COVID-19

Economic exposure to COVID-19

Potential local vulnerabilities across Great Britain

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2 June 2020

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Introduction

- This briefing provides an overview of potential **local economic exposure to COVID-19**, by area of Great Britain.
- At a local level, the lockdown affects industries, firms and workers in different ways.
- Exposure to the lockdown's effects depends on the **local concentration of different industries, firms and workers**.

Version history

02/06/2020	Added new analysis of occupations and comparison with sector-based projections from the UK OBR.
28/04/2020	First version of the briefing.

The top-right corner of each content slide gives the last modified date.

Considerations

- **Economic vulnerability** to lockdown (imposed reductions in economic activity).
  - Which industries are most subject to enforced reductions in activity?
  - How many jobs are in these industries?
  - In these industries, what activities (occupations) have the most/least scope to work differently?
- **Potential fragility** among industries, firms and workers at risk of going out of business or suffering falls in income.
  - This is of immediate concern but may also hold back future recovery.
  - Various government support measures are in place and there is now talk about how to bring them to a close.

Focus on sectors

- Sectors most likely to be directly affected by the lockdown:
  - **Tourism and leisure**, including air transport, hotels, catering, arts and recreation.
  - **Manufacture of consumer durables**, including motor vehicles, consumer electronics and domestic appliances.
- High concentrations of at-risk employment and output as indications of potential vulnerability.

Focus on occupations

- Even within a sector, workers' circumstances differ: **occupational structure matters**:
  - Some job roles are more exposed to disease or involve physical proximity.
  - Some people may be able to work from home, but many cannot.
- Analysis of occupational data and how occupations differ across sectors to better understand the potential impacts.
  - Even if areas have *similar sector mixes*, the impacts may vary because of *different occupational mixes*.

Focus on small businesses

- Areas with **high proportions of small businesses** may be more vulnerable to cashflow difficulties.
  - Greater need for finance under the Coronavirus Business Interruption Loan Scheme?
  - Greater reliance on the Coronavirus Job Retention Scheme?
- High proportions of small businesses as an indicator of potential fragility.

Focus on self-employment

- Areas with **high proportions of self-employment**, with people who may be suffering from a fall in income.
- An indicator of potential fragility through greater reliance on the Self-employment Income Support Scheme.

Summary

Summary: Sectors (1)

- In **tourism and leisure**, **there are local authorities in which one in five jobs are in industries likely to be affected by the lockdown**.
  - This is because of higher reliance on hotels and restaurants/catering.
- The most exposed areas are often those in which tourism is seasonal.
  - The full economic impacts of lockdown may be still to come.
- Areas in the south with major airports are also at risk.

Summary: Sectors (2)

- **Consumer durables manufacturing** is now a relatively small part of the British economy.
- However, **several areas in the West Midlands may be especially exposed**.
  - This is because of higher dependence on vehicle manufacturing.

Summary: Occupations

- Outside of health and social care (13% of GB employment), **relatively few workers are directly exposed to disease**.
  - However, **many jobs involve close proximity to others**, presenting a challenge for social distancing.
- An occupations-based approach supports the idea that **working from home favours professionals** more than other occupations.
  - Geographically, people in coastal areas in Wales, Scotland and parts of England are least likely to be able to work from home.

Summary: Small businesses

- The majority of businesses in Great Britain have fewer than 50 employees.
- Focusing on the smallest (those with fewer than five employees, which may be more prone to cashflow difficulties), **local authorities with the highest concentration of small firms tend to be in or around London**.
- Information about the Coronavirus Job Retention Scheme will reveal more about the extent of furloughing.

Summary: Self-employment (1)

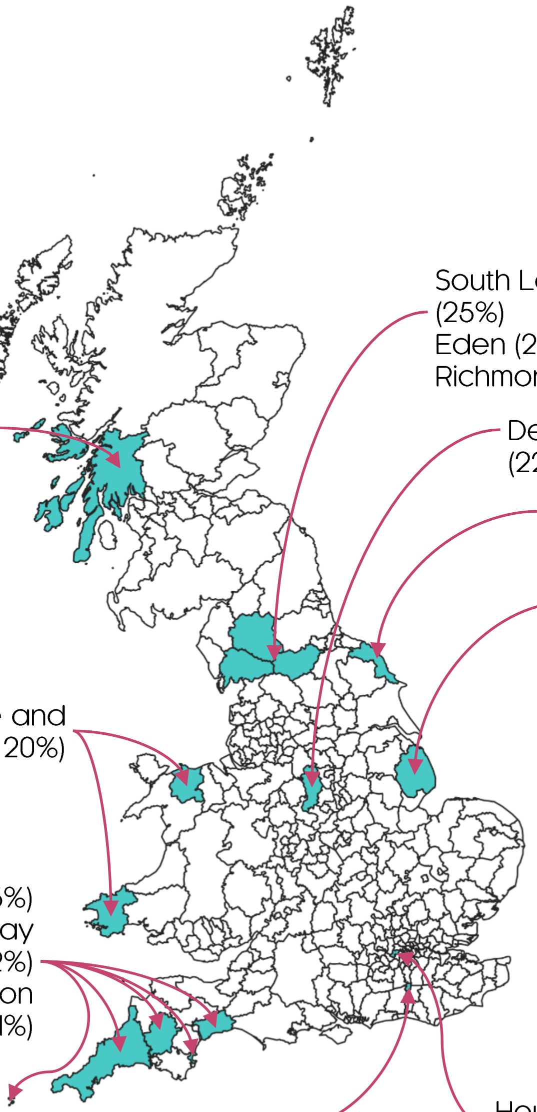
- **Many of the highest concentrations of self-employed people are in London.**
  - For example, one in three jobs in Haringey.
- There is no clear geographical pattern of exposure outside of London.
  - Although, as with the tourism and leisure analysis, there may be a seasonal tourism aspect to this.

Summary: Self-employment (2)

- **Men account for almost two-thirds of self-employment**, **but the split varies by industry**:
- In **tourism and leisure, women account for 45%** of self-employment.
- In **consumer durables manufacturing, men account for over 80%** of self-employment.
- How the lockdown is relaxed will have implications for these people and, in turn, the gender impacts.

Analysis

Tourism and leisure: Workplace jobs



Share of workplace jobs, 2018 (%)

- Of the 371 areas in Great Britain:
  - There are **16 areas in which tourism and leisure accounts for 20% or more of workplace jobs**.
  - For most (301) areas, the share is between 10% and 20%.
- In the most exposed areas, high vulnerability is often due to **high proportions of jobs in the hotel and restaurants/catering sectors**, and many seem reliant on seasonal tourism.
  - Crawley and Hounslow are the notable exceptions, with greater reliance on air transport (Gatwick and Heathrow airports, respectively).

