



Ministry of Housing,
Communities &
Local Government

The English Indices of Deprivation 2019

Research report

September 2019
Authors: Stefan Noble, David McLennan, Michael Noble, Emma Plunkett, Nils Gutacker, Mary
Silk and Gemma Wright

Ministry of Housing, Communities and Local Government



© Crown copyright, 2019

Copyright in the typographical arrangement rests with the Crown.

You may re-use this information (not including logos) free of charge in any format or medium, under the terms of the Open Government Licence. To view this licence, <http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>

This document is also available on our website at www.gov.uk/mhclg

If you have any enquiries regarding this document, complete the form at <http://forms.communities.gov.uk/> or write to us at:

Ministry of Housing, Communities and Local Government
Fry Building
2 Marsham Street
London
SW1P 4DF
Telephone: 030 3444 0000

For all our latest news and updates follow us on Twitter: <https://twitter.com/MHCLG>

September 2019

Contents

Chapter 1. Introduction	7
1.1 Introduction	7
1.2 Overview of the Indices of Deprivation 2019	7
1.3 Use of the Indices	8
1.4 About this Research Report	10
Chapter 2. Summary of the Indices of Deprivation 2019	11
2.1 Measuring deprivation at the small area level	11
2.2 Constructing the Indices of Deprivation 2019	11
2.3 Data time point	12
2.4 Geography and spatial scale	13
2.5 The domains and indicators	13
2.6 Combining the domains	17
2.7 Summary of the domains, indicators and methods used to construct the Indices of Deprivation 2019	17
Chapter 3. Using and interpreting the Indices of Deprivation 2019 data	19
3.1 The data that has been published	19
3.2 Interpreting the neighbourhood-level data	19
3.3 Interpreting the higher-level geography summaries	24
3.4 Interpreting change over time	29
3.5 Comparing the English Indices of Deprivation 2019 with Welsh, Scottish and Northern Irish Indices of deprivation	33
Chapter 4. The geography of deprivation	34
4.1 Introduction	34
4.2 Deprivation at local level	34
4.3 Areas that are highly deprived on more than one domain	39
4.4 Local Authority District summary measures	41
Chapter 5. Changes in relative deprivation	51
5.1 Introduction	51
5.2 Changes at Lower-layer Super Output Area level	52
5.3 Changes at Local Authority District level	53

5.4	Persistent deprivation	66
5.5	Conclusion	67
Appendix A. How to aggregate to different geographies		68
Appendix B. Combining the domains together using different weights		71
Appendix C. Summary measures for Local Enterprise Partnerships and Clinical Commissioning Groups		73
Appendix D. Domain summaries		76
Appendix E. What data has been published?		86

Preface

The Indices of Deprivation are an important tool for identifying the most deprived areas in England. Local policy makers and communities can also use this tool to ensure that their activities prioritise the areas with greatest need for services.

The English Indices of Deprivation 2019 is the sixth release in a series of statistics produced to measure multiple forms of deprivation at the small spatial scale.

This report outlines the main results from the Indices of Deprivation 2019, including the overall Index of Multiple Deprivation 2019, and provides examples and guidance on how to use and interpret the data sets. The accompanying Technical Report presents the conceptual framework of the new Indices of Deprivation 2019; the methodology for creating the domains and the overall Index of Multiple Deprivation; the quality assurance carried out to ensure reliability of the data outputs; and the component indicators and domains.

The datasets underpinning the Indices of Deprivation 2019 can be accessed at:
<https://www.gov.uk/government/statistics/english-indices-of-deprivation-2019>

We would like to thank all those who assisted in the production of the Indices of Deprivation 2019.

Acknowledgements

The English Indices of Deprivation 2019 were constructed by Oxford Consultants for Social Inclusion (OCSI) and Deprivation.org. The research team comprised: Stefan Noble, David McLennan, Michael Noble, Gemma Wright, and Emma Plunkett.

In addition, some indicators from the Health Deprivation and Disability Domain were constructed by Karen Bloor, Nils Gutacker and Veronica Dale at the University of York; the air quality indicator by Jon Fairburn at Staffordshire University; the housing affordability indicator by Glen Bramley at Heriot-Watt University; and the housing condition indicator by the Building Research Establishment.

External quality assurance was carried out by Alex Sutherland, and geographic information system work was undertaken by David Avenell. Additional support at Oxford Consultants for Social Inclusion was provided by Mary Silk and Luke Murray.

The research team would also like to thank the Local Policy Analysis Division within the Ministry of Housing, Communities and Local Government, and all the suppliers of data.

Chapter 1. Introduction

1.1 Introduction

- 1.1.1 The Ministry of Housing, Communities and Local Government commissioned Oxford Consultants for Social Inclusion (OCSI) and Deprivation.org to update the English Indices of Deprivation 2015. The project remit was to produce a direct update of the Indices of Deprivation 2015 wherever possible, and only introduce changes where this was necessary, for example due to developments in the data landscape.
- 1.1.2 The Indices of Deprivation 2019 have been produced using the same approach, structure and methodology used to create the previous Indices of Deprivation 2015. Existing domains and sub-domains have been retained, although certain changes to the data landscape have necessitated or facilitated a modest number of minor modifications to the indicators used in some domains.
- 1.1.3 The updated Indices continue to be based on the 2011 Lower-layer Super Output Area geography.

1.2 Overview of the Indices of Deprivation 2019

- 1.2.1 The Indices of Deprivation 2019 provide a set of relative measures of deprivation for small areas (Lower-layer Super Output Areas) across England, based on seven different domains of deprivation:
- Income Deprivation
 - Employment Deprivation
 - Education, Skills and Training Deprivation
 - Health Deprivation and Disability
 - Crime
 - Barriers to Housing and Services
 - Living Environment Deprivation
- 1.2.2 Each of these domains is based on a set of indicators. Each indicator is based on data from the most recent time point available on a consistent basis across neighbourhoods in England.
- 1.2.3 The Index of Multiple Deprivation 2019 combines information from the seven domains to produce an overall relative measure of deprivation. The domains are combined according to their respective weights as described in section 2.6. In addition, there are seven domain-level Indices, and two supplementary Indices: the Income Deprivation Affecting Children Index and the Income Deprivation Affecting Older People Index.
- 1.2.4 The Index of Multiple Deprivation 2019 (IMD2019), domain Indices and the supplementary Indices, together with the higher area summaries, are collectively referred to as the Indices of Deprivation 2019 (IoD2019).
- 1.2.5 The Indices of Deprivation are designed primarily to be *small-area* measures of relative deprivation. But the Indices are commonly used to describe relative deprivation for higher-level geographies. To facilitate this, a range of summary measures are available for

higher-level geographies: Local Authority Districts and upper tier Local Authorities, Local Enterprise Partnerships and Clinical Commissioning Groups. These summary measures are produced for the overall Index of Multiple Deprivation, each of the seven domains and the supplementary Indices.

1.3 Use of the Indices

1.3.1 Since their original publication in 2000 the Indices have been used very widely for a variety of purposes, including the following:

Targeting resources

- The Indices are used by national and local organisations to identify places for prioritising resources and more effective targeting of funding.
 - The Indices are currently used in the allocation of European Regional Development Funds (ERDF). Community-Led Local Development is a mechanism for responding to barriers to growth in local areas and the 20% most deprived areas are prioritised.
 - The funding formula for Dedicated Schools Grant (DSG) uses deprivation as a compulsory factor. This is measured from the Income Deprivation Affecting Children Index (IDACI). In 2017-18, 123 Local Authorities used IDACI
 - The IDACI data is an integral part of both the schools and high need funding formulae. IDACI data is used as a proxy for deprivation in the Schools National Funding Formula (NFF); The IDACI data is also used as a proxy for deprivation in the High Needs National Funding Formula (HN NFF).
 - The Index of Multiple Deprivation 2010 was used by the Ministry of Housing, Communities and Local Government in conjunction with other data to distribute £448m of funding to Local Authorities for the Troubled Families Programme.
 - The Indices have also been used by some Local Authorities to prioritise areas for long-term intervention.

Policy and strategy

- The IMD is used in the development of the evidence base for setting a range of local strategies and service planning, including helping understand current need and model future demand for services.
- The IMD is used to inform research and analysis into the challenges and performance of different areas, and to support policy and delivery. For example, understanding the relationship between pupil attainment and neighbourhood deprivation, and analysing local deprivation as risk factor for behaviours such as smoking.
- It has also been used to assess programme reach and impact e.g. to identify whether the most disadvantaged areas are receiving more support under various programmes than others; and in assessment of the impact of programmes, albeit at the neighbourhood rather than the individual level.
- It has been used to inform the Northern Powerhouse programme in briefings and contextual analysis. £3.4 billion of Local Growth funding has been awarded to Northern Powerhouse LEAs.

- It has been used to identify pockets of high deprivation for the Thames Estuary Regeneration programme.
- It has been used in Joint Strategic Needs Assessments (JSNAs).
- It has been used by sustainability and transformation partnerships (STPs) to inform their plans.

As an analytical resource to support commissioning by Local Authorities and health services, and in exploring inequalities

- Public Health England (PHE) has used the Indices to produce indicators for the Government's Public Health Outcomes Framework (PHOF) examining recent trends in inequalities in life expectancy and healthy life expectancy between communities.
- PHE has also used the Indices to illustrate inequalities in many of the other PHOF indicators and users of the PHOF tool can now examine the relationship of every indicator with deprivation.
- The Indices are used to identify areas of rural deprivation and were used recently in the Local Government Association (LGA) Health and Wellbeing in Rural Areas publication. This stated that pockets of rural deprivation can often be masked by higher level statistics, so the Indices are a particularly valuable tool as they provide information on small geographical areas. The report recommended that rural local authorities ensure they make the best use of small area level data to identify areas of deprivation.
- The Indices are also a primary source of data in the LGA's online tool LG Inform which enables users to create reports, charts and maps for all local authorities in England.

Funding bids

- The Indices are frequently used in bids for funding, and are recognised by commissioners as an authoritative, nationally comparable measure of deprivation. This includes bids made by councillors for their neighbourhoods, and from voluntary and community sector groups.

1.3.2 Additionally, responses from the user survey undertaken as part of the user consultation exercise, which accompanied the 2015 Indices, confirmed that Indices data was used for a variety of purposes, often citing multiple uses. The most common uses were to inform the targeting of funding (43 per cent), targeting interventions and services (43 per cent) and strategic needs assessments (41 per cent) (see Table 1.1). Note, the survey was conducted in July 2014, and it is important to be aware that there may have been changes to the user cases for the Indices of Deprivation in the intervening period.

Table 1.1. Uses for the Indices of Deprivation data, reported by users as part of the user consultation survey for the 2015 update

What do you use the Indices of Deprivation data for?	Per cent
Targeting funding	43
Targeting services and interventions	43
Needs assessment – strategic	41
In preparing bids for funding / assessing or commissioning bids for funding	39
General research and analysis	24
Impact and policy assessments	7
Other	59
Base = 226 respondents opting to complete this section of the survey.	

1.4 About this Research Report

- 1.4.1 This report outlines the main results from the Indices of Deprivation 2019 (IoD2019), including the overall Index of Multiple Deprivation 2019 (IMD2019), and provides examples and guidance on how to use and interpret the data sets. This presents a fuller and more detailed account than is presented in the Ministry of Housing, Communities and Local Government (MHCLG) Statistical Release, and is aimed at specialist users and analysts, particularly those with an interest in specific domains of deprivation or the full range of summary statistics available for higher-level geographies.
- 1.4.2 There is a summary of points to consider in using and interpreting the Indices in the MHCLG Statistical Release (under ‘Further information’) and in the short MHCLG guidance documentation which is aimed at both specialist and non-specialist users of the Index of Multiple Deprivation.
- 1.4.3 The accompanying technical report presents the conceptual framework of the new Indices of Deprivation 2019; the methodology for creating the domains and the overall Index of Multiple Deprivation; the quality assurance carried out to ensure reliability of the data outputs; and the component indicators and domains¹.
- 1.4.4 All project outputs are available to download from www.gov.uk/government/statistics/english-indices-of-deprivation-2019.

¹ Ministry of Housing, Communities and Local Government (2019). The Indices of Deprivation 2019. Technical Report

Chapter 2. Summary of the Indices of Deprivation 2019

2.1 Measuring deprivation at the small area level

- 2.1.1 The English Indices of Deprivation 2019 are relative measures of multiple deprivation at the small area level. The model of multiple deprivation which underpins the Indices is based on the idea of distinct dimensions of deprivation which can be recognised and measured separately². Since these deprivations are experienced by individuals living in an area, an area-level measure of deprivation for each of the dimensions (or domains) can be produced if suitable data exists.
- 2.1.2 The overall Index of Multiple Deprivation 2019 is a measure of multiple deprivation based on combining together seven distinct domains of deprivation, which are described further in Section 2.5 below:
- Income Deprivation
 - Employment Deprivation
 - Education, Skills and Training Deprivation
 - Health Deprivation and Disability
 - Crime
 - Barriers to Housing and Services
 - Living Environment Deprivation.
- 2.1.3 The Index of Multiple Deprivation, and each of the domains, can be used to rank every small area in England according to the deprivation experienced by the people living there.
- 2.1.4 Data has been published for the overall Index of Multiple Deprivation and each of the domains. Chapter 3 describes in detail what has been published and how to use and interpret the data. Chapters 4 and 5 present analysis of the data.
- 2.1.5 The sections below outline the methods and indicators used to construct the data sets.

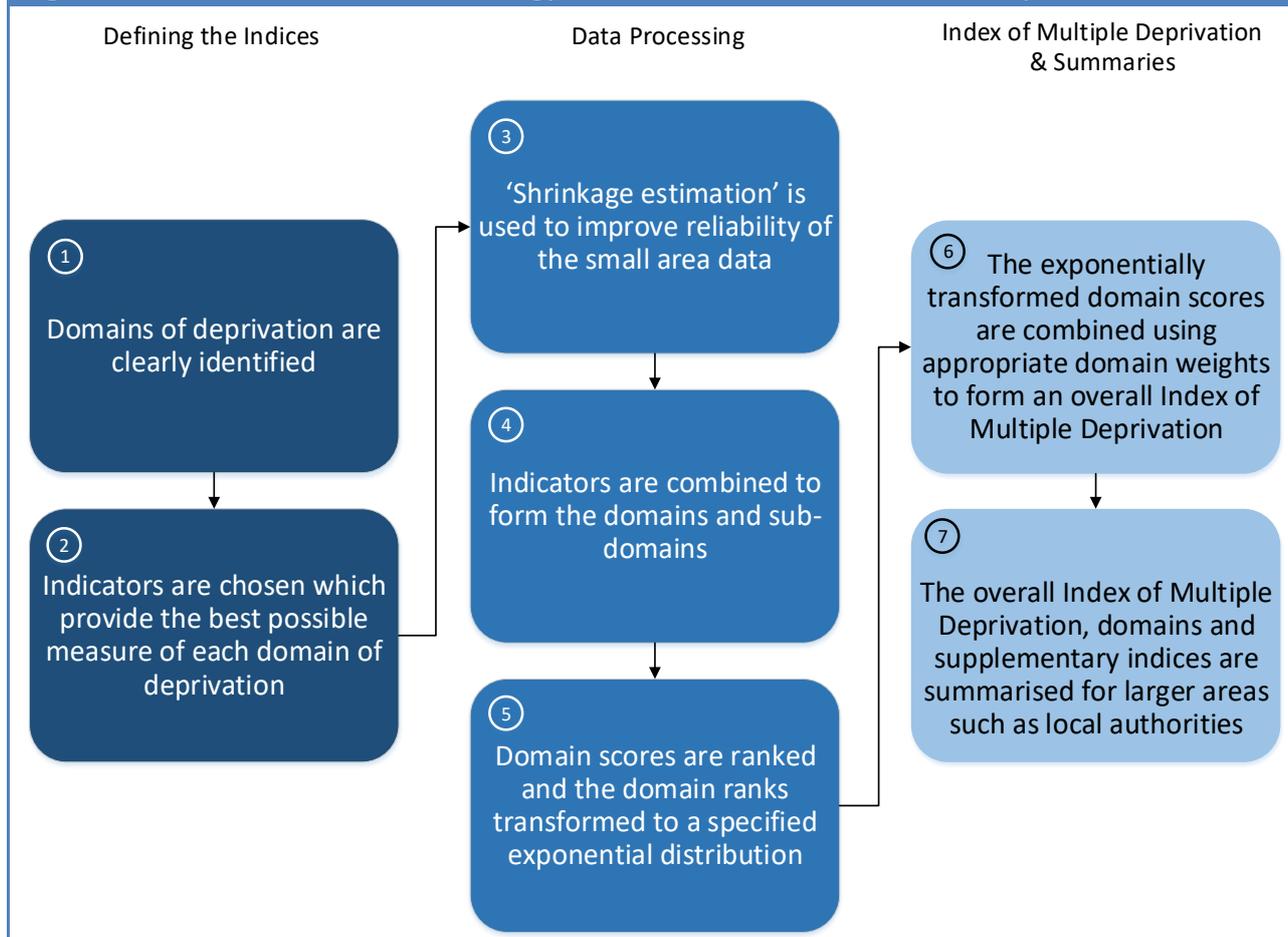
2.2 Constructing the Indices of Deprivation 2019

- 2.2.1 The construction of the Index of Multiple Deprivation 2019 (IMD2019) and Indices of Deprivation 2019 (IoD2019) broadly consists of seven stages, see Figure 2.1. The accompanying Technical Report gives further details under each of these stages³.

² Previous versions of the Indices of Deprivation 2019 followed the same framework and methodology for measuring multiple deprivation, including the Indices of Deprivation 2015, 2010, 2007, 2004 and 2000. See Smith et al. (2015) McLennan et al. (2011); Noble et al. (2008); Noble et al. (2004) and Noble et al (2000).

³ Ministry of Housing, Communities and Local Government (2019). The Indices of Deprivation 2019. Technical Report.

Figure 2.1. Overview of the methodology used to construct the Indices of Deprivation 2019



2.2.2 Feedback provided during the consultation stages of the Indices of Deprivation 2015 suggested that maintaining comparability with previous versions of the Indices is important to users. For this reason, the methods used in developing the Indices of Deprivation 2019 have remained consistent with those used in 2015.

2.2.3 Changes since the Indices of Deprivation 2015 are therefore mainly confined to updates to the data used to create the indicators. However, two new indicators have had to be included to reflect the introduction of Universal Credit into the benefits system, and two indicators have been modified due to changes to the data landscape. In addition, a number of other indicators have been subject to minor changes, for instance to base the indicator on a longer time period than has previously been the case, in order to further increase the robustness of the results. The complete set of indicators by domain is outlined in Section 2.5.

2.3 Data time point

2.3.1 As far as is possible, each indicator was based on data from the most recent time point available. Using the latest available data in this way means that there is not a single consistent time point for all indicators. An itemised list can be found in Appendix A of the Technical Report.

2.3.2 As with previous Indices, the Indices of Deprivation 2019 uses Census data only when alternative data from administrative sources is not available. Four such indicators were

derived from the 2011 Census: adult skill levels and English language proficiency in the Education, Skills and Training Deprivation Domain; household overcrowding in the Barriers to Housing and Services Domain; and houses without central heating in the Living Environment Deprivation Domain.

- 2.3.3 All indicators are constructed using the latest available data at the time of production⁴. However, in some cases the timepoints for which data is available are several years old and the indicators do not take into account changes to policy since the time point of the data used. For example, the 2015/16 benefits data used in the Income Deprivation Domain and Employment Deprivation Domain do not include the impact of the wider rollout of Universal Credit, which only began to replace certain income and health related benefits from April 2016.

2.4 Geography and spatial scale

- 2.4.1 The Indices of Deprivation 2019 have been produced at Lower-layer Super Output Area level, using the current (2011) Lower-layer Super Output Areas⁵. As was done for the Indices of Deprivation 2015, scores and ranks have been provided at Lower-layer Super Output Area level.
- 2.4.2 Summary measures for the Index of Multiple Deprivation, domains and supplementary Indices have been produced for the following higher-level geographies: Local Authority Districts, upper-tier Local Authorities, Local Enterprise Partnerships and Clinical Commissioning Groups. These are based on the geographic boundaries for these areas at the time of publication⁶.
- 2.4.3 Guidance is provided (Appendix A) on how to aggregate the Indices to other geographies such as wards or bespoke local areas.

2.5 The domains and indicators

- 2.5.1 Seven domains of deprivation are combined to produce the overall Index of Multiple Deprivation, and each domain contains a number of component indicators. The criteria for inclusion of these indicators are that they should be 'domain specific' and appropriate for the purpose of measuring major features of that deprivation; up-to-date; capable of being updated on a regular basis; statistically robust; and available for the whole of England at a small area level in a consistent form.

⁴ Note, the data needs to be available on a nationally consistent basis, where more recent data is published for some areas, but not across England as a whole it cannot be included

⁵ Lower-layer Super Output Areas are homogenous small areas of relatively even size containing approximately 1,500 people. The Indices of Deprivation 2010 and earlier versions used the 2001 Lower-layer Super Output Area geography. The Office for National Statistics has since produced an updated version of the Lower-layer Super Output Area geography using population data from the 2011 Census. The changes made between the 2001 and 2011 versions were minimal: the boundaries of approximately 2.5% of the 2001 Lower-layer Super Output were modified.

⁶ There was a minor revision to the Clinical Commissioning Group boundaries affecting a small number of LSOAs in five Group areas, published 22 July 2019 <https://geoportal.statistics.gov.uk/geoportal/catalog/content/bulletin.page>

2.5.2 The Technical Report which accompanies this Research Report provides further details about the purpose of each domain, the indicators and denominators used and how the indicators are combined into the domains⁷.

Income Deprivation Domain

2.5.3 The Income Deprivation Domain measures the proportion of the population in an area experiencing deprivation relating to low income. The definition of low income used includes both those people that are out-of-work, and those that are in work but who have low earnings (and who satisfy the respective means tests). A combined count of income deprived individuals per Lower-layer Super Output Area is calculated by summing the following seven non-overlapping indicators:

- Adults and children in Income Support families⁸
- Adults and children in income-based Jobseeker's Allowance families
- Adults and children in income-based Employment and Support Allowance families
- Adults and children in Pension Credit (Guarantee) families
- Adults and children in Working Tax Credit and Child Tax Credit families not already counted, that is those who are not in receipt of Income Support, income-based Jobseeker's Allowance, income-based Employment and Support Allowance or Pension Credit (Guarantee) and whose equivalised income (excluding housing benefit) is below 60 per cent of the median before housing costs
- Adults and children in Universal Credit families where no adult is in 'Working - no requirements' conditionality regime
- Asylum seekers in England in receipt of subsistence support, accommodation support, or both.

2.5.4 In addition, an Income Deprivation Affecting Children Index and an Income Deprivation Affecting Older People Index were created, respectively representing the proportion of children aged 0-15, and people aged 60 and over, living in income deprived households.

Employment Deprivation Domain

2.5.5 The Employment Deprivation Domain measures the proportion of the working age population in an area involuntarily excluded from the labour market. This includes people who would like to work but are unable to do so due to unemployment, sickness or disability, or caring responsibilities. A combined count of employment deprived individuals per Lower-layer Super Output Area is calculated by summing the following six non-overlapping indicators:

- Claimants of Jobseeker's Allowance (both contribution-based and income-based), women aged 18 to 59 and men aged 18 to 64
- Claimants of Employment and Support Allowance, women aged 18 to 59 and men aged 18 to 64
- Claimants of Incapacity Benefit, women aged 18 to 59 and men aged 18 to 64

⁷ Ministry of Housing, Communities and Local Government (2019). The Indices of Deprivation 2019. Technical Report.

⁸ The word 'family' is used to designate a 'benefit unit', that is the claimant, any partner and any dependent children (those for whom Child Benefit is received).

- Claimants of Severe Disablement Allowance, women aged 18 to 59 and men aged 18 to 64
- Claimants of Carer's Allowance, women aged 18 to 59 and men aged 18 to 64.
- Claimants of Universal Credit in the 'Searching for work' and 'No work requirements' conditionality groups

Education, Skills and Training Deprivation Domain

2.5.6 The Education, Skills and Training Domain measures the lack of attainment and skills in the local population. The indicators fall into two sub-domains: one relating to children and young people and one relating to adult skills. These two sub-domains are designed to reflect the 'flow' and 'stock' of educational disadvantage within an area respectively. That is, the 'children and young people' sub-domain measures the attainment of qualifications and associated measures ('flow'), while the 'skills' sub-domain measures the lack of qualifications in the resident working age adult population ('stock').

Children and Young People sub-domain

- Key Stage 2 attainment: The scaled score of pupils taking Mathematics, English reading and English grammar, punctuation and spelling Key Stage 2 exams⁹
- Key Stage 4 attainment: The average capped points score of pupils taking Key Stage 4
- Secondary school absence: The proportion of authorised and unauthorised absences from secondary school
- Staying on in education post 16: The proportion of young people not staying on in school or non-advanced education above age 16
- Entry to higher education: A measure of young people aged under 21 not entering higher education

Adult Skills sub-domain

2.5.7 The Adult Skills sub-domain is a non-overlapping count of two indicators:

- Adult skills: The proportion of working age adults with no or low qualifications¹⁰, women aged 25 to 59 and men aged 25 to 64
- English language proficiency: The proportion of working age adults who cannot speak English or cannot speak English well, women aged 25 to 59 and men aged 25 to 64.

