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Let's level with everyone: How do we identify regional inequalities in the UK?

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Summary

There have been various policy initiatives announced by the UK Government in recent months to try to further their ambition to “Level Up” the country.

These recognise that there are huge regional inequalities across the UK, which have only been increasing over the last couple of decades. To a certain extent, the UK Government is also looking to fill a gap left by the absence of EU funding to further similar aims in the past.

We discuss the Levelling Up Fund in this paper, focussing on how different areas have been categorised through the Levelling Up prioritisation index. We also discuss the areas flagged for priority funding through the Community Renewal Fund, and compare and contrast the methodology used for both funds.

Our main findings are:

- Whilst using a range of indicators to assist with allocation of funding is to be welcomed, this exercise demonstrates the difficulty of using a set of indicators to capture the different types of need in different areas;
- The Levelling Up Fund methodology is not sufficiently transparent – much more must be done in future to ensure that appropriate detail is provided;
- The Levelling Up Fund methodology is not capturing need for transport connectivity in rural areas in Scotland and Wales, due to the inconsistent nature of the indices in different nations;
- Given the level of funding at stake and the need for transparency, it is critical that there is a more open consultation on the allocation of the forthcoming UK Shared Prosperity Fund, including a discussion of current data gaps and limitations to identify the people and areas most in need; and
- Policy makers should pay special attention to areas most impacted by the COVID-19 restrictions, while regional data fails to reflect these disproportionate impacts.

Background

In order to achieve the aim to "Level Up" regional inequalties in the UK, there have been many funds announced by the UK Government: some that are just for England (and therefore generate consequentials for the devolved administrations) and those which are UK wide. In this article, we are going to discuss two UK wide funds: the Levelling Up Fund and the Community Renewal Fund. These funds are accessed by local authorities across the UK, meaning that the devolved governments are not involved in their distribution.

We will be examining the metrics that have been used to classify areas into those in most need, including how sensitive they are to varying assumptions. We will also be discussing the transparency of the methods used.

These funds are providing a vehicle for significant funding directly from the UK Government to local authorities across the UK. In the wake of the UK leaving the EU, they also set the tone for how EU replacement funding may be distributed in the future. We therefore discuss the precedent that the nature and criteria for these funds set for the UK Shared Prosperity Fund, due to be launched in 2022.

Introduction to the Levelling Up Fund

The Levelling Up Fund was announced alongside the UK Budget in March 2021. The stated aim of this fund was to invest in local infrastructure that "has a visible impact on people and their communities"[1]. The first round of the fund is designed to focus on smaller transport projects, town centre and high street regeneration, and investment in cultural assets.

This fund is designed to allocate investments of £4.8 billion in capital spending over the next 4 years.

Alongside the budget, a spreadsheet was published which put every local authority in GB into different priority areas - Levels 1,2 &3, with 1 being the most in need, and 3 being the least in need. Initially this was published without any details on the underlying methodology, although this was rectified roughly a week after the initial publication. We discuss this methodology in the sections to follow. We also test the sensitivity of the methodology to different assumptions.

It is worth flagging that the indices used and discussed in this note are for GB only, as the UK Government are taking a different approach in Northern Ireland, "taking account of the different local government landscape compared to England Scotland and Wales".

Despite the categorisation of areas into these different levels, the priority level of the area is just one of the factors taken into account when projects are being assessed. Other factors include (this is not exhaustive):

- In the first round of funding, projects that can start in the current financial year (2021-22) are also being prioritised. Indeed, those who cannot demonstrate this are likely to be knocked out in the first stage of assessment.

1 Levelling Up prospectus.pdf (publishing.service.gov.uk)

- All funding to be spent by 31 March 2024 (with some exceptions).
- MP endorsement – local MPs have the opportunity to formally signal, through the provision of a signed letter, that they are supportive of a particular project.
- The strategic fit with local priorities as well as priorities of the fund; and
- The usual Green Book- style assessment of value for money.

The fund is a challenge fund, with each individual authorities proposals assessed on its merits. This means, in theory, parts of the country could see no funding from the Levelling Up Fund. However, there are some constraints to this: at least £800 million will be allocated over the 4 years across Scotland, Wales and Northern Ireland. In addition, for the first round of funding, at least 9% of total UK allocations will be set aside for Scotland, 5% for Wales, and 3% for Northern Ireland, broadly in line with population shares.