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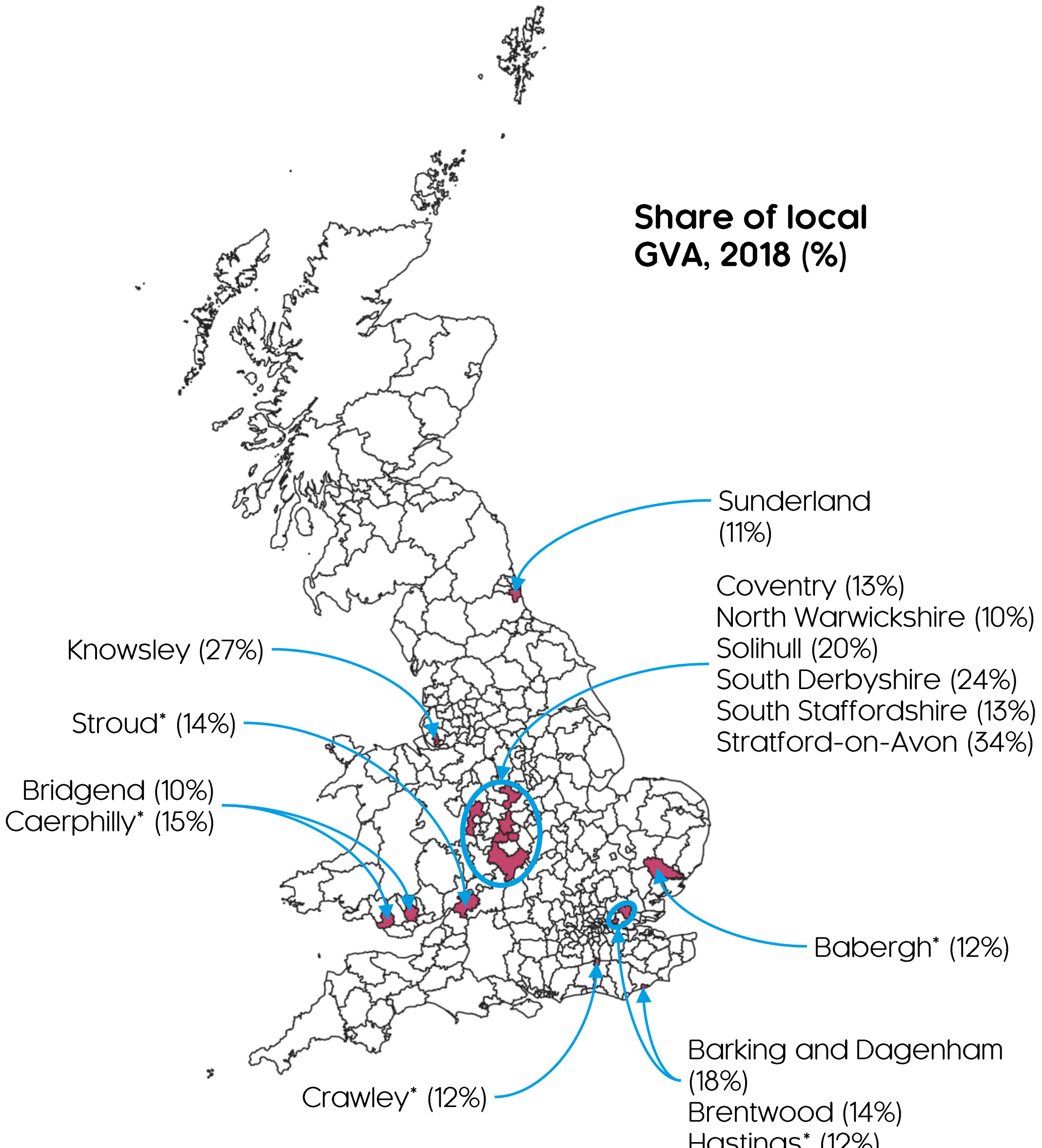
Note: Top 16 exposed areas are marked and labelled, along with the most exposed area in Scotland.
Source: Cambridge Econometrics local authority database, March 2020.

Durables: Output



- By output, consumer durables manufacturing in Great Britain is small, at around 2% of output.
  - However, there are **16 areas in which consumer durables manufacturing accounts for at least 10% of gross value added**.
  - In four areas, the share is 20% or more.
- **Exposure is clear in the West Midlands** (and South Derbyshire in the East Midlands) owing to **high dependence on motor vehicle manufacturing**.

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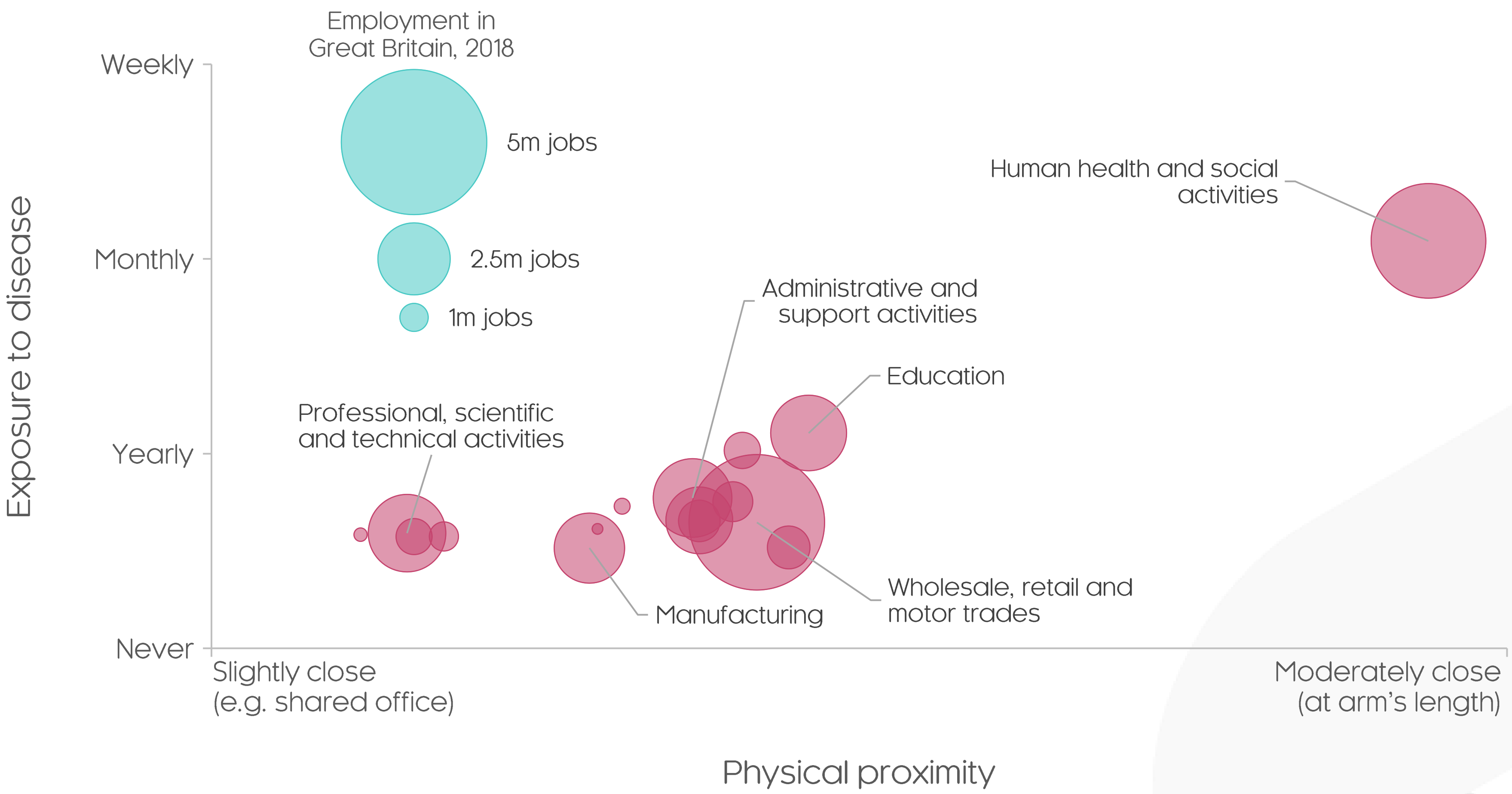
Note: Top 16 exposed areas are marked and labelled. Asterisks indicate high proportions of electronics, some of which could be for industrial rather than consumer use.
Source: Cambridge Econometrics local authority database, March 2020.

Occupational impacts

- Even within individual sectors, activities can vary greatly by occupation.
- To look at **the role of occupational composition**, we combine:
  - data (from the US) about the work characteristics of different occupations
  - UK data about employment in different sectors and occupations
- Analysis:
  - Exposure to disease and physical proximity: risk of spreading/catching COVID-19 and/or challenges for social distancing
  - How many jobs, and in which sectors, can people work from home? What is the pattern of work impacts under lockdown?
- Comparison of impacts against the OBR's sector-based assumptions.

