Levelling Up Live:
Measuring Local Inequalities Using Real Time Data

TrackTheEconomy.ac.uk*

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Summary

The Government has placed levelling up at the heart of its domestic agenda. Levelling up is about reducing inequalities. Yet at its heart, because disparities in health, crime, education and opportunity are strongly associated with disparities in income and wealth, closing economic inequality is central to its objective. The pandemic has led to rapid change in the picture of local inequalities across the UK. These changes are still in progress as working and consumption patterns shift to a new normal, and the long term effect on employment and business becomes clear.

We can only understand the evolution local inequalities across the UK in light of Covid-19 by using geographically granular data. However, while existing data sets offer deep insight into long-term deprivation they do not provide local data that gives an up-to-date picture of changes since Covid-19. Through the TrackTheEconomy project, we bring together new data sources that show geographically granular data updated monthly, providing a real-time understanding of how Covid-19 has affected inequality at granular geographic levels.

These data show that many areas previously falling behind, such as smaller towns around large cities, are bouncing back fastest from the impact of Covid-19. Traditionally strong areas, such as metropolitan London, are experiencing a slower recovery. Of particular concern are areas of ethnically diverse metropolitan living, which are among the most long-term deprived and the slowest to bounce back. These are not necessarily located in particular cities or regions e.g. the North, but are spread across the country. We suggest that levelling up policy should focus therefore on economically contiguous areas (e.g., a type of place – such as metropolitan areas in cities) rather than geographically contiguous areas (e.g., a region).

"We will get on with our job of uniting and levelling up across the UK - the greatest project that any government can embark on. We have one of the most imbalanced societies and lop-sided economies of all the richer countries. It is not just that there is a gap between London and the South east and the rest of the country: there are aching gaps within the regions themselves." Prime Minister Boris Johnson, Speech to the Conservative Party Conference, 6 October 2021

The current UK government has put levelling up at the heart of its domestic mission. Tranches of levelling up funds are already being allocated, Freeports have been designated across the UK and an imminent White Paper will outline future policy direction. Levelling up seeks to understand and confront long standing local inequalities across the UK, which are the most severe in the OECD.[1] These are likely to require exceptional levels of financing and activist government intervention to eliminate.

The longstanding local inequalities that levelling up seeks to address are widely documented and extensively measured. Patterns of local inequality are clear from census data records, large scale household surveys, labour market data and consumer data. These show a pattern of correlated inequalities across localities in dimensions such as productivity and output, employment and wages, consumption and wealth, education and health, social capital and political engagement. These data are being used to define priority localities for receiving levelling up funds. For, example the three-category Levelling up Fund Index draws on official data on productivity, unemployment, skills, transport connectivity and local capacity.[2]

However, a feature of the data currently informing levelling up, including categorisation of priority areas for the disbursement of levelling up fund grants, is that it dates almost exclusively from the pre-Covid-19 period. This is partly a feature of the long lead time in the national statistics, typically of up to two years. In normal economic times, this would not present a challenge for the topic of levelling-up given that patterns in local inequality have been very persistent, with little change to be expected in a two-year period.

Yet the radical nature of the Covid-19 shock, both in terms of economic magnitude and in the disruption of normal geographies of economy and living through "stay at home" and work from home, means the pre-Covid-19 picture of local inequality may have been radically redrawn, and is likely to keep changing as the impact of the pandemic works through. Data that are two years old will not be a helpful guide to this new landscape.

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[1] Recent analyses of OECD data include `https://www.ippr.org/north` and `https://equalitytrust.org.uk/scale-economic-inequality-uk`.

[2] For further details see `https://www.gov.uk/government/publications/levelling-up-fund-additional-documents/levelling-up-fund-prioritisation-of-places-methodology-note`

In this context, a key challenge currently facing UK policy-makers is to understand how the Covid-19 pandemic has affected local areas. The immediate picture is not clear, because the effect of Covid-19 on existing inequalities in very mixed. On the one hand, there is widespread concern that the pandemic may have exacerbated existing inequalities across localities – many areas most hit by Covid outbreaks were areas of existing deprivation in cities. Yet, on the other hand, many areas of existing deprivation and decline may have benefited greatly from the interruption to commuting into cities and the displacement of consumer spending away from cities and close to home (including places such as "forgotten places" of towns outside large cities). We cannot, therefore, easily guess what the pattern of local inequality in the UK economy emerging post-Covid looks like due to a data gap.