Community Renewal Fund - Introduction

The Community Renewal Fund has been introduced as a set of pilot programmes to prepare for the introduction of the UK Shared Prosperity Fund (UKSPF), which will be launched in 2022. As EU structural Funds are phased out (although these will continue until the end of 2023), the UK Government has introduced this additional £220 million fund in 2021-22 to prepare or the introduction of the UKSPF.

Alongside the large amounts of capital funding proposed through LUF above, this can and is being seen by local government and others as somewhat setting a precedent for how the UKSPF may work in the future. For example, in the prospectus[2], it is set out that the CRF “offers us an opportunity to establish a new way of working between the UK Government and places”, “forming a new, direct way of working with the UK Government”.

The stated priorities of the fund are:

- Investment in skills
- Investment for local business
- Investment in communities and place
- Supporting people into employment

The stated aims are to support “innovative responses to local challenges and local need across the UK, spanning urban, rural and coastal areas”. 90% of the funding through this fund is for revenue spending.

In order the prioritise funding, 100 priority areas have been identified, using a similar (but different!) methodology from the LUF. Projects that target investment at these top 100 areas will be prioritised. There are other criteria that will be used, such as alignment to local and national policy, and deliverability by 31 March 2022.

2 UK Community Renewal Fund: prospectus 2021-22 - GOV.UK (www.gov.uk)

So how have priority areas been identified?

The Levelling Up and Community Renewal schemes both developed distinct methodologies to identify priority areas for allocation of funding resources[3].

For the Levelling Up Fund, the UK Government assigned one of three categories (1, 2, and 3) to each local authority in Great Britain, with category 1 indicating the highest priority level. The methodology note setting out the approach was published on 11 March 2021.

Assigning these categories involved two steps. Firstly, each nation received a specific number of slots in each category, based on common indicators proxying the 'need for economic recovery and growth' . The 'need for economic recovery and growth'[4] is proxied by an indicator, giving equal weight to productivity (lower productivity=higher priority), unemployment (higher unemployment=higher priority), and skills (lower skill level=higher priority). This resulted in the allocation given in Table 1.

Table 1: Allocation of Priority Slots for LA Fund across GB Nations

Category	England	Scotland	Wales	Total
1	93 (30%)	13 (41%)	17 (77%)	123
2	108 (34%)	12 (38%)	3 (14%)	123
3	113 (36%)	7 (22%)	2 (9%)	122

Source: *UK Government*

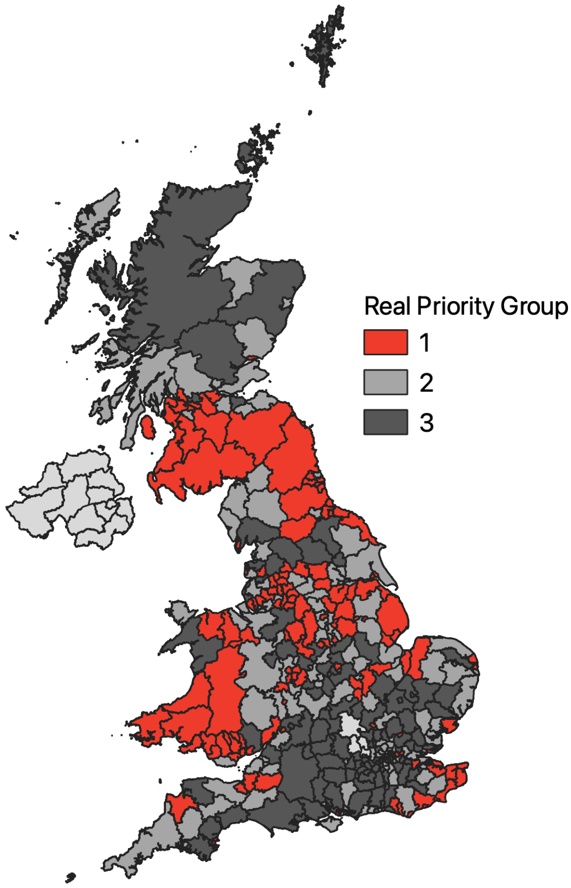
Based on this step, Wales has the highest share of high priority areas; nearly four in five local authorities in Wales are considered as priority 1.

In step two, additional nation-specific data is leveraged to rank the local authorities within each nation. This includes an indicator measuring the 'need for regeneration' through property vacancy rates (residential in Scotland, both commercial and residential in England and Wales).