Potential exposure to COVID-19



- Health and social care stands out as having both:
  - high exposure to disease
  - close contact with others (risking spread of the disease)
- There are also a lot of workers in health and social care: almost 4m in 2018.

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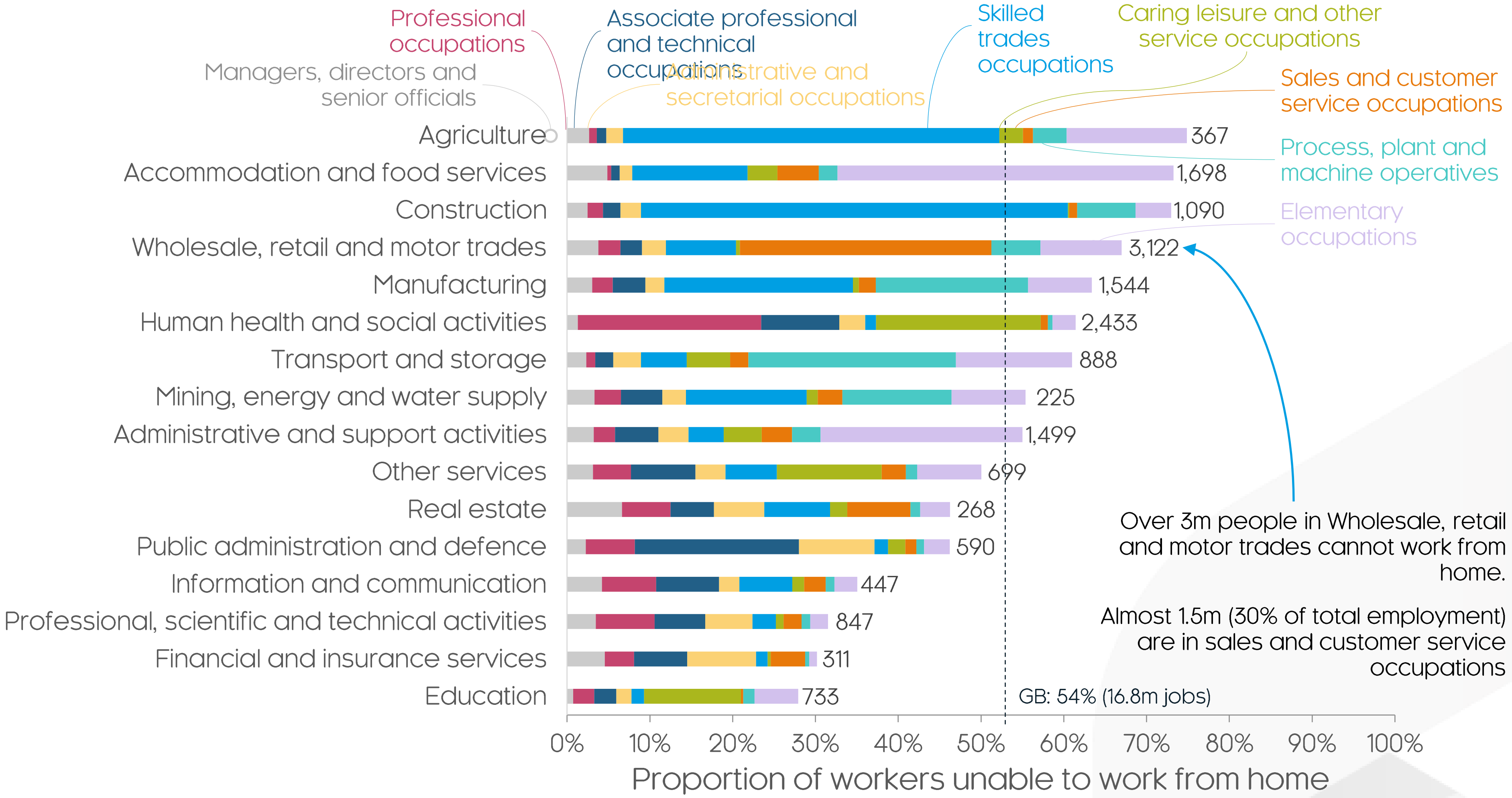
Note: Physical proximity and exposure to disease measures are compiled from US occupational data (from O*NET), mapped to UK occupations and then aggregated to 16 UK industries. See the notes for further information.

Source(s): Cambridge Econometrics analysis of US Department of Labor, Employment and Training Administration O*NET data; ONS (2019) Business Register and Employment Survey data; and Cambridge Econometrics local authority database, March 2020

Who can't work from home?



- Most affected by a lockdown:
  - retail
  - hospitality (accommodation and food services)
  - manufacturing
  - construction
- Few agriculture workers can work from home but they may be more able to social distance.

Note: Numbers beside the bars are the estimated number of workers in each sector who cannot work from home, based on figures for 2018.

Source(s): Cambridge Econometrics analysis of Dingel and Neiman (2020); ONS (2019) Business Register and Employment Survey data; and Cambridge Econometrics local authority database, March 2020.

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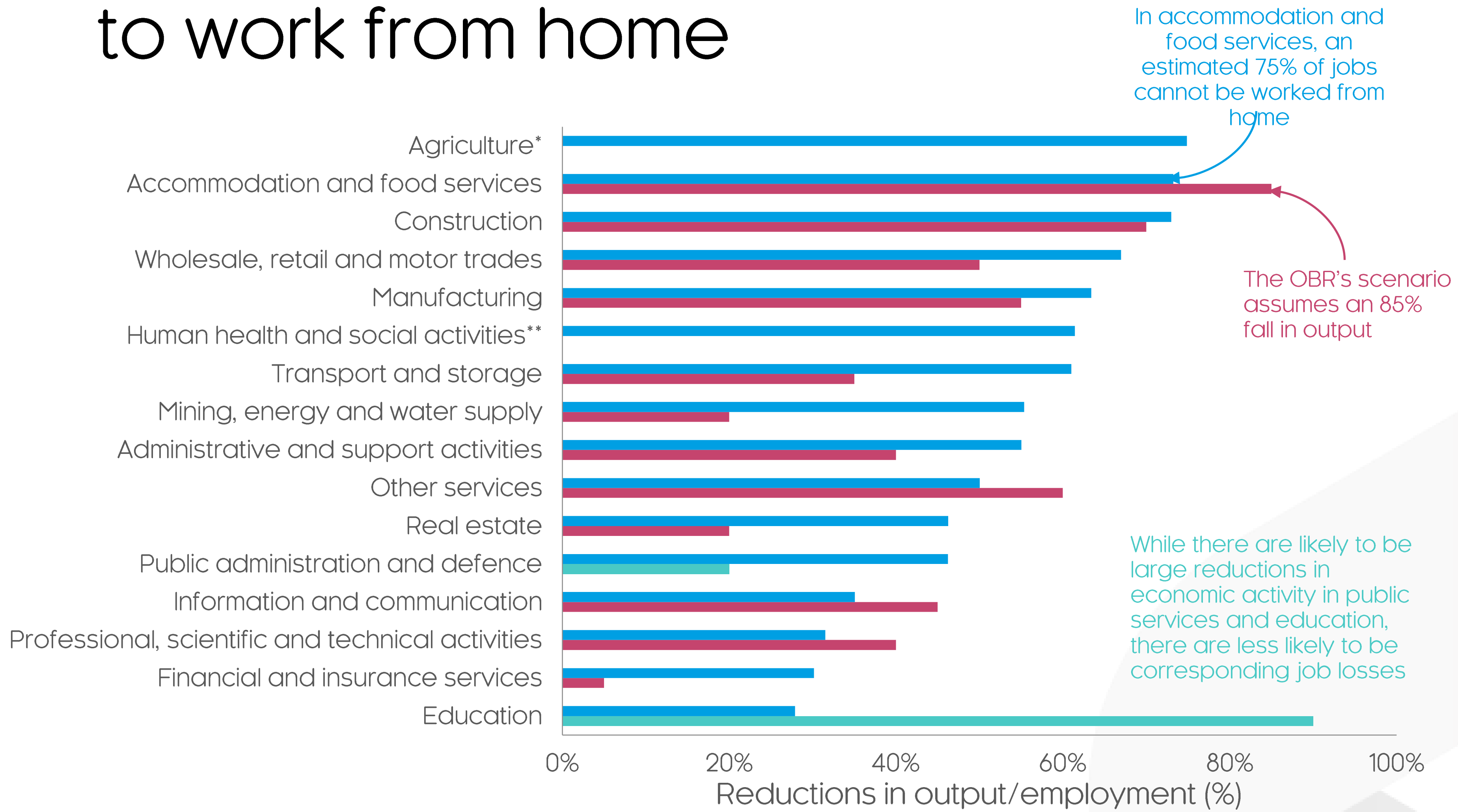
Comparison: Occupational and sectoral impacts