Measuring Covid-19 Impact on Local Areas

This paper addresses that gap by using real-time, geographically granular data sourced from transaction records to measure local economic activity in the UK. We draw upon data streams covering consumer and business credit performance (Experian), consumer spending transactions (Fable Data), and mobile phone mobility (Huq) to create measures of real-time activity. These transactions are geomarked, allowing us to build local-level measures. We also draw upon business expectation data sourced from the Bank of England Decision Maker Panel disaggregated to the local level, providing a forward-looking measure of business activity. These data can be disaggregated to the very local level, and are updated at regular frequency. All data sources used in this analysis are provided under academic licence for non-commercial use and contain no personal identifying information. We have previously used these data to analyse the effects of "local lockdowns" in the UK during 2020, and the uneven recovery in UK consumer spending during the early part of 2021.[3]

While transaction data provide access to large volumes of detailed data, work is required to construct reliable measures of activity at appropriate geography and frequency. At very fine geographies, areas may contain small amounts of data either due to sampling rates or low population levels within the geography. Similarly, at very high frequency, time periods may contain small amounts of data for the same reasons. In such cases, measures of activity may be highly volatile due to inconsistent sampling or outlier observations. In

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[3]See Levelling Down and the COVID-19 Lockdowns: Uneven Regional Recovery in UK Consumer Spending CEPR Covid Economics 67, 24-52, February 2021 `https://cepr.org/sites/default/files/CovidEconomics67.pdf` and The English Patient: Evaluating Local Lockdowns Using Real-Time COVID-19 & Consumption Data CEPR Covid Economics 64, 73-100, January 2021 `https://cepr.org/sites/default/files/CovidEconomics64.pdf`

addition at fine levels of geography or time the likelihood of potential re-identification of individuals increases.

In the analysis presented here, we overcome these issues using measures of activity at the local authority level which are updated monthly. This provides a detailed picture of activity across the UK. It is also possible to produce analysis at finer grained level within local authorities (which may be particularly relevant to understand the local dynamics within the larger unitary authorities covering wide geographies and demographics), though at very fine geographies even population-level data sets may provide only a few observations in each geographic unit.

We construct a set of measures as follows. Using Experian data containing the universe of consumer and business credit files in the UK, we obtain a measure of the year-on-year change consumer financial distress and firm financial distress on outstanding credit agreements (delinquency rate) as measured using monthly markers on credit files. Using Fable data we construct an index of year-on-year growth in the value of consumer transactions. To so do, we take the raw transaction data, aggregate spending by day at the local authority level and take a seven day moving average.

Further, by utilising mobile devices positioning data provided by Huq, we also calculate a seven-day moving average of the median of individual maximum distances travelled away from home, at the local authority level. For all series, to obtain an index value we normalize the series by setting an index to 1 using the mean value between 8 − 28 January 2020. We have developed a data dashboard hosting these series at tracktheeconomy.ac.uk, a screenshot from which is shown below. This dashboard is currently made available to policymakers in the UK.