In addition, the English index considers the 'need for improved transport connectivity' by adding data on commuting times for different modes of transportation. Thus, the final index for Wales and Scotland is constructed as a weighted average of the 'need for economic recovery and growth' and the 'need for regeneration' indicators, while the English index complements these with an indicator measuring the 'need for improved transport connectivity'. The resulting categorisation for each local authority is shown in Diagram 1.

3 As we said above, the allocation process covers England, Scotland, and Wales only. Funds for Northern Ireland are allocated through a separate process.
4 [Levelling Up Fund: Prioritisation of places methodology note - GOV.UK (www.gov.uk)]

Diagram 1: Distribution of LUF priority categories across the nations of Great Britain

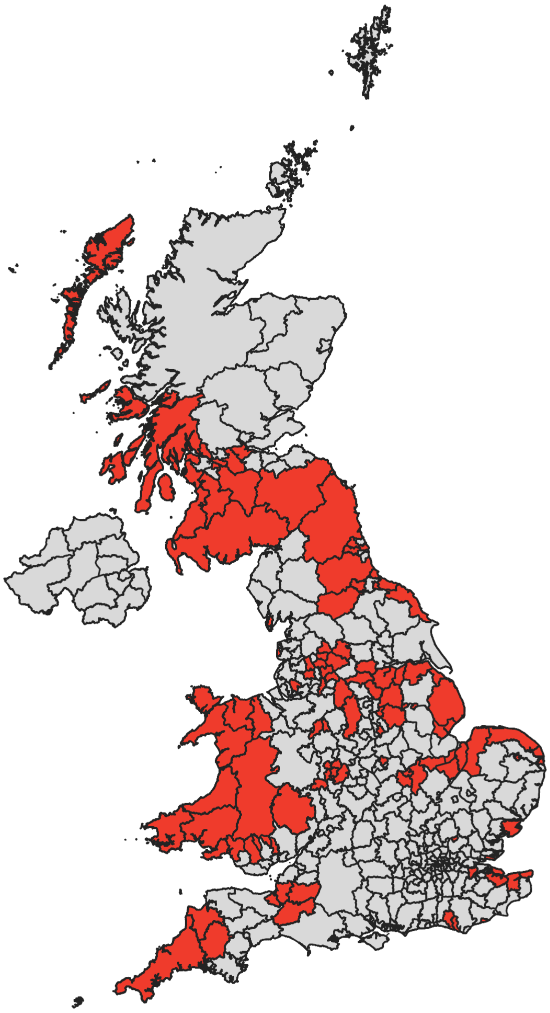


Source: *UK Government*

A similar index was developed to support the tendering process for funds allocated under the Community Renewal Fund. This index is constructed as a weighted average based on local authority level data, covering productivity (same as for LUF), household income, unemployment (same as for LUF), population density, and skills (same as for LUF). So essentially, the same approach as for LUF is used, except for additional indicators measuring population density and household income are added in. This leads to a different outcome between the LUF and CRF, particularly for rural areas as we might expect. We discuss this further below when we test the sensitivity of the methods.

The final index is then used to identify 100 priority places across the nations of Great Britain. These places are shown in Diagram 2.

Diagram 2: Distribution of 100 priority places under the CRF scheme



Source: *UK Government*

Why is this important?

As set out above, when it comes to Levelling Up Fund, the prioritisation index is not the only factor which is used to determine whether a project gets funded. However, it is stated as one of the factors used, so it is important that it is seen as a legitimate way to identify priority areas.

It is of course difficult to identify an indicator, or set of indicators, which can be used to help prioritise funding for all types of areas (particularly both urban and rural areas). Previously, much of the EU funding that was distributed was done on the basis of GVA per head at a NUTS 2 level. For those not familiar, NUTS 2 areas split up the UK into roughly 40 areas, and GVA per head was compared on an EU-wide scale to determine the level of funding each area should receive.

As more countries joined the EU through accession, in general areas in the UK were less likely to receive funding given that the countries joining tended to be less affluent than the UK on average.

Many will no doubt welcome a more sophisticated approach to identify areas in need, capturing not just economic output but other factors as well. However, this opens up a conversation about how well particular measures are doing in capturing the concept that is trying to be reflected in the prioritisation.