- Analysis by occupation implies that there are many jobs in which:
  - social distancing will be difficult to reduce exposure to COVID-19
  - working from home may not be viable
- Certain occupations and sectors will be especially affected.
- How does this compare to a purely sector-based assessment?
  - Comparisons with the UK Office for Budget Responsibility's Coronavirus Reference Scenario (14 April 2020).
  - Comparison of implied impacts at a local (travel-to-work) area level.

Output losses compared with the ability to work from home



- Many sectors have both:
  - limited possibilities to work from home
  - severe output reductions expected by the OBR
- Hospitality, construction, retail and manufacturing are especially affected.

Notes: * The OBR scenario assumes no impact on Agriculture output.
** The OBR scenario assumes higher output in health (no reduction shown).

Source(s): OBR Coronavirus Reference Scenario (April 2020); and Cambridge Econometrics analysis of US Department of Labor, Employment and Training Administration O*NET data; and Cambridge Econometrics local authority database, March 2020

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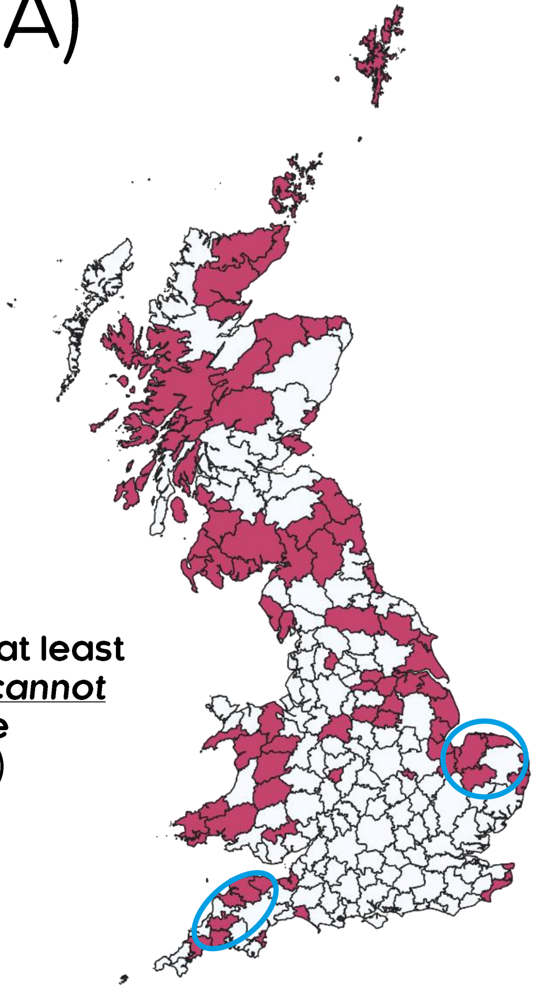
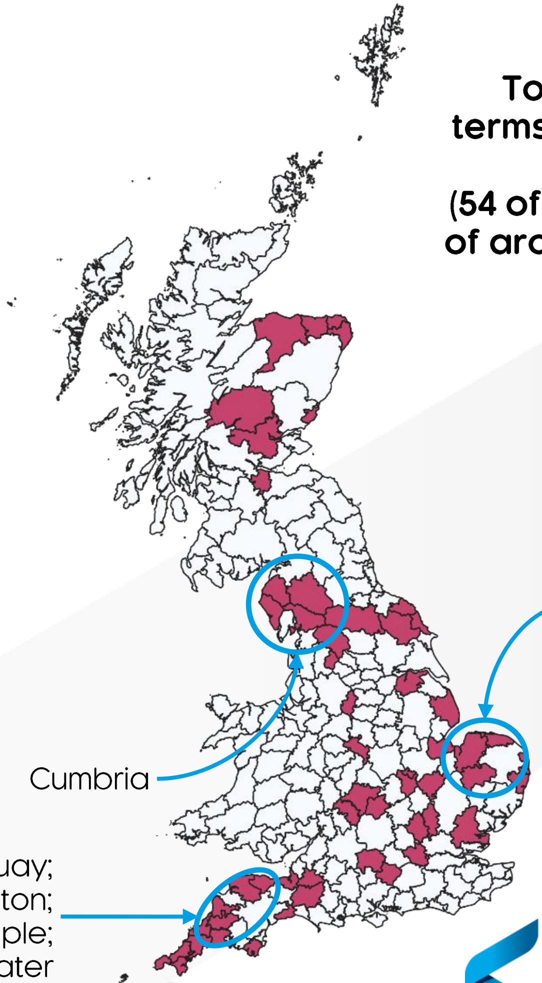
Jobs and output impacts by Travel to Work Area (TTWA)



TTWAs in which at least 60% of people *cannot* work from home (82 of 218 areas)

- Coastal areas in England, parts of Wales and Scotland have more limited scope to work from home (left).
- There is less of a regional pattern to the OBR-based impacts(right) but areas in the north, south west and east of England look more exposed.



Top 25% of TTWAs in terms of OBR-assumed output losses (54 of 218 areas; impact of around 38% or more)

Notes: Proportions of people who cannot work from home (left) exclude health and caring professions (who continue to work regardless). OBR output impacts (right) exclude health, education and public administration as these sectors are less likely to accompanying falls in employment.

Source(s): OBR Coronavirus Reference Scenario (April 2020); and Cambridge Econometrics analysis of US Department of Labor, Employment and