Health Deprivation and Disability Domain

2.5.8 The Health Deprivation and Disability Domain measures the risk of premature death and the impairment of quality of life through poor physical or mental health. The domain measures morbidity, disability and premature mortality but not aspects of behaviour or environment that may be predictive of future health deprivation.

- Years of potential life lost: An age and sex standardised measure of premature death

⁹ In 2014/15 the scaled score was not available so, instead, the average point score of pupils taking English and mathematics Key Stage 2 exams was used.

¹⁰ No or low qualifications refers to qualifications at Level 1 or below. Level 1 qualifications include 1+O level passes, 1+CSE/GCSE any grades, NVQ level 1, Foundation GNVQ Level 2: 5+O level passes, 5+CSEs (grade 1).

- Comparative illness and disability ratio: An age and sex standardised morbidity/disability ratio
- Acute morbidity: An age and sex standardised rate of emergency admission to hospital
- Mood and anxiety disorders: A composite based on the rate of adults suffering from mood and anxiety disorders, hospital episodes data and suicide mortality data.

Crime Domain

- 2.5.9 Crime is an important feature of deprivation that has major effects on individuals and communities. The Crime Domain measures the risk of personal and material victimisation at local level in four ways:
- Violence – number of recorded violent crimes (18 recorded crime types in 2016/17; 20 recorded crime types in 2017/18) per 1,000 at risk population
 - Burglary – number of recorded burglaries (4 recorded crime types) per 1,000 at risk population
 - Theft – number of recorded thefts (5 recorded crime types) per 1,000 at risk population
 - Criminal damage – number of recorded crimes (8 recorded crime types) per 1,000 at risk population.

Barriers to Housing and Services Domain

- 2.5.10 This domain measures the physical and financial accessibility of housing and local services. The indicators fall into two sub-domains: ‘geographical barriers’, which relate to the physical proximity of local services, and ‘wider barriers’ which include issues relating to access to housing such as affordability.

Geographical Barriers sub-domain

- Road distance to a post office
- Road distance to a primary school
- Road distance to a general store or supermarket
- Road distance to a GP surgery.

Wider Barriers sub-domain

- Household overcrowding: The proportion of all households in a Lower-layer Super Output Area which are judged to have insufficient space to meet the household’s needs
- Homelessness: Local Authority District level rate of acceptances for housing assistance under the homelessness provisions of the 1996 Housing Act, assigned to the constituent Lower-layer Super Output Areas
- Housing affordability: Difficulty of access to owner-occupation or the private rental market, expressed as the inability to afford to enter owner occupation or the private rental market.

Living Environment Deprivation Domain

- 2.5.11 The Living Environment Deprivation Domain measures the quality of the local environment. The indicators fall into two sub-domains. The ‘indoors’ living environment

measures the quality of housing; while the ‘outdoors’ living environment contains measures of air quality and road traffic accidents.

Indoors sub-domain

- Houses without central heating: The proportion of houses that do not have central heating
- Housing in poor condition: The proportion of social and private homes that fail to meet the Decent Homes standard.

Outdoors sub-domain

- Air quality: A measure of air quality based on emissions rates for four pollutants
- Road traffic accidents involving injury to pedestrians and cyclists: A measure of road traffic accidents involving injury to pedestrians and cyclists among the resident and workplace population.

2.6 Combining the domains

2.6.1 Each domain was constructed separately, from the component indicators, and each Lower-layer Super Output Area was assigned a domain score representing the combination of these indicators. Each area was then ranked according to this domain score.

2.6.2 The domain ranks were then transformed to an exponential distribution before combining into the overall Index of Multiple Deprivation¹¹. Table 2.1 sets out the weights used to combine the domains, which are the same as in the Indices of Deprivation 2015¹².

Domain	Domain weight (%)
Income Deprivation Domain	22.5
Employment Deprivation Domain	22.5
Health Deprivation and Disability Domain	13.5
Education, Skills and Training Deprivation Domain	13.5
Barriers to Housing and Services Domain	9.3
Crime Domain	9.3
Living Environment Deprivation Domain	9.3

2.7 Summary of the domains, indicators and methods used to construct the Indices of Deprivation 2019

2.7.1 Figure 2.2 on the following page summarises the domains, indicators and methods used to construct the Indices of Deprivation 2019.

¹¹ The accompanying Technical Report provides more detail on how the Indices of Deprivation are constructed, with information on the statistical methods that have been used, including how the weights were derived (see Chapter 3).

¹² Appendix B describes how users can combine the domains together using different weights for analytical purposes.

Chapter 3. Using and interpreting the Indices of Deprivation 2019 data

3.1 The data that has been published

3.1.1 The Indices of Deprivation 2019 have been produced at Lower-layer Super Output Area level, which may be thought of as a ‘neighbourhood level’, using the current (2011) version of the Lower-layer Super Output Area geography¹³. Ranks, deciles and scores have been published at neighbourhood level for:

- the Index of Multiple Deprivation 2019,
- the seven domains, which are combined to make the overall Index of Multiple Deprivation; and where relevant, the sub-domains that comprise the domains; and
- the two supplementary Indices: the Income Deprivation Affecting Children Index and the Income Deprivation Affecting Older People Index.

These are collectively referred to as the neighbourhood-level Indices in this chapter.

3.1.2 Summary measures for the Index of Multiple Deprivation, domains and supplementary Indices have been produced for the following higher-level geographies: Local Authority Districts, upper-tier Local Authorities, Local Enterprise Partnerships and Clinical Commissioning Groups. These summary measures are described in Section 3.3 below.

3.1.3 The Index of Multiple Deprivation 2019 (IMD2019), domain Indices and the supplementary Indices, together with the higher-level geography summaries, are collectively referred to as the Indices of Deprivation 2019 (IoD2019).

3.1.4 Appendix F lists the data sets that have been published for Lower-layer Super Output Areas and higher-level geographies. These data sets are available from www.gov.uk/government/statistics/english-indices-of-deprivation-2019.

3.2 Interpreting the neighbourhood-level data

Ranks, deciles and scores

3.2.1 The 32,844 Lower-layer Super Output Areas in England are ranked according to their deprivation score. For each of the neighbourhood-level Indices, the most deprived Lower-layer Super Output Area in England is given a rank of 1, and the least deprived a rank of 32,844.

3.2.2 The deciles are produced by ranking the 32,844 Lower-layer Super Output Areas and dividing them into 10 equal-sized groups. Decile 1 represents the most deprived 10 per

¹³ Lower-layer Super Output Areas are small areas of relatively even size containing approximately 1,500 people. The Indices of Deprivation 2010 and earlier versions used the 2001 Lower-layer Super Output Area geography. The Office for National Statistics has since produced an updated version of the Lower-layer Super Output Area geography using population data from the 2011 Census. The changes made between the 2001 and 2011 versions were minimal: the boundaries of approximately 2.5% of the 2001 Lower-layer Super Output were modified.

cent of areas nationally and decile 10 represents the least deprived 10 per cent of areas nationally.

- 3.2.3 The ranks and deciles can straightforwardly be interpreted as showing broadly whether a Lower-layer Super Output Area is more deprived than any other such area in the country. The ranks (and deciles) are relative: they show that one area is more deprived than another but not by how much. For example, if an area has a rank of 1,000, it is not half as deprived as a place with a rank of 500.
- 3.2.4 The ranks and deciles are based on scores: the larger the score, the more deprived the area. In the case of the Income and Employment deprivation domains and the supplementary Indices, the scores are meaningful and relate to a proportion of the relevant population experiencing that type of deprivation (see relevant sections below for details). So, for example, if a Lower-layer Super Output Area has a score of 0.38 in the Income Deprivation Domain, this means that 38 per cent of the population is income deprived in that area. In addition to the ranks which show relative deprivation, the scores for these domains (and supplementary Indices) can be used to compare areas on an absolute scale, although this does not necessarily mean that they can be used to identify 'real' change over time. For example, an area can be said to have become more deprived relative to other areas if it was within the most deprived 20 per cent of areas nationally according to the IMD2015 but within the most deprived 10 per cent according to the IMD2019. However, it would not necessarily be correct to state that the level of deprivation in the area has increased on some absolute scale, as it may be the case that all areas had improved, but that this area had improved more slowly than other areas and so had been 'overtaken' by those areas.
- 3.2.5 The scores for the Index of Multiple Deprivation and the remaining five domains are less easy to interpret, as they do not relate straightforwardly to the proportion of the population experiencing deprivation. For example, an area with a score of 60 on the Index of Multiple Deprivation is not simply twice as deprived as an area with a score of 30. It is recommended that ranks and deciles, but not scores, are used in the case of the Index of Multiple Deprivation and these domains.
- 3.2.6 The purpose of the Indices of Deprivation is to measure as accurately as possible the relative distribution of deprivation at a small area level at a snapshot in time, but this sometimes comes at the expense of 'backwards' comparability. When exploring changes in deprivation between the Indices of Deprivation 2019 and previous versions of the Indices, users should be aware that changes can only be described in relative terms, for example, the extent to which an area has changed rank or decile of deprivation. While relative ranks can be compared between one iteration and another, this should be considered in the context of changes in method and geography between different versions of the Indices.
- 3.2.7 Section 3.4 describes how users can make valid comparisons over time, and also sets out suggestions for how users might explore whether any changes seen in the Indices of Deprivation data can be attributed to real change over time.

Points to consider when using the data

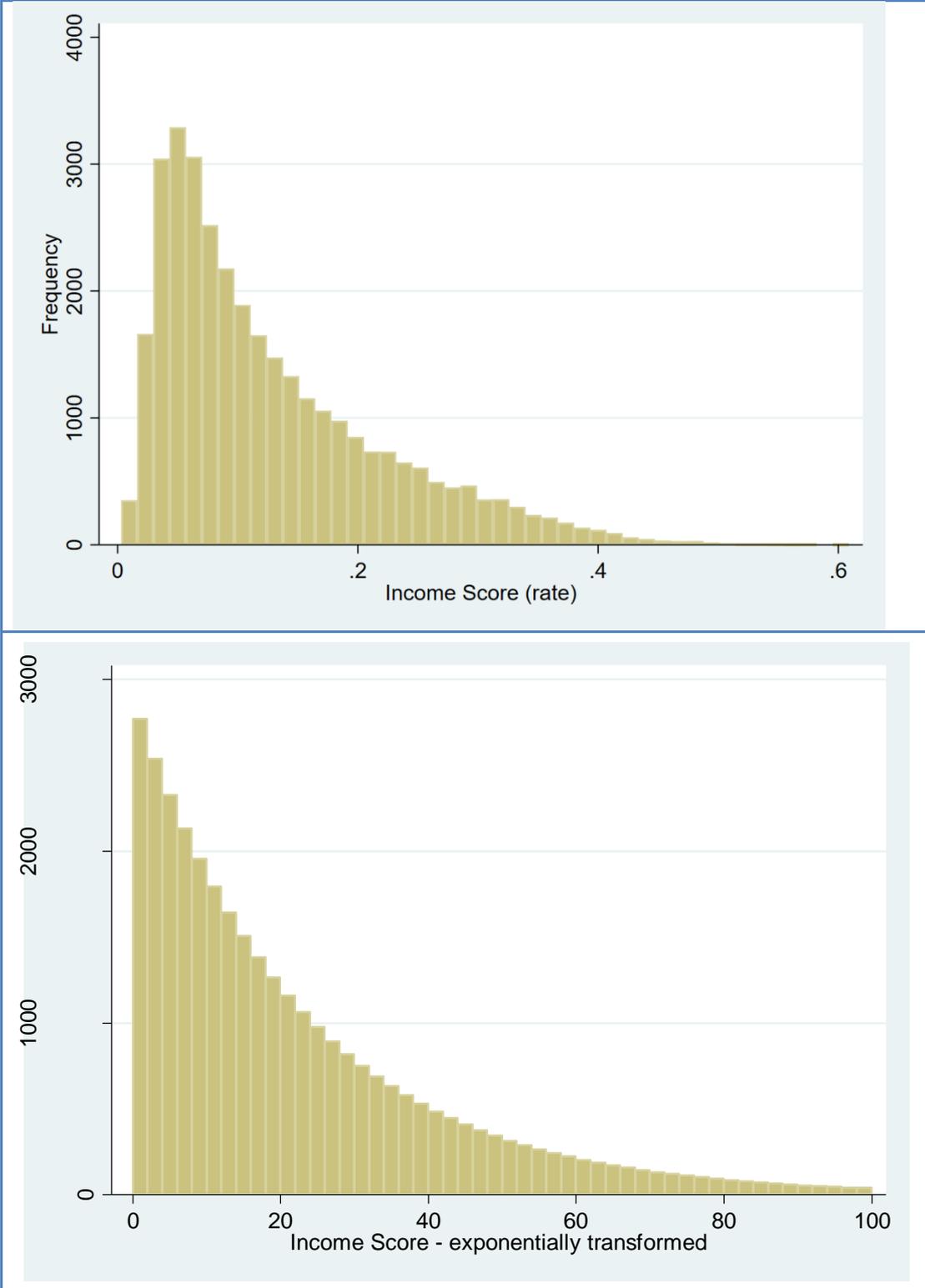
- 3.2.8 The neighbourhood-level Indices provide a description of areas; but this description does not apply to every person living in those areas. Many non-deprived people live in deprived areas, and many deprived people live in non-deprived areas.
- 3.2.9 Those areas that are not identified as relatively deprived by the neighbourhood-level Indices are not necessarily *affluent* areas. It may be the case that some areas with a high proportion of people experiencing deprivation, also contain a relatively high proportion of people who have high levels of income or wealth (i.e. where there is high inequality between residents living in the same area). The Indices does not capture or compare relative levels of wealth or affluence, so a lower ranked area could be described as less deprived, but not as more affluent or richer. Similarly, the least deprived area in the country should not be described as the most affluent or richest. For example, the measure of income deprivation is concerned with people on low incomes who are in receipt of benefits or have an income below 60% of the median. An area with a relatively small proportion of people (or indeed no people) on low incomes may also have relatively few or no people on high incomes. Such an area may be ranked among the least deprived in the country, but it is not necessarily among the most affluent. By contrast, an area with a relatively large proportion of people on low incomes may also contain a relatively high proportion of people with very high incomes (the presence of high earners in this area would not affect the overall income domain score which only takes into account the income of those who fall below the threshold to be considered income deprived).
- 3.2.10 In addition, the Indices of Deprivation methodology is designed to reliably distinguish between areas at the most deprived end of the distribution, but not at the least deprived end. Differences between less deprived areas in the country are therefore less well defined than those between areas at the more deprived end of the distribution.

The Index of Multiple Deprivation 2019

- 3.2.11 The overall Index of Multiple Deprivation 2019 describes each Lower-layer Super Output Area by combining information from all seven domains: Income Deprivation, Employment Deprivation, Health Deprivation and Disability, Education Skills and Training Deprivation, Barriers to Housing and Services, Living Environment Deprivation, and Crime.
- 3.2.12 As outlined in Chapter 2, the domains were combined in two stages. First, each domain score was standardised by ranking, and then transformed to an exponential distribution. Then the domains were combined using the explicit domain weights chosen. The overall Lower-layer Super Output Area level Index of Multiple Deprivation score was then ranked and split into deciles.
- 3.2.13 As indicated in paragraph 3.2.5 above, it is recommended that the Index of Multiple Deprivation ranks and deciles are used rather than the score. The score, being the combined sum of the weighted, exponentially transformed domain rank of the domain scores, is less easy to interpret in its own right. The exponential transformation stretches out the deprived end of the distribution, inflating the deprivation scores at the most deprived end to ensure that there is greater variation in deprivation scores for the most deprived 10% of areas.

3.2.14 Figure 3.1 illustrates the effect of the exponential distribution using the Income Deprivation Domain as an example. The first figure shows the distribution of the Income Deprivation scores, in other words the percentage of income-deprived people in each area. The second figure shows the exponentially transformed domain ranks, which range from 0 to 100. The 10 per cent most deprived Lower-layer Super Output Areas (numbering 3,248) have an exponentially transformed value of between 50 and 100. The remaining 90 per cent have an exponentially transformed value of between 0 and 50.

Figure 3.1. Distribution of Indices of Deprivation 2019 Income deprivation domain, before and after exponential transformation has been applied



The domains and sub-domains

- 3.2.15 Each of the seven domain scores, and six sub-domain scores, describe each type of deprivation in a Lower-layer Super Output Area. These enable users to focus on particular types of deprivation and to compare across Lower-layer Super Output Areas.
- 3.2.16 Larger scores on any of the domains or sub-domains correspond to more deprived areas. The scores for the Income Deprivation Domain and the Employment Deprivation Domain are rates and can be interpreted as the proportion of the relevant population that is 'income deprived' or 'employment deprived' respectively. For example, if a Lower-layer Super Output Area scores 0.38 in the Income Deprivation Domain, this means that 38 per cent of the population is income deprived in that area.
- 3.2.17 As indicated in paragraph 3.2.5 above, for the remaining five domains it is recommended that ranks and deciles are used rather than the score, as the scores are less easy to interpret. Further, these domains have different minimum and maximum values and ranges and cannot be directly compared. The scores reflect the statistical methods used to derive them (as described in Chapter 2 and the technical report) e.g. while the income and employment domain scores are proportions of the population, the other indicators are constructed by combining multiple indicators, which have been standardised by ranking and transforming to a normal distribution, therefore these scores are less straightforward to interpret and absolute score values cannot be compared across the different domains.

The Income Deprivation Affecting Children Index (IDACI) and Income Deprivation Affecting Older People Index (IDAOPI)

- 3.2.18 The Income Deprivation Affecting Children Index is a subset of the Income Deprivation Domain, with the Index showing the proportion of children in each Lower-layer Super Output Area that live in families that are income deprived; those that are in receipt of Income Support, income-based Jobseeker's Allowance, Universal Credit (where no adult is in 'Working – no requirements' conditionality regime), Pension Credit Guarantee or Child Tax Credit below a given threshold.
- 3.2.19 The Income Deprivation Affecting Older People Index is similarly a subset of the Income Deprivation Domain, with the score showing the proportion of a Lower-layer Super Output Area's population aged 60 and over who are income deprived.
- 3.2.20 As with the Income and Employment Deprivation Domain scores, the Income Deprivation Affecting Children Index and Income Deprivation Affecting Older People Index scores are rates, so can be interpreted as the proportion of the relevant population that is 'income deprived'. For example, a score of 0.24 on the Income Deprivation Affecting Children Index would mean that 24 per cent of children in the area live in income-deprived families.

3.3 Interpreting the higher-level geography summaries

- 3.3.1 The neighbourhood-level Indices data described above provide a description of deprivation levels across each of the Lower-layer Super Output Areas in England. The summary measures described in this section help users identify and understand the patterns of deprivation for larger areas such as Local Authority Districts.

- 3.3.2 The pattern of deprivation across large areas can be complex. In some areas, deprivation is concentrated in pockets, rather than evenly spread throughout. In some other areas the opposite picture is seen, with deprivation spread relatively evenly throughout the area, and with no highly deprived areas.
- 3.3.3 Higher-level areas such as Local Authority Districts or Local Enterprise Partnerships can also vary enormously in terms of geographical area and population size¹⁴. Accordingly, the volume of deprivation, for example how many people are experiencing income or employment deprivation, should also be taken into account, as well as the intensity of deprivation.
- 3.3.4 The set of summary measures have been carefully designed to help users understand deprivation patterns for a set of higher-level areas. The measures identify the overall intensity of deprivation, how deprivation is distributed across the larger area, and the overall volume, or 'scale', of deprivation:
- The **average rank** and **average score** summaries identify the average level of deprivation in the larger area, taking into account all Lower-layer Super Output Areas in the area.
 - The **proportion** of Lower-layer Super Output Areas in the most deprived 10 per cent nationally and the **extent** measure are summaries of the degree to which the higher-level area is highly deprived. These two summary measures respectively identify the proportion of the Lower-layer Super Output Areas that are in the most deprived 10 per cent of areas nationally, and a weighted-sum of the population living in the most deprived 30 per cent of areas nationally.
 - The **local concentration** summary identifies those higher-level areas with extreme levels of deprivation, by comparing the most deprived Lower-layer Super Output Areas in the higher-level area against those in other areas across the country.
 - The **income scale** and **employment scale** summaries identify the volume of deprivation in the larger area according to the number of people who are, respectively, income deprived or employment deprived. As with the average rank and score, these summaries are based on all Lower-layer Super Output Areas in the larger area.
- 3.3.5 No single summary measure is the 'best' measure. Each measure highlights different aspects of deprivation, and each leads to a different ranking of areas. Comparison of the different measures is needed to give a fuller description of deprivation in a large area. In addition, it is important to remember that the higher-area measures are *summaries*; the Lower-layer Super Output Area level data provides more detail than is available through the summaries.
- 3.3.6 The summary measures have been produced for the following higher-level geographies for the Index of Multiple Deprivation, domains and supplementary Indices: Local Authority Districts, upper-tier Local Authorities, Local Enterprise Partnerships and Clinical

¹⁴ Lower-layer Super Output Areas have been designed to cover roughly equal-sized populations, so direct comparisons of deprivation levels are appropriate.

Commissioning Groups¹⁵. As with the Lower-layer Super Output Area data, both ranks and scores are produced, with higher scores corresponding to higher levels of deprivation¹⁶, and areas ranked so that a rank of 1 identifies the most deprived higher-level area on that measure¹⁷.

Average rank

- 3.3.7 The average rank measure summarises the average level of deprivation across the higher-level area, based on the ranks of the Lower-layer Super Output Areas in the area.
- 3.3.8 As all Lower-layer Super Output Areas in the higher-level area are used to create the average rank, this gives a measure of the whole area covering both deprived and less-deprived areas. The measure is population-weighted, to take account of the fact that Lower-layer Super Output Area population sizes can vary.
- 3.3.9 The nature of this measure – using all areas and using ranks rather than scores – means that a highly polarised Local Authority or other higher-level area would not tend to score highly, because extremely deprived and less deprived Lower-layer Super Output Areas will ‘average out’. Conversely, a higher-level area that is more uniformly deprived will tend to score highly on this measure.

Average score

- 3.3.10 The average score measure summarises the average level of deprivation across the higher-level area, based on the scores of the Lower-layer Super Output Areas in the area.
- 3.3.11 As all Lower-layer Super Output Areas in the higher-level area are used to create the average score, this gives a measure of the whole area covering both deprived and less-deprived areas. The measure is population-weighted, to take account of the fact that Lower-layer Super Output Area population sizes can vary within a certain threshold.
- 3.3.12 The main difference with the average rank measure described above is that more deprived Lower-layer Super Output Areas tend to have more ‘extreme’ scores than ranks. So highly deprived areas will not tend to average out to the same extent as when using ranks; highly polarised areas will therefore tend to score higher on the average score measure than on the average rank.

¹⁵ Appendix A describes how users can aggregate the Lower-layer Super Output Area data to different geographies such as wards.

¹⁶ In order that higher scores can consistently be interpreted as corresponding to higher levels of deprivation, those summary measures that are based on Lower-layer Super Output Area *ranks* (the average rank and local concentration summary measures) use a reversed ranking - where 32,844 rather than 1 corresponds to the most deprived area - in the calculation of the summary measure score.

¹⁷ The ranks were constructed separately for each higher-level geography and are therefore not directly comparable between the different geographies. For example, an area ranked 20th of the Clinical Commissioning Groups is not necessarily more deprived than an area ranked 25th of the local authority districts. To compare between the different types of areas, the summary scores should be used rather than ranks.

Proportion of Lower-layer Super Output Areas in the most deprived 10 per cent nationally

- 3.3.13 The proportion of Lower-layer Super Output Areas in the most deprived 10 per cent nationally measures the proportion of the Lower-layer Super Output Areas in the higher-level area that are classified as among the most deprived 10 per cent in the country.
- 3.3.14 By contrast to the average rank and average score measures, which are based on all Lower-layer Super Output Areas in the higher-level area, this measure focuses only on the most deprived Lower-layer Super Output Areas. Higher-level areas which have no Lower-layer Super Output Areas in the most deprived 10 per cent of all such areas in England have a score of zero for this summary measure.