Particularly interesting in the LUF methodology are the approaches on “need for regeneration” and “improved transport connectivity”. On regeneration, it is debatable whether the vacancy rate of residential properties helps capture this, particularly when we move away from the urban areas of the country. With respect to transport connectivity, only taking account of this for England is controversial, especially given (i) it is likely to be more of an issue particularly for Scotland and (ii) a measure of population sparsity, reflecting rurality, was used in determining priority areas for the Community Renewal Fund.

It is probably impossible to identify a set of measures which will please everyone: the metrics will always be an imperfect proxy for the stated aims of any fund, and the weightings chosen for different aspects are by definition subjective (even if they are equal). However, incoherence, both across parts of the UK and across similar funds, is hard to defend.

It will be interesting to see if there is more open discussion on the metrics that may be used in future to ensure that there is as much consensus as possible about the metrics used to determine priority. This becomes important when we think ahead to the UK Shared Prosperity Fund.

Finally, a further change is apparent here, as smaller areas are used – local authorities – than have been used before for EU funding. This allows the UK Government, as discussed above, to have a relationship directly with the local authorities across the UK in these funding streams, which continues a trend which started with City Deal funding. However, data at this level is more subject to sampling error and tends to be more volatile, which introduces some challenges for using single point estimates of particular metrics.

How sensitive is the prioritisation to different assumptions?

Overall, we have managed to match our own rankings to those published for:

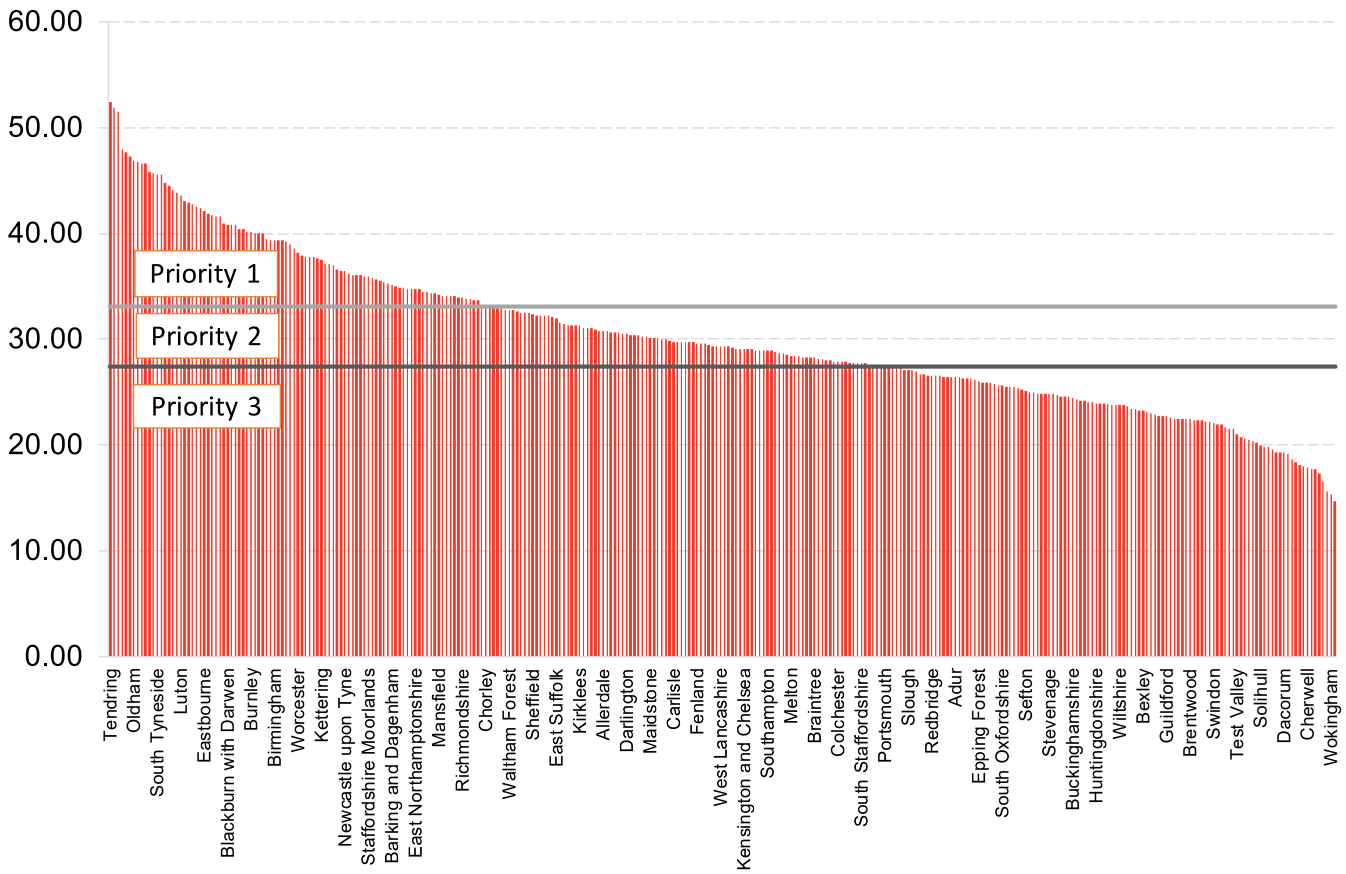
- 100% of Scottish LAs
- 100% of Wales LAs
- 96% of English LAs