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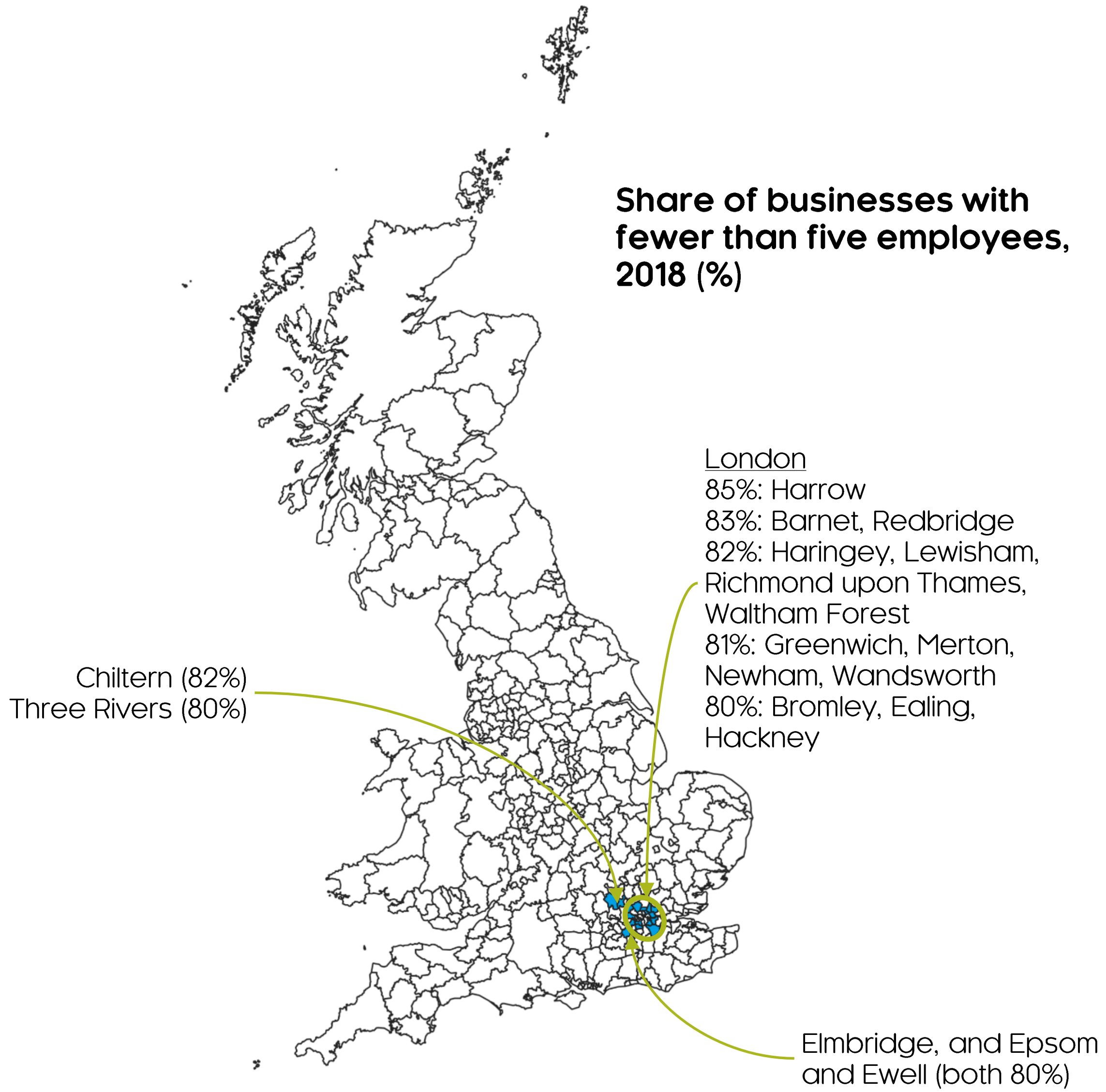
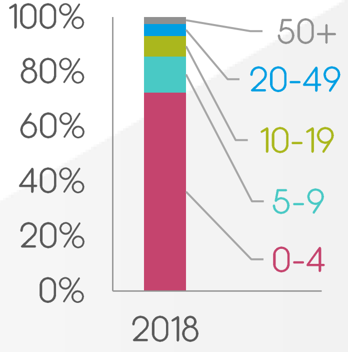
Small businesses: Fewer than five employees

Share of businesses with fewer than five employees, 2018 (%)



- The **majority of private businesses in Great Britain (98%) have fewer than 50 employees**.
  - 72% have fewer than five employees.
  - 86% have fewer than ten employees.
- In **18 areas, businesses with fewer than five employees account for more than 80% of firms**. All are either in or near London.
  - London areas continue to be high in the rankings when considering firms with fewer than ten employees.

Composition of GB businesses (local units) by number of employees



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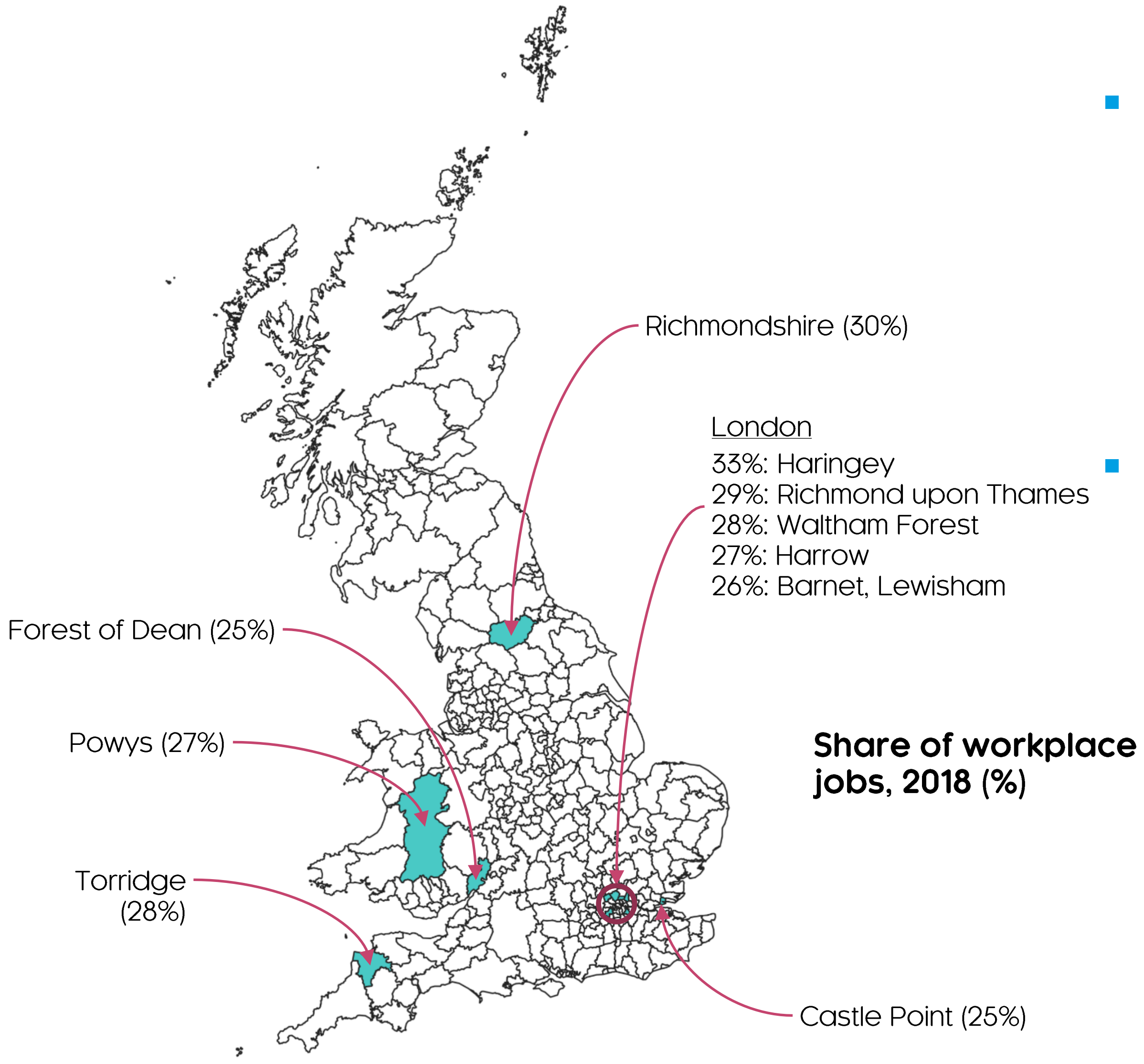
Note: Top 18 exposed areas are marked and labelled.
Source: Cambridge Econometrics analysis of ONS business counts data of private local units (via Nomis).

Self-employment by area



- **Self-employment accounts for 13% of workplace jobs** in Great Britain.
  - There are **11 areas in which the share is over 25%**.
  - In Haringey, self-employment accounts for one in three jobs.
- **Self-employed men account for a higher proportion of employment than self-employed women**: 16% compared with 10%.
  - In Haringey, **male self-employment is 36% of all male employment** in the area. **For women the figure is 30%.** These are the highest figures among all areas.