The tracktheeconomy.ac.uk Dashboard
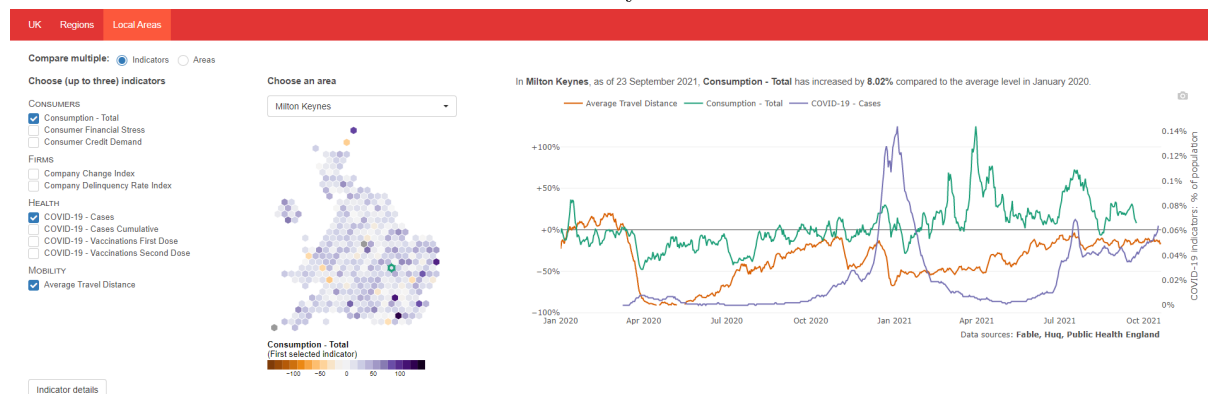
Notes: An example from the tracktheeconomy dashboard

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Combining these data sources, we have generated a new Index of Covid-19 Economic Impact, which ranks local authorities by the severity of the economic impacts of Covid-19, as measured using the latest real-time data to the end of September 2021 relative to a pre-pandemic 2020 baseline. In the analysis shown here our Index applies equal weights to the underlying data series.

For local authorities in England, we then compare this with the underlying economic situation of the local authority pre-pandemic using pre-Covid-19 Indices of Multiple Deprivation (IMD) from the Ministry of Housing, Communities and Local Government. (The levelling up fund has partitioned funds for Northern Ireland, Scotland and Wales and in line with this, we conduct separate analysis for these using each country's own IMD measure – no UK-wide IMD exists.)

Covid-19 Economic Impact and Levelling Up Fund Classification

Figure 1 shows a scatter plot in which each dot is a local authority as at September 2021. The x-axis ranks local authorities by the IMD by increasing deprivation from right to left. The y-axis ranks local authorities by the Index of Covid Economic Impact by increasing impact from top to bottom. Hence the local authorities in the far bottom-left of the plot are those with highest deprivation and severest economic impact of Covid (such as Hackney and Tower Hamlets), while those in the far top-right show lowest deprivation and the least severe economic impact of Covid (such as South Northamptonshire and Waverley). In addition, each dot is colored by the Levelling Up Fund categorisation of the local authority into most need (red), mid-need (blue) and least need (black).

