Economic prosperity, inclusivity and sustainability scores across UK regions

Figure 1 summarises the findings of the regional typology analysis that uses composite indicators to assess economic prosperity, inclusivity (economic growth that all of society benefits from) and sustainability (economic growth that does not compromise the environment). Green denotes a relatively strong performance, yellow average and red weak, compared to other regions. We also examined this data across a range of regional governance structures; Combined Authorities (CAs), Local Enterprise Partnerships (LEPs), and City Regions in devolved nations (exc. Northern Ireland). Different policies have been applied to improve growth, inclusivity and sustainability in each of these local governance contexts and this approach allows us to compare and contrast the effectiveness of different regional institutional forms.

|   |          | 2                       | 2018 LEVELS            |             |                | CHANGE (2013-18)       |             |                |
|---|----------|-------------------------|------------------------|-------------|----------------|------------------------|-------------|----------------|
|   |          | Governance<br>Structure | ECONOMIC<br>PROSPERITY | INCLUSIVITY | SUSTAINABILITY | ECONOMIC<br>PROSPERITY | INCLUSIVITY | SUSTAINABILITY |
| COMBINED AUTHORITIES (10)                 |          |                         |                        |             |                |                        |             |                |
| Cambridgeshire and Peterborough CA        | CP CA    | A                       | 4.01                   | 4.05        | 3.10           | 3.44                   | 2.42        | 1.40           |
| Greater Manchester CA                     | GM CA    | A                       | 2.80                   | 3.34        | 4.81           | 3.06                   | 3.04        | 3.51           |
| Liverpool City Region CA                  | LCR CA   | A                       | 2.72                   | 3.19        | 4.29           | 3.83                   | 2.96        | 2.31           |
| North East CA                             | NE CA    | В                       | 2.39                   | 3.35        | 3.63           | 3.78                   | 3.58        | 2.86           |
| North of Tyne CA                          | NT CA    | A                       | 2.64                   | 3.37        | 3.71           | 3.39                   | 3.23        | 2.35           |
| Sheffield City Region CA                  | SCR CA   | A                       | 2.57                   | 3.34        | 3.97           | 3.30                   | 3.23        | 3.02           |
| Tees Valley CA                            | TV CA    | A                       | 1.91                   | 3.21        | 2.55           | 1.96                   | 2.87        | 3.44           |
| West Midlands CA                          | WMCA     | A                       | 2.38                   | 2.89        | 4.09           | 4.59                   | 2.75        | 2.66           |
| West of England CA                        | WECA     | А                       | 4.45                   | 4.37        | 4.25           | 4.00                   | 3.02        | 3.48           |
| West Yorkshire CA                         | WY CA    | В                       | 2.53                   | 3.36        | 3.96           | 2.99                   | 2.95        | 2.26           |
| LEPS (38)                                 |          |                         |                        |             |                |                        |             |                |
| Black Country LEP                         | BC LEP   | D                       | 1.50                   | 3.06        | 4.26           | 3.43                   | 2.75        | 2.49           |
| Buckinghamshire and Thames Valley LEP     | BTV LEP  | G                       | 4.70                   | 3.94        | 2.97           | 2.98                   | 3.24        | 2.45           |
| Cheshire & Warrington LEP                 | CW LEP   | E                       | 3.95                   | 3.77        | 2.20           | 4.13                   | 3.32        | 2.38           |
| Coast to Capital LEP                      | CC LEP   | G                       | 4.01                   | 3.56        | 4.31           | 2.68                   | 2.15        | 2.98           |
| Cornwall and Isles of Scilly LEP          | CIS LEP  | F                       | 1.65                   | 2.97        | 3.23           | 2.80                   | 2.80        | 2.42           |
| Coventry and Warwickshire LEP             | CW LEP   | D                       | 3.77                   | 3.56        | 2.68           | 3.91                   | 2.69        | 2.87           |
| Cumbria LEP                               | C LEP    | E                       | 2.92                   | 3.46        | 2.19           | 2.54                   | 3.24        | 1.17           |
| Derby, Derbyshire, Nottingham, Notts. LEP | DDNN LEP | E                       | 2.62                   | 3.63        | 3.51           | 3.43                   | 2.93        | 2.66           |
| Dorset LEP                                | D LEP    | F                       | 3.20                   | 3.88        | 4.17           | 3.08                   | 2.76        | 2.81           |
| Enterprise M3 LEP                         | EM3 LEP  | G                       | 5.01                   | 3.83        | 3.23           | 3.48                   | 2.75        | 3.24           |
| Gloucestershire (Gfirst) LEP              | G LEP    | F                       | 3.59                   | 4.19        | 3.73           | 2.27                   | 3.00        | 3.16           |
| Greater Birmingham and Solihull LEP       | GBS LEP  | D                       | 2.90                   | 3.22        | 3.75           | 4.56                   | 3.17        | 2.47           |