This means that 12 LAs in England are classified wrongly in our index: a few authorities near the border of level 1 vs level 2, and level 2 vs level 3, are classified on the wrong side of the border. We discuss the issues that we have had in replicating the index in the Transparency section below.

Our version of the index allows us to not only see where Local authorities have been classified, but also how close different local authorities are to the thresholds. As we would expect with the larger numbers, the English index has much finer margins than the Scottish and Welsh.

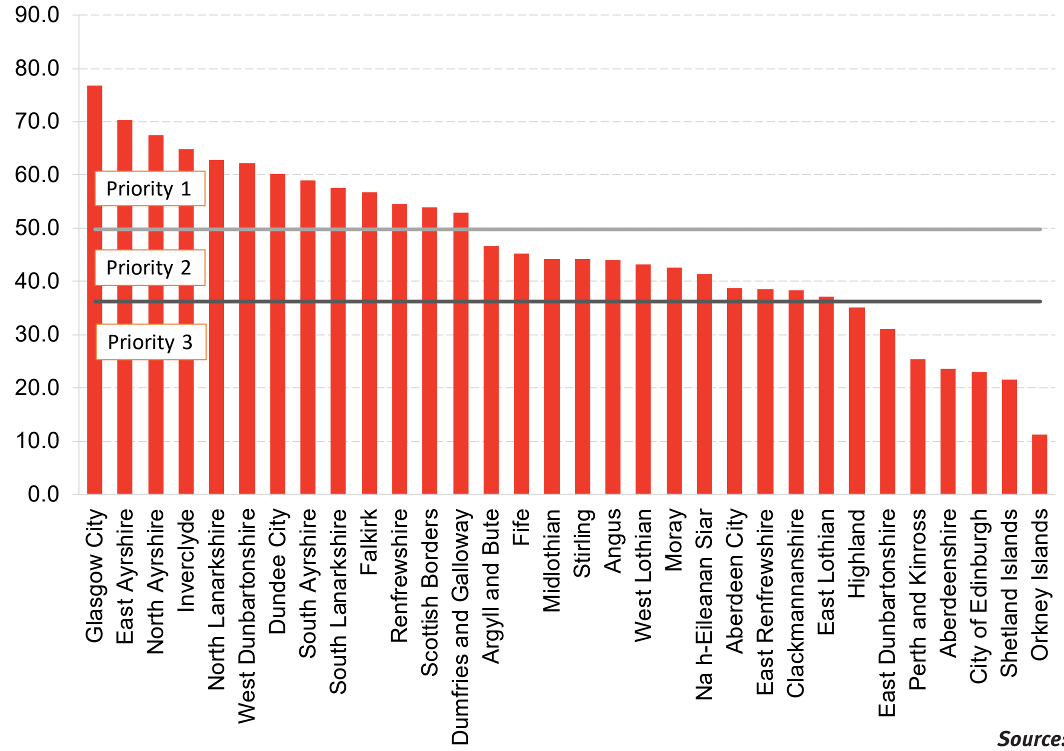
The absolute values of the indices cannot be compared across the different nations, due to the different indicators that are used. The charts below show the value of the index that we have classified for each nation, and the thresholds for moving between priority categories.