Extent

- 3.3.15 The extent measure is a summary of the proportion of the local population that live in areas classified as among the most deprived in the country. The extent measure is a more sophisticated version of the proportion of Lower-layer Super Output Areas in the most deprived 10 per cent nationally measure and is designed to avoid the sharp cut-off seen in that measure, whereby areas ranked only a single place outside the most deprived 10 per cent are not counted at all.
- 3.3.16 The extent measure is designed to avoid such 'cliff edges', by using a weighted measure of the population in the most deprived 30 per cent of all areas:
- The population living in the most deprived 10 per cent of Lower-layer Super Output Areas in England receive a 'weight' of 1.0
 - The population living in the most deprived 11 to 30 per cent of Lower-layer Super Output Areas receive a sliding weight, ranging from 0.95 for those in the eleventh percentile, to 0.05 for those in the thirtieth percentile.
- 3.3.17 Higher-level areas which have no Lower-layer Super Output Areas in the most deprived 30 per cent of all areas in England have a score of zero for this summary measure.

Local concentration

- 3.3.18 The local concentration measure is a summary of how the most deprived Lower-layer Super Output Areas in the higher-level area compare to those in other higher-level areas across the country. This measures the average rank for the most deprived Lower-layer Super Output Areas in the higher-level area that contain exactly 10 per cent of the higher-level area population.
- 3.3.19 Similar to the proportion of Lower-layer Super Output Areas in the most deprived 10 per cent nationally and extent measures, the local concentration measure is based on only the most deprived Lower-layer Super Output Areas, rather than on all areas. By contrast to these measures however, the local concentration measure gives additional weight to very highly deprived areas.
- 3.3.20 An example may help: consider two Local Authority Districts, the first having one-quarter of its Lower-layer Super Output Areas ranked in the most deprived *10 per cent* of all areas in England and the second with one-quarter of its Lower-layer Super Output Areas ranked in the most deprived *1 per cent* of all areas. The two Districts would score identically on

the proportion of Lower-layer Super Output Areas in most deprived 10 per cent nationally and extent of deprivation summary measures, as these do not differentiate between levels of deprivation within the most deprived decile. However, the local concentration score would be much higher for the second area, due to the large proportion of extremely highly deprived areas.

Income scale and employment scale (two measures)

- 3.3.21 The two scale measures summarise the number of people in the higher-level area who are income deprived (the income scale) or employment deprived (the employment scale).
- 3.3.22 These measures are designed to give an indication of the number of people experiencing income deprivation and employment deprivation in the local area. For example, if two Districts have the same percentage of income deprived people, the larger District will be ranked as more deprived on the income scale measure because more people are experiencing that type of deprivation.
- 3.3.23 It is important to note that the two scale measures do not pick up large populations, but large *deprived* populations. These measures will therefore identify Districts with large numbers of people experiencing deprivation.

Using the higher-level geography summaries to understand deprivation patterns

- 3.3.24 The higher-level geography summaries can help users better understand the patterns of deprivation in a local area. As an example, to help illustrate this, consider the two Local Authority Districts of Torridge and Swale. Both are rural coastal Districts within large counties (Devon and Kent, respectively). Table 3.1 identifies how the two Districts rank on the summary measures.

Table 3.1. Higher-level geography summary measures for two Local Authority Districts		
Higher-level geography summary measures	Swale Local Authority District (ranks)	Torridge Local Authority District (ranks)
Average rank	69	67
Average score	56	99
Proportion of Lower-layer Super Output Areas in the most deprived 10 per cent nationally	45	* 195
Extent	81	160
Local concentration	29	171
Income scale	111	256
Employment scale	112	262
On each summary measure, the most deprived Local Authority District in England is ranked 1, and larger ranks correspond to lower levels of deprivation.		
* Local Authority Districts with no Lower-layer Super Output Areas in the most deprived 10 per cent nationally receive a score of zero, and a joint rank of 195, for the proportion of Lower-layer Super Output Areas in the most deprived 10 per cent nationally summary measure.		

- 3.3.25 The two Districts are ranked very similarly across all Local Authority Districts, when based on the *average rank* of the Lower-layer Super Output Areas in the Districts. However, they differ on the other summary measures, with Swale ranking significantly more deprived

than Torrington on each of the other five measures. (Remember that smaller ranks correspond to higher levels of deprivation, with the most deprived area in England being ranked 1.)

- Swale has a higher ranking (i.e. more deprived) on both the average score measure and the proportion of Lower-layer Super Output Areas in most deprived 10 per cent nationally measure than it has on the average rank measure. By contrast, Torrington is significantly less deprived according to the average score measure, proportion of Lower-layer Super Output Areas in most deprived 10 per cent nationally measure and extent measure than it is on the average rank measure.
- The difference between the two Districts is most significant when using the local concentration scale, where Swale ranks in the most deprived 10 per cent of all Local Authority Districts in the country, while Torrington ranks in the 50 per cent *least* deprived.
- The higher ranking for Swale than Torrington on the income and employment scale measure shows that Swale has a greater *volume* of deprivation than Torrington, with a larger number of people who are income deprived, or employment deprived.

3.3.26 Comparison of the summary measures can be used to draw out the differences in deprivation patterns between the two areas. The analysis identifies that the most deprived parts of Swale are characterised by higher levels of deprivation than seen in the most deprived parts of Torrington, picked up in the Local concentration and Extent measures. However, there are also many less-deprived areas across Swale District which act to 'cancel' out these highly deprived areas in the average rank and average score measures. By comparison, there is less variation in deprivation levels across Torrington, with fewer neighbourhoods experiencing particularly high or particularly low levels of deprivation than is seen in Swale. As a consequence, Torrington scores significantly less deprived on those measures that highlight the most deprived neighbourhoods, namely the extent and local concentration summaries.

3.4 Interpreting change over time

3.4.1 The Indices of Deprivation 2019 have been produced using the same approach, structure and methodology used to create the previous Indices of Deprivation 2015 (and the 2010, 2007 and 2004 versions).

3.4.2 As stated earlier, the purpose of the Indices is to measure as accurately as possible the relative distribution of deprivation at a small area level, and that this comes at the expense of 'backwards' comparability with previous versions of the Indices. However, keeping a consistent methodology allows some comparisons to be made over time between the Indices of Deprivation 2019 and previous versions, but only in terms of comparing the rankings as determined at the relevant time point by each of the versions. The versions of the Indices should not be construed as a time-series. As described below, other changes limit the ability to make comparisons over time:

- Changes to the data used to construct the indicators, including changes to eligibility criteria for certain benefits used to measure income deprivation and employment deprivation
- Revisions to the population denominator data

- Changes to the area definitions and administrative geographies¹⁸.

3.4.3 This section outlines which types of comparisons over time are valid, and what users should consider when making comparisons over time.

Relative and absolute change

- 3.4.4 Changes in deprivation levels over time are relative to other areas. When exploring changes in deprivation between the Indices of Deprivation 2019 and previous versions of the Indices, users should be aware, and make clear in analysis, that such changes are relative to other areas.
- 3.4.5 For example, it would be valid to state that an area showed an increased level of deprivation, relative to other areas, if it was ranked within the most deprived 20 per cent of areas nationally based on the 2015 Indices but ranked within the most deprived 10 per cent according to the 2019 Indices. However, it would not necessarily be correct to state that the level of deprivation in the area had increased on some *absolute* scale, as it may be the case that all areas had improved, but that this area had improved more slowly than other areas and so been ‘overtaken’ by those other areas.
- 3.4.6 Similarly, the overall rank of an area may not have changed between the 2015 and 2019 Indices, but this does not mean that there have been no changes to the level of deprivation in the area. For example, in the situation where the absolute levels of deprivation in all areas were increasing or decreasing at the same rate, the ranks would show no change.
- 3.4.7 Equally, when comparing the overall Index of Multiple Deprivation, if improvements in one domain are offset by a decline in another domain, the overall Index of Multiple Deprivation position may be about the same even if significant changes have occurred in these two underlying domains.
- 3.4.8 As discussed in 3.2.15, on two domains, the Income Deprivation Domain and the Employment Deprivation Domain, and the supplementary Indices, the domain scores are simple proportions of the relevant population experiencing income or employment deprivation, respectively. Nevertheless, these domains and supplementary Indices are not directly comparable with previous versions of the Indices for the reasons outlined in 3.4.2 and measures of change over time are, again, relative.

Understanding changes in the Indices over time

3.4.9 Users should be aware of the following to understand why changes in the Indices of Deprivation data should be interpreted with care.

Changes to the indicators or data used to construct the indicators

3.4.10 Although the Indices of Deprivation 2019 have been produced using the same approach, structure and methodology as earlier versions, there are some changes to the basket of indicators used (although not to the domains themselves). As described in the

¹⁸ For example, caution should be exercised when comparing ranks of the 2019 Indices with previous updates, since there were 317 Local Authorities at the time of the 2019 Indices compared with 326 for previous updates.

accompanying Technical Report, the introduction of Universal Credit into the benefits system has necessitated the inclusion of two new indicators in the Indices of Deprivation 2019, and other changes to the data landscape have resulted in a number of additional small modifications to indicators across various domains. Each of these changes was introduced to strengthen the Indices as a robust measure of small area deprivation.

- 3.4.11 In addition, changes to the data sets underlying the indicators may have an effect on indicator values. These changes could include, for example, eligibility criteria changes for certain benefits, or changes to the assessment framework for primary school examinations.

Revisions to the population denominator data

- 3.4.12 In October 2018, the mid-year population estimates stretching back to 2012 were revised following improvements to the methodology to roll forward estimates from the Census 2011 population data, drawing from newly available administrative data¹⁹. These mid-year estimates are an important component of the Indices of Deprivation, and changes to the population estimates can result in changes to deprivation levels.
- 3.4.13 The earlier Indices of Deprivation 2015, 2010, 2007, 2004 and 2000 used mid-year population estimate data published prior to the 2018 revisions.

Changes to the Local Authority definitions

- 3.4.14 The Indices of Deprivation 2019 have been produced using the current (2019) version of Local Authorities, while the previous Indices used the 2013 version. The table below shows the changes made between Local Authorities between 2013 and 2019.

¹⁹ See

<https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/annualmidyearpopulationestimates/mid2012tomid2016> for more details

Table 3.1. Local Authority Districts with changed boundaries between 2013 and 2019	
Local Authority District 2013	Local Authority District 2019
Bournemouth	Bournemouth, Christchurch and Poole
Poole	Bournemouth, Christchurch and Poole
Christchurch	Bournemouth, Christchurch and Poole
East Dorset	Dorset
North Dorset	Dorset
Purbeck	Dorset
West Dorset	Dorset
Weymouth and Portland	Dorset
Taunton Deane	Somerset West and Taunton
West Somerset	Somerset West and Taunton
Forest Heath	West Suffolk
St Edmundsbury	West Suffolk
Suffolk Coastal	East Suffolk
Waveney	East Suffolk

3.4.15 As a result of these changes, the number of Local Authority Districts has been reduced from 326 to 317.

Considerations in assessing change over time

3.4.16 The changes described above make it difficult to determine real changes in deprivation from the Indices' rankings and scores, such as those arising from social, economic or demographic trends and the impact of specific policies or interventions. Users who wish to explore whether any changes seen in the Indices of Deprivation data can be attributed to real change over time may wish to:

- examine the impact of new or changed indicators in the areas that they are interested in. For example, using the published domain and indicator data to identify those changes that have an impact on the final output scores and ranks
- examine whether changes observed between the Indices of Deprivation 2019 and the earlier Indices could be, at least in part, due to revisions to the population estimates²⁰
- check that changes in deprivation levels between the time-points are not in part caused by changes to the geographies.

3.4.17 Users may also wish to examine trends seen in other data sets. There is an increasing amount of open (i.e. published) data available for users to explore social, economic and demographic trends at local level. Users may want to analyse trends seen in the Indices of Deprivation data in the context of these other data sets to understand what is likely to be driving changes. For example, benefit claimant data published by the Department for Work and Pensions²¹ and economic and labour market data published by the Office for

²⁰ Note that the analysis of change in Chapter 5 is based on the published Indices of Deprivation data and has not been adjusted for the revisions to the population estimates.

²¹ Statistics published by the Department of Work and Pensions are linked from <https://www.gov.uk/government/organisations/department-for-work-pensions/about/statistics>.

National Statistics²² can be used to understand whether changes to the size of particular groups receiving benefits may be driving changes in the Income Deprivation Domain and Employment Deprivation Domain.

- 3.4.18 Other local knowledge of the area can be helpful when interpreting changes in the data. For example, knowing the impact of local business growth and job creation schemes would mean that changes in the Employment Deprivation Domain could be more confidently attributed to real change.

3.5 Comparing the English Indices of Deprivation 2019 with Welsh, Scottish and Northern Irish Indices of deprivation

- 3.5.1 Indices of Deprivation data is published for each of the countries in the United Kingdom²³. These data sets are based on the same concept and general methodology, however there are differences in the domains and indicators, the geographies for which the Indices are developed and the time points on which they are based. These differences mean that the ranks and scores for the English Indices of Deprivation published here should not be directly compared with those from the Indices produced in Wales, Scotland and Northern Ireland.

²² For example, labour market trends data from the Office for National Statistics is available at <http://www.ons.gov.uk/ons/rel/lms/labour-market-statistics/index.html>.

²³ Scottish Index of Multiple Deprivation 2016, <https://www2.gov.scot/Topics/Statistics/SIMD>; Welsh Index of Multiple Deprivation 2014, <http://gov.wales/statistics-and-research/welsh-index-multiple-deprivation/?lang=en>; Northern Ireland Multiple Deprivation Measure 2017, <https://www.nisra.gov.uk/statistics/deprivation/northern-ireland-multiple-deprivation-measure-2017-nimdm2017>

Chapter 4. The geography of deprivation

4.1 Introduction

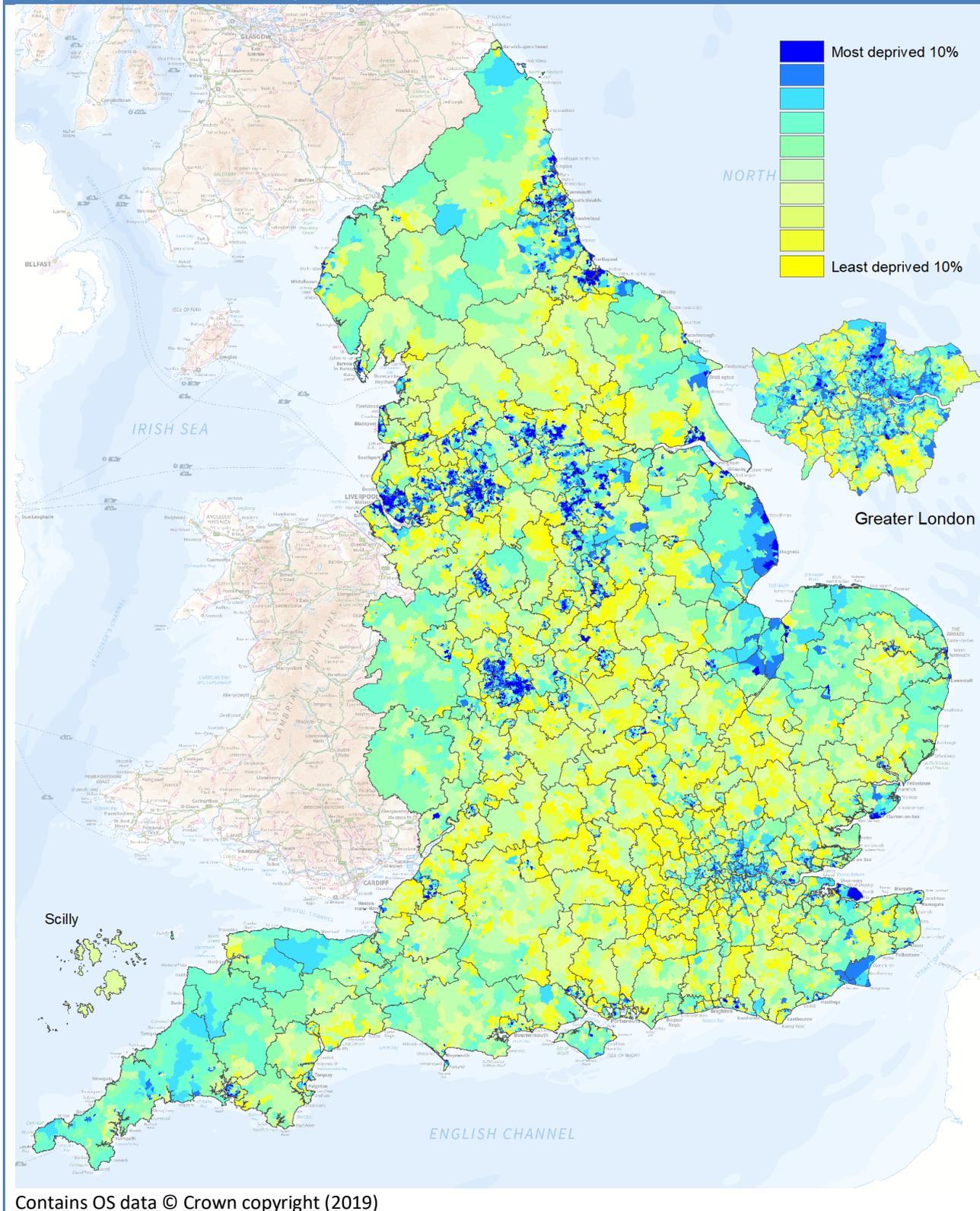
- 4.1.1 This and the following chapter present summary findings from analysis of the Indices of Deprivation 2019. Chapter 5 focuses on change over time, while this chapter focuses on the geography of deprivation across England, looking at:
- deprivation at local level, showing the most deprived Lower-layer Super Output Areas and Local Authority Districts according to the Index of Multiple Deprivation
 - areas that are highly deprived on more than one domain
 - Local Authority District summary measures, including maps of the set of summary measures.
- 4.1.2 In this analysis we have described patterns of deprivation using a variety of thresholds appropriate to the analysis carried out. There is no definite threshold above which an area can be described as 'deprived'; the Indices of Deprivation are a continuous scale of deprivation. Users often take the most deprived 10 per cent or 20 per cent of Lower-layer Super Output Areas (or Local Authority Districts) as the group of highly deprived areas, however there is no reason that other thresholds could not be used instead.
- 4.1.3 The maps and charts in this and the following chapter show all areas, grouped into 10 per cent bands. In addition, the most deprived areas are analysed looking at the most deprived 1 per cent, 5 per cent, 10 per cent and 20 per cent of Lower-layer Super Output Areas. Where Local Authority Districts are described, we illustrate the analysis by showing the most deprived 10 Local Authorities for the overall Index of Multiple Deprivation, and we present the most deprived 5 Local Authorities for each of the domains in Appendix E. Some of the analysis groups all Lower-layer Super Output Areas across the country into 10 per cent bands (*deciles*) and 20 per cent bands (*quintiles*), by their deprivation rank. Based on the published data, users can of course extend the analysis in this section to examine any of the areas or issues in more detail.
- 4.1.4 In addition to the analysis in this chapter, Appendix C presents summary measures for Local Enterprise Partnerships and Clinical Commissioning Groups, and Appendix D presents analysis of the domains and sub-domains.

4.2 Deprivation at local level

The Index of Multiple Deprivation

- 4.2.1 The patterns of deprivation across England are complex. The most deprived Lower-layer Super Output Areas and least deprived Lower-layer Super Output Areas are spread throughout England.
- 4.2.2 The following map shows the Index of Multiple Deprivation 2019 at Lower-layer Super Output Area level across England (Map 4.1). The areas have been ranked and divided into 10 equal groups (deciles). Areas shaded dark blue are the most deprived 10 per cent of Lower-layer Super Output Areas in England, while areas shaded bright yellow are the least deprived 10 per cent.

Map 4.1. The Index of Multiple Deprivation rank 2019 at LSOA level.



4.2.3 As was the case in previous Indices, there are concentrations of deprivation in large cities and towns, including areas that have historically had large heavy industry, manufacturing and/or mining sectors, coastal towns, and large parts of East London.

The most deprived areas by Local Authority District

4.2.4 This section highlights which Local Authority Districts rank as most deprived, based on those Lower-layer Super Output Areas that are ranked among the 20 per cent, 10 per cent, 5 per cent and 1 per cent most deprived areas nationally (Section 4.4 looks in more detail at the full set of summary measures for Local Authority Districts). As Local Authority Districts vary considerably in size, the analysis here is based on those areas with the highest proportion of deprived Lower-layer Super Output Areas.

Tables 4.1 to 4.4 below show the ten Local Authorities with the highest proportion of Lower-layer Super Output Areas in the most deprived 20 per cent, 10 per cent, 5 per cent, and 1 per cent nationally, respectively. Of the 317 Local Authority Districts in England:

- 260 have at least one Lower-layer Super Output Area in the most deprived 20 per cent
- 194 have at least one Lower-layer Super Output Area in the most deprived 10 per cent
- 135 have at least one Lower-layer Super Output Area in the most deprived 5 per cent
- 71 have at least one Lower-layer Super Output Area in the most deprived 1 per cent nationally.

Table 4.1. Local Authority Districts with the highest proportion of Lower-layer Super Output Areas in the most deprived 20 per cent of areas nationally based on the Index of Multiple Deprivation

Local Authority District	Number	Total number of LSOAs	Per cent
Knowsley	62	98	63.3
Liverpool	187	298	62.8
Sandwell	112	186	60.2
Manchester	167	282	59.2
Blackpool	55	94	58.5
Nottingham	104	182	57.1
Middlesbrough	49	86	57.0
Birmingham	360	639	56.3
Blackburn with Darwen	51	91	56.0
Barking and Dagenham	60	110	54.5

Table 4.2. Local Authority Districts with the highest proportion of Lower-layer Super Output Areas in the most deprived 10 per cent of areas nationally based on the Index of Multiple Deprivation

Local Authority District	Number	Total number of LSOAs	Per cent
Middlesbrough	42	86	48.8
Liverpool	145	298	48.7
Knowsley	46	98	46.9
Kingston upon Hull, City of	75	166	45.2
Manchester	122	282	43.3
Blackpool	39	94	41.5
Birmingham	264	639	41.3
Burnley	23	60	38.3
Blackburn with Darwen	33	91	36.3
Hartlepool	21	58	36.2

Table 4.3. Local Authority Districts with the highest proportion of Lower-layer Super Output Areas in the most deprived 5 per cent of areas nationally based on the Index of Multiple Deprivation

Local Authority District	Number	Total number of LSOAs	Per cent
Middlesbrough	34	86	39.5
Liverpool	113	298	37.9
Knowsley	37	98	37.8
Blackpool	33	94	35.1
Kingston upon Hull, City of	56	166	33.7
Burnley	15	60	25.0
Hartlepool	14	58	24.1
Manchester	66	282	23.4
Birmingham	138	639	21.6
North East Lincolnshire	22	106	20.8

Table 4.4. Local Authority Districts with the highest proportion of Lower-layer Super Output Areas in the most deprived 1 per cent of areas nationally based on the Index of Multiple Deprivation

Local Authority District	Number	Total number of LSOAs	Per cent
Blackpool	22	94	23.4
Knowsley	15	98	15.3
Middlesbrough	13	86	15.1
Liverpool	31	298	10.4
North East Lincolnshire	11	106	10.4
Kingston upon Hull, City of	14	166	8.4
Barrow-in-Furness	4	49	8.2
Wirral	15	206	7.3
Hartlepool	4	58	6.9
Redcar and Cleveland	6	88	6.8

Levels of income and employment deprivation in the most deprived areas

- 4.2.5 Table 4.5 shows, for the most deprived 1 per cent, 5 per cent, 10 per cent and 20 per cent of Lower-layer Super Output Areas according to the Index of Multiple Deprivation, the proportion of the population that is income or employment deprived, with additional detail for children and older people living in low income families. The table also shows the 20-40 per cent, 40-60 per cent, 60-80 per cent and 80-100 per cent quintiles for comparison, along with the average for all areas across England.

Table 4.5: The proportion of the population that are income or employment deprived, including the proportion of children and older people that are income deprived, for all Lower-layer Super Output Areas grouped by their Index of Multiple Deprivation 2019 rank

	Percentage of people who are income deprived	Percentage of working-age people who are employment deprived	Percentage of children who are income deprived	Percentage of older people who are income deprived
1 per cent most deprived areas	43.9	34.0	49.8	43.8
5 per cent most deprived areas	36.9	27.7	42.4	39.2
10 per cent most deprived areas	32.9	24.3	38.2	36.0
20 per cent most deprived areas	27.9	20.3	33.4	31.8
20-40 per cent areas	15.7	11.4	20.5	19.6
40-60 per cent areas	9.9	7.7	12.8	12.4
60-80 per cent areas	6.5	5.5	7.9	8.4
80-100 per cent (least deprived) areas	3.8	3.7	4.2	5.1
All areas in England	12.8	9.9	16.9	14.1

4.2.6 The most deprived 20 per cent of Lower-layer Super Output Areas in England, that is 6,568 of the 32,844 areas, account for 10.9 million people, representing almost exactly 20 per cent of the population of England²⁴. The table shows that in these areas:

- on average, over a quarter (27.9 per cent) of people are income deprived
- one in five (20.3 per cent) of the working age population (women aged 18 to 59 and men aged 18 to 64) are employment deprived
- one third of children live in families that are income deprived (33.4 per cent)
- just under one third (31.8 per cent) of older people are income deprived.