Figure 1 – Economic prosperity, inclusivity and sustainability across UK regions

A = CA (elected Mayor); B = CA (no elected Mayor); C = LEPs with CA where boundaries align; D = LEPs with CA where boundaries do not align; E = LEPs with urban centre(s) and rural areas (no CA); F = LEPs with mainly rural areas; G = LEPs in/close to London; H = City-region devolution deal area in Wales or Scotland.



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|   |           | 2018 LEVELS          |                        |              | CHANGE (2013-18) |                        |              |                |
|---|-----------|----------------------|------------------------|--------------|------------------|------------------------|--------------|----------------|
|   |           | Governance Structure | ECONOMIC<br>PROSPERITY | INCEUSIVITY  | SUSTAINABILITY   | ECONOMIC<br>PROSPERITY | INCEUSIVITY  | SUSTAINABILITY |
| Greater Cambridge and Peterborough LEP    | GCP LEP   | D                    | 3.52                   | 4.04         | 2.95             | 3.08                   | 2.52         | 1.61           |
| Greater Lincolnshire LEP                  | GL LEP    | E                    | 1.72                   | 3.51         | 2.51             | 2.39                   | 2.65         | 2.00           |
| Greater Manchester LEP                    | GM LEP    | С                    | 2.79                   | 3.28         | 4.81             | 3.02                   | 2.95         | 3.51           |
| Heart of the South West LEP               | HSW LEP   | E                    | 2.87                   | 3.83         | 3.56             | 3.34                   | 3.05         | 2.37           |
| Hertfordshire LEP                         | H LEP     | E                    | 3.98                   | 3.92         | 3.80             | 2.87                   | 2.57         | 2.57           |
| Humber LEP                                | Hu LEP    | E                    | 2.12                   | 3.37         | 2.22             | 2.52                   | 2.91         | 2.37           |
| Lancashire LEP                            | LLEP      | E                    | 2.68                   | 3.32         | 3.74             | 4.08                   | 3.26         | 2.37           |
| Leeds City Region LEP                     | L LEP     | D                    | 2.63                   | 3.50         | 3.78             | 2.90                   | 3.12         | 2.26           |
| Leicester and Leicestershire LEP          |           | E                    | 2.67                   | 3.67         | 3.77             | 3.19                   | 2.97         | 2.61           |
| Liverpool City Region LEP                 | LCR LEP   | C                    | 2.70                   | 3.23         | 4.29             | 3.76                   | 3.01         | 2.31           |
| London LEP                                | Lo LEP    | G                    | 5.02                   | 3.25         | 4.53             | 3.03                   | 2.96         | 3.49           |
| New Anglia LEP                            | NA LEP    | E                    | 2.48                   | 3.77         | 3.43             | 2.38                   | 2.63         | 1.78           |
| North East LEP                            | NE LEP    | D                    | 2.51                   | 3.35         | 3.66             | 3.60                   | 3.30         | 2.65           |
| Oxfordshire LEP                           | O LEP     | E                    | 4.90                   | 4.29         | 3.61             | 3.21                   | 3.34         | 2.39           |
| Sheffield City Region LEP                 | SCR LEP   | D                    | 2.49                   | 3.40         | 3.74             | 3.12                   | 3.09         | 2.91           |
| Solent LEP                                | S LEP     | E                    | 3.38                   | 3.78         | 4.33             | 2.95                   | 2.87         | 3.04           |
| South East LEP                            | SE LEP    | E                    | 3.00                   | 3.48         | 3.91             | 3.31                   | 2.46         | 2.54           |
| South East Midlands LEP                   | SEM LEP   | E                    | 3.54                   | 3.85         | 3.35             | 3.46                   | 2.88         | 2.52           |
| Stoke-on-Trent and Staffordshire LEP      | STS LEP   | E                    | 2.69                   | 3.79         | 3.43             | 3.34                   | 2.97         | 2.44           |