Figure 1: Index of Multiple Deprivation vs. Index of Covid-19 Economic Impact
UK Local Authorities
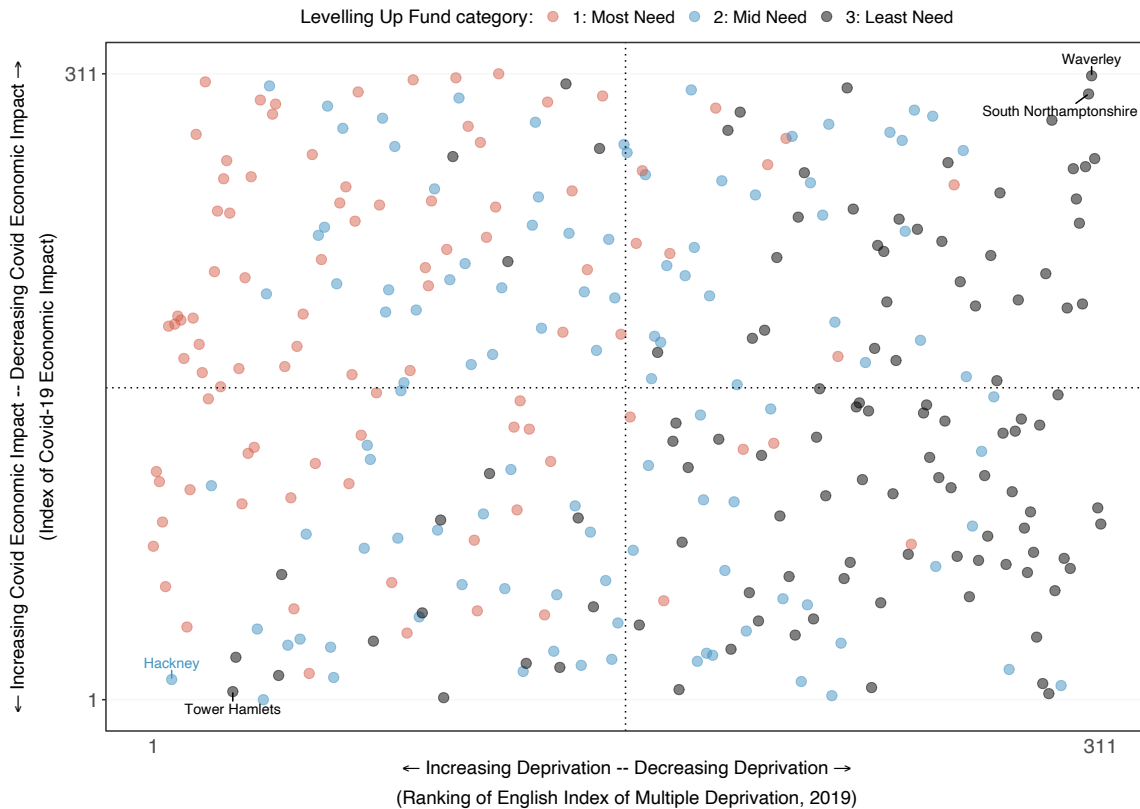
Notes: Each dot is a local authority in England. X-axis ranks local authorities from most deprived (left) to least deprived as measured using 2019 Index of Multiple Deprivation. Each dot is colored by priority category in the Levelling Up Fund Y-axis ranks local authorities from worst hit economically by Covid-19 (bottom) to least hit as measured using Index of Covid-19 Economic Impact.

A notable feature of the plot is that the correlation between IMD and the Index of Covid Economic Impact is low. There are many local authorities in the top-left and bottom-right, showing local authorities suffering deprivation yet less affected by Covid-19 (top left), or affluent areas that have suffered worse effects from Covid-19 (bottom right). This means that the two measures are important complements for policy-makers to consider – such as when deciding which local authorities should be allocated levelling up funds. This demonstrates the varied experience of local authorities through the Covid period, compared to their existing level of deprivation.

The levelling up fund categorisation correlates strongly with the IMD (correlation of approximately 0.66), as shown by the general pattern of local authorities being colored red – blue – black from right to left. However, there is no clear correlation between the levelling up fund categorisation and the Index of Covid Economic Impact. On the left side of the plot there is a tendency for a larger share of the data points in the top left

plot (deprived local authorities with a less severe covid impact) to be in the Most Need category, compared with the bottom left quadrant. This might indicate that, among those Category 1 local authorities with highest levels of deprivation pre-Covid, the impact of Covid has actually been less severe.

The evidence from Figure 1 therefore suggests that, from the perspective of identifying areas most in need to levelling up support in light of the Covid 19 experience, a richer picture can be obtained using the Index of Covid Economics Impact. This arises given the varied experience of local authorities in the Covid period relative to their pre-Covid status.

Covid-19 Economic Impact by ONS Supergroup

What alternative approach to classifying local authorities by their combined experience of existing deprivation and Covid-19 might better reflect their situation today? One lens through which to view local authorities is the ONS Supergroup classification. This classifies local authorities by the demographic and productive characteristics into eight groups, such as affluent England, London Cosmopolitan and Urban Settlements. Each local authority enters one supergroup.

Figure 2 illustrates the same scatter plot format as Figure 1 shown separately for each of the eight supergroups, allowing us to view differences in the experiences of supergroups. It is clear from the plot that we can characterise different supergroups by their experience of existing deprivation and Covid economic impact. The bottom-left quadrant, showing highest levels of existing deprivation and severest impact of Covid-19, is sparsely populated for the supergroups of Affluent England, Business, Education and Heritage Centres, Services and Industrial Legacy, and Town and Countryside Living. This suggests these areas rank lowest in terms of need. Yet, these areas have different experiences, in particular Services and Industrial Legacy local authorities cluster as high deprivation, but have experienced a much less severe impact of Covid-19. Similarly, many areas of Urban Settlements have had a similar experience.