4.2.7 People living in the most deprived 1 per cent of areas are more than 10 times as likely to be income deprived as those in the least deprived 20 per cent of areas. In the most deprived 1 per cent of areas over two-fifths of all people, and half of all children, are income deprived.

4.3 Areas that are highly deprived on more than one domain

4.3.1 Many of the most deprived areas in England face multiple issues. Taking the most deprived 10 per cent (decile) of Lower-layer Super Output Areas on the overall Index of Multiple Deprivation 2019, it is possible to ascertain the number of component domains on which each Lower-layer Super Output Area ranks within the most deprived 10 per cent of areas nationally.

²⁴ As outlined in Section 3.2, it is important to remember that not all people living in deprived Lower-layer Super Output Areas are themselves deprived.

4.3.2 Table 4.6 summarises this information and shows:

- No Lower-layer Super Output Areas rank in the most deprived 10 per cent of areas nationally on all seven component domains.
- 137 (4.2 per cent) of the 3,284 Lower-layer Super Output Areas rank in the most deprived 10 per cent of Lower-layer Super Output Areas on six domains.
- Nearly one third (30.7 per cent) of the 3,284 Lower-layer Super Output Areas rank in the most deprived 10 per cent of Lower-layer Super Output Areas on five or more domains.
- Nearly two-thirds (65.5 per cent) of the 3,284 Lower-layer Super Output Areas rank in the most deprived 10 per cent of Lower-layer Super Output Areas on four or more domains.
- Almost all (98.7 per cent) of the 3,284 Lower-layer Super Output Areas rank in the most deprived 10 per cent of Lower-layer Super Output Areas on two or more domains.
- All of the 3,284 Lower-layer Super Output Areas rank in the most deprived 10 per cent of Lower-layer Super Output Areas on at least one domain.

Table 4.6. Lower-layer Super Output Areas that are in the most deprived 10 per cent of areas nationally based on the Index of Multiple Deprivation, by the number of domains on which they are also in the most deprived decile

Number of domains	Number of Lower-layer Super Output Areas	Percentage of Lower-layer Super Output Areas	Cumulative Percentage
6	137	4.2	4.2
5	870	26.5	30.7
4	1145	34.9	65.5
3	778	23.7	89.2
2	312	9.5	98.7
1	42	1.3	100
Total	3,284	100.0	

4.3.3 Table 4.7 shows more detail for the 137 Lower-layer Super Output Areas in England that are in the 10 per cent most deprived areas on six domains of deprivation. These 137 Lower-layer Super Output Areas are not evenly distributed across England: the table lists the ten Local Authority Districts that contain the highest proportion of Lower-layer Super Output Areas ranked among the 10 per cent most deprived on six domains.

Table 4.7. Local Authority Districts with the highest proportions of Lower-layer Super Output Areas that are in the most deprived 10 per cent of areas nationally for at least six of the seven domains

Local Authority District	Number of Lower-layer Super Output Areas	Total number of LSOAs	Percentage of Lower-layer Super Output Areas in the District
Blackpool	15	94	16.0
Burnley	7	60	11.7
North East Lincolnshire	6	106	5.7
Kingston upon Hull, City of	9	166	5.4
Liverpool	14	298	4.7
Bradford	11	310	3.5
Swale	3	85	3.5
Leeds	13	482	2.7
Birmingham	13	639	2.0
Stoke-on-Trent	3	159	1.9

4.4 Local Authority District summary measures

- 4.4.1 The pattern of deprivation across large areas such as Local Authority Districts can be complex. In some areas, deprivation is concentrated in severe pockets, rather than evenly spread throughout. In some other areas the opposite picture is seen, with deprivation spread relatively evenly throughout the area, and with no highly deprived areas. The set of summary measures described in Section 3.3 have been designed to help users understand deprivation patterns for higher-level areas such as Local Authority Districts. The measures identify the overall intensity of deprivation, how deprivation is distributed across the larger area, and the overall volume, or ‘scale’, of deprivation. For further detail on the set of summary measures, see Section 3.3.
- 4.4.2 Maps 4.2 to 4.8 on the following pages show each of the summary measures of the Index of Multiple Deprivation 2019 mapped for Local Authority Districts across England. For each of the maps the Local Authority Districts have been divided into 10 equal groups (deciles) according to the level of deprivation on the summary measure. Local Authority Districts in the most deprived decile are shaded dark blue, those in the next most deprived decile are shaded a lighter blue. Each successively less deprived decile is shaded through lighter blues and greens until the least deprived decile which is shaded bright yellow.
- 4.4.3 When interpreting maps, the eye is drawn to large swathes of colour. This can be misleading as geographically large Local Authority Districts may have relatively small populations whereas geographically small Local Authority Districts may contain larger populations. There is an inset for London where the 33 boroughs are geographically small and obscured on the large map.

Average rank

- 4.4.4 Map 4.2 shows the distribution of Local Authority Districts on the average rank measure. The most deprived Local Authority Districts (shaded dark blue) are widely distributed across the country. There is a concentration of Local Authorities in London in the most

deprived decile on this measure, and also in Local Authority Districts in the Midlands, the North East and North West of England. The most deprived decile includes coastal areas such as Blackpool, Liverpool and Kingston upon Hull; metropolitan centres such as Greater Manchester and the West Midlands; and former industrial areas.

Average score

- 4.4.5 Map 4.3 shows the distribution of Local Authority Districts on the average score measure. Areas in the most deprived decile are concentrated in larger cities in the North and the Midlands. There are also concentrations in some smaller towns in Lancashire and the South and East coast.

Proportion of Lower-layer Super Output Areas in the most deprived 10 per cent nationally

- 4.4.6 Map 4.4 shows the distribution of Local Authority Districts on the proportion of Lower-layer Super Output Areas in the most deprived 10 per cent nationally measure. This measure is based on only those Lower-layer Super Output Areas in the most deprived 10 per cent, rather than the average rank and score measures which are based on averages across all Lower-layer Super Output Areas. The measure shows a much greater concentration of Local Authority Districts in the most deprived decile in northern Local Authority Districts and to a lesser extent the Midlands, with only a single Local Authority south of Birmingham (specifically, Hastings) identified by this measure as being in the most deprived decile.

Extent of deprivation

- 4.4.7 Map 4.5 shows the distribution of Local Authority Districts on the extent of deprivation measure. The distribution of the most deprived decile is similar to the average score measure described above. In contrast with the previous measure, the proportion of Lower-layer Super Output Areas in the most deprived 10 per cent nationally, there are two London boroughs identified as being in the most deprived decile on the extent measure.

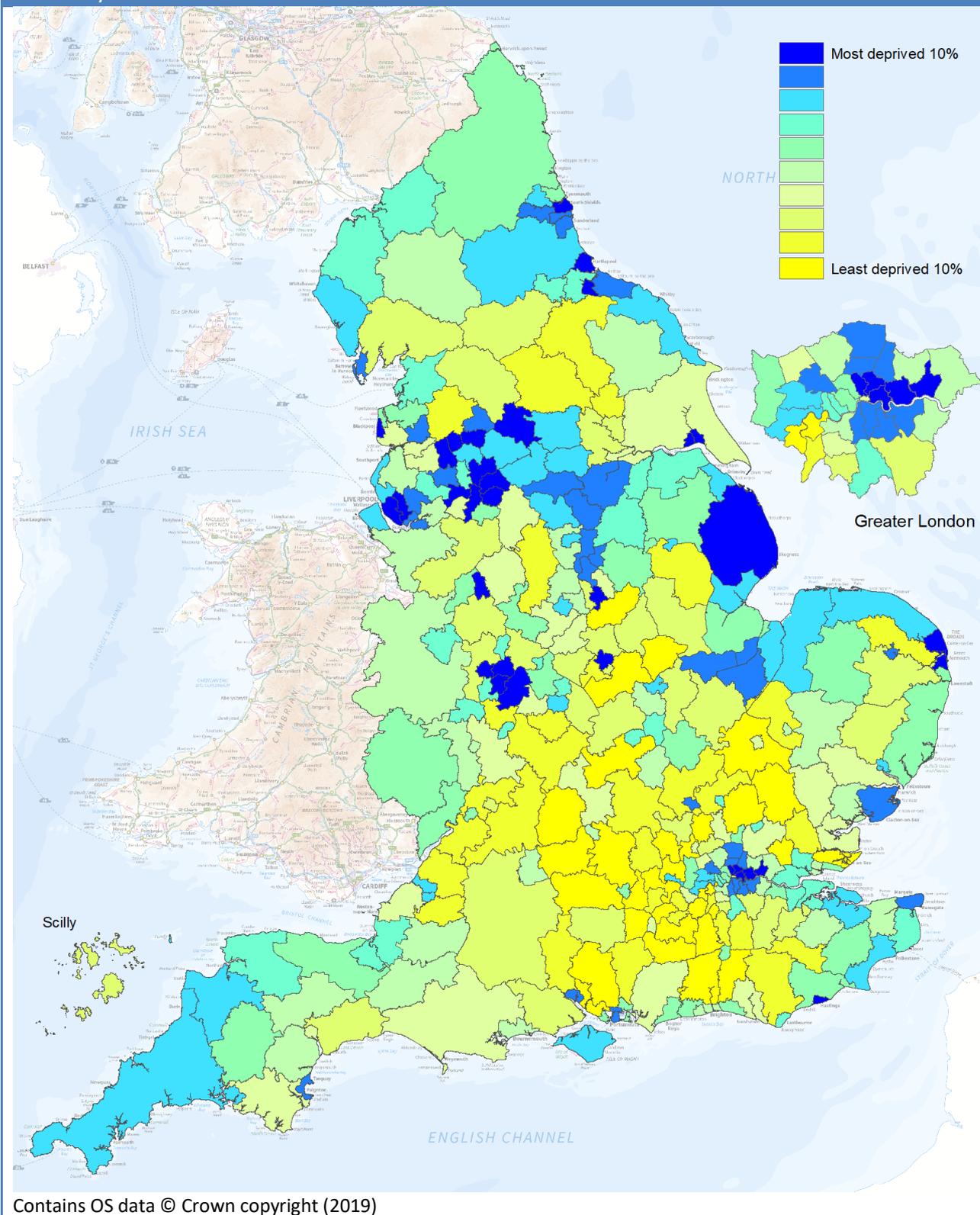
Local concentration of deprivation

- 4.4.8 Map 4.6 shows the distribution of Local Authority Districts on the local concentration of deprivation measure. This summary measure tends to highlight those Local Authority areas with very highly deprived Lower-layer Super Output Areas and shows a different distribution of the most deprived decile to the measures above, in that there are particularly high concentrations in coastal areas with 11 of the 20 areas with the highest Local Concentration scores located in coastal areas.

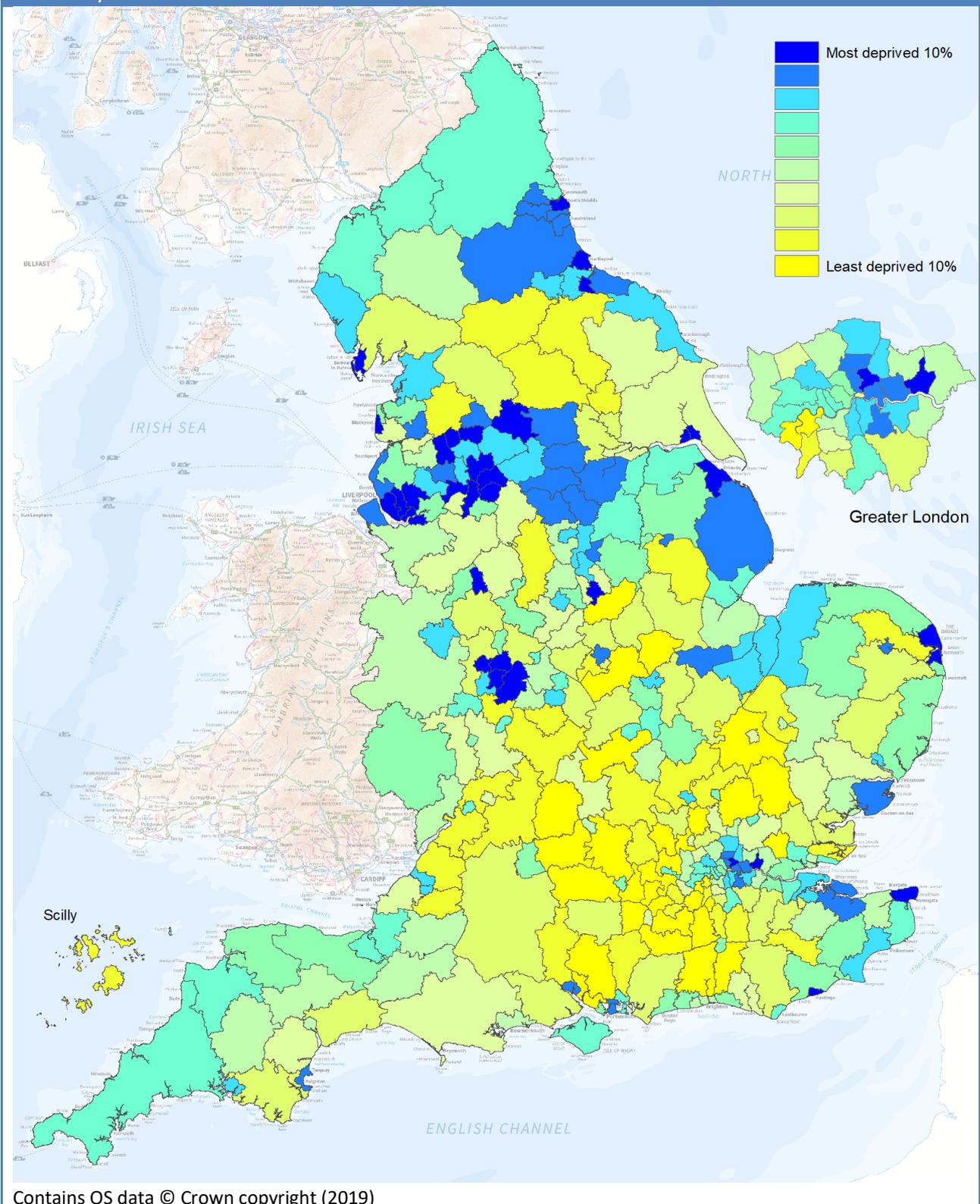
Income scale and employment scale

- 4.4.9 Maps 4.7 and 4.8 shows the distribution of Local Authority Districts on the income and employment scale measures. As these measures are based on the scale, or number, of people who are income- and employment-deprived, the measures tend to highlight highly deprived and highly populated Local Authority areas. Some London boroughs and Local Authority Districts in the North West feature in the most deprived decile on both of these measures. In addition, clusters in the Midlands and the large unitary authorities of Cornwall and County Durham are in the most deprived decile on both measures.

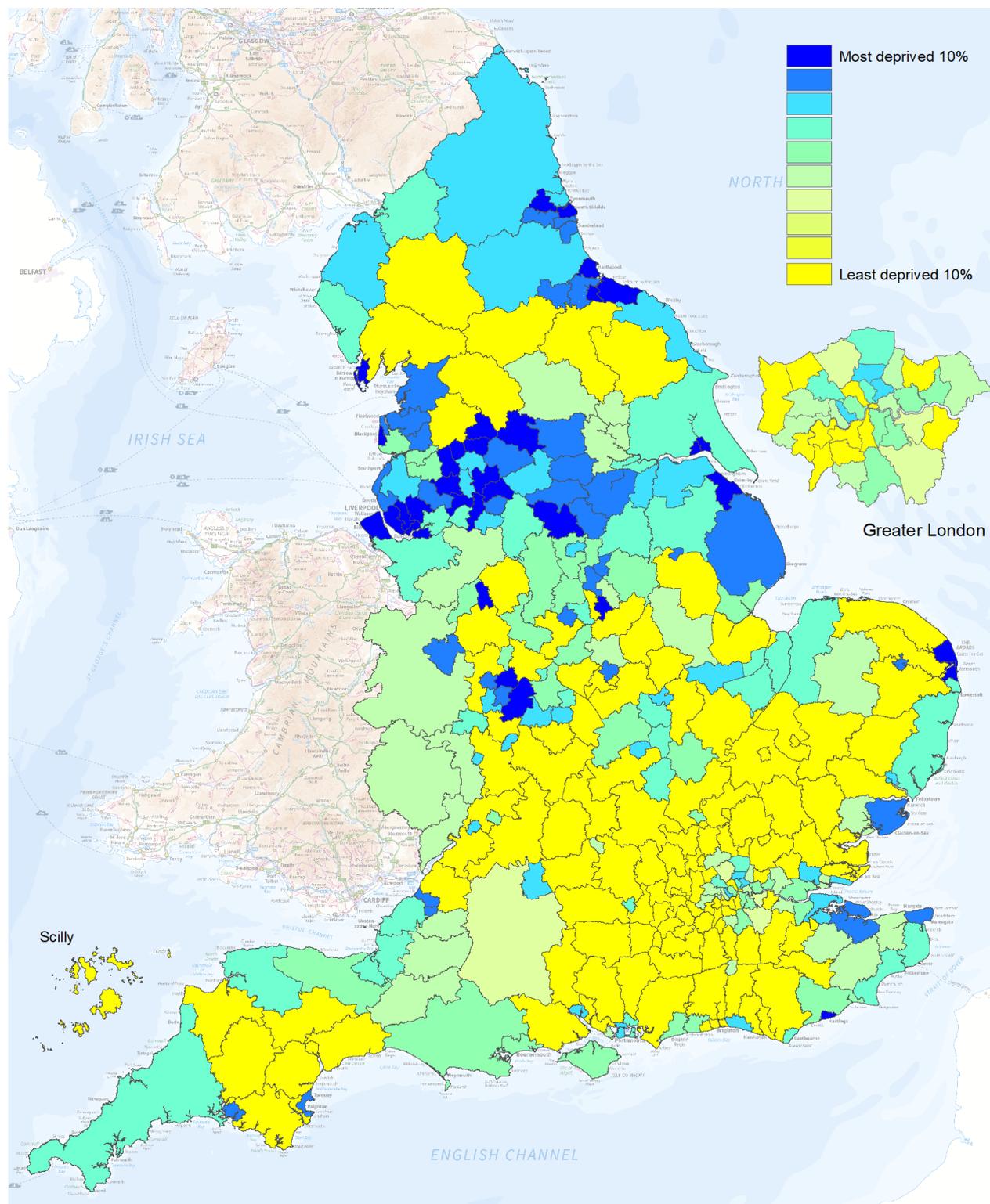
Map 4.2. Average rank summary measure of the Index of Multiple Deprivation 2019, for Local Authority Districts



Map 4.3. Average score summary measure of the Index of Multiple Deprivation 2019, for Local Authority Districts

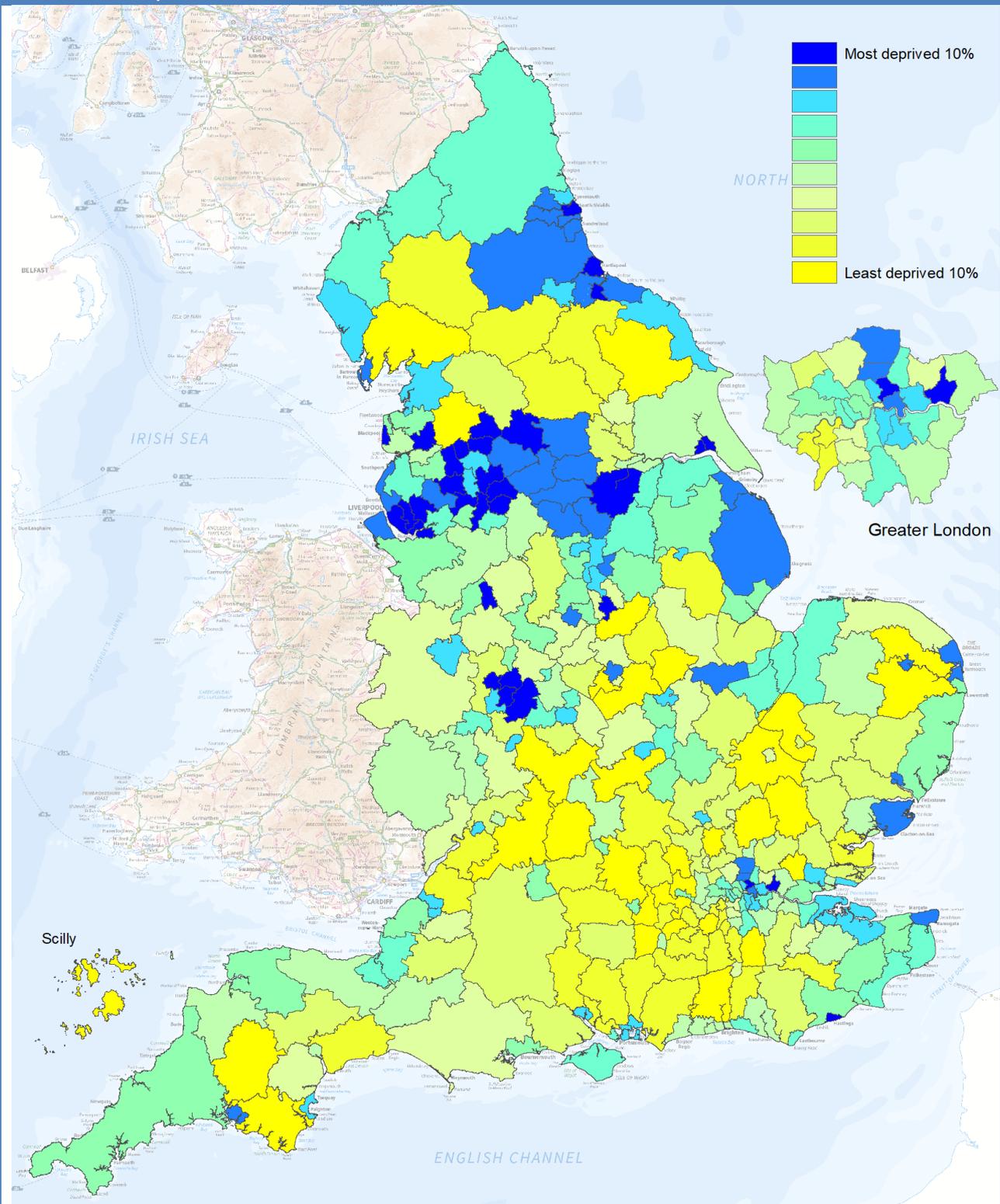


Map 4.4. Proportion of Lower-layer Super Output Areas in the most deprived 10 per cent nationally summary measure of the Index of Multiple Deprivation 2019, for Local Authority Districts



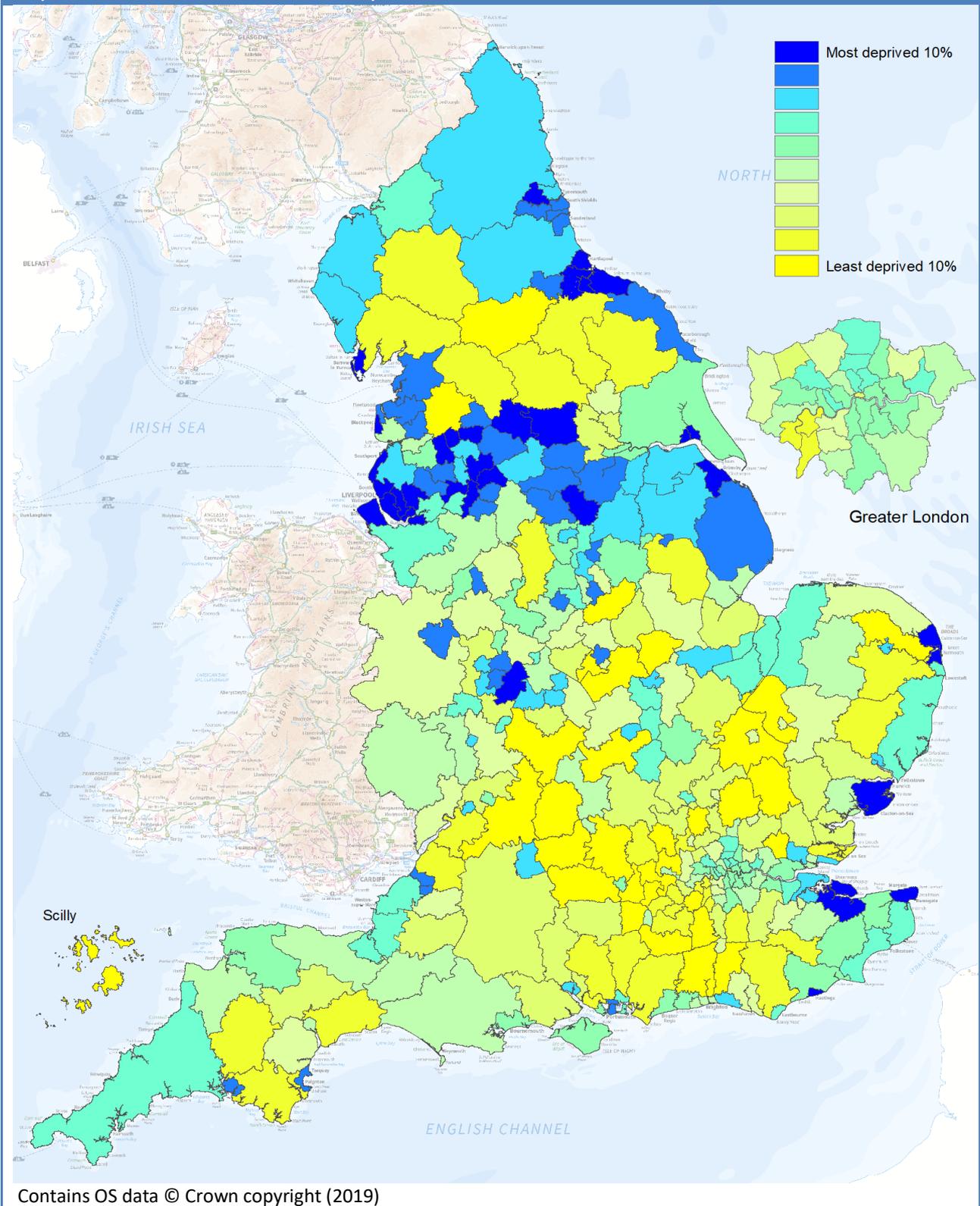
Note, there are 123 Districts with no Lower-layer Super Output Areas in the most deprived 10 per cent of areas. These areas score zero on the summary measure and are shown in the least deprived decile.
 Contains OS data © Crown copyright (2019)