| Swindon and Wiltshire LEP                 | SW LEP    | F                    | 3.81                   | 4.29         | 3.12             | 2.86                   | 3.82         | 2.79           |
| Tees Valley LEP                           | TV LEP    | C                    | 1.91                   | 3.20         | 2.55             | 1.93                   | 2.83         | 3.44           |
| Thames Valley Berkshire LEP               | TVB LEP   | G                    | 5.33                   | 3.98         | 3.44             | 2.82                   | 2.74         | 2.88           |
| The Marches LEP                           | TM LEP    | F                    | 2.76                   | 3.81         | 3.23             | 3.51                   | 3.27         | 2.32           |
| West of England LEP                       | WELEP     | D                    | 4.29                   | 4.24         | 4.06             | 3.80                   | 3.14         | 3.21           |
| Worcestershire LEP                        | WLEP      | F                    | 3.25                   | 3.95         | 3.19             | 2.94                   | 3.93         | 2.54           |
| York, North Yorkshire and East Riding LEP | YNYER LEP | D                    | 2.99                   | 3.92         | 2.79             | 2.42                   | 3.52         | 2.14           |
| CITY-REGIONS IN DEVOLVED NATION (16)      |           | _                    |                        |              |                  |                        |              |                |
| .,  |           |                      | 0.77                   | 0.47         | 0.04             | 0.47                   | 0.00         | 0.00           |
| Cardiff Capital Region                    | CCR       | н                    | 2.77                   | 3.47         | 3.64             | 3.47                   | 3.20         | 2.88           |
| Mid Wales Growth Deal Region              | MWGDR     | н                    | 1.96                   | 3.34         | 2.99             | 3.05                   | 3.81         | 2.14           |
| North Wales Growth Deal Region            | NWGDR     | н                    | 2.43                   | 3.40         | 2.82             | 2.79                   | 2.72         | 2.28<br>2.79   |
| Swansea Bay City Region                   | SBCR      | н                    | 2.16<br>3.95           | 3.39<br>3.73 | 2.06             | 3.17<br>1.98           | 3.21<br>3.44 | 2.79           |
| Aberdeen and Aberdeenshire                | AA        | H<br>H               |                        |              |                  |                        |              |                |
| Argyll and Bute                           | AB        | н                    | 2.74<br>2.03           | 2.92<br>2.82 | 2.65<br>3.87     | 3.29<br>4.43           | 2.95<br>3.26 | 3.05<br>2.19   |
| Ayrshire<br>Borderlands                   | A         | н<br>Н               |                        | 2.82         |                  |                        |              |                |
|   | В         | H<br>H               | 2.31                   |              | 2.53             | 2.72                   | 3.00         | 1.34           |
| Falkirk<br>Glasgow City Region            | F         | H<br>H               | 3.35<br>2.60           | 4.03         | 2.85<br>3.68     | 3.82<br>3.18           | 3.36<br>3.37 | 2.25<br>2.37   |
|   | GCR       | H<br>H               |                        | 3.35         |                  |                        | 2.85         |                |
| Edinburgh City Region                     | ECR       | н                    | 3.88                   | 3.80         | 3.60<br>2.81     | 3.77                   | 3.60         | 2.70<br>2.08   |
| Inverness and the Highlands               | IH        |                      | 3.23                   | 3.92         |                  | 3.50                   |              |                |
| Islands                                   |           | н                    | 3.37                   | 3.44         | 2.26             | 2.08                   | 3.28         | 2.25           |
| Moray                                     | M         | н                    | 1.99                   | 3.00         | 3.93             | 2.52                   | 3.29         | 2.25           |
| Stirling and Clackmannanshire             | SC        | H<br>H               | 3.10<br>2.85           | 3.43<br>3.57 | 3.00<br>2.72     | 3.63<br>3.53           | 3.06<br>2.54 | 1.62<br>2.23   |