Chart 1: Levelling Up Index, England



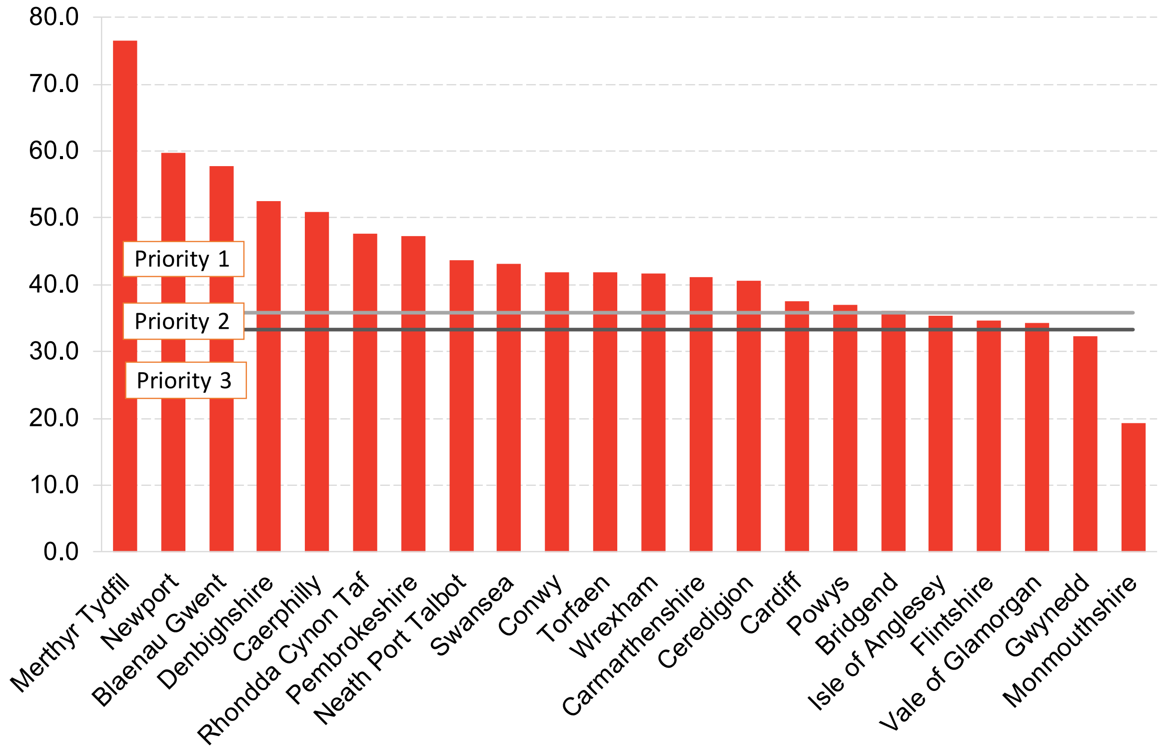
Source: *FAI Calculations*

Chart 2: Levelling Up Index, Scotland



Source: *FAI Calculations*

Chart 3: Levelling Up Index, Wales



Source: *FAI Calculations*

In the pursuit of creating a methodology that is transparent and robust, an ideal index should reflect some deep structural differences between the different areas. In this section, we test the robustness of the Levelling Up allocation to different assumptions.

Sensitivity 1: Using the CRF method for LUF

Firstly, we replace step 1 of the Levelling Up methodology, which measures the 'need for economic recovery and growth' with the Community Renewal Fund index, measuring 'economic resilience'. So, this means we are taking account of population density and household income, as well as the other indicators around productivity, unemployment and skills.

As a result, Scotland gets four additional high priority slots, while England would lose three high priority places and Wales one (see table 2). It is likely that this change in methodology would result in substantially more levelling up funding going to Scotland.

