

Exploration of unemployment in Wales by settlement type for small areas: Summary Paper

As part of a package of work on the [Welsh Index of Multiple Deprivation 2014](#), and in response to issues raised in the recent WIMD consultation, the Welsh Government has published two papers relating to the topic of deprivation in rural areas. The first is a statistical article exploring how WIMD can be used to consider deprivation in rural areas. The second, more technical paper, considers whether data at the smaller Output Area (OA) level would capture a fuller picture of the spread of deprivation in different types of areas of Wales. This paper is a summary of the second technical paper.

WIMD is published at Lower Layer Super Output Area level (LSOA) (areas of around 1,600 people). The exploratory work used unemployment data (a proxy measure for deprivation) from the 2011 Census at the smaller OA level (areas of around 300 people). The analysis used information about settlement size and context across Wales. It also explores some of the issues that may affect reliability of data for small areas.

Key Findings

- For analysing unemployment data by settlement type, it is not clear that OA level data is necessarily better than LSOA level data.
 - There are potential data quality issues for very small areas (Output Areas). In the case of unemployment analysis, these raise questions about whether the differences observed between OA and LSOA level data are real, random fluctuations or a product of those data quality issues.
 - The numbers of unemployed people at OA level can be very small and potentially unreliable> For example more than half the OAs contained fewer than 10 unemployed people so a single household of two unemployed adults moving could have a significant impact on an OAs unemployment rate.
- Overall there is little systematic difference in the picture of unemployment by settlement size and context if the scale of analysis is changed from LSOA to OA.
 - There is a higher level of variation (i.e. more extremes) at OA level – though this must be considered alongside quality issues and the small numbers involved.
 - There are individual areas in the rural areas that have locally high unemployment rates. However, this is both relatively and absolutely less than for the more urban areas.
 - The change from LSOA to OA scale does not particularly change the pattern of unemployment in the more rural areas. There is as much, or even more, change in the more urban areas.

- The broad picture at both LSOA and OA is:
 - The more rural areas tend to have lower unemployment rates.
 - There are still significant numbers of unemployed people in rural areas.

Definitions used in analysis

Unemployment

The definition of unemployment used in the Census follows the ILO definition i.e. for people aged 16 to 74, an unemployed person has to be out of work and seeking work and available to start work if it is found.

The unemployment rate of an area (OA, LSOA, local authority, Wales or other) is the number of unemployed people divided by the sum of people in work and the unemployed. People in work include employees and the self employed.

Excluded from the definition are people who are economically inactive (for example pensioners, full time students, the sick or disabled and people looking after the home).

Rural and urban areas

There is no single classification of rural and urban that is best for all uses – please see the related statistical article, “WIMD 2014: A guide to analysing deprivation in rural areas”, for further information.

An obvious starting point for defining rural areas is settlement size; from larger settlements like cities and large towns to small places like villages and hamlets. With settlement size there can be a number of size bands based on the number of people in an individual settlement. The tool for doing this is the Built Up Areas published by Office for National Statistics (ONS).

To supplement this we may also want to look at how the settlements are dispersed or cluster together. This gives an idea of the accessibility or remoteness of the settlements to other settlements. The tool for this is the National Statistics Urban-Rural classification that gives two “contexts” for settlements in Wales; the Sparsest and the Less Sparse context.

Table 1 shows the classification used (in terms of settlement size and context) and the distribution of people and land between the categories. A range of categories is used rather than a simplistic urban-rural dichotomy.

Table 1**People and land in Wales by settlement classification, 2012**

	People (‘000)	Area (sq km)	Share of Wales		Persons per sq km
			People	Land	
Less sparse context					
At least 100,000	1,054	689	34.4%	3.3%	1,530
25,000 to 99,999	600	568	19.6%	2.7%	1,057
10,000 to 24,999	346	379	11.3%	1.8%	913
2,000 to 9,999	337	679	11.0%	3.3%	496
Under 2,000	302	5,874	9.9%	28.3%	51
Total	2,639	8,189	86.2%	39.4%	322
Sparsest context					
10,000 to 24,999	57	64	1.9%	0.3%	900
2,000 to 9,999	90	286	2.9%	1.4%	314
Under 2,000	277	12,242	9.0%	58.9%	23
Total	424	12,591	13.8%	60.6%	34
Wales					
At least 100,000	1,054	689	34.4%	3.3%	1,530
25,000 to 99,999	600	568	19.6%	2.7%	1,057
10,000 to 24,999	403	443	13.2%	2.1%	911
2,000 to 9,999	427	965	13.9%	4.6%	442
Under 2,000	579	18,115	18.9%	87.2%	32
Total	3,063	20,780	100.0%	100.0%	147

Source: Census of Population, 2011 with Built Up Areas and National Statistics rural classification

From this we see that over half the people of Wales live in larger settlements of at least 25,000 people. However, just under 20 per cent live in settlement of under 2,000 people – including people living outside the defined Built Up Areas.