Low (Q1) = Red; Medium (Q2 and Q3) = Yellow; High (Q4) = Green



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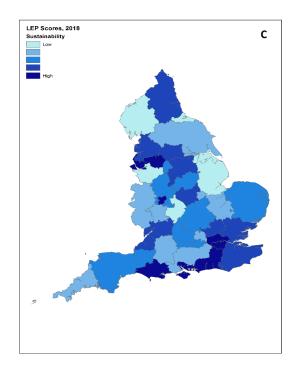


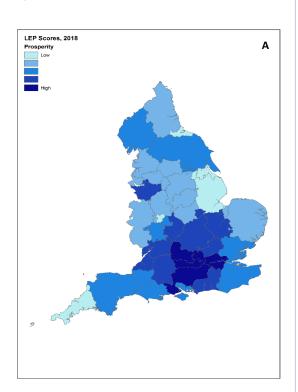


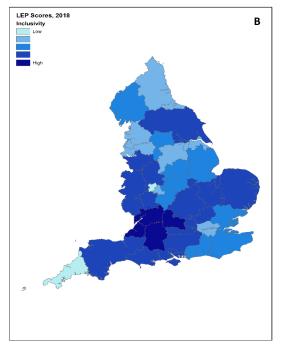
# Current Performance Across English Regions (2018)

Figure 2 presents the 2018 data from Figure 1 for LEPs, in map form. Map A clearly shows how economic prosperity is highest in London and South / South-East of England. However, map B shows that London is amongst the least inclusive regions in England. While the South still does better, there are more equal regions in the North that, although relatively poorer (see map A), have lower diversity of wealth and income than London. Map C (sustainability) is more difficult to interpret, but will be influenced by the density of heavy industry in a region, amongst other factors.

Figure 2: Economic prosperity, inclusivity and sustainability scores for LEPs (2018 levels)









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## Performance Change Across English Regions (2013-2018)

Figure 3 shows how different LEP regions in England have performed over the 2013-2018 period, albeit from different starting points. Map A shows low levels of growth in economic prosperity in the North and East of England compared to average-to-good improvements in the South. Also shown are several high-growth hot-spots, including the West Midlands, the North-West and the West of England. In contrast, map B reveals some of the highest levels of growth in inclusivity in the North and some of the lowest levels in the South-East. This suggests that while typically the most prosperous regions are also the most inclusive (see Figure 4), these regions are becoming more polarised. Again, map C is more difficult to interpret but it does show that London and surrounding areas, the West of England, and Manchester and Tees Valley LEPs are performing particularly well for sustainability.