Map 4.5. Extent of deprivation summary measure of the Index of Multiple Deprivation 2019, for Local Authority Districts

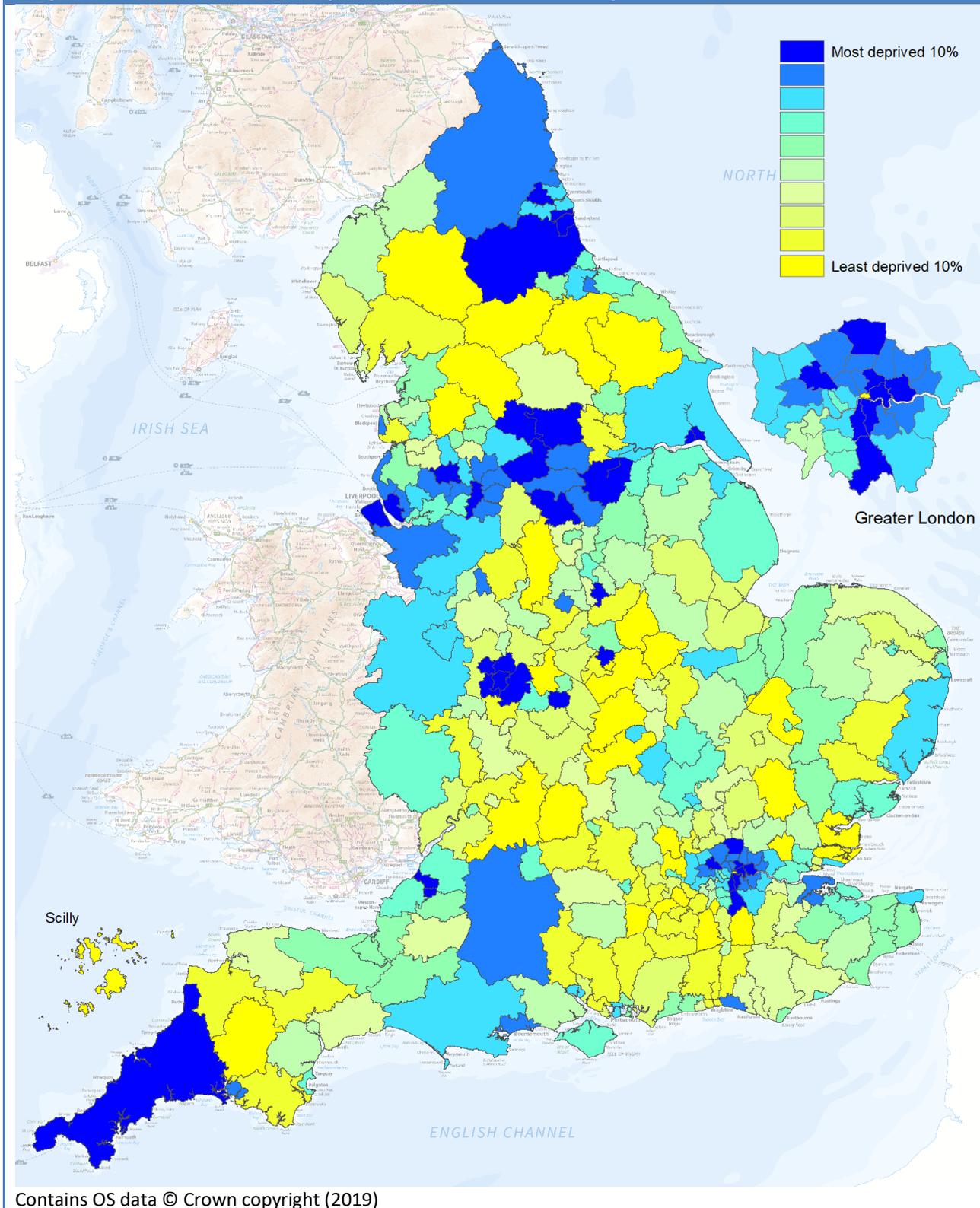


Note, there are 23 Districts with no Lower-layer Super Output Areas in the most deprived 30 per cent of areas. These areas score zero on the extent measure and are shown in the least deprived decile. Contains OS data © Crown copyright (2019)

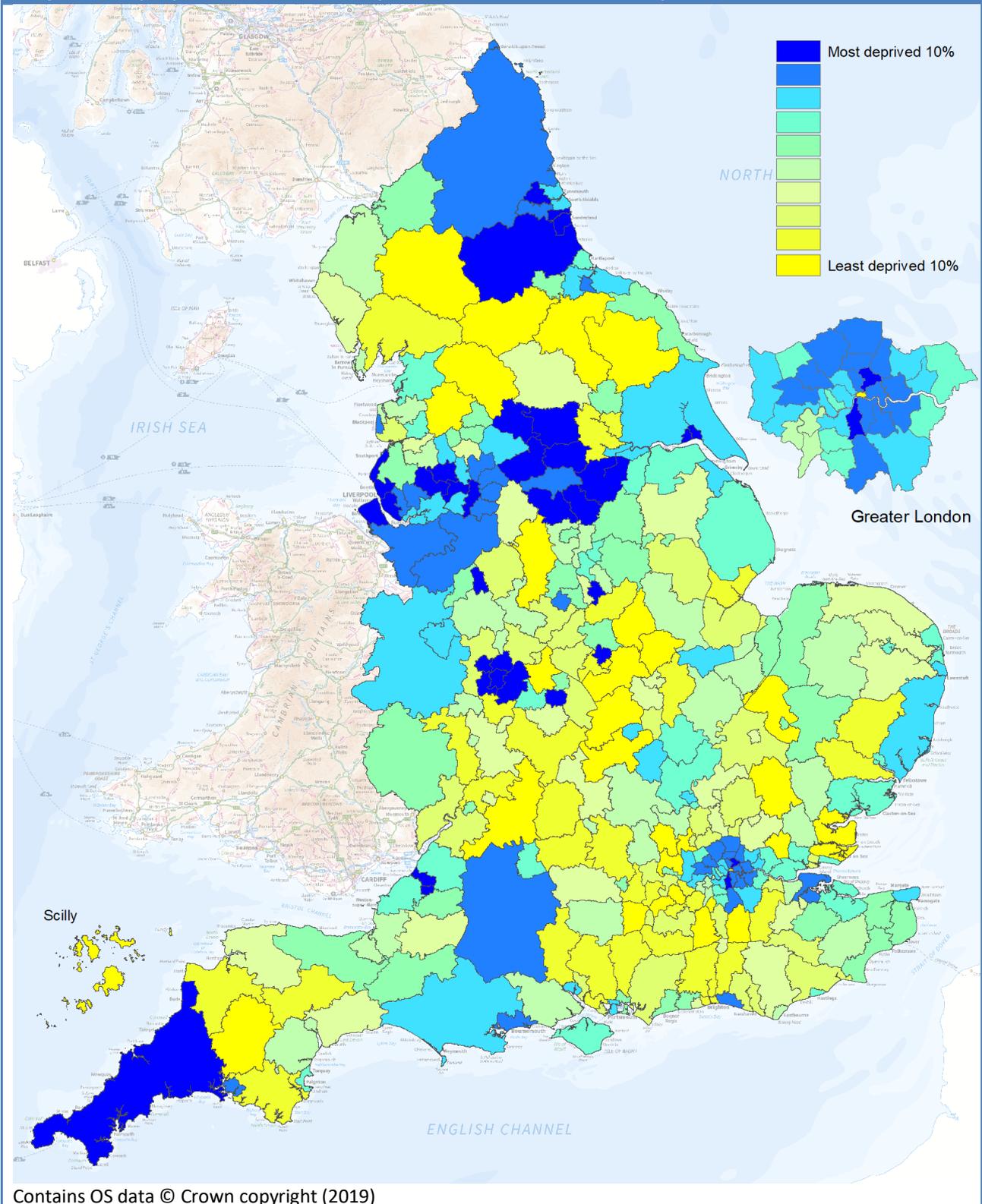
Map 4.6. Local concentration of deprivation summary measure of the Index of Multiple Deprivation 2019, for Local Authority Districts



Map 4.7. Income scale summary measure for Local Authority Districts



Map 4.8. Employment scale summary measure for Local Authority Districts



4.4.10 The tables below show the 20 Local Authority Districts ranked as most deprived according to each of the summary measures (a rank of 1 being the most deprived). Appendix C shows the same data for Clinical Commissioning Groups and Local Enterprise Partnerships.

Table 4.8: The most deprived Local Authority Districts on each of the summary measures of the Index of Multiple Deprivation 2019 and on the income and employment scale measures

	Average Rank	Average Score	Proportion of Lower-layer Super Output Areas in the most deprived 10 per cent nationally	Extent	Local Concentration	Income Scale	Employment Scale
1	Blackpool	Blackpool	Middlesbrough	Liverpool	Blackpool	Birmingham	Birmingham
2	Manchester	Knowsley	Liverpool	Manchester	Knowsley	Manchester	Liverpool
3	Knowsley	Liverpool	Knowsley	Knowsley	Middlesbrough	Liverpool	Leeds
4	Liverpool	Kingston upon Hull, City of	Kingston upon Hull, City of	Birmingham	North East Lincolnshire	Leeds	Manchester
5	Barking and Dagenham	Middlesbrough	Manchester	Blackpool	Liverpool	Bradford	County Durham
6	Birmingham	Manchester	Blackpool	Middlesbrough	Burnley	Sheffield	Bradford
7	Hackney	Birmingham	Birmingham	Blackburn with Darwen	Kingston upon Hull, City of	County Durham	Sheffield
8	Sandwell	Burnley	Burnley	Kingston upon Hull, City of	Wirral	Cornwall	Cornwall
9	Kingston upon Hull, City of	Blackburn with Darwen	Blackburn with Darwen	Burnley	Barrow-in-Furness	Sandwell	Bristol, City of
10	Nottingham	Hartlepool	Hartlepool	Sandwell	Hartlepool	Leicester	Nottingham
11	Burnley	Nottingham	Bradford	Nottingham	Redcar and Cleveland	Nottingham	Kirklees
12	Newham	Sandwell	Stoke-on-Trent	Stoke-on-Trent	Newcastle upon Tyne	Bristol, City of	Sandwell
13	Hastings	Bradford	Halton	Bradford	Manchester	Kirklees	Wirral
14	Blackburn with Darwen	Stoke-on-Trent	Pendle	Hartlepool	Great Yarmouth	Kingston upon Hull, City of	Kingston upon Hull, City of
15	Stoke-on-Trent	Rochdale	Nottingham	Walsall	Thanet	Newham	Sunderland
16	Middlesbrough	Hyndburn	Oldham	Wolverhampton	Hastings	Tower Hamlets	Leicester
17	Rochdale	Hastings	Hastings and North East Lincolnshire (joint)	Hyndburn	Bradford	Enfield	Wakefield
18	Hyndburn	Salford	-	Oldham	Blackburn with Darwen	Wirral	Wigan
19	Wolverhampton	Oldham	Salford	Rochdale	Sefton	Walsall	Newcastle upon Tyne
20	Salford	Great Yarmouth	Rochdale	Barking and Dagenham	Salford	Wolverhampton	Doncaster

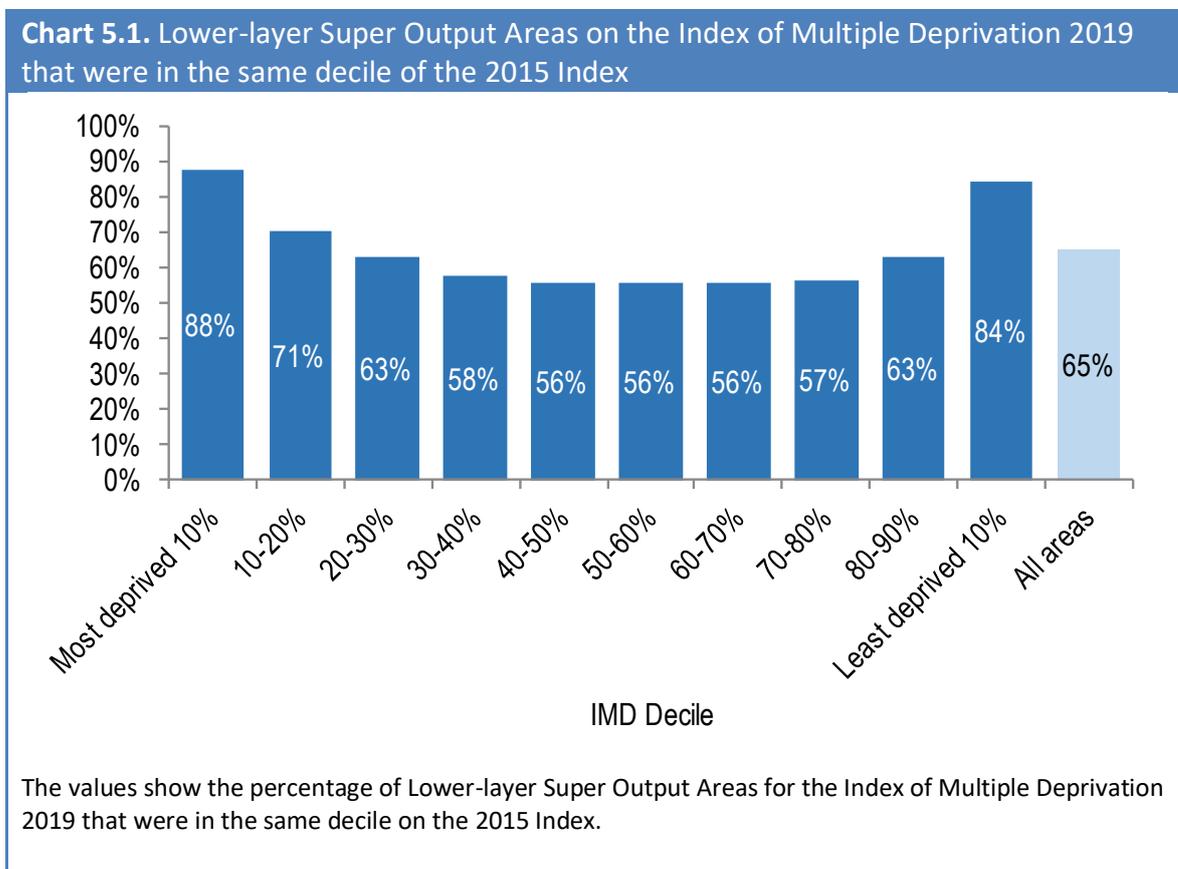
Chapter 5. Changes in relative deprivation

5.1 Introduction

- 5.1.1 The purpose of the Indices of Deprivation is to measure as accurately as possible the relative distribution of deprivation at a small area level. They are not designed to provide ‘backwards’ comparability with previous versions of the Indices and the versions of the Indices should not be used as a time-series. However, because there is a broadly consistent methodology between the Indices of Deprivation 2019 and previous versions (using the same approach, structure and methodology), this does allow some comparisons to be made over time, but only in terms of comparing the rankings as determined at the relevant snapshot time point for each of the versions of the Indices.
- 5.1.2 This means that, when exploring changes in deprivation between versions of the Indices, users should be aware that changes can only be described in relative terms, for example, the extent to which an area has changed rank or decile of deprivation between the current and previous Indices. It would not necessarily be correct to state that the level of deprivation in the area has increased on some absolute scale, as it may be the case that all areas had improved, but that some areas had improved more slowly than others. If the absolute levels of deprivation in all areas were increasing or decreasing at the same rate, the ranks would show no change. Further guidance on how to interpret changes in relative deprivation is given in Section 3.4.
- 5.1.3 The aim of this chapter then is to describe how the areas identified as most deprived according to the latest Index of Multiple Deprivation compare with areas identified as most deprived based on previous versions. The chapter focuses on change in relative deprivation over time, looking at:
- changes at Lower-layer Super Output Area level
 - changes at Local Authority District level
 - persistent deprivation: those areas that have been ranked consistently as highly deprived according to the Index of Multiple Deprivation 2019 and earlier versions of the Index.

5.2 Changes at Lower-layer Super Output Area level

5.2.1 Chart 5.1 shows the proportion of Lower-layer Super Output Areas that were in the same decile on the Index of Multiple Deprivation 2019 and 2015.



5.2.2 Overall, 65 per cent of Lower-layer Super Output Areas in the 2019 Index were in the same decile as in the 2015 Index. There was less movement at the extreme ends of the distribution; 88 per cent of the most deprived 10 per cent of areas on the 2019 Index were in the same decile on the 2015 Index, as were 84 per cent of the least deprived areas.

5.2.3 A more detailed analysis of movement across deciles is shown in Table 5.1, which cross-references all 2019 Index deciles against the 2015 Index. Comparing the distributions in this way shows the extent of changes in relative rankings, and how large the changes are for those areas that have moved. Although 88 per cent of the areas in the most deprived decile of the 2015 Index are also in the most deprived decile of the 2019 Index, 401 areas (12 per cent) have moved out of the most deprived decile since the 2015 index; 395 of these have shifted one decile to the 10-20 per cent most deprived of areas, and 6 areas have moved further, to the 20-30 per cent decile.

Table 5.1. Lower-layer Super Output Areas by level of deprivation on the Index of Multiple Deprivation 2015 and 2019

Number of Lower-layer Super Output Areas		Index of Multiple Deprivation 2015									
		Most deprived 10%	10-20%	20-30%	30-40%	40-50%	50-60%	60-70%	70-80%	80-90%	Least deprived 10%
Index of Multiple Deprivation 2019	Most deprived 10%	2883	400	1	0	0	0	0	0	0	0
	10-20%	395	2316	567	6	0	0	0	0	0	
	20-30%	6	545	2073	643	18	0	0	0	0	
	30-40%	0	22	612	1892	726	31	1	0	0	
	40-50%	0	1	32	663	1834	721	31	3	0	
	50-60%	0	0	0	76	652	1838	685	33	0	
	60-70%	0	0	0	3	49	641	1833	719	38	
	70-80%	0	0	0	0	6	51	682	1862	671	
	80-90%	0	0	0	1	0	2	51	650	2076	
	Least deprived 10%	0	0	0	0	0	0	1	18	499	2767

5.2.4 The table also shows that some Lower-layer Super Output Areas have experienced a considerable change in their relative level of deprivation since the 2015 Index, with a small number of areas moving by up to three deciles, and one area moving five deciles from the 4th to the 9th decile of the 2019 Index.

5.3 Changes at Local Authority District level

5.3.1 Table 5.2 shows the ten Local Authority Districts with the highest proportion of Lower-layer Super Output Areas in the most deprived 10 per cent of areas, based on the Index of Multiple Deprivation 2019. The table also shows the proportion of Lower-layer Super Output Areas in each Local Authority District that were in the most deprived 10 per cent on the 2015 Index, and the percentage point change between the updates.

5.3.2 Note, there have been some revisions to Local Authority District boundaries between 2015 and 2019²⁵. To reflect these changes, the Indices of Deprivation 2015, have been re-aggregated to the 2019 Local Authority boundaries to enable direct comparison between the Indices of Deprivation 2019 and the previous Indices at Local Authority District level. Comparisons between the Indices of Deprivation 2015 and 2019 in this section refer to the Indices of Deprivation 2015 re-aggregated to the new 2019 Local Authority boundaries.

²⁵ For more details, see <http://www.legislation.gov.uk/uksi/2019/615/made>

Table 5.2. Local Authorities with the highest proportion of Lower-layer Super Output Areas in the most deprived 10 per cent of areas nationally based on the Index of Multiple Deprivation 2019, and relative change since the 2015 Index

	Index of Multiple Deprivation 2019		Index of Multiple Deprivation 2015		Percentage point change from the 2015 Index
	Number	Per cent	Number	Per cent	
Middlesbrough	42	48.8	42	48.8	0.0
Liverpool	145	48.7	134	45.0	3.7
Knowsley	46	46.9	45	45.9	1.0
Kingston upon Hull, City of	75	45.2	75	45.2	0.0
Manchester	122	43.3	115	40.8	2.5
Blackpool	39	41.5	36	38.3	3.2
Birmingham	264	41.3	253	39.6	1.7
Burnley	23	38.3	20	33.3	5.0
Blackburn with Darwen	33	36.3	28	30.8	5.5
Hartlepool	21	36.2	19	32.8	3.4

Based on all Lower-layer Super Output Areas. Due to boundary changes, the numbers of Lower-layer Super Output Areas should not be directly compared across the Indices of Deprivation 2019 and 2015; relative changes should be compared based on the percentage point change shown in the final column.

5.3.3 Middlesbrough is the Local Authority District with the highest proportion of Lower-layer Super Output Areas in the most deprived 10 per cent of the Index of Multiple Deprivation 2019, with just under half of all Lower-layer Super Output Areas (48.8 per cent) ranked among the most deprived 10 per cent. Middlesbrough also had the highest proportion of Lower-layer Super Output Areas ranked among the most deprived 10 per cent on the 2015 Index. Blackburn with Darwen experienced a notable increase in the proportion of Lower-layer Super Output Areas ranked among the most deprived 10 per cent (from 30.8 per cent to 36.3 per cent) between 2015 and 2019. Birmingham is the Local Authority District with the largest number of Lower-layer Super Output Areas that are amongst the most deprived in the 2019 Index, which was also the case in 2015, reflecting the larger size of Birmingham.

Changes in ranks of multiple deprivation at the Local Authority level since the Index of Multiple Deprivation 2004

5.3.4 In this section the most deprived 30 Local Authority Districts according to each of the summary measures of the Index of Multiple Deprivation 2019 (see Section 3.3 for details) are examined as regards their position on those measures for the Index of Multiple Deprivation 2004, 2007, 2010 and 2015.

Interpreting the charts

5.3.5 Charts 5.2 to 5.6 show the 30 Local Authority Districts representing the most deprived 10 per cent of Districts on each of the set of summary measures of the Index of Multiple Deprivation 2019. For each summary measure, the chart shows how the most deprived Districts according to the 2019 Index were ranked in previous versions of the Index (noting that the versions are not a time series). Where a Local Authority District's relative

deprivation has changed by five or more rank positions since the 2015 Index of Multiple Deprivation, it is highlighted on the chart.