Comparing OA and LSOA level unemployment by settlement category

For every OA and LSOA in Wales we can calculate the unemployment rate. There is, of course, a huge range of rates.

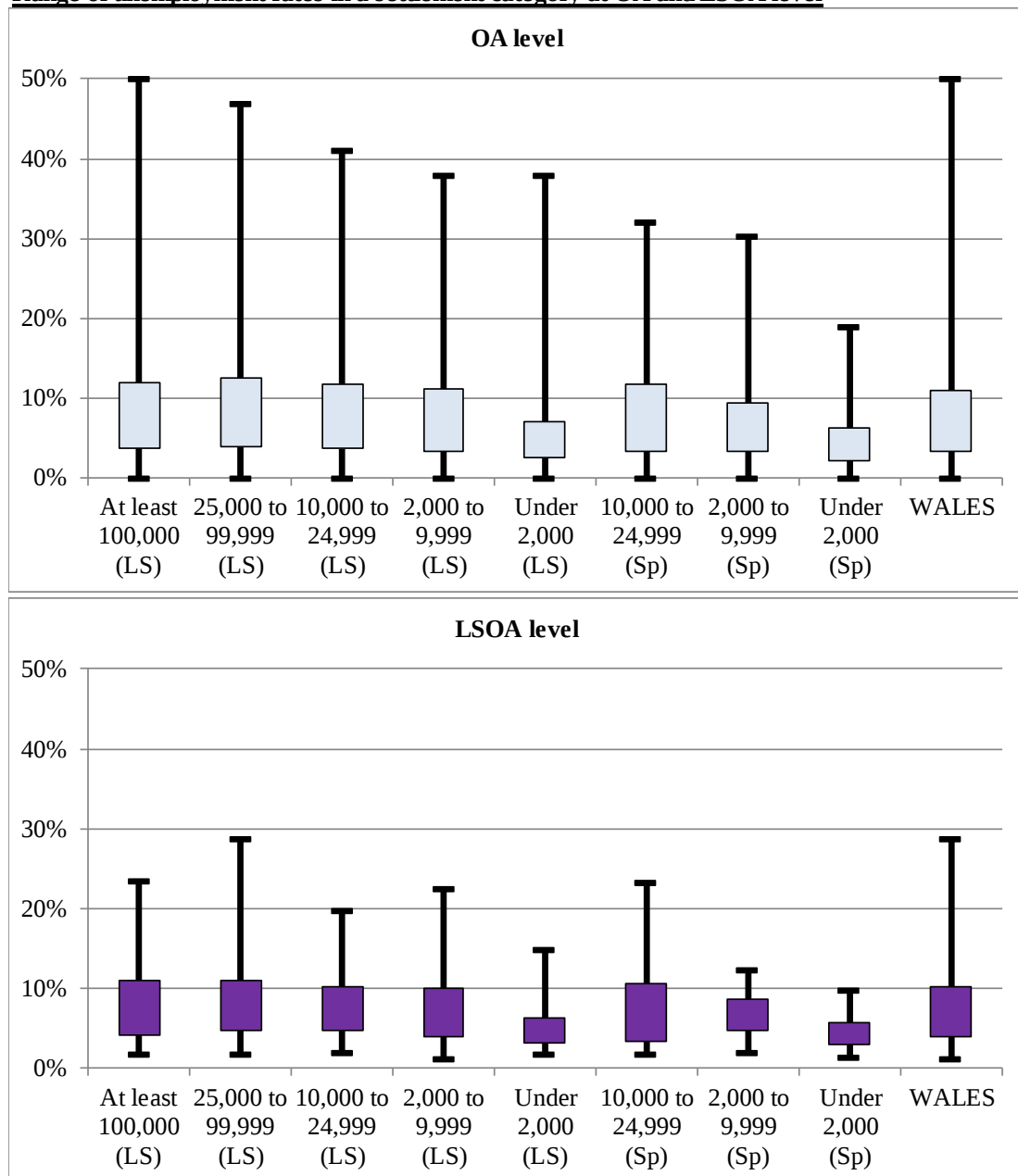
The analysis needs to be considered in the light of the very small number of unemployed people found in many Output areas. A fifth of all Output Areas in Wales contained fewer than 5 unemployed people, and more than half the OAs contained fewer than 10 unemployed people. A single household of two unemployed adults moving could have a significant impact on an OAs unemployment rate.