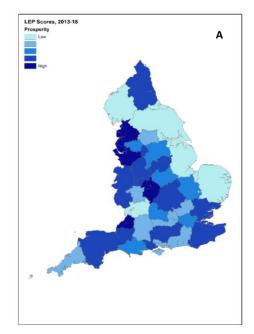
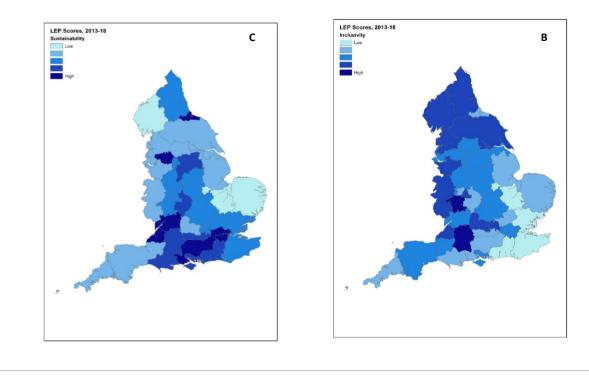


Figure 3: Economic prosperity, inclusivity and sustainability scores for LEPs (2013-2018 change)





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A wide range of factors are cited in studies of regional economic growth. <u>Hoole (2020)</u> specifically examines the factors affecting productivity in nominal GVA terms, as one indicator in our taxonomy of prosperity. Some of the influences include the following. The changing structure of industry, as more firms or sectors with higher levels of productivity move to a region, is one factor. This can evolve over time as more competitive firms reinvest locally and others exit the market. Growth and investment in R&D, linked to both a growing number of R&D-intensive firms in a region, and the spill-over and multiplier effects of these on other firms, improving overall productivity, is also a factor. Firms that invest more in R&D, innovation and capital equipment to replace employees tend to be more productive.

Improvements in skills and/or growth in the local retention of higher-skilled people, including graduates, have a strong impact on local productivity and tend to attract more productive firms to locate in a region. Higher levels of inward FDI (foreign direct investment) lifts the regional productivity average, because foreign investors have higher levels of productivity than local firms. Finally, various kinds of infrastructure, including transport and communications networks and the presence of high-quality, research-intensive universities, together support a strong regional innovation system which boosts productivity.

Two different dynamics are in play across the set of factors listed above. The first is the innate improvement in the innovation capabilities of people and firms, strengthening their capacity to produce more outputs with fewer inputs. The second is the movement of high-skilled people, competitive firms and investment capital from one region to another, which creates successful local clusters, or agglomerations of prosperity. But this creates displacement effects; some places win, only because other places lose.

## Types of Regional Growth Trajectory

In terms of current levels, Figure 4 shows a broad correlation between economic prosperity and inclusivity. Although this is not a perfect correlation and there are clear outliers (e.g. London), it does seem that the more prosperous regions are also more inclusive.

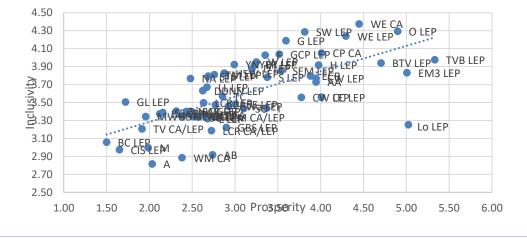


Figure 4: Inclusive growth across UK regions, 2018



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This is not the case, however, when we consider progress on both prosperity and inclusivity measures in regions between 2013 and 2018 as shown in Figure 5. This highlights the varied performance of different regions towards achieving inclusive growth outcomes over the short-term, with some high prosperity growth regions experiencing low growth in inclusivity measures and vice versa.

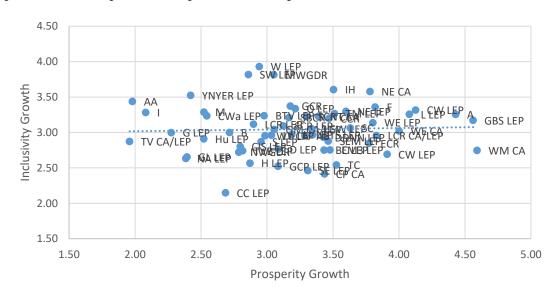


Figure 5: Inclusive growth change across UK regions, 2013-2018

Figure 6: What kind of growth: inclusive, sustainable?