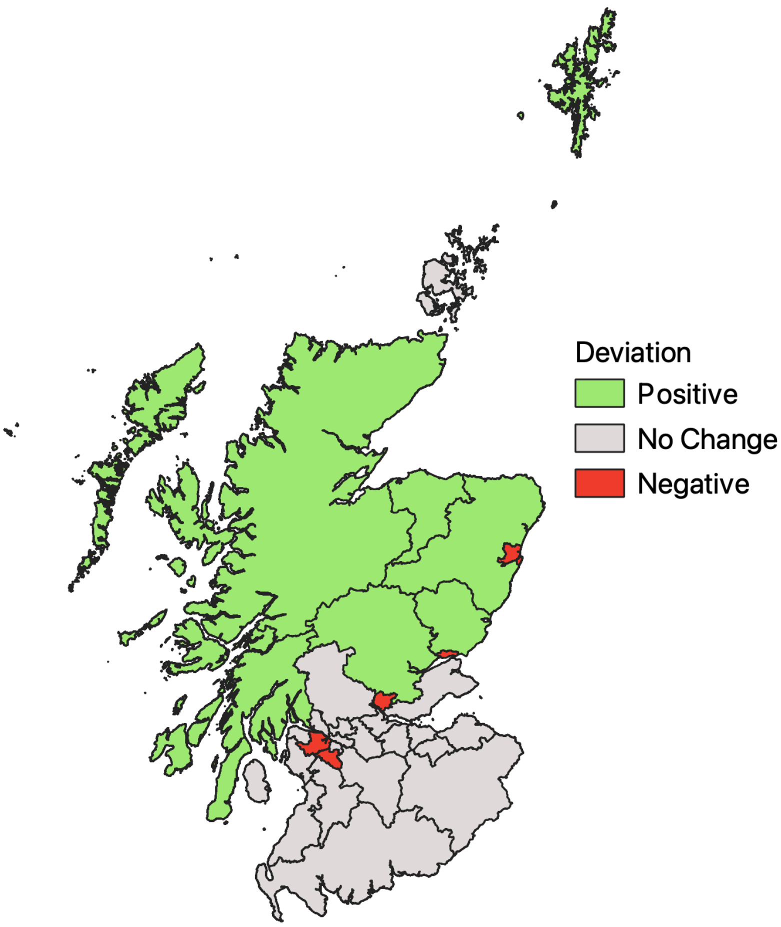
Table 2: Counterfactual allocation of priority categories for LUF under CRF methodology

Category	England	Scotland	Wales	Total
1	90	17	16	123
	(-3)	(+4)	(-1)	
2	110	9	4	123
	(+2)	(-3)	(+1)	
3	114	6	2	122
	(+1)	(-1)	(+/- 0)	

Source: *FAI Calculations*

Diagram 3 maps the resulting changes in funding priority for Scottish authorities. We find that there are both winners and losers under this scenario. It seems that urban areas seem to suffer from this change. For instance, Dundee and Aberdeen move into lower priority categories. On the other hand, rural areas in the north, such as the Highlands and Shetland islands, seem to benefit from the revised methodology.

Diagram 3: Distribution of 100 priority places under the CRF scheme



Source: *FAI Calculations*

Sensitivity 2: The effect on the English index of capturing transport connectivity

Next, we consider the impact of removing the 'need for improved transport connectivity' indicator from the Levelling Up index for England. This indicator is built from data on travel times to employment centres (of more than 5000 employees) for different modes of transportation, produced by the DfT for England only.

We find that before this adjustment there exists a negative association between population density and prioritisation. Removing this indicator reverses this association, benefiting more urban areas: The average population density for high priority areas under this new methodology rises from about 10 people per square kilometre to about 15.

Table 3: Population density of LUF priority categories in England with and without transport element

	1	2	3
Density under LUF Allocation	10.7	12.6	12.2
Density without Transport Element	15.3	13.1	7.9

Source: *FAI Calculations*

So, therefore, the transport element being included means that significantly more areas with low population density (so, rural areas) are included as high priority.

This is interesting as it allows us to consider how the indices in Scotland and Wales may have been impacted if such a component had been included in those indices. The English authorities moved up as a result into Priority 1 had a mean density of 1.5, with a maximum and minimum of 0.25 and 20 respectively.

Eight LAs in Scotland and two LAs in Wales have a population density lower than the minimum area in England (less than 0.25) that is moved up to Priority 1 due to the inclusion of the transport element.

Table 4: Population density and prioritisation of Scottish and Welsh LAs with a population density of less than 0.25 people aged 16-64 per squared km of land area.

Local Authority	Density	Current Prioritisation
Na h-Eileanan Siar	0.05	2
Highland	0.06	3
Argyll and Bute	0.07	2
Shetland Islands	0.10	1
Orkney Islands	0.14	1
Dumfries and Galloway	0.14	1
Scottish Borders	0.14	1
Powys	0.14	1
Perth and Kinross	0.17	3
Ceredigion	0.24	1

Source: *FAI Calculations*

As you can see, many of these areas are already priority 1: but it is possible that the inclusion of a similar transport element for those that are category 2 or 3 would result in these areas moving up in priority.