Chart 1 shows the range of unemployment rates occurring in each of the settlement size and context categories at both OA and LSOA level.

The vertical lines run from the minimum to the maximum unemployment rate for a settlement category. The coloured boxes show the range within which 60 per cent of the areas (OA or LSOA) lie. 20 per cent of the areas have a rate above the box and 20 per cent below.

Chart 1

Range of unemployment rates in a settlement category at OA and LSOA level



Source: Census of Population, 2011 with Built Up Areas and National Statistics rural classification

In the chart (LS) refers to the less sparse context and (Sp) to the sparsest context.

Chart 1 shows that the broad patterns in the distribution of unemployment in Wales are similar at OA and LSOA level. The central part of the distribution (the boxes) for each of the settlement groups matches quite closely for OA and LSOA. The key difference is the very much greater variation within a settlement category at the OA compared to LSOA level.

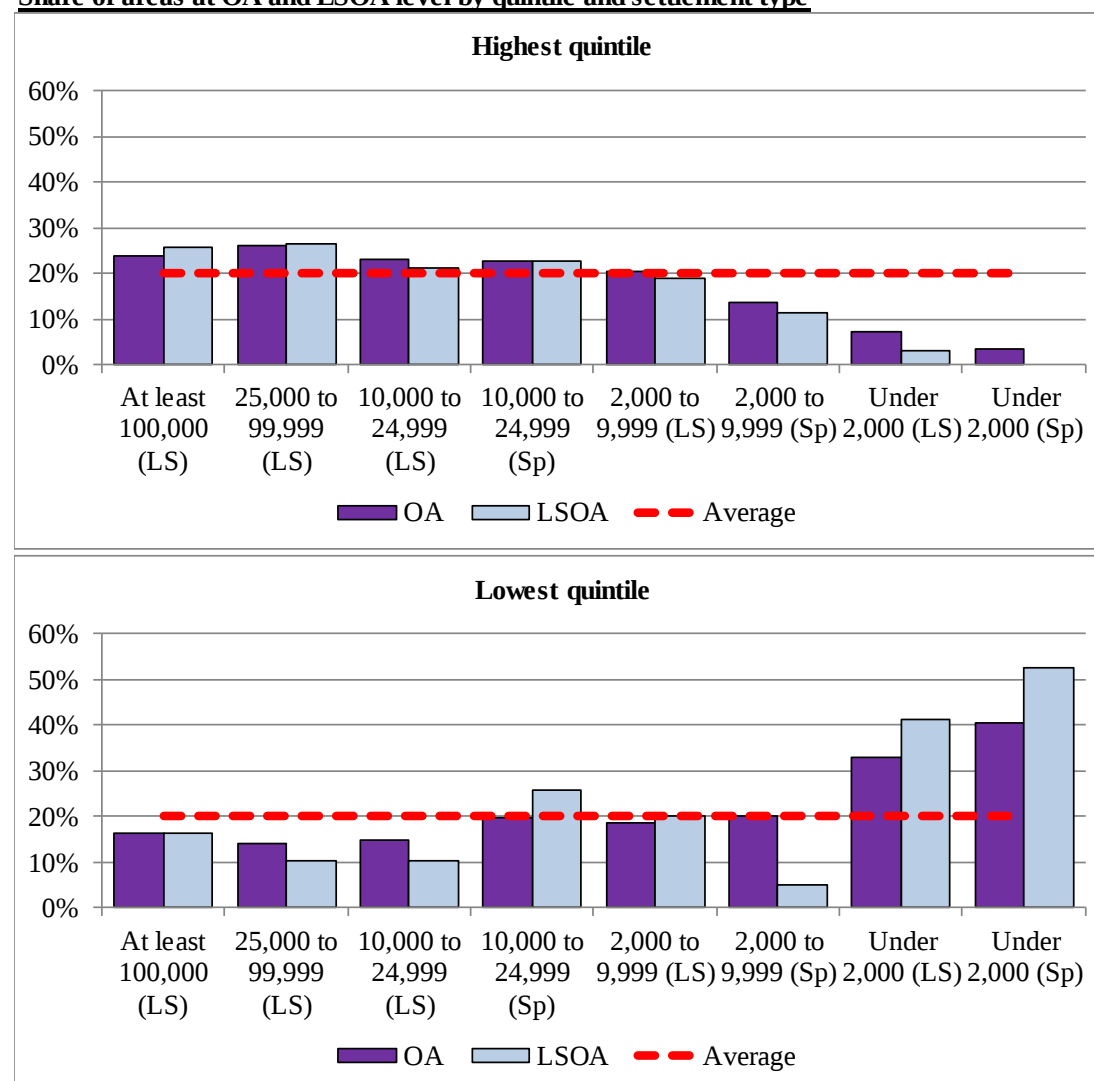
Given the potential data quality issues and the small number of unemployed people in many OAs, the chart strongly suggests that the apparent extra precision of the OA level data is at the expense of the accuracy of the figures.