|                     |      | Inclusive Growth  |  |                |                     | Sustainable Growth   |
|---------------------|------|---|--|----------------|---------------------|--|
| nclusivity          | High | Cheshire and Warrington LEP<br>Falkirk<br>North East CA<br>North East LEP |  | Sustainability | High                | West of England CA<br>West of England LEP                          |
| Inclu               |      | Exclusive Growth  |  | ustai          |                     | Unsustainable Growth   |
|                     | Low  | West Midlands CA<br>Coventry and Warwickshire LEP<br>Tay Cities           |  | S              | Low                 | Ayrshire<br>Falkirk<br>Stirling and Clackmannanshire<br>Tay Cities |
|                     |      | High  |  |                |                     | High   |
| Economic Prosperity |      |   |  |                | Economic Prosperity |  |



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Figure 6 focuses on the fastest-growing regions for 2013-2018 in terms of economic prosperity and categorises them according to high/low scores for inclusivity and sustainability indicators (those regions in the upper quartile that have medium scores for both inclusivity and sustainability are excluded). The West of England (LEP and CA) is managing high levels of prosperity growth and sustainability. The North East CA and LEP, Cheshire and Warrington LEP and Falkirk are managing high levels of inclusive growth, maintaining greater equality across socio-economic groups while improving their economic prosperity. There are likely to be clear lessons from those regions managing balanced growth; maintaining a steady improvement in economic prosperity at the same time as scoring high on inclusivity and/or sustainability. There do, however, seem to be some tradeoffs for some regions experiencing high growth in economic prosperity (2013-2018). For the West Midlands CA, for example, growing prosperity may be at the cost of worsening or low improvement in inclusivity; it sits in the 'exclusive growth' category in Figure 6. For Ayrshire and other regions in Scotland identified under the 'unsustainable growth' category, strong improvement in economic prosperity could be at the cost of weakening sustainability. At this stage in the study we can only observe patterns in the data which suggest certain hypotheses which require further research.

|              |      | DECLINING   | DYNAMIC   |  |  |  |
|--------------|------|---|---|--|--|--|
| 2018)        | High | Aberdeen and Aberdeenshire<br>Coast to Capital LEP<br>Gloucestershire (Gfirst) LEP<br>Thames Valley Berkshire LEP   | Cheshire and Warrington LEP<br>Coventry and Warwickshire LEP<br>Edinburgh City Region LEP<br>West of England LEP/CA |  |  |  |
| LEVEL (2018) | Low  | MARGINALISED<br>Borderlands<br>Cornwall and Isles of Scilly<br>Greater Lincolnshire<br>Humber LEP<br>Moray<br>North Wales Growth Region<br>New Anglia LEP<br>Tees Valley LEP/CA | <b>EMERGING</b><br>Ayrshire<br>North East CA<br>West Midlands CA  |  |  |  |
|              |      | Low   | High  |  |  |  |
|              |      | CHANGE (2013-18)  |   |  |  |  |

Figure 7: Regional growth trajectories



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Taking this analysis further, by combining the economic prosperity, inclusivity and sustainability indicators at current levels and overtime, we can group UK regions into different categories of growth.

Figure 7 uses economic prosperity scores only. It groups regions that score high (upper quartile) or low (lower quartile) for 2018 and combines these with high and low scores for relative change between 2013 and 2018. The results show the most *dynamic, emerging, marginalised* and *declining* regions across the UK. Declining regions may well have started from a high level of economic prosperity and, despite experiencing a downward trend between 2013 and 2018, may still have a relatively high level of prosperity. Marginalised regions, with low prosperity in 2018 and low growth rates between 2013 and 2018 are the problem cases we should look to support. Dynamic and emerging regions with high growth rates for prosperity between 2013 and 2018 are doing something right and may have lessons for other regions looking to improve economic prosperity.