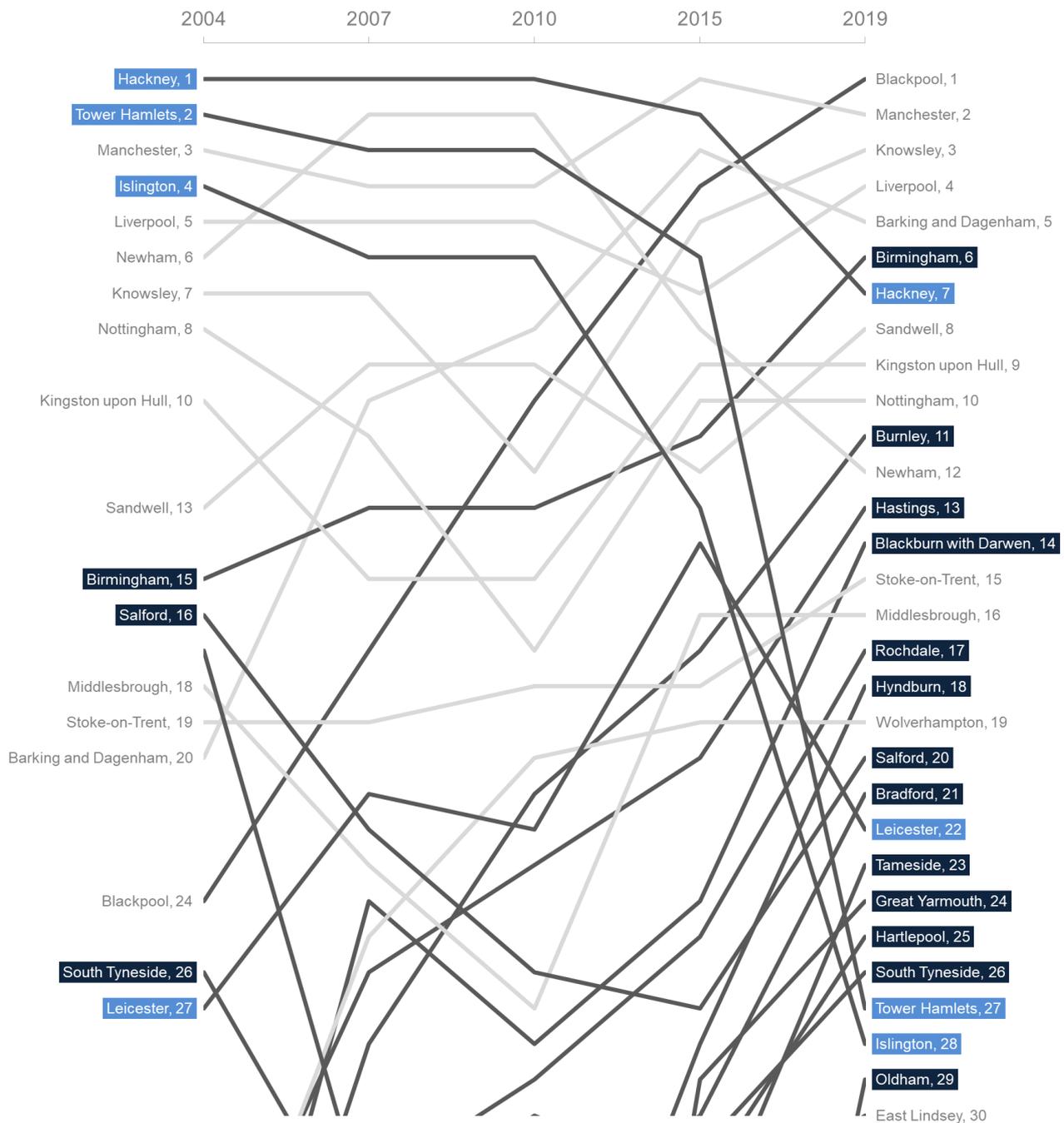
- 5.3.6 Note, these charts compare the rank position for the 303 Local Authority Districts which have not experienced boundary changes between 2004 and 2019. The ranks refer to the ranks across the 303 unchanged Districts. As such, the rank of a Local Authority District may differ from the official rank in the previous publications of the Indices of Deprivation. In the IoD 2004 and 2007 the published rankings refer to the relative position of 354 Local Authority Districts; in IoD 2010 and 2015 the published rankings refer to the relative position of 326 Local Authority Districts and in the IoD 2019 the published rankings refer to the relative position of 317 Local Authority Districts. However, in the analysis in this section, the rankings refer to the relative position across the 303 unchanged Local Authority Districts i.e. those that have not experienced boundary changes between 2004 and 2019.
- 5.3.7 It is also important to note that any change in rank position represents *relative* change only. In other words, it is possible that a Local Authority District may have become *less* deprived in real terms since the previous index, but *more* deprived relative to all other Local Authority Districts, or vice versa. Furthermore, a change in rank – even of five places – may not actually represent a large increase or decrease in absolute levels of deprivation. Further guidance on how to interpret changes in relative deprivation is given in Section 3.4.
- 5.3.8 The Districts are listed on the right-hand vertical axis, ranked from 1 to 30 where 1 represents the most deprived Local Authority District on that particular measure. For example, in the first chart (Chart 5.2) which presents the average rank summary, Blackpool is ranked 1 signalling that Blackpool is the most deprived Local Authority District in England on this measure in 2019. The Districts are then ordered in descending rank with East Lindsey being ranked 30th most deprived on this measure out of all 303 unchanged Local Authority Districts in England.
- 5.3.9 The left-hand vertical axis lists the Local Authority Districts that are among the 10 per cent most deprived based on the particular summary measure of the Index of Multiple Deprivation 2019 that were also among the 10 per cent most deprived Districts on this measure of the 2004 Index. These Local Authority Districts are named on the left-hand axis, showing their 2004 summary measure rank. So again, taking the example of the average rank chart, Blackpool (which is ranked 1 on the 2019 Index) was ranked 24 based on the 2004 Index. The gaps therefore correspond to Local Authority Districts that were in the most deprived 10 per cent on that measure in the 2019 Index that were not ranked among the most deprived on this measure in the 2004 Index. As an example, again from the average rank chart, East Lindsey (which is ranked 30 on the 2019 Index) did not appear among the most deprived Local Authorities according to the 2004 Index.
- 5.3.10 The rank of each Local Authority District on the 2007, 2010 and 2015 Indices is given by the intermediate points on the chart. The lines connecting these points for each Local Authority District show the trajectory of the particular District on the summary measure in question from the 2004 Index to the 2019 Index. To give an example, again from the average rank chart (Chart 5.2); Blackpool was ranked most deprived on this measure on the 2019 Index. On the 2010 Index it was ranked 10th, on the 2007 Index it was ranked 17th, and on the 2004 Index it was ranked 24th.

5.3.11 The names of the Local Authority Districts are highlighted in dark blue to indicate that the District has become relatively more deprived by at least five rank places than it was on the Index of Multiple Deprivation 2015. Conversely, names are highlighted in light blue where the Local Authority District has become relatively less deprived by at least five rank places than it was on the Index of Multiple Deprivation 2015.

Average rank

- 5.3.12 Chart 5.2 shows the change in Local Authority District rank on the average rank measure according to the five updates of the Index of Multiple Deprivation (2019, 2015, 2010, 2007 and 2004). Thirteen Local Authority Districts (highlighted in dark blue) have experienced an increase in relative deprivation on this measure of at least five rank places since the 2015 Index. Of those now in the 30 most deprived Local Authority Districts in terms of average rank on the 2019 Index, Oldham, Tameside, Hyndburn and Blackburn and Darwen (all in the North West) have had the greatest rank changes since the 2015 Index.
- 5.3.13 On this measure, eight Local Authorities have ranked as progressively more deprived, in relative terms, with each update since the 2004 Index (Blackpool, Birmingham, Burnley, Wolverhampton, Stoke-on-Trent, Hastings, Rochdale and Hyndburn). On the other hand, Local Authority Districts such as Kingston upon Hull and Middlesbrough have had a different trajectory: an initial decrease in relative deprivation on this measure from the 2004 Index followed by an increase by the 2019 Index, as shown by the 'U' shape of the line.
- 5.3.14 There are four Local Authority Districts in the most deprived 10 per cent of Local Authority Districts on the 2019 Index which have experienced a decrease in relative deprivation on this measure of at least five rank places since the 2015 Index (highlighted in light blue).
- 5.3.15 Manchester and Liverpool are consistently ranked as among the most highly deprived in terms of average rank across all four updates of the Index of Multiple Deprivation.

Chart 5.2. The most deprived Local Authority Districts according to the average rank summary measure of the Index of Multiple Deprivation 2019, showing changes in rank since earlier versions of the Index



Increase in rank of 5 or more since the 2015 Index

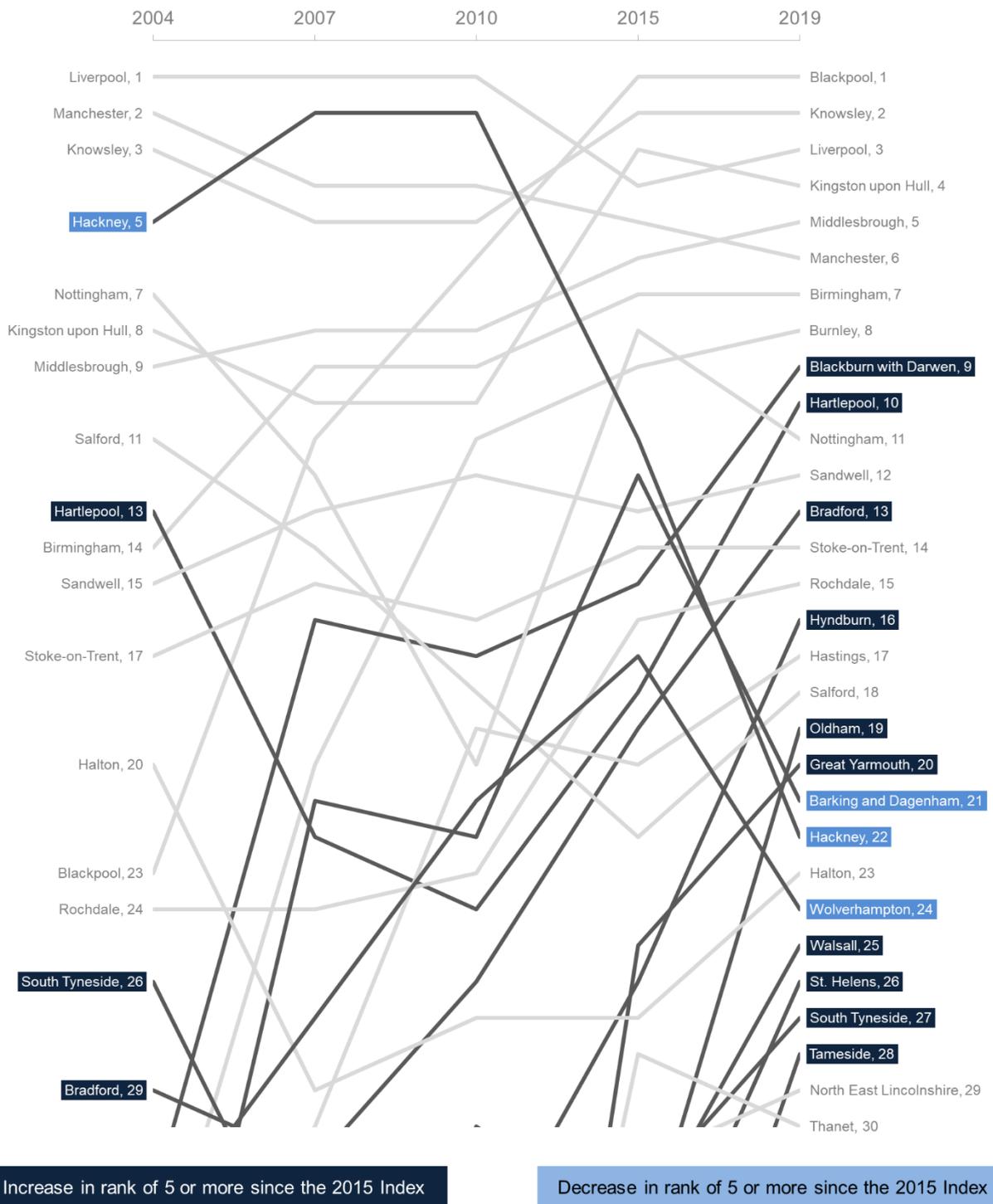
Decrease in rank of 5 or more since the 2015 Index

Note that any change in rank position represents *relative* change only. It is possible that a Local Authority District may have become *less* deprived in real terms since the previous index, but *more* deprived relative to all other Local Authority Districts, or vice versa. Furthermore, a change in rank – even of five places – may not represent a large increase or decrease of deprivation.

Average score

- 5.3.16 Chart 5.3 shows the change in rank of Local Authority Districts on the average score measure over the four updates of the Index of Multiple Deprivation. Of the most deprived 10 per cent of Districts based on this measure of the 2019 Index, ten (highlighted in dark blue) have experienced an increase in relative deprivation of at least five rank places since the 2015 Index. Of these, Oldham, Tameside, Hyndburn and St Helens have had the greatest rank changes.
- 5.3.17 There are three Local Authority Districts in the most deprived 10 per cent of Local Authority Districts on this measure of the 2019 Index which have experienced a decrease in relative deprivation of at least five rank places since the 2015 Index. Two of these are London Boroughs: Hackney and Barking and Dagenham. Bradford has shown continuous increase in relative deprivation since its position on this measure on the 2004 Index.

Chart 5.3. The most deprived Local Authority Districts according to the average score summary measure of the Index of Multiple Deprivation 2019, showing changes in rank since earlier versions of the Index

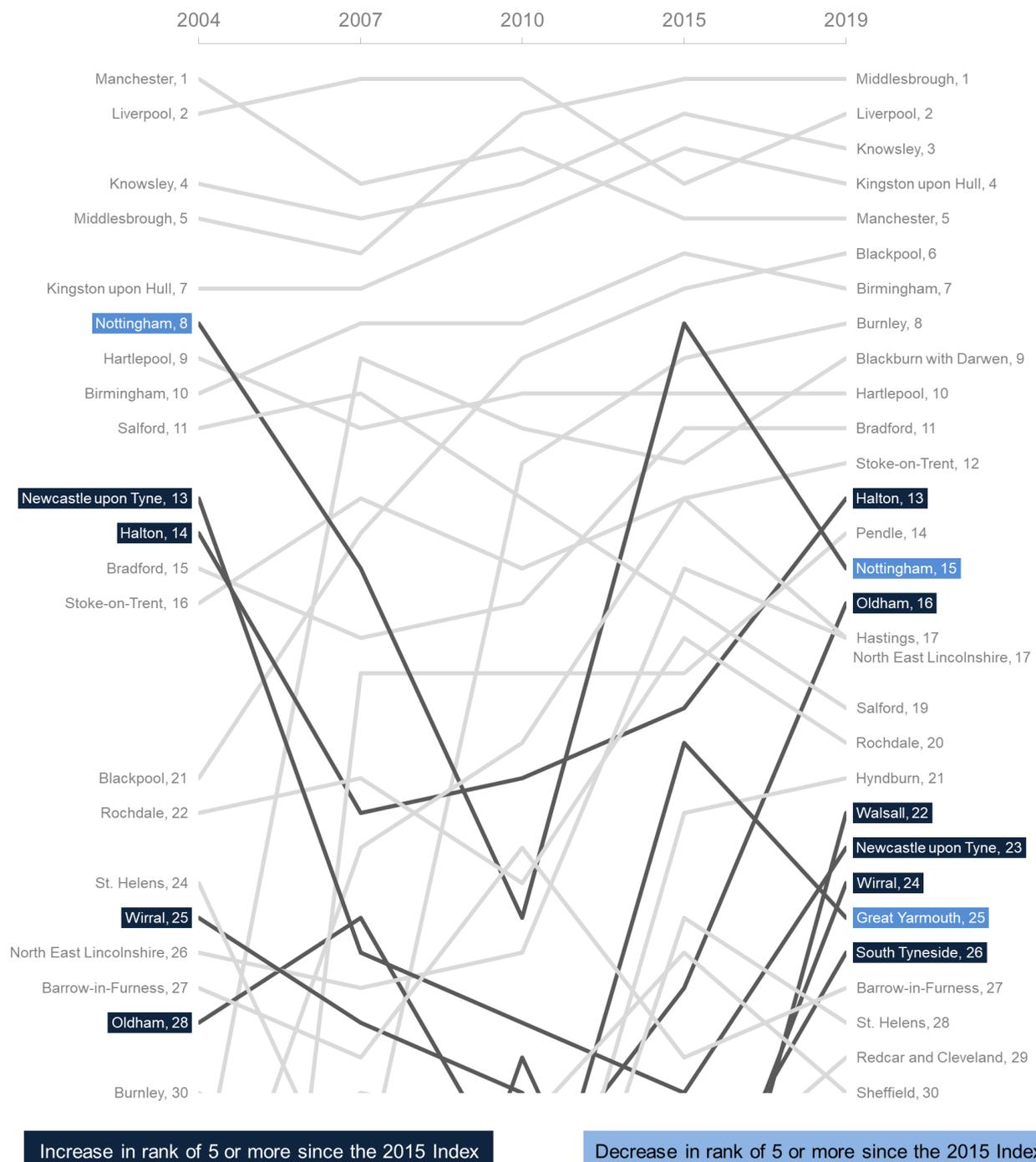


Note that any change in rank position represents *relative* change only. It is possible that a Local Authority District may have become *less* deprived in real terms since the previous index, but *more* deprived relative to all other Local Authority Districts, or vice versa. Furthermore, a change in rank – even of five places – may not represent a large increase or decrease in absolute levels of deprivation.

Proportion of Lower-layer Super Output Areas in most deprived 10 per cent nationally

- 5.3.18 Chart 5.4 shows the change in Local Authority District rank on the proportion of Lower-layer Super Output Areas in the most deprived 10 per cent nationally measure over the four updates of the Index of Multiple Deprivation. Of the most deprived 10 per cent of Districts based on this measure of the 2019 Index, six (highlighted in dark blue) have experienced an increase in relative deprivation of at least five rank places since the 2015 Index. Walsall saw the greatest movement, with an increase in relative deprivation on this measure of 17 rank places.
- 5.3.19 There are two Local Authority Districts in the most deprived 10 per cent of Local Authority Districts on the 2019 Index which have experienced a decrease in relative deprivation on this measure of at least five rank places since the 2015 Index (highlighted in light blue). After increases between 2010 and 2015, Nottingham and Great Yarmouth have seen the greatest decrease amongst the most deprived 10 percent in 2019, with a decrease of seven and five rank places respectively.

Chart 5.4. The most deprived Local Authority Districts according to the proportion of Lower-layer Super Output Areas in the most deprived 10 per cent nationally measure of the Index of Multiple Deprivation 2019, showing changes in rank since earlier versions of the Index

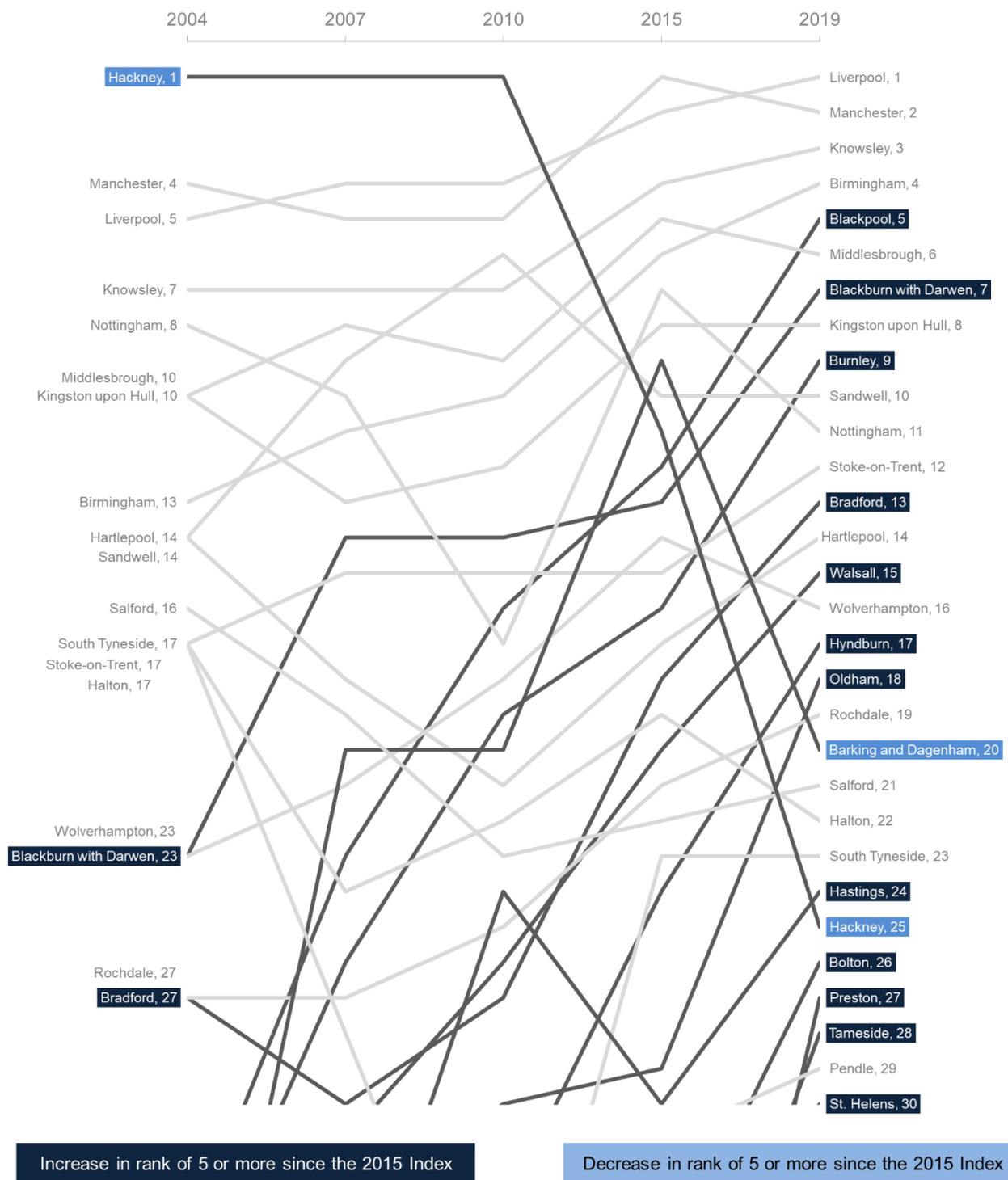


Note that any change in rank position represents *relative* change only. It is possible that a Local Authority District may have become *less* deprived in real terms since the previous index, but *more* deprived relative to all other Local Authority Districts, or vice versa. Furthermore, a change in rank – even of five places – may not represent a large increase or decrease in absolute levels of deprivation.

Extent of deprivation

- 5.3.20 Chart 5.5 shows the change in Local Authority District rank on the extent of deprivation measure over the four updates of the Index of Multiple Deprivation. Of the most deprived 10 per cent of Local Authority Districts based on this measure of the 2019 Index, twelve Districts (highlighted in dark blue) have experienced an increase in relative deprivation on this measure of at least five rank places since the 2015 Index. Preston, Tameside and Oldham have had the greatest rank changes. Birmingham, Blackpool, Walsall, Burnley, Hyndburn, Oldham and Pendle have all shown an increase in relative deprivation on this measure in each successive Index since the 2004 Index.
- 5.3.21 There are two Local Authority Districts in the most deprived 10 per cent of Local Authority Districts on the 2019 Index which have experienced a decrease in relative deprivation on this measure of at least five rank places since the 2015 Index. They are both London boroughs (Hackney and Barking and Dagenham).

Chart 5.5. The most deprived Local Authority Districts according to the extent of deprivation summary measure of the Index of Multiple Deprivation 2019, showing changes in rank since earlier versions of the Index

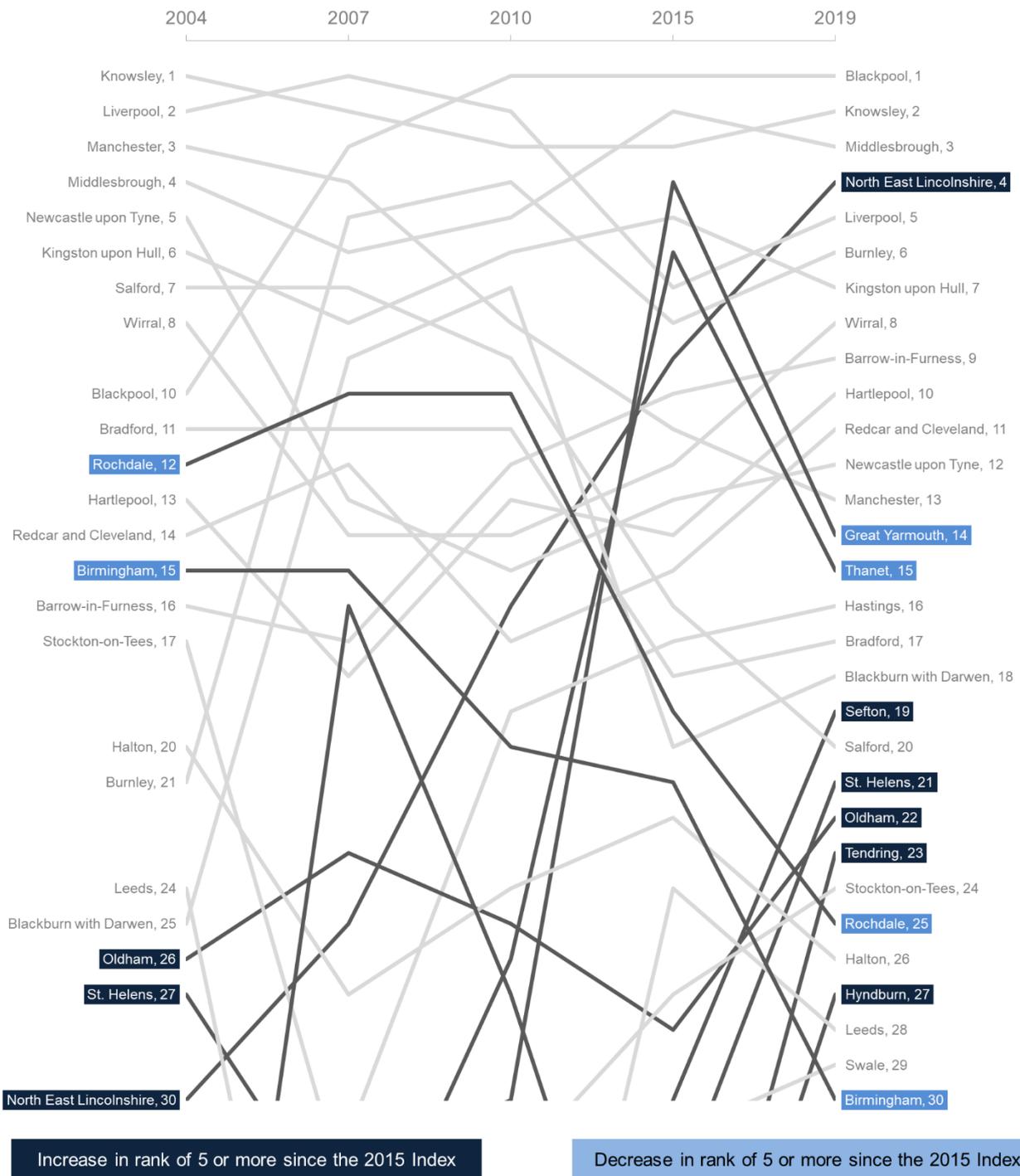


Note that any change in rank position represents *relative* change only. It is possible that a Local Authority District may have become *less* deprived in real terms since the previous index, but *more* deprived relative to all other Local Authority Districts, or vice versa. Furthermore, a change in rank – even of five places – may not represent a large increase or decrease in absolute levels of deprivation.