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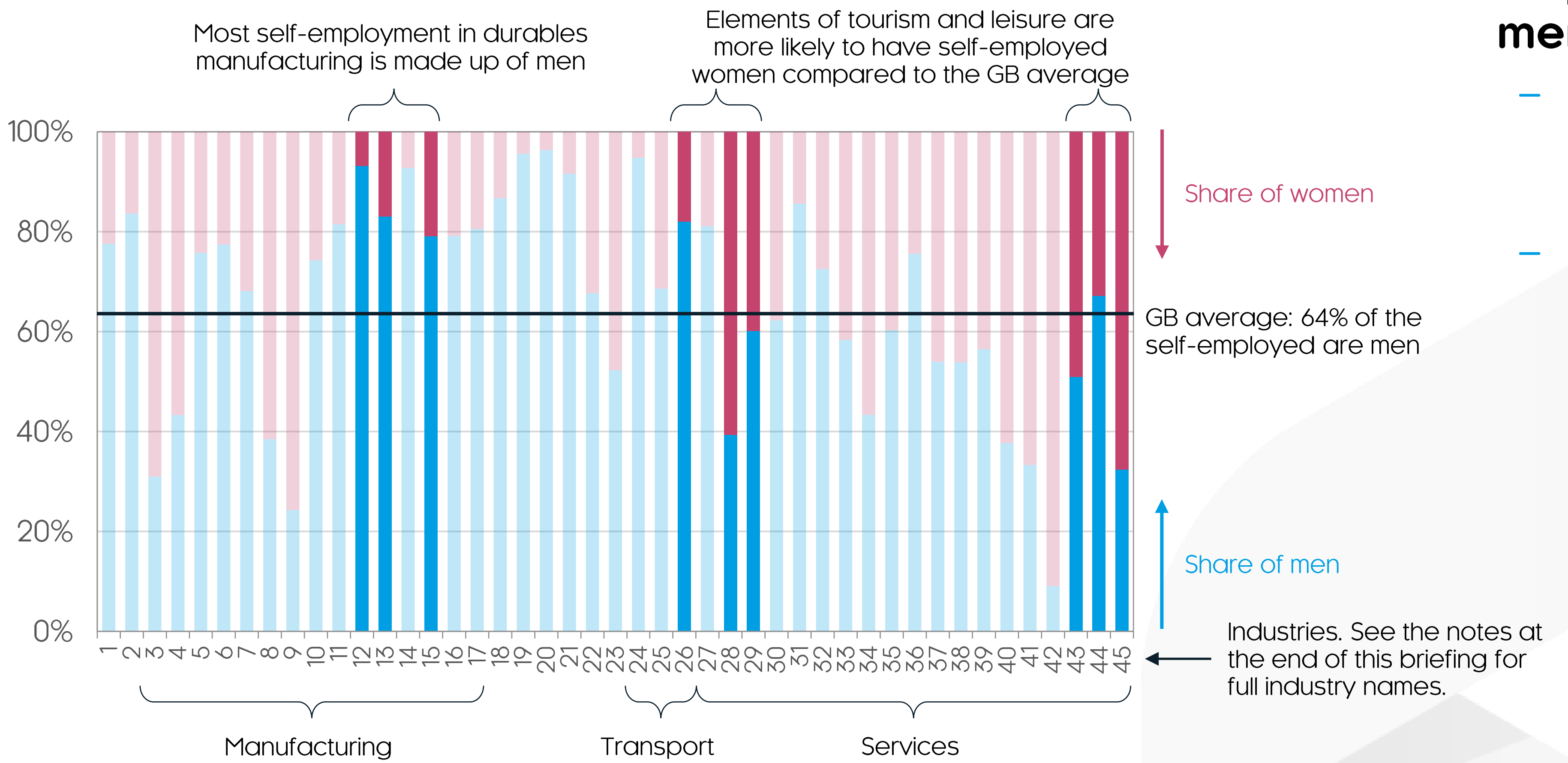
Note: Top 11 exposed areas are marked and labelled.
Source: Cambridge Econometrics local authority database, March 2020.

Self-employment: By industry and gender

Composition of self-employment by industry and gender, 2018 (workplace jobs)



- **Almost two-thirds of self-employment is made up of men** but:
  - Men account for 86% of self-employment in durables manufacturing.
  - Women account for 45% of self-employment in tourism and leisure and are thus relatively more affected in this sector.

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Source: Cambridge Econometrics local authority database, March 2020.

How we can help

- **Place matters**: Local areas are different, with their own vulnerabilities but also opportunities.
- We can help you with:
  - **Data** and analysis: How is your area exposed? What's going on?
  - **Modelling**: How might things look under different scenarios? What might you prepare for?
  - **Resilience** assessment: What factors affect prospects for recovery? What should you be looking at more closely?
- **Talk to us** about your concerns:
  - If you'd like a call back to talk through the issues please request a call back.
- https://www.camecon.com/coronavirus/

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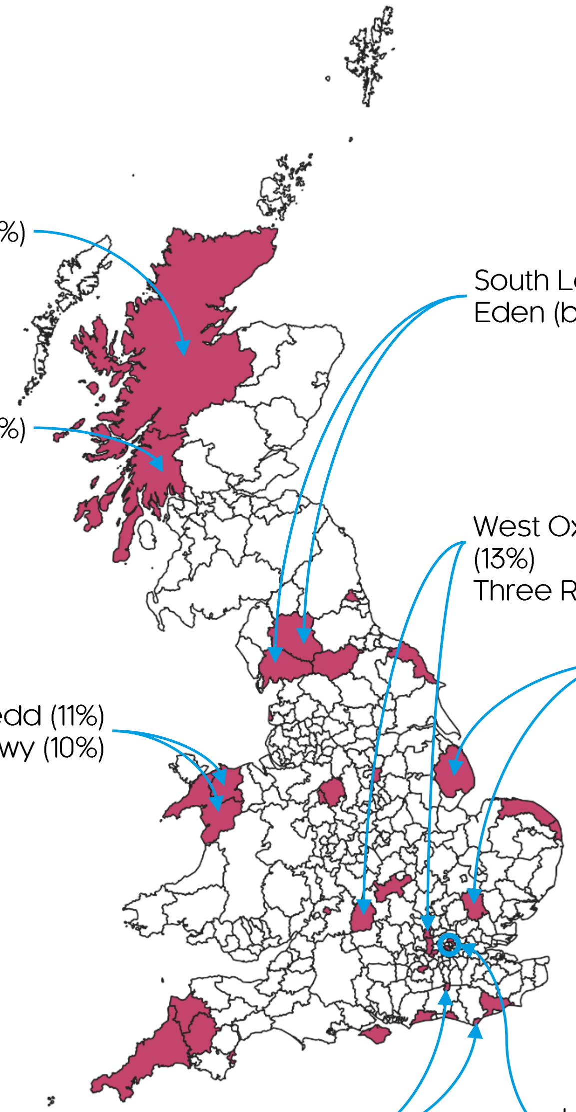
Tourism and leisure: Output



- Of the 371 areas in Great Britain:
  - There are **38 (one in ten) in which tourism and leisure accounts for at least 10% of economic output (gross value added)**.
- **High exposure is usually due to hotels, restaurants/catering and other services** with some exceptions:
  - Airports are important to Crawley (Gatwick), Hounslow (Heathrow) and Uttlesford (Stansted).
  - Three Rivers is notable as having a high reliance on recreation.