## **Technical Appendix**

The typology brings together data from a range of sources for 10 Combined Authorities (CAs), 38 Local Enterprise Partnerships (LEPs) and 16 city-region deal areas in Wales and Scotland (Northern Ireland is excluded due to data limitations). The 64 regions selected for the analysis were classified into 8 categories that are labelled in the typology as follows:

- A = Combined Authority (CA) (elected Mayor) (8)
- B = Combined Authority (CA) (no elected Mayor) (2)
- C = LEPs with CA where boundaries align (3)
- D = LEPs with CA where boundaries do not align (9)
- E = LEPs with urban centre(s) and rural areas (no CA) (15)
- F = LEPs with mainly rural areas (no CA) (6)
- G = LEPs in/close to London (5)
- H = City-region devolution deal area in Wales or Scotland (16)

The indicators used as proxy measures of economic prosperity, inclusivity and sustainability are presented in the following table. Data was captured between the years 2013-18 to assess change over a 5-year period, with the year 2018 providing the most up-to-date look at the current state of play. For the 3 indicators where data was not yet available for 2018 at the point of data collection (highlighted in the table), the data for 2017 was used. Datasets were limited to those where data is available (either directly or by aggregating lower level geographies) for each of the 64 regions included in the analysis.



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| Table of Indica        | itors          |   |  |  |  |  |  |
|------------------------|----------------|---|--|--|--|--|--|
| Economic<br>Prosperity | Outrut         | GVA per/hour (real and nominal)   |  |  |  |  |  |
|                        | Output         | Median gross weekly pay, full-time workers  |  |  |  |  |  |
|                        | Employment     | Employment rate 16-64   |  |  |  |  |  |
|                        |                | % of employees in low pay sectors   |  |  |  |  |  |
|                        | Human Capital  | % of workers in managerial, professional and technical occupations (SOC 1,2 and 3)    |  |  |  |  |  |
|                        |                | % aged 16-64 with NVQ2+ qualifications  |  |  |  |  |  |
|                        | Income         | % in-work households receiving child and/or working tax credits                       |  |  |  |  |  |
|                        |                | 20:20 ratio of median gross weekly pay (gross), full-time workers                     |  |  |  |  |  |
|                        | Poverty/Health | Ratio of lower quartile house price to lower quartile earnings                        |  |  |  |  |  |
| Inclusivity            |                | Life expectancy (females)   |  |  |  |  |  |
|                        | Participation  | % of total connections with superfast broadband                                       |  |  |  |  |  |
|                        |                | % of workless households  |  |  |  |  |  |
|                        | Emissions/Euel | CO2 per capita emissions (year = 2017)  |  |  |  |  |  |
| Sustainability         | Consumption    | Total residual fuel consumption (tonnes of oil equivalent, per capita) (year=2017)    |  |  |  |  |  |
|                        | Transport      | Total transport energy consumption (tonnes of oil equivalent, per capita) (year=2017) |  |  |  |  |  |
|                        |                | Motor vehicle traffic (vehicle miles, per capita)                                     |  |  |  |  |  |
|                        |                | Municipal waste generation (tonnes, per capita)                                       |  |  |  |  |  |
|                        | Waste          | % of household waste sent for recycling/reuse/composting                              |  |  |  |  |  |

The approach taken to create the scores for 'levels' and 'change' under each theme is comparable to that used in the Inclusive Growth Monitor (IGM) developed by Sheffield Hallam University and the University of Manchester in 2016-17 as a tool for measuring the relationship between growth and inclusivity for LEPs in England. A description of this methodology can be found <u>here</u> or via the following link:

https://www4.shu.ac.uk/research/cresr/sites/shu.ac.uk/files/jrf-inclusive-growth-technicalnotes.pdf

#### Sources:

Hoole, C. UK regional productivity variations and what might be driving these. City-REDI Blog (March 2020).

**Charlotte Hoole (LIPSIT Co-Investigator)** is a Research Fellow at City REDI and WM REDI, Birmingham Business School, University of Birmingham.

**Simon Collinson (LIPSIT Co-Investigator)** is a Professor of International Business and Innovation, Deputy Pro-Vice-Chancellor for Regional Economic Engagement and Director of City REDI and WM REDI, University of Birmingham.



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