Local concentration of deprivation

- 5.3.22 Chart 5.6 shows the change in Local Authority District rank on the local concentration measure over the four updates of the Index of Multiple Deprivation. Of the most deprived 10 per cent of Local Authority Districts based on this measure of the 2019 Index, six Districts (highlighted in dark blue) have experienced an increase in relative deprivation on this measure of at least five rank places since the 2015 Index. Of these, four Districts have moved more than 10 rank places since the 2015 Index: Tendring, Hyndburn, St. Helens and Sefton.
- 5.3.23 There are four Local Authority Districts in the most deprived 10 per cent of Local Authority Districts on the 2019 Index which have experienced a decrease in relative deprivation on this measure of at least five rank places since the 2015 Index.

Chart 5.6. The most deprived Local Authority Districts according to the local concentration summary measure of the Index of Multiple Deprivation 2019, showing changes in rank since earlier versions of the Index



Note that any change in rank position represents *relative* change only. It is possible that a Local Authority District may have become *less* deprived in real terms since the previous index, but *more* deprived relative to all other Local Authority Districts, or vice versa. Furthermore, a change in rank – even of five places – may not represent a large increase or decrease in absolute levels of deprivation.

5.4 Persistent deprivation

- 5.4.1 The charts above showed that, while there is some variation in the ranking of Local Authority Districts between updates of the Indices, some Districts have been ranked consistently among the most deprived according to the five updates of the Indices of Deprivation (2019, 2015, 2010, 2007 and 2004).
- 5.4.2 This section explores the extent to which the most deprived Lower-layer Super Output Areas according to the Index of Multiple Deprivation 2019 have been persistently ranked as deprived. Table 5.3 shows the Lower-layer Super Output Areas ranked among the most deprived 100 areas in England based on the Index of Multiple Deprivation in each of the five updates of the Indices of Deprivation²⁶.

Table 5.3. Lower-layer Super Output Areas that are consistently in the most deprived 1 per cent of areas nationally based on the Index of Multiple Deprivation 2019, 2015, 2010, 2007 and 2004, by Local Authority District

Local Authority District	Number of Lower-layer Super Output Areas	Area codes for consistently deprived Lower-layer Super Output Areas
Liverpool	2	E01006540, E01006563
Wirral	1	E01007122
Middlesbrough	1	E01012041
Rochdale	1	E01005482

- 5.4.3 There are five Lower-layer Super Output Areas that have been ranked among the most deprived 100 LSOAs on each of Index of Multiple Deprivation updates (2019, 2015, 2010, 2007 and 2004). Three of these are located in the Merseyside area (including two in Liverpool and one in Wirral) one in Rochdale and one in Middlesbrough.

²⁶ The analysis is based on the 31,672 Lower-layer Super Output Areas that have not changed boundaries between 2001 and 2011 versions of the geography.

5.5 Conclusion

- 5.5.1 The IoD 2019 was designed to be as similar as possible to the IoD 2015 in terms of geographical scale, domains, indicators and methodology. This was to maximise backwards comparability and help identify 'real' relative change (subject to the caveats explored in Section 3.4 above).
- 5.5.2 Comparisons in this chapter show a marked degree of similarity between the relative positions of areas between the Indices of Deprivation 2019 and Indices of Deprivation 2015, with nearly two-thirds of LSOAs remaining in the same decile (a figure which rises to 88% among the most deprived 10% of LSOAs) and little movement in the Local Authority Districts ranked among the most deprived on the summary measures.
- 5.5.3 Looking further back, it is evident that a large number of Local Authority Districts have been ranked as persistently deprived across multiple iterations of the Indices of Deprivation. However, there has been some change in the composition of Local Authority Districts ranked among the most deprived between ID 2004 and ID 2019, with a relative fall in levels of deprivation across Local Authority Districts in London over the period, contrasting with a rise in the relative deprivation levels in Local Authority Districts covering towns and coastal communities.

Appendix A. How to aggregate to different geographies

- A.1.1. The Indices of Deprivation 2019 have been produced at Lower-layer Super Output Area level, using the current (2011) Lower-layer Super Output Areas. As was produced for the Indices of Deprivation 2015, ranks and scores have been provided at Lower-layer Super Output Area level.
- A.1.2. Summary measures for the Index of Multiple Deprivation, domains and supplementary Indices have been produced for the following higher-level geographies: Local Authority Districts, upper-tier Local Authorities, Local Enterprise Partnerships and Clinical Commissioning Groups.
- A.1.3. Guidance is provided in this Appendix on how to aggregate the Indices to other geographies such as wards or bespoke local areas, using the ‘average score’ summary measure²⁷ for the Index of Multiple Deprivation²⁸. Users should follow a three-step process:
1. Identify the lookup table from Lower-layer Super Output Areas (for which data is published) to the areas of interest (for which data is required)
 2. Sum the population-weighted scores from Lower-layer Super Output Areas to the areas of interest (using the published population denominators)
 3. Rank the resulting scores across the areas of interest.
- A.1.4. These steps are outlined below.
1. Identify the lookup table from Lower-layer Super Output Areas (for which data is published) to the areas of interest (for which data is required)
- A.1.5. This lookup can be obtained in a number of ways:
- In some cases, the lookup table may be published. For example, the Office for National Statistics produces a number of lookup tables for different geographies, published on their open geography portal (footnote: <https://geoportal.statistics.gov.uk/geoportal/catalog/main/home.page>) or available on request.
 - In other cases, the lookup table may be available to the user. For example, Local Authorities often define local service delivery areas, or priority neighbourhoods, based on clustering together Lower-layer Super Output Areas.

²⁷ ‘Average score’ is one of a range of possible summary measures described in Chapter 3. It is recommended for use here because it gives a measure of the whole area, covering both deprived and non-deprived areas whilst being designed so that highly deprived areas do not tend to average out. It is also one of the more straightforward summary measures to calculate and interpret.

²⁸ This summary measure could be produced for any of the other neighbourhood-level Indices e.g. the income deprivation domain, following the same principles. The Index of Multiple Deprivation is used here since it is anticipated that it will be the most frequently aggregated.

- Otherwise, users may need to develop their own lookup tables. This can be done in a number of ways, for example: using a Geographical Information Systems application to identify what proportion of each Lower-layer Super Output Area geographical area 'sits' within each of the areas of interest; or comparison of residential addresses to identify what proportion of each Lower-layer Super Output Area's residential population (as approximated by the residential addresses) 'sits' within each of the areas of interest. Once identified, each Lower-layer Super Output Area can be assigned to an area of interest based on where the majority of the Lower-layer Super Output Areas sits: the end result should be a lookup table that assigns each Lower-layer Super Output Area to one of the areas of interest.

A.1.6. In cases where Lower-layer Super Output Area boundaries do not exactly fit the boundaries of the area of interest, this will involve approximation. In other words, the lookup table will not be exact. This approximation will tend to have a larger effect when aggregating to small geographies that have boundaries that do not match Lower-layer Super Output Area boundaries.

2. Sum the population-weighted scores from Lower-layer Super Output Areas to the areas of interest

- A.1.7. Where the areas of interest are larger than Lower-layer Super Output Areas, the approach is to sum together the Lower-layer Super Output Area scores. In order to give each Lower-layer Super Output Area the appropriate weight into the sum, the Lower-layer Super Output Area scores should be weighted by the Lower-layer Super Output Area population size. This means that each of the Lower-layer Super Output Area scores should be multiplied by the relevant Lower-layer Super Output Area population before summing, and the final scores for the areas of interest should be divided by the sum of the relevant Lower-layer Super Output Area populations in that area.
- A.1.8. Population denominators can be found in File 6 (see Appendix F). To calculate the average Index of Multiple Deprivation score, the 'total population' should be used.
- A.1.9. Where the areas of interest are smaller than Lower-layer Super Output Areas, users will need to decide whether to use the Lower-layer Super Output Area scores directly for the smaller areas or use small area estimation techniques to model the scores down to the smaller areas.

Worked example

- A.1.10. A user wishes to calculate the Index of Multiple Deprivation average score for an area A in her Local Authority District. Having compared the boundaries for A against the Lower-layer Super Output Area boundaries, she has identified that A can be approximated as five Lower-layer Super Output Areas. These five Lower-layer Super Output Areas have populations of 1,200, 1,800, 1,400, 1,500 and 1,700, giving a total population of 7,600, and have Index of Multiple Deprivation scores of 44.81, 26.75, 64.58, 59.43 and 14.34 respectively.
- A.1.11. To calculate the average score for A, each Lower-layer Super Output Area score is multiplied by the Lower-layer Super Output Area population. These values are then

summed, before dividing by the population for A to create the average score for A. Thus, the average score for area A would be calculated as:

$$\begin{aligned} \text{Average score for A} &= (44.81 \times 1,200 + 26.75 \times 1,800 + 64.58 \times 1,400 + \\ & 59.43 \times 1,500 + 14.34 \times 1,700) / 7,600 \\ \text{Average score for A} &= 40.24 \end{aligned}$$

3. Rank the resulting scores across the areas of interest

- A.1.12. In order to interpret the resulting scores, it is recommended that they are ranked across the areas of interest, where a rank of 1 (most deprived) is assigned to the area with the highest score.
- A.1.13. In addition, users may want to identify where the resulting scores would lie in the distribution of all Lower-layer Super Output Area scores. This would enable the user to say for example “when compared to deprivation levels across England, the deprivation level for the X area shows that it would lie in the most deprived 10 per cent of all Lower-layer Super Output Areas nationally”.

Appendix B. Combining the domains together using different weights

B.1.1. The overall Index of Multiple Deprivation 2019 is produced by combining the seven standardised domain scores, using the weights in the following table.

Domain	Domain weight (%)
Income Deprivation Domain	22.5
Employment Deprivation Domain	22.5
Health Deprivation and Disability Domain	13.5
Education, Skills and Training Deprivation Domain	13.5
Barriers to Housing and Services Domain	9.3
Crime Domain	9.3
Living Environment Deprivation Domain	9.3

B.1.2. It is possible to use the component domains to produce alternative measures of deprivation at Lower-layer Super Output Area, based on different domain weights than are used in the Index of Multiple Deprivation.

B.1.3. Users would typically do this for analytical purposes where they want to exclude the effect of one or more domains. For example, health researchers may want to use the Index of Multiple Deprivation as a factor to help explain the variation in health outcomes across a sample of areas or individuals. To exclude the effect of the health domain, they may want to use a modified measure of deprivation in their statistical analysis, with the health domain weight set to zero.

B.1.4. To combine the domains using different weights to create a modified deprivation ranking, users should follow a three-step process:

1. Use the standardised domain scores²⁹, which are provided in the file 9 (see Appendix F for details of published data and spreadsheets);
2. Combine the seven standardised domain scores together with the desired weights to create the modified measure of deprivation. As noted above, to exclude one or more domains from the reconstituted composite measure, the weights for the excluded domains would be set to zero. This can be achieved in the Excel spreadsheet containing the standardised scores, or any standard statistical application, using the following equation:

$$\begin{aligned}
 & \text{Income Deprivation Domain} \times \text{domain-weight} \\
 & + \text{Employment Deprivation Domain} \times \text{domain-weight} \\
 & + \text{Health Deprivation and Disability Domain} \times \text{domain-weight} \\
 & + \text{Education, Skills and Training Deprivation Domain} \times \text{domain-weight}
 \end{aligned}$$

²⁹ The standardised domain scores have been standardised by ranking, and then transformed to an exponential distribution. These standardised domain scores have been published to be used as the basis for users to combine the domains together using different weights.

- + Barriers to Housing and Services Domain x domain-weight*
 - + Crime Domain x domain-weight*
 - + Living Environment Deprivation Domain x domain-weight.*
3. Rank the output, to produce the ranked scores to be used in analysis by users.

Appendix C. Summary measures for Local Enterprise Partnerships and Clinical Commissioning Groups

C.1.1. The tables below show the 20 higher-level areas ranked as most deprived according to each of the summary measures (a rank of 1 corresponds with the most deprived area). Table C.1 shows the Clinical Commissioning Groups, and C.2 shows Local Enterprise Partnerships.

Table C.1: The most deprived Clinical Commissioning Groups on each of the summary measures of the Index of Multiple Deprivation 2019 and on the income and employment scale measures

	Average Rank	Average Score	Proportion of LSOAs in most deprived 10 per cent nationally	Extent	Local Concentration	Income Scale	Employment Scale
1	NHS Bradford City CCG	NHS Bradford City CCG	NHS Bradford City CCG	NHS Bradford City CCG	NHS Blackpool CCG	NHS Birmingham & Solihull CCG	NHS Birmingham & Solihull CCG
2	NHS Blackpool CCG	NHS Blackpool CCG	NHS Liverpool CCG	NHS Liverpool CCG	NHS Knowsley CCG	NHS Devon CCG	NHS Devon CCG
3	NHS Manchester CCG	NHS Knowsley CCG	NHS Knowsley CCG	NHS Manchester CCG	NHS North East Lincolnshire CCG	NHS Derby & Derbyshire CCG	NHS Derby & Derbyshire CCG
4	NHS Knowsley CCG	NHS Liverpool CCG	NHS Hull CCG	NHS Knowsley CCG	NHS Liverpool CCG	NHS Manchester CCG	NHS Liverpool CCG
5	NHS Sandwell & West Birmingham CCG	NHS Hull CCG	NHS Manchester CCG	NHS Sandwell & West Birmingham CCG	NHS South Tees CCG	NHS Sandwell & West Birmingham CCG	NHS Leeds CCG
6	NHS Liverpool CCG	NHS Manchester CCG	NHS Blackpool CCG	NHS Blackpool CCG	NHS Hull CCG	NHS Liverpool CCG	NHS Bristol, North Somerset & South Gloucestershire CCG
7	NHS Barking & Dagenham CCG	NHS Sandwell & West Birmingham CCG	NHS Blackburn with Darwen CCG	NHS Blackburn with Darwen CCG	NHS Wirral CCG	NHS Leeds CCG	NHS Manchester CCG
8	NHS Hull CCG	NHS Blackburn with Darwen CCG	NHS South Tees CCG	NHS Hull CCG	NHS South Sefton CCG	NHS Bristol, North Somerset & South Gloucestershire CCG	NHS Sandwell & West Birmingham CCG
9	NHS City & Hackney CCG	NHS South Tees CCG	NHS Birmingham & Solihull CCG	NHS Nottingham City CCG	NHS Bradford City CCG	NHS Sheffield CCG	NHS Sheffield CCG
10	NHS Nottingham City CCG	NHS Nottingham City CCG	NHS Halton CCG	NHS Stoke on Trent CCG	NHS Manchester CCG	NHS Newcastle Gateshead CCG	NHS Newcastle Gateshead CCG
11	NHS Newham CCG	NHS Heywood, Middleton & Rochdale CCG	NHS Stoke on Trent CCG	NHS Birmingham & Solihull CCG	NHS Hartlepool & Stockton-on-Tees CCG	NHS Cambridgeshire & Peterborough CCG	NHS Cambridgeshire & Peterborough CCG
12	NHS Blackburn with Darwen CCG	NHS Salford CCG	NHS Sandwell & West Birmingham CCG	NHS Walsall CCG	NHS Thanet CCG	NHS Dorset CCG	NHS Dorset CCG
13	NHS Bradford Districts CCG	NHS Bradford Districts CCG	NHS Nottingham City CCG	NHS Wolverhampton CCG	NHS Great Yarmouth & Waveney CCG	NHS Kernow CCG	NHS Kernow CCG
14	NHS Heywood, Middleton & Rochdale CCG	NHS Stoke on Trent CCG	NHS Oldham CCG	NHS Oldham CCG	NHS Newcastle Gateshead CCG	NHS Leicester City CCG	NHS Nene CCG
15	NHS Stoke on Trent CCG	NHS Birmingham & Solihull CCG	NHS North East Lincolnshire CCG	NHS Heywood, Middleton & Rochdale CCG	NHS Blackburn with Darwen CCG	NHS Nene CCG	NHS Nottingham City CCG
16	NHS Wolverhampton CCG	NHS Oldham CCG	NHS Salford CCG	NHS Barking & Dagenham CCG	NHS Swale CCG	NHS Nottingham City CCG	NHS East Lancashire CCG
17	NHS Salford CCG	NHS Barking & Dagenham CCG	NHS Heywood, Middleton & Rochdale CCG	NHS Salford CCG	NHS Salford CCG	NHS Bradford Districts CCG	NHS South Tees CCG
18	NHS Leicester City CCG	NHS South Sefton CCG	NHS South Sefton CCG	NHS South Tees CCG	NHS St Helens CCG	NHS Coventry & Rugby CCG	NHS Wirral CCG
19	NHS Durham Dales, Easington & Sedgfield CCG	NHS Halton CCG	NHS Bradford Districts CCG	NHS Halton CCG	NHS Oldham CCG	NHS South Tees CCG	NHS Coventry & Rugby CCG
20	NHS Birmingham & Solihull CCG	NHS Wolverhampton CCG	NHS Walsall CCG	NHS Bradford Districts CCG	NHS Bradford Districts CCG	NHS East Lancashire CCG	NHS Gloucestershire CCG

Table C.2: The most deprived Local Enterprise Partnerships on each of the summary measures of the Index of Multiple Deprivation 2019 and on the income and employment scale measures

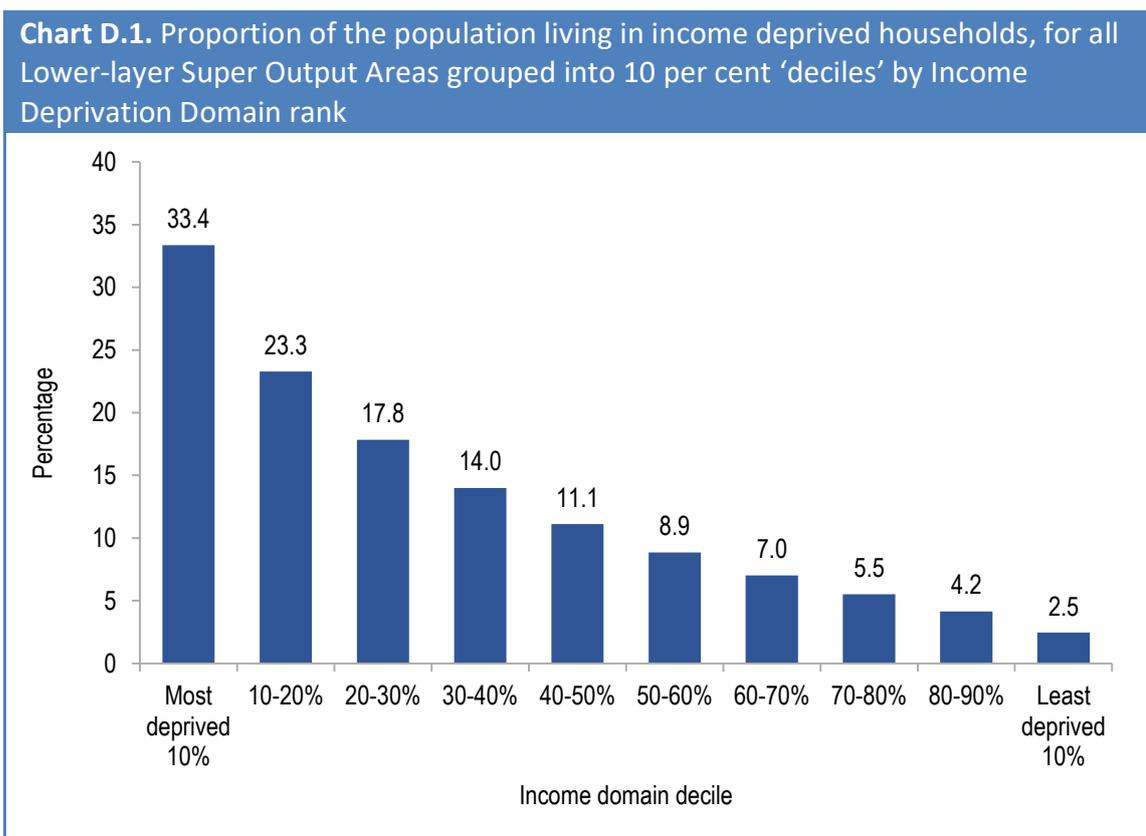
	Average Rank	Average Score	Proportion of LSOAs in most deprived 10 per cent nationally	Extent	Local Concentration	Income Scale	Employment Scale
1	Liverpool City Region	Liverpool City Region	Liverpool City Region	Liverpool City Region	Liverpool City Region	London	London
2	Black Country	Tees Valley	Tees Valley	Black Country	Tees Valley	Greater Manchester	Greater Manchester
3	Greater Manchester	Black Country	Greater Birmingham and Solihull	Tees Valley	Humber	South East	South East
4	Greater Birmingham and Solihull	Greater Manchester	Greater Manchester	Greater Manchester	Lancashire	Leeds City Region	Leeds City Region
5	Tees Valley	Greater Birmingham and Solihull	Humber	Greater Birmingham and Solihull	Greater Manchester	Greater Birmingham and Solihull	North East
6	North East	North East	Lancashire	North East	Greater Birmingham and Solihull	North East	Liverpool City Region
7	Sheffield City Region	Lancashire	Black Country	Sheffield City Region	Leeds City Region	Liverpool City Region	Greater Birmingham and Solihull
8	Cornwall and Isles of Scilly	Sheffield City Region	Sheffield City Region	Lancashire	North East	Derby, Derbyshire, Nottingham and Nottinghamshire	Derby, Derbyshire, Nottingham and Nottinghamshire
9	Lancashire	Humber	Leeds City Region	Leeds City Region	Sheffield City Region	Sheffield City Region	Sheffield City Region
10	Leeds City Region	Leeds City Region	North East	Humber	Black Country	Black Country	Lancashire
11	Humber	Cornwall and Isles of Scilly	Greater Lincolnshire	Derby, Derbyshire, Nottingham and Nottinghamshire	Greater Lincolnshire	Lancashire	Black Country
12	London	Greater Lincolnshire	Derby, Derbyshire, Nottingham and Nottinghamshire	Greater Lincolnshire	Derby, Derbyshire, Nottingham and Nottinghamshire	South East Midlands	Heart of the South West
13	Greater Lincolnshire	Derby, Derbyshire, Nottingham and Nottinghamshire	Stoke-on-Trent and Staffordshire	Stoke-on-Trent and Staffordshire	Cumbria	Heart of the South West	South East Midlands
14	Derby, Derbyshire, Nottingham and Nottinghamshire	London	Cumbria	London	Stoke-on-Trent and Staffordshire	Coast to Capital	Coast to Capital
15	Cumbria	Cumbria	West of England	Cumbria	West of England	New Anglia	New Anglia
16	The Marches	Stoke-on-Trent and Staffordshire	Leicester and Leicestershire	Solent	Leicester and Leicestershire	Greater Cambridge and Greater Peterborough	Greater Cambridge and Greater Peterborough
17	Heart of the South West	New Anglia	Coventry and Warwickshire	West of England	Coventry and Warwickshire	Humber	Humber
18	New Anglia	Solent	New Anglia	Coventry and Warwickshire	Solent	Greater Lincolnshire	Greater Lincolnshire
19	Stoke-on-Trent and Staffordshire	Heart of the South West	Solent	Leicester and Leicestershire	New Anglia	Stoke-on-Trent and Staffordshire	Stoke-on-Trent and Staffordshire
20	Solent	The Marches	South East	Cheshire and Warrington	South East	Solent	Tees Valley

Appendix D. Domain summaries

D.1.1. This Appendix presents analysis of the Indices of Deprivation 2019 domains and sub-domains.