Sensitivity 3: The effect of using a 5-year average for productivity

Lastly, the LUF methodology uses data on productivity for 2018 only. This type of data can be very volatile on an annual basis, reflecting temporary fluctuations in economic activity.

To address this problem, we replace this indicator with average productivity over the 2013 – 2018 period. This results in the first step allocation given in Table 5. Again, Scotland benefits from this revised methodology, receiving one additional high priority area, while England looses three. However, the LUF index seems to be less sensitive to this change, compared to introducing the CRF methodology.

Table 5: Counterfactual allocation of priority categories for LUF using average productivity data

Category	England	Scotland	Wales	Total
1	92	14	17	123
	(-3)	(+1)	(+/- 0)	
2	110	10	3	123
	(+2)	(-2)	(+/- 0)	
3	112	8	2	122
	(+1)	(+1)	(+/- 0)	

Source: *FAI Calculations*

The impact of this change on Scottish priority categories is fairly small; only two authorities change their categories: Argyll and Bute becomes a high priority area, while Aberdeen city moves from category 2 into the lowest priority category, 3.

It does however, matter around the margins, with a handful of English local authorities moving category due to the use of the average level: 4 going from category 2 to category 1, for example.

Transparency is key

Several times in the description of these funds and the metrics used to identify priority areas, it is flagged up that transparency is essential. So, one of the general principles of the LUF methodology was:

"That any data used should be publicly available, so that the calculations behind the index rankings are fully transparent."

Unfortunately, despite the data used being publicly available, it is not the case that the calculations behind the index rankings are fully transparent. In order for the index to be fully transparent, it should be replicable to allow analysts like ourselves to examine how influential different domains are, to test the sensitivity of the index, and have open discussions of alternative indicators.

Whilst we have done our best to replicate the index this given the information we have, we have not been able to do it perfectly despite working on this for a number of weeks. From talking to other organisations, we are not the only analysts who have had difficulty.

There are a number of reasons for this.

Firstly, while the publishing organisation of the data is given, the precise dataset and the detail of the vintage of the data used is not provided. Links to the spreadsheets/sources used are required, in order to prevent the incorrect elements being used. The level of referencing falls short of academic standards, and it is certainly not good enough for such an important index using official sources.

Secondly, the treatment of missing values is described in the abstract, not what has been done in each individual case. So despite some trial and error, and indeed some helpful conversations with analysts in MHCLG and HMT, we have still not been able to replicate it perfectly.

Thirdly, only the rankings were published, not the index value for each authority, or the values for each component. This means it is difficult to see which indicators may lead to a local authority being misclassified.

Given the importance of this, and the stated aims of transparency, a full spreadsheet should have been published, with all sources, suitable links and descriptions of the amends (if any) made to each source to make it suitable for use.

Conclusion

The use of metrics to decide how to allocate funding to make the country a more equal place is to be welcomed. Many will applaud the efforts to bring in wider measures, over and above just economic activity, to determine the needs for investment in different parts of the country.

We have made it clear how difficult it is likely to be to get a set of metrics that fairly categorises areas across the board: the indicators for urban deprivation are likely to be quite different to those which indicate rural disadvantage. This article sought to explore how sensitive the outcome of such an exercise can be to different assumptions about the indicators included.

We have found that the use of different indicators such as population density would likely change the outcome, and that the decision not to include transport data in the Scottish and Welsh index has likely changed the allocation. Use of average productivity data does have an impact, although only at the margins. There are many more sensitivities one can do to stress test such rankings, but we limited ourselves to these for the purposes of brevity for this piece.

One of the stand out conclusions from this exercise has been the difficulty we have had in replicating such an important index. These categorisations should not have been published in the first place without the methodology prepared: and much more information about the sources should have been made available. A spreadsheet should have been produced with the sub-indices and steps to produce this. This is what will be required in future if full transparency is actually desired by those producing such indices.

The forthcoming establishment of the UK Shared Prosperity Fund gives the chance for a fuller discussion about the metrics that can inform where to spend money to, as the UK government states “target the people and places most in need across the UK”. Given the experience of both LUF and CRF, it will be good to see an open conversation about the measures that can best capture need. This may include the development of new and better measures to capture regional and local differences, if the measures we have at the moment are not up to scratch.

Finally, policy makers will need to consider those areas most impacted since many of these metrics were last measured. It is likely that the COVID pandemic and associated lockdowns have had a disproportionate impact on particular areas of the country, particularly those who have a high proportion of employment related to social spending and tourism.

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