Areas with the highest and lowest unemployment rates

At each level the areas are ranked by unemployment rate and the 20 per cent of areas that have the highest and lowest rates are found. These are the highest and lowest quintiles at LSOA and OA level. Chart 2 compares the share of areas in a settlement category that fall into the highest and lowest quintiles for the OA and LSOA levels. If all the settlement categories had an even distribution of unemployment then all the bars would be at 20 per cent (shown by the red broken line).

Chart 2

Share of areas at OA and LSOA level by quintile and settlement type



Source: Census of Population, 2011 with Built Up Areas and National Statistics rural classification

LS - less sparse context

Sp - Sparsest context

From chart 2 we can see that there is little systematic difference between the share of areas in the highest quintile at OA and LSOA level. They both have the smallest settlements with under 2,000 people having a lower share of areas in the highest unemployment rate quintile than larger settlements. There appears to be little overall difference between the share in the highest quintile for the settlements of at least 10,000 people at either OA or LSOA level.

For the lowest unemployment rate quintile the smallest settlements seem to show more of a difference between OA and LSOA level analysis. The share in the lowest quintile is higher for LSOA than for OA by around 10 percentage points. At both levels the smallest settlements have a larger share of areas in the lowest quintile than the other settlement categories.

Overall the picture of unemployment by settlement size and context is consistent at both scales. The broad messages remain the same:

- The more rural areas tend to have lower unemployment rates.
- There are still significant numbers of unemployed people in rural areas.
- There are individual areas in the rural areas that have locally high unemployment rates. However, this is both relatively and absolutely less than for the more urban areas.

Conclusions

The analysis only looks at one aspect of deprivation, although a key one, from one source. It therefore does not represent a definitive statement about the value of considering Output Area level analysis in assessing deprivation in rural areas. Variables such as low pay, poor health, low skills, poor education and so on are not guaranteed to follow the same pattern.

However, the analysis raises key questions about the usefulness of OA data in this context, particularly in view of the lack of available data to analyse and the uncertain value of the results because of the data quality issues for such small areas.

Notwithstanding these fundamental problems with OA level analysis it also appears – at least for unemployment based on Census data – that the change of scale makes little systematic difference in the patterns revealed. There is a great deal of variation across all areas but the supposed systematic differences between urban and rural (or indeed other groups) is not apparent in the analysis.

In the particular example presented, using OA level data seems to offer no real advantage. However, it would be dangerous to assume that this generalises to all data sources and variables. What the appropriate geographic level of analysis is for any given purpose needs to be carefully considered and justified. It cannot simply be *assumed* that OA – or LSOA – data are *always* better.

References

National Statistics Area and Rural-Urban classifications, Office for National Statistics

<http://www.ons.gov.uk/ons/guide-method/geography/products/area-classifications/index.html>

Built Up Areas, Office for National Statistics

<http://www.ons.gov.uk/ons/guide-method/geography/beginner-s-guide/census/built-up-areas---built-up-area-sub-divisions/index.html>

Statistical Focus on Rural Wales

<http://wales.gov.uk/statistics-and-research/statistical-focus-rural-wales/?lang=en>

Welsh Index of Multiple Deprivation 2014: A guide to analysing deprivation in rural areas

<http://wales.gov.uk/statistics-and-research/welsh-index-multiple-deprivation/?lang=en>

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Produced by Knowledge and Analytical Services, Welsh Government

26 November 2014



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