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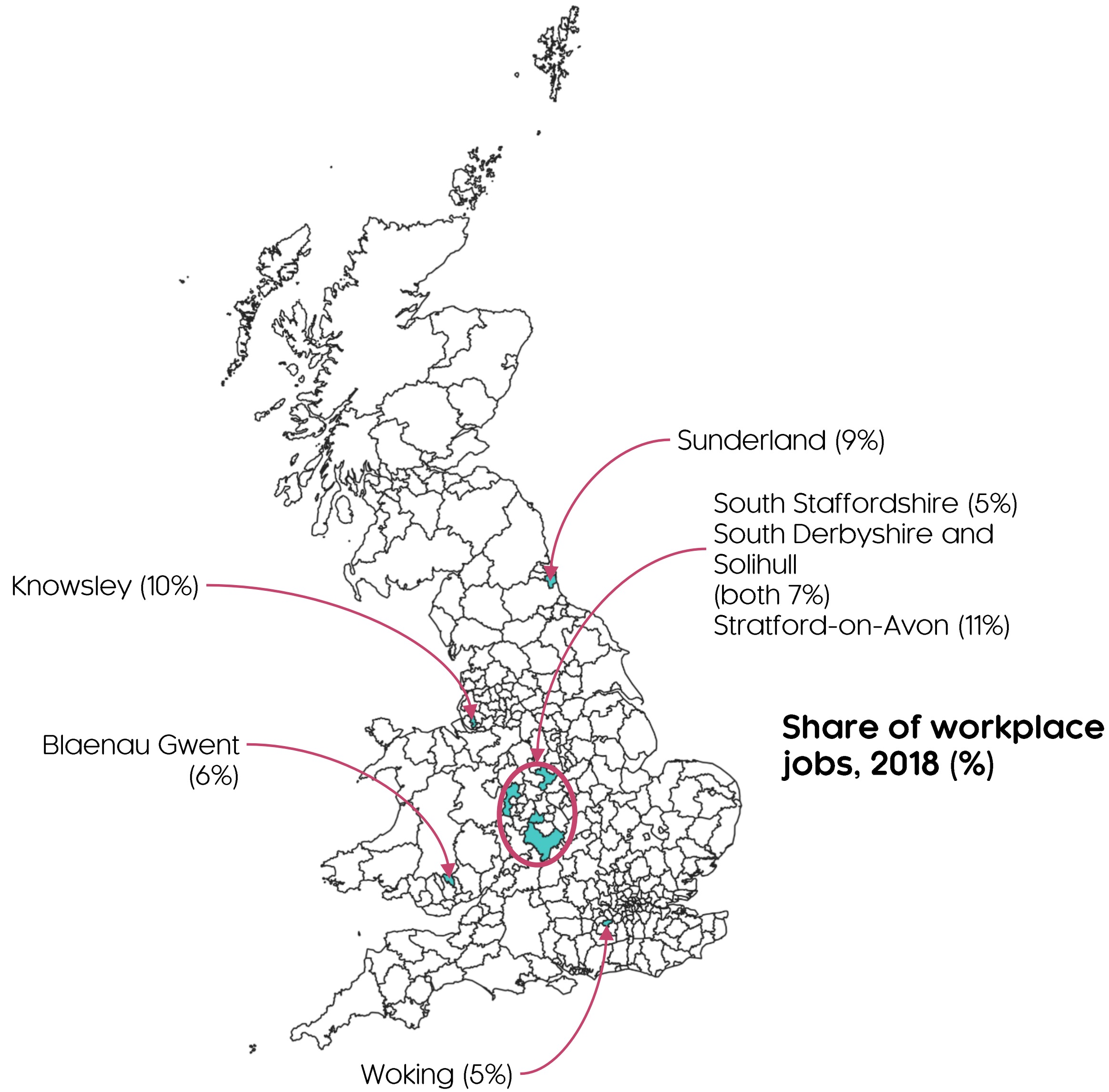
Note: Top 38 exposed areas are marked, with the top ten labelled (plus the two most exposed in each of Wales and Scotland).
Source: Cambridge Econometrics local authority database, March 2020.

Durables: Workplace jobs



- While employment in consumer durables manufacturing accounts for just 1% of total employment in Great Britain, it remains important in some areas.
  - **Eight areas have employment shares of 5% or more**, with a share of **over 10% in Stratford-on-Avon**.
- Most of this exposure is because of the **presence of motor vehicle manufacturing**.
  - Coventry, Barking and Dagenham, North Warwickshire, and Swindon are also not far behind by this measure.

Note: Top eight exposed areas are marked and labelled.
Source: Cambridge Econometrics local authority database, March 2020.

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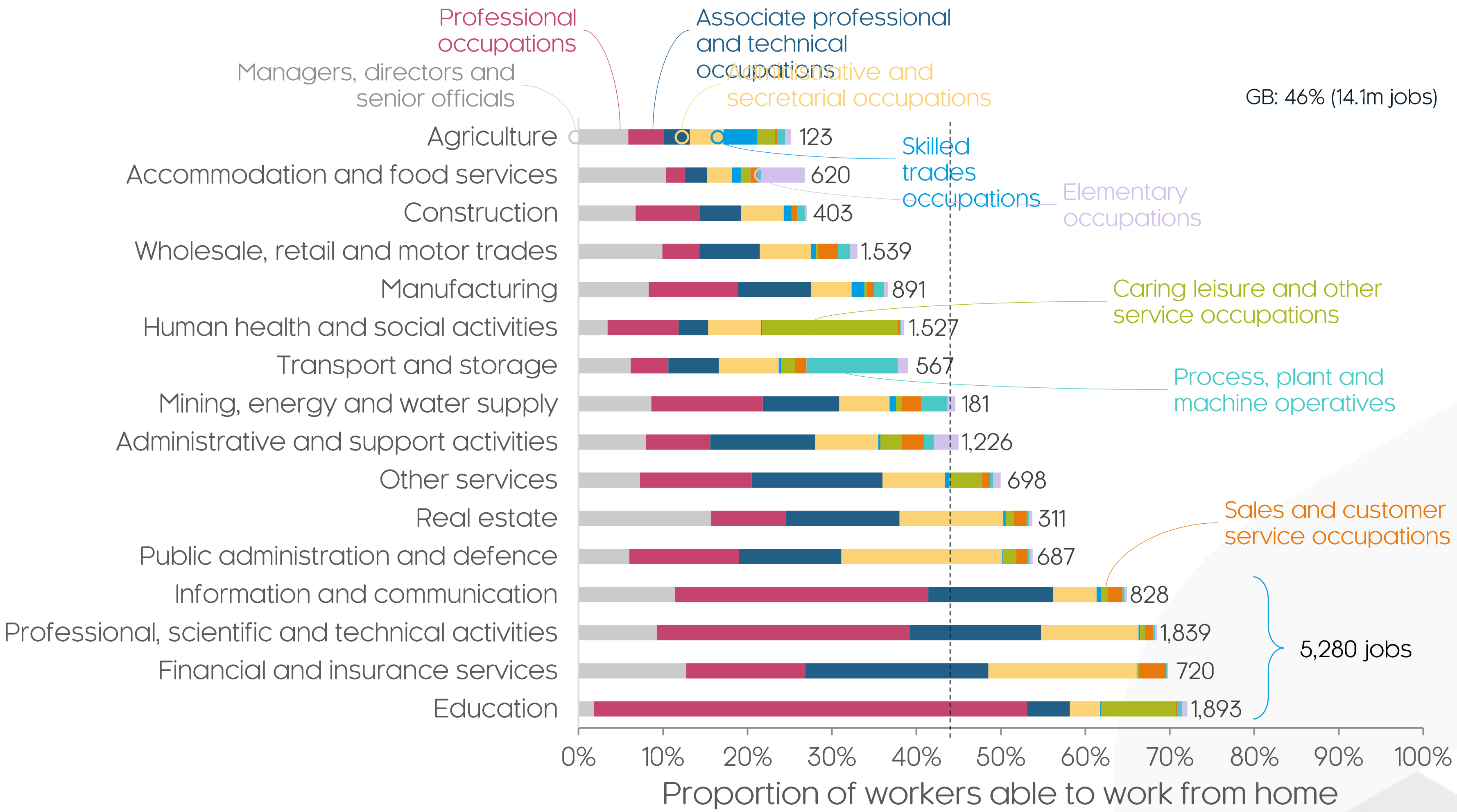
Last updated: 02/06/2020

Who can work from home?