Income deprivation domain

D.1.2. The chart below shows the range of income deprivation for Lower-layer Super Output Areas grouped into 10 per cent bands, or 'deciles', based on their Income Deprivation Domain rank.



D.1.3. In the most income deprived decile of Lower-layer Super Output Areas in England, an average of 33.4 per cent of the population are income deprived³⁰. Within this decile, the range for Lower-layer Super Output Areas is from 60.9 per cent to 26.8 per cent, showing the high rates of deprivation that exist in the most deprived Lower-layer Super Output Areas. The least income deprived decile of Lower-layer Super Output Areas has on average only 2.5 per cent of people living in income deprived households.

³⁰ The decile averages shown for the Income Deprivation Domain, the Income Deprivation Affecting Children Index, the Income Deprivation Affecting Older People Index and the Employment Deprivation Domain are calculated by (a) generating the decile level numerator by summing the numerators of the Lower-layer Super Output Areas contained in that decile (b) generating the decile level denominator by summing the denominators of the areas contained in that decile and (c) dividing the numerator by the denominator and multiplying by 100 to obtain a percentage.

- D.1.4. There are 36 Lower-layer Super Output Areas in England where more than half of all people are income deprived. The Local Authority Districts with the highest numbers of these Lower-layer Super Output Areas are Blackpool (8 Lower-layer Super Output Areas), Middlesbrough (4 areas), Wirral (4 areas), Knowsley (3 areas) and Liverpool (3 areas). There are 1,357 Lower-layer Super Output Areas (4 per cent of the total) where more than one-third of people live in income deprivation.
- D.1.5. The table below shows the five Local Authority Districts with the highest average score on the Income Deprivation Domain³¹. In all five Districts, more than one in five people are income deprived.

Table D.1. Local Authority Districts with the highest average score on the Income Deprivation Domain	
Local Authority District	Average score
Knowsley	0.251
Middlesbrough	0.251
Blackpool	0.247
Liverpool	0.235
Hartlepool	0.228

- D.1.6. The table below shows the five Local Authority Districts with the highest proportion of Lower-layer Super Output Areas in the most deprived 10 per cent of Lower-layer Super Output Areas nationally on the Income Deprivation Domain. Half of all Lower-layer Super Output Areas in Middlesbrough are ranked among the most deprived 10 per cent on the Income Deprivation Domain, while more than 40 per cent of Lower-layer Super Output Areas in Knowsley, Liverpool and Kingston upon Hull are in the most deprived decile

Table D.2. Local Authority Districts with the highest proportion of Lower-layer Super Output Areas in the most deprived 10 per cent of areas nationally on the Income Deprivation Domain	
Local Authority District	Percentage of Lower-layer Super Output Areas
Middlesbrough	50.0
Knowsley	46.9
Liverpool	44.6
Kingston upon Hull	42.2
Birmingham	39.7

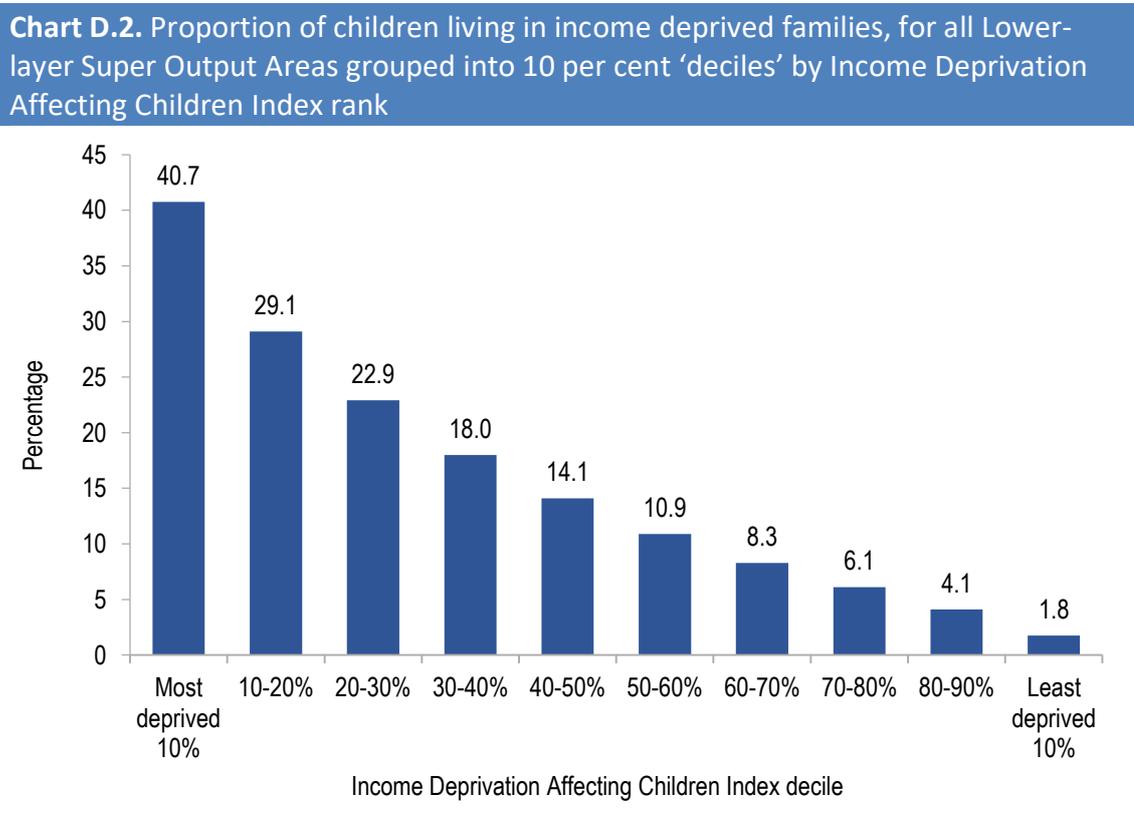
Income Deprivation Affecting Children Index

- D.1.7. The chart below shows that in the most deprived decile of Lower-layer Super Output Areas on the Income Deprivation Affecting Children Index, on average 40.7 per cent of children aged less than 16 are living in income deprived families³². Within this decile, the range is from 89.8 per cent to 32.9 per cent, showing the extreme range of deprivation that exists in the most deprived Lower-layer Super Output Areas. On average, in the least

³¹ This can be interpreted as the proportion of people in the local authority district experiencing income deprivation.

³² The word 'family' is used to designate a 'benefit unit', that is the claimant, any partner and any dependent children (those for whom Child Benefit is received).

deprived decile of Lower-layer Super Output Areas in terms of the Income Deprivation Affecting Children Index, only 1.8 per cent of children aged less than 16 live in income deprived families.



- D.1.8. In England there are 12 Lower-layer Super Output Areas where more than two thirds of children live in income deprived families. Half (6) of these Lower-layer Super Output Areas are in Blackpool and one each within the following six Districts: Salford, Middlesbrough, Brighton and Hove, Tendring, Leicester and Liverpool.
- D.1.9. There are 318 Lower-layer Super Output Areas (less than 1 per cent of the total) where more than half of all children live in income deprived households.
- D.1.10. The table below shows the five Local Authority Districts with the highest average score on the Income Deprivation Affecting Children Index³³. In all five Districts, more than one in four children are income deprived.

³³ This can be interpreted as the proportion of children in the local authority district living in families experiencing income deprivation.

Table D.3. Local Authority Districts with the highest average score on the Income Deprivation Affecting Children Index

Local Authority District	Average Score
Middlesbrough	0.326
Blackpool	0.305
Knowsley	0.301
Liverpool	0.298
Nottingham	0.296

D.1.11. The table below shows the five Local Authority Districts with the highest proportion of Lower-layer Super Output Areas in the most deprived 10 per cent of Lower-layer Super Output Areas nationally on the Income Deprivation Affecting Children Index

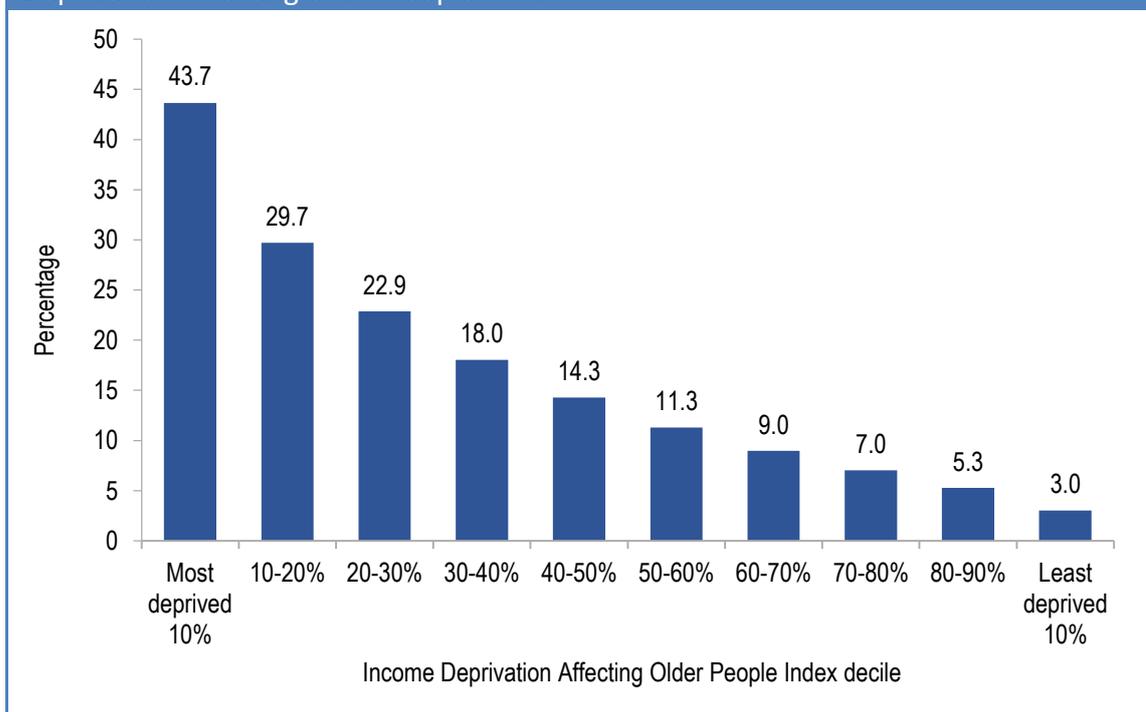
Table D.4. Local Authority Districts with the highest proportion of Lower-layer Super Output Areas in the most deprived 10 per cent of areas nationally on the Income Deprivation Affecting Children Index

Local Authority District	Percentage of Lower-layer Super Output Areas
Middlesbrough	47.7
Knowsley	44.9
Hartlepool	43.1
Liverpool	41.9
Kingston upon Hull	38.0

Income Deprivation Affecting Older People Index

D.1.12. The chart below shows that the most deprived decile of Lower-layer Super Output Areas on the Income Deprivation Affecting Older People Index has on average 43.7 per cent of older people affected by income deprivation. Within this decile, the range is from 98.8 per cent to 34.0 per cent, again showing the extreme range of deprivation that exists in the most deprived Lower-layer Super Output Areas. The least deprived decile of Lower-layer Super Output Areas in terms of this Index has on average only 3 per cent of older people affected by income deprivation.

Chart D.3. Proportion of older people living in income deprived households, for all Lower-layer Super Output Areas grouped into 10 per cent 'deciles' by Income Deprivation Affecting Older People Index rank



D.1.13. In England there are 97 Lower-layer Super Output Areas where more than two thirds of older people are affected by income deprivation. Twenty-two of these Lower-layer Super Output Areas are located in Birmingham, with a further 11 in Manchester, 10 in Bradford, 8 in Tower Hamlets and 7 in Leicester.

D.1.14. There are 644 Lower-layer Super Output Areas (just under 2 per cent of the total) where more than 50 per cent of older people are income deprived.

D.1.15. The table below shows the five Local Authority Districts with the highest average score on the Income Deprivation Affecting Older People Index³⁴. In all five Districts, more than one in three older people are income deprived.

Table D.5. Local Authority Districts with the highest average score on the Income Deprivation Affecting Older People Index

Local Authority District	Average score
Tower Hamlets	0.438
Hackney	0.406
Newham	0.372
Islington	0.335
Manchester	0.335

D.1.16. The table below shows the five Local Authority Districts with the highest proportion of Lower-layer Super Output Areas in the most deprived 10 per cent of Lower-layer Super

³⁴ This can be interpreted as the proportion of older people in the local authority district experiencing income deprivation.

Output Areas nationally on the Income Deprivation Affecting Older People Index. In all five Districts presented in the table, 50 per cent or more of the Lower-layer Super Output Areas are in the 10 per cent most deprived Lower-layer Super Output Areas nationally on this measure. In Hackney and Tower Hamlets more than two-thirds of Lower-layer Super Output Areas are in the most deprived 10 per cent nationally.

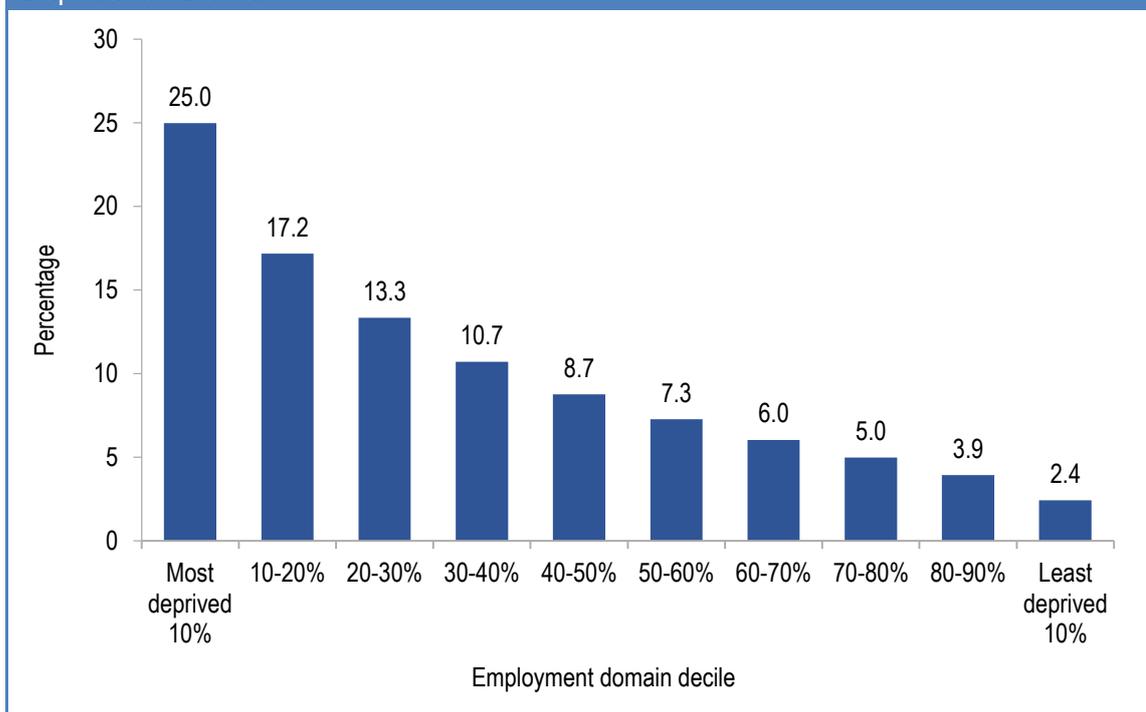
Table D.6. Local Authority Districts with the highest proportion of Lower-layer Super Output Areas in the most deprived 10 per cent of areas nationally on the Income Deprivation Affecting Older People Index

Local Authority District	Percentage of Lower-layer Super Output Areas
Hackney	77.1
Tower Hamlets	69.4
Newham	64.0
Manchester	50.0
Southwark	50.0

Employment Domain

D.1.17. The chart below shows employment deprivation in England by decile. In the most employment deprived decile of Lower-layer Super Output Areas, an average of 25 per cent of working-age adults (women aged 18 to 59 and men aged 18 to 64) are employment deprived. Within this decile, the range is from 53.4 per cent to 19.7 per cent, showing the high rates of deprivation that exist in the most deprived Lower-layer Super Output Areas. This compares with 2.4 per cent in the least employment deprived decile of Lower-layer Super Output Areas in England.

Chart D.4. Proportion of working-age adults in employment deprivation, for all Lower-layer Super Output Areas grouped into 10 per cent 'deciles' by Employment Deprivation Domain rank



D.1.18. There are 205 Lower-layer Super Output Areas in England (0.6 per cent of the total) where more than one third of working-age adults experience employment deprivation.

D.1.19. The table below shows the five Local Authority Districts with the highest average score on the Employment Deprivation Domain³⁵. In each of these Local Authority Districts more than one in six working-age adults is employment deprived.

Table D.7. Local Authority Districts with the highest average score on the Employment Deprivation Domain

Local Authority District	Average Score
Blackpool	0.209
Knowsley	0.202
Middlesbrough	0.191
Hartlepool	0.185
Liverpool	0.176

D.1.20. The table below shows the five Local Authority Districts with the highest proportion of Lower-layer Super Output Areas in the most deprived decile of Lower-layer Super Output Areas nationally on the Employment Deprivation Domain. Half of the Lower-layer Super Output Areas in Knowsley, and almost half of the Lower-layer Super Output Areas in Middlesbrough and Liverpool, are in the 10 per cent most deprived nationally on this measure.

³⁵ This can be interpreted as the proportion of working age people in the local authority district experiencing employment deprivation.

Table D.8. Local Authority Districts with the highest proportion of Lower-layer Super Output Areas in the most deprived 10 per cent of areas nationally on the Employment Deprivation Domain

Local Authority District	Percentage of Lower-layer Super Output Areas
Knowsley	50.0
Middlesbrough	48.8
Liverpool	48.0
Blackpool	43.6
Hartlepool	43.1

Health Deprivation and Disability Domain

D.1.21. The table below shows the five Local Authority Districts with the highest proportion of Lower-layer Super Output Areas in the most deprived decile of Lower-layer Super Output Areas nationally on the Health Deprivation and Disability Domain. In all five Districts presented, over half the Lower-layer Super Output Areas are in the 10 per cent most deprived Lower-layer Super Output Areas nationally on this measure. In Blackpool, Liverpool and Knowsley, over 60 per cent of Lower-layer Super Output Areas are in the 10 per cent most deprived nationally.

Table D.9. Local Authority Districts with the highest proportion of Lower-layer Super Output Areas in the most deprived 10 per cent of areas nationally on the Health Deprivation and Disability Domain

Local Authority District	Percentage of Lower-layer Super Output Areas
Blackpool	67.0
Liverpool	65.8
Knowsley	61.2
Middlesbrough	57.0
Barrow-in-Furness	53.1

Education, Skills and Training Deprivation Domain

D.1.22. The table below shows the five Local Authority Districts with the highest proportion of Lower-layer Super Output Areas in the most deprived decile of Lower-layer Super Output Areas nationally on the Education, Skills and Training Deprivation Domain. In all five Districts presented, over one in three Lower-layer Super Output Areas are in the 10 per cent most deprived Lower-layer Super Output Areas nationally on this measure.

Table D.10. Local Authority Districts with the highest proportion of Lower-layer Super Output Areas in the most deprived 10 per cent of areas nationally on the Education, Skills and Training Deprivation Domain

Local Authority District	Percentage of Lower-layer Super Output Areas
Knowsley	42.9
Kingston upon Hull	41.6
Middlesbrough	39.5
Doncaster	37.6
Norwich	36.1

Barriers to Housing and Services Domain

D.1.23. The table below shows the five Local Authority Districts with the highest proportion of Lower-layer Super Output Areas in the most deprived decile of Lower-layer Super Output Areas nationally on the Barriers to Housing and Services Domain. In Newham, every Lower-layer Super Output Areas is in the 10 per cent most deprived nationally.

Table D.11. Local Authority Districts with the highest proportion of Lower-layer Super Output Areas in the most deprived 10 per cent of areas nationally on the Barriers to Housing and Services Domain

Local Authority District	Percentage of Lower-layer Super Output Areas
Newham	100.0
Hackney	93.8
Barking and Dagenham	93.6
Brent	77.5
City of London	66.7

Crime Domain

D.1.24. The table below shows the five Local Authority Districts with the highest proportion of Lower-layer Super Output Areas in the most deprived decile of Lower-layer Super Output Areas nationally on the Crime Domain. In Manchester, more than half (61.3 per cent) of Lower-layer Super Output Areas are in the 10 per cent most deprived nationally.

Table D.12. Local Authority Districts with the highest proportion of Lower-layer Super Output Areas in the most deprived 10 per cent of areas nationally on the Crime Domain

Local Authority District	Percentage of Lower-layer Super Output Areas
Manchester	61.3
Bradford	46.8
Middlesbrough	45.3
Rochdale	41.8
Burnley	40.0

Living Environment Deprivation Domain

D.1.25. The table below shows the five Local Authority Districts with the highest proportion of Lower-layer Super Output Areas in the most deprived decile of Lower-layer Super Output

Areas nationally on the Living Environment Deprivation Domain. All of the Lower-layer Super Output Areas in Isles of Scilly are ranked as deprived on this measure.

Table D.13. Local Authority Districts with the highest proportion of Lower-layer Super Output Areas in the most deprived 10 per cent of areas nationally on the Living Environment Deprivation Domain

Local Authority District	Percentage of Lower-layer Super Output Areas
Isles of Scilly	100.0
Pendle	59.6
Eden	50.0
Portsmouth	49.6
Torridge	48.6

Appendix E. What data has been published?

E.1.1. The Indices of Deprivation 2019 datasets are available to download at www.gov.uk/government/statistics/english-indices-of-deprivation-2019

Lower-layer Super Output Area data

E.1.2. Nine sets of data have been published for Lower-layer Super Output Areas:

1. Index of Multiple Deprivation: The rank and decile for each area, on the overall Index of Multiple Deprivation.
2. Domains of deprivation: The rank and decile for each area, for each of the seven domains, as well as the Index of Multiple Deprivation.
3. Supplementary Indices - Income Deprivation Affecting Children Index and Income Deprivation Affecting Older People Index: The rank and decile for each area, for the Income Deprivation Affecting Children Index and the Income Deprivation Affecting Older People Index, as well as the Index of Multiple Deprivation.
4. Sub-domains of deprivation: The rank and decile for each area, for each of the six sub-domains, as well as their respective domains.
5. Scores for the Indices of Deprivation: The scores for each area, for the overall Index of Multiple Deprivation, the seven domains, the supplementary Indices, and the six sub-domains.
6. Population denominators: The primary population denominators (all people, children, working age, and older people) used in the Indices of Deprivation 2019. These can be used for aggregating the data sets, weighted by population, to other geographies such as wards (see Appendix A).
7. All ranks, deciles and scores for the Indices of Deprivation, and population denominators (CSV file): A single text file containing all of the data sets listed above.
8. Underlying indicators. The indicators used to construct the seven domains, for those that are able to be published.
9. Transformed domain scores: The seven domain scores in this file have been standardised by ranking, and then transformed to an exponential distribution. These transformed domain scores can be used as the basis for users to combine the domains together using different weights (see Appendix B).

Higher-level geography files

E.1.3. To summarise the level of deprivation in larger areas, a range of summary measures of the Index of Multiple Deprivation 2019, the domains and the two supplementary Indices (Income Deprivation Affecting Children Index and Income Deprivation Affecting Older People Index) have been created³⁶.

³⁶ For the Indices of Deprivation 2010 and previous versions, the majority of summary measures published were for the Index of Multiple Deprivation only. In response to demand from users, additional summary measures for the domains and supplementary Indices were published for the Indices of Deprivation 2015, and this expanded set has also been published here for the Indices of Deprivation 2019.

E.1.4. For each of the larger areas the following measures have been published:

10. Local Authority District Summaries.
11. Upper-tier Local Authority Summaries.
12. Local Enterprise Partnership Summaries.
13. Clinical Commissioning Group Summaries.
14. Local Authority District Summaries from the IoD2015 reaggregated to 2019 Local Authority District boundaries.

Table F.1. The summary measures published for the Index of Multiple Deprivation, the domains and supplementary Indices

	Average rank	Average score	Proportion of Lower-layer Super Output Areas in most deprived 10 per cent nationally	Extent	Local concentration	Scale
Index of Multiple Deprivation	x	x	x	x	x	
Income	x	x	x			x
Employment	x	x	x			x
Education	x	x	x			
Health	x	x	x			
Crime	x	x	x			
Living	x	x	x			
Barriers	x	x	x			
IDACI	x	x	x			
IDAOPi	x	x	x			

E.1.5. These measures are described in section 3.8 of the Technical Report and advice on their interpretation is provided in section 3.3 of the Research Report.