Figure 2: Index of Multiple Deprivation vs Index of Covid-19 Economic Impact by ONS SuperGroup
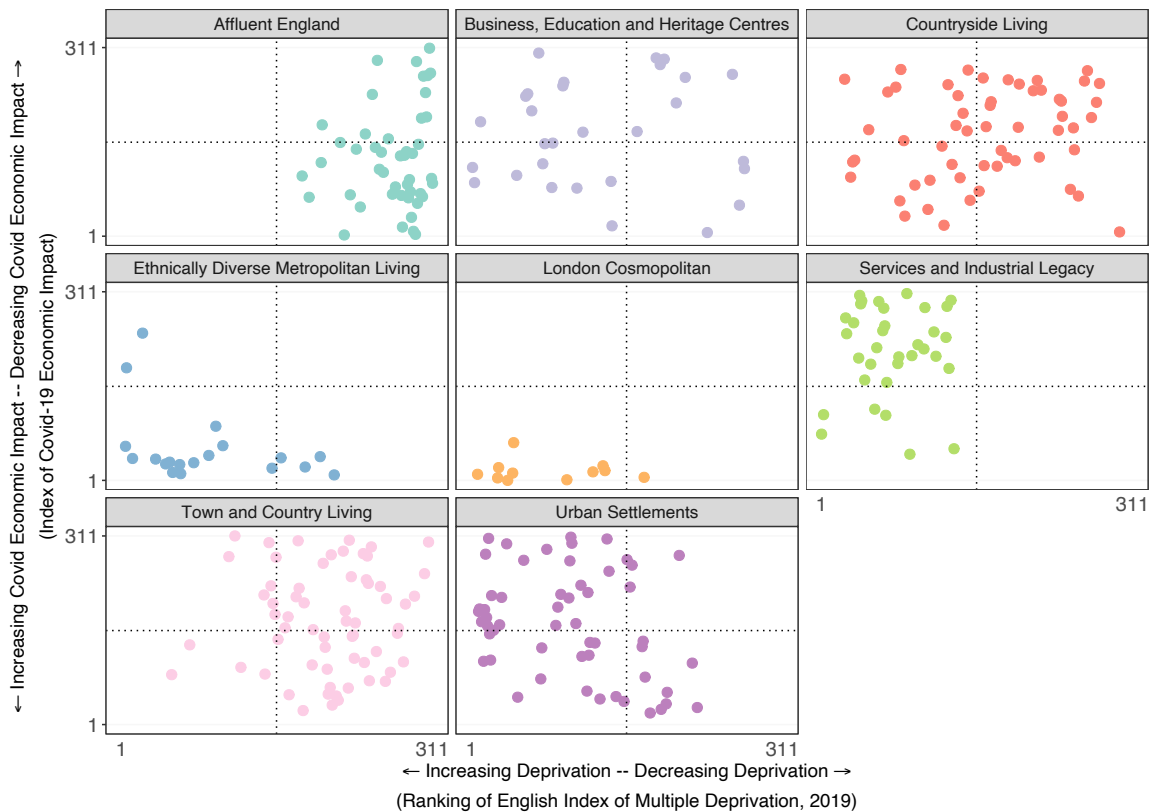
Notes: Each sub plot groups local authorities by their ONS Supergroup classification On each sub-plot each dot is a local authority in England. X-axis ranks local authorities from most deprived (left) to least deprived as measured using 2019 Index of Multiple Deprivation. Each dot is colored by priority category in the Levelling Up Fund Y-axis ranks local authorities from worst hit economically by Covid-19 (bottom) to least hit as measured using Index of Covid-19 Economic Impact.