- Working from home favours senior and professional positions.
- Of the estimated 14.1m jobs that can be worked from home, almost 40% are in:
  - ICT
  - professional services
  - finance/insurance
  - education

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Note: Numbers beside the bars are the estimated number of workers in each sector who cannot work from home, based on figures for 2018.

Source(s): Cambridge Econometrics analysis of Dingel and Neiman (2020); ONS (2019) Business Register and Employment Survey data; and Cambridge Econometrics local authority database, March 2020.

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Notes (1)

- **Employment and output** (gross value added) data are for 2018 and come from Cambridge Econometrics' local authority database (last updated March 2020), which is derived from ONS data.
  - Employment is expressed in workplace-based jobs (full-time, part-time and self-employed). The data combine figures on employees by sector and local area (full- and part-time, by gender) from the Business Register and Employment Survey as well as the earlier Annual Business Inquiry. Self-employment is estimated from the Annual Population Survey. The figures are made consistent with more recently published estimates of jobs at a regional level by ONS (quarterly workforce jobs, June figures).
  - Output data are made consistent with sector-level data (by the balanced approach) at the local authority level from the ONS regional accounts.

Notes (2)

- **UK business count data** are for 2018 and come from ONS (accessed via Nomis)
  - The figures are 'local units by industry and employment size band'.
  - Local units are individual sites that may belong to a larger 'enterprise'. We use local units as a proxy for local businesses because the controlling enterprise may be located elsewhere in the country.
- The **sector classification** overleaf lists the industries identified in Cambridge Econometrics' local authority database and their correspondence to the UK 2007 standard industrial classification of economic activities (SIC 2007).
  - The constituent industries for this analysis ('Tourism and leisure' and 'Manufacture of consumer durables') are also marked.
  - For assessing exposure to COVID-19, these industries are relatively broad in definition and should be taken to be an indication of where the economic impacts might fall at a local level.
  - This applies especially to durables, which could be for industrial use.

Sector

Tourism and leisure | Durables

	CE industry	SIC 2007 Division
1	Agriculture, forestry & fishing	01-03
2	Mining & quarrying	05-09
3	Food, drink & tobacco	10-12
4	Textiles etc	13-15
5	Wood & paper	16-17
6	Printing & recording	18
7	Coke & petroleum	19
8	Chemicals	20
9	Pharmaceuticals	21
10	Non-metallic mineral products	22-23
11	Metals & metal products	24-25
12	Electronics	26
13	Electrical equipment	27
14	Machinery	28
15	Motor vehicles	29

	CE industry	SIC 2007 Division
16	Other transport equipment	30
17	Other manufacturing & repair	31-33
18	Electricity & gas	35
19	Water, sewerage & waste	36-39
20	Construction	41-43
21	Motor vehicles trade	45
22	Wholesale trade	46
23	Retail trade	47
24	Land transport	49
25	Water transport	50
26	Air transport	51
27	Warehousing & postal	52-53
28	Accommodation	55
29	Food & beverage services	56
30	Media	58-60

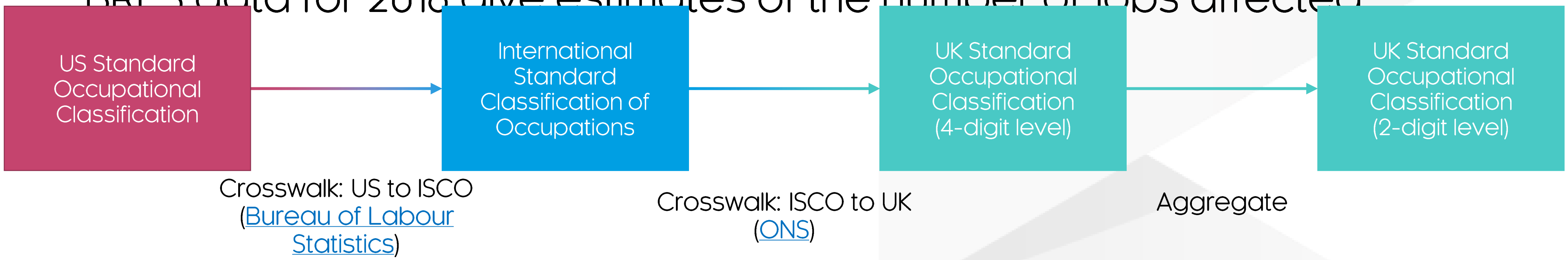
	CE industry	SIC 2007 Division
31	IT services	61-63
32	Financial & insurance	64-66
33	Real estate	68
34	Legal & accounting	69
35	Head offices & management consultancies	70
36	Architectural & engineering services	71
37	Other professional services	72-75
38	Business support services	77-82
39	Public Administration & Defence	84
40	Education	85
41	Health	86
42	Residential & social	87-88
43	Arts	90-91
44	Recreational services	92-93
45	Other services	94-96

Notes (3)

- **Personal risk of exposure to COVID-19** analysis follows a similar approach to that of Autonomy (24/03/2020) and the UK Office for National Statistics (11/05/2020), which was in turn inspired by earlier work for the US by the New York Times (15/03/2020).
  - The two measures, of physical proximity (physical distance while working) and exposure to diseases or infection, come from the US O*NET database of occupational information.
  - The measures come from the O*NET work context questionnaire and are available for individual occupations, as defined by the US Standard Occupational Classification.
  - US occupations were mapped to the International Standard Classification of Occupations (ISCO-08) and then to the UK Standard Occupational Classification.
  - We then applied the figures to Cambridge Econometrics' data on employment in Great Britain by sector and occupation to construct weighted scores by sector for 2015. Estimates of job numbers are based on 2018 figures from the ONS Business Register and Employment Survey

Notes (4)

- **Estimates of the number of workers unable to work from home** are based on analysis by Dingel and Neiman (16/04/2020) who apply a series of rules to the O*NET data to identify occupations that may not be amenable to working from home.
  - Dingel and Neiman (2020) make their classification by occupation available online.
  - As with the estimates of risk of exposure to COVID-19, we map the results from US to UK occupations via the International Standard Classification of Occupations. We then apply the estimated shares to data from Cambridge Econometrics' local authority database for 2015 to get weighted scores. ONS BRES data for 2018 give estimates of the number of jobs affected



Notes (5)

- For **comparability with the OBR figures**, results by sector (e.g. from Cambridge Econometrics' 45-sector classification) are aggregated to match the OBR's 16-sector classification.

OBR sector	CE industry number(s)
Agriculture, forestry and fishing	1
Mining, energy and water supply	2, 18-19
Manufacturing	3-17
Construction	20
Wholesale, retail and motor trades	21-23
Transport and storage	24-27
Accommodation and food services	28-29
Information and communication	30-31

OBR sector	CE industry number(s)
Financial and insurance services	32
Real estate	33
Professional, scientific and technical activities	34-37
Administrative and support activities	38
Public administration and defence	39
Education	40
Human health and social activities	41-42
Other services	43-45

Notes (6)

- Estimated proportions of people who can or cannot work from home, and OBR sector impacts are localised to **Travel to Work Areas (TTWAs)**.
  - TTWAs are (estimated) areas in which people both live and work. They seek to approximate local labour markets.
  - Employment data by TTWA broken down by sector and occupation have been estimated from Cambridge Econometrics' local authority database (March 2020).
  - In comparisons between estimates of (potential) home working and the OBR impacts, the OBR-based figures *exclude* output effects in Human health and social activities; Education; and Public administration and defence. This is because output losses in these sectors are more likely to be reductions (or, indeed, increases) in economic activity with more limited accompanying jobs impacts.

Notes (7)

- **Employment at a TTWA level** is measured in total jobs and disaggregated by sector and occupation.
  - The data take Cambridge Econometrics' local authority database (March 2020) as a starting point.
  - Figures at a TTWA level are calculated by aggregating local authority district-level data using a matching process between district and TTWA boundaries.