An explanation for this pattern is that these geographies have benefited from the movement of economic activity out of cities and into suburban and smaller town areas, due to a combination of working from home and spending closer to home during the pandemic. In contrast, the majority of local authorities classified as Ethnically Diverse Metropolitan Living and London Cosmopolitan occupy the bottom-left quadrant, indicating these areas show both the highest level of existing deprivation and the most severe impacts of Covid. This experience most likely reflects the downside of working from home and spending closer to home, with both production and consumption moving out of cities during the pandemic. The experience of local authorities classified as Countryside Living is notably mixed, with many data points in each quadrant bar the top-left, indicating that local authorities in this supergroup have very different experiences of long-term deprivation and Covid impact.

Persistence of Covid-19 Economic Impact across Supergroups

We further consider the experience of local authorities over time since the beginning of the pandemic. To do so, we again use the categorisation of ONS Supergroup, with Figure 3 plotting the time series of the Covid-19 Economic Impact index for ONS Supergroups. We take a simple weighted average of the index value to create a single time series index for each supergroup, plotted on Figure 3. To further understand the varied experience of local authorities in the Countryside Living supergroup, we split these authorities into two groups by whether the local authority has a border on the UK coastline, naming the resulting groups Countryside Living Inland and Countryside Living Coastal.

Figure 3 illustrates the common experience of all supergroups in the early stages of the pandemic, yet very varied experiences during the subsequent period. All supergroups experienced a sharp and severe decline in the index in March 2020, declining by between 30 and 40% for all groups. However, the period of recovery has delivered very different experiences.

Figure 3: Index of Covid-19 Economic Impact, Jan 2020 - Sept 2021 by ONS SuperGroup
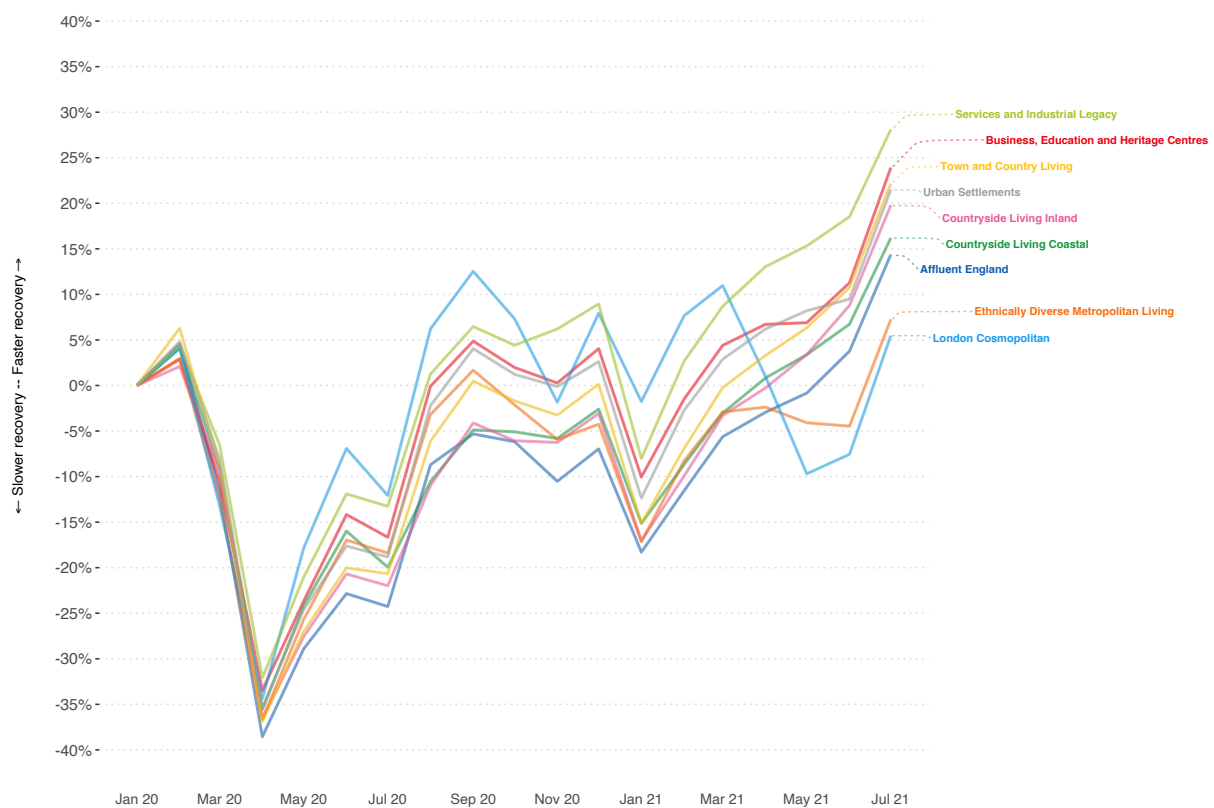
 Notes: Time series illustration shows Index of Covid-19 Economic Impact (Jan 2020 set to 0%) for local authorities grouped by ONS SuperGoup.

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The supergoup areas recovering fastest are Services and Industrial Legacy, Business, Education and Heritage Centres, Town and Countryside Living, and Urban Settlements. We hypothesise that all these areas have benefited most from the move to work from home and spend closer to move. In these areas, the Index of Covid Economic Impact is between 20 and 30% above pre-pandemic levels, reflecting the current boom in demand-side economic activity in the UK.

In contrast, the slowest to recover supergroups are London Cosmopolitan and Ethnically Diverse Metropolitan Living. The recovery in these areas of activity to approximately 5% above pre-pandemic levels lags the areas of fastest recovery sixfold. Notably, the London Cosmopolitan supergroup experienced a sharp decline in activity in early 2021, during the period of the second national lockdown in the UK, to an extent not experienced by other supergroups.

In additional analysis we see these patterns replicated in data for Scotland and Wales. In Scotland, Aberdeenshire and East Dunbartonshire have been least affected by long-term deprivation and the effects of Covid-19, whereas East Ayrshire and Glasgow City have experienced the most severe effects. In Wales, Torfaen and Rhondda Cynon Taff show high levels of long-term deprivation and worst effects of Covid-19, in contrast with Wrexham and Monmouthshire, which have been least affected. In these nations, we see similar patterns by levelling up fund categories and ONS supergroups.

Discussion

Addressing persistent uneven regional economic growth has been identified as one of the UK government's central policy objectives. By extension, a range of policy interventions have been developed including the £4.8 billion levelling up fund, whereby local authorities submit bids for investment in town centre and high street regeneration projects, transport improvements and local cultural industries. Critical to the success of these policy interventions will be the extent to which they target the places that most need support to stimulate economic growth and reduce deprivation. This is not an easy task, as the UK lacks sufficiently granular, official real-time (or near-real-time) data on local economic activity.

There are two main challenges for policy-makers seeking to direct the levelling up fund. First, at what scale should policy intervention be initiated? Earlier approaches to uneven economic growth from the 1980s onwards focused on economic differences at the regional level. In many ways, this made sense at the time given the profound restructuring of the UK economic associated with deindustrialisation, mostly concentrated in the North

East, North West, South Wales and Midlands. These areas were associated with heavy industries such as coal in the North East and Wales, and steel on Tyneside.

But it is important to note that similarities in economic structures – reflected by measures such as ONS local authority supergroups – are no longer particularly geographically contiguous. Commuter towns in Warwickshire may have more in common with towns in Hertfordshire than they do with the wider West Midlands, for example. Coastal towns with high levels of deprivation are found in the North West (Blackpool) and the South East (Hastings). This suggests that measuring and targeting policy at needs among similar but geographically diverse local areas is more important than focusing on regional economies.

The second policy challenge for levelling up stems from Covid-19 and further amplifies the importance of locally targeted approaches. Policy interventions need to address the fact that longstanding patterns of economic inequality are now being overlaid with the locally uneven economic impacts of the pandemic. We suggest, therefore, that policy-makers should consider combining pre-Covid-19 measures of deprivation with our Index of Covid-19 Economic Impact when making decisions about additional support for local authorities, such as disbursements from the levelling up fund. It will take time for the long term impact of the pandemic to work through as working patterns and consumption habits settle into a new normal and the permanent impact on employment and business becomes clear. However the value of disaggregated real time data is not restricted to understanding the impact of the pandemic.

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