Travel-to-Work Areas and the fitness for purpose of local unemployment statistics

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As a leading researcher involved in the revision of the TTWA definitions, I have been invited to comment on Ray Thomas's open letter to Steve Hickman (the statistician who is co-ordinating the TTWA revisions at ONS). I will restrict myself to what I see to be the main issue raised -- although I should point out first that Ray's entertaining style sweeps across many issues in a way which is in several places rather misleading if not simply wrong (for example, the section "Computerisation" altogether 're-writes the history' of TTWAs: anyone wanting to know the true background should read the fascinating monograph by Michael Smart in Progress in Planning volume 2).

I take Ray's key criticism to be that expressed in his section 6 on the "Failure to identify areas of high unemployment" viz. that unemployment rates for TTWAs are not "fit for the purpose intended" (the principle for government statistics which Ray appropriately cites). In an earlier section Ray had raised concerns about the workforce basis for the published TTWA rates, but in section 6 he recognises that the nature of the TTWA definitions largely defuses this concern so far as unemployment rates calculated for TTWAs are concerned. Thus the key criticism becomes the one in the title of the letter itself: that TTWAs are not fit for purpose because they do not identify inner city (or similar) concentrations of unemployment.

The simple response is that identifying such concentrations is not -- and never was -- the purpose of TTWAs. The specific objective for TTWA definitions is to identify labour market areas, on the basis of which different areas can be compared on as near to a 'like with like' basis as is possible. Due to the nature of labour markets, in Britain and all comparable countries, this leads to definitions in which a TTWA is typically a city and its commuting hinterland.

In contrast, a concentration of the unemployed is likely to be found in an inner city -- or nowadays perhaps elsewhere, such as in peripheral housing estates -- as a result of the working of the housing 'market' in and around that city. Residential segregation thus leads to many of a city's unemployed living within the same neighbourhoods. Thus the analysis needed to find such concentrations is quite different to the one needed to define TTWAs. Not only might it focus as much on the housing market as much as on the labour market, but also it would be at an entirely different scale: there are many thousands of neighbourhoods which would appear in the output of such an analysis, whereas it is well recognised that the number of separable local labour markets in Britain is numbered in the hundreds only. To summarise:

* it is an empirical question whether or not the most acute concentrations of unemployment are in the inner cities

* this question can either be addressed by analysing somewhat arbitrarily defined areas such as wards, or by first trying to define genuine neighbourhoods, or by trying to identify statistically significant clusters of unemployment (N.B. both the latter two options would involve tackling unresolved methodological challenges!) but

* at no time have TTWAs ever been thought of as providing an appropriate unit for such an analysis.

In other words, it is not surprising that TTWAs are unsuitable for the form of analysis which Ray requires, because that is not something which TTWAs were setting out to provide. A more important point lies behind this apparently simplistic response. This point is that different scales of analysis -- such as of whole cities on the one hand and of neighbourhoods on the other -- require areas which are defined in different ways. An interesting analysis in section 6 of Ray's letter helps to clarify this otherwise rather technical point. Having noted that there is a difficulty in obtaining data for the denominators for sub-TTWAs unemployment rates, Ray side-steps that problem by using Parliamentary Constituencies -- on the grounds that Constituencies are designed to have very similar populations, so the 'unknown' denominator can be assumed to be virtually constant across all of them.

The first nagging doubt about this might be that far fewer people in a retirement area will be 'at risk' of unemployment -- indicating that the denominator (viz. the number who may work or be unemployed) will

not really be very constant even between areas with similar total populations. Thus the residential segregation issue is seen to be important again. Unfortunately the use of areas with a uniform population size actually dramatises the effect of residential segregation on the analysis. Ray's results suggest that London has by far and away the most significant concentrations of unemployment of anywhere in the country. I doubt that these results will be seen to provide a convincing proof of the value of this form of analysis for people in Clydeside or Merseyside or Sunderland or Aberdare or ..... The reason why the analysis is so misleading is that the constant size of Constituencies 'interacts' with the different size of cities and, for that matter, all other settlements.

Suppose every city did in fact have an inner city problem area which included, for the purpose of the example, a quarter of the city's total population - and that these people were at the same time all of the city's unemployed. The result of an analysis of each city (in its entirety) would be an unemployment rate of 25% for every city. This seems an analysis which is valid and not misleading. On the other hand, an analysis which used areas of a constant size -- regardless of the size of the city -- would produce a very different set of results. Each area would have a high or a low value purely a result of the extent to which its constituents were drawn from the inner city. More importantly still, this effect would not be random but tend to be systematically skewed: the larger the city was then the more this form of analysis will produce extreme values there. Quite simply, even when every city's inner city makes up the same share of that city overall, the bigger the city (and hence its inner city) then the more likely it is that some of the areas of constant size within that city will include nothing but inner cities within them.

Ray's constituency analysis provides a very good illustration of this problem. His finding is that unemployment is overwhelmingly concentrated in parts of the one city which is overwhelming the largest in Britain -- but this finding is an artefact of using areas of constant size to analyse a pattern which, in each city, is geographically distributed in a way which is geared to the size of that city overall. Since small cities have small inner cities they will be lost within a Constituency analysis.

Thus the analysis Ray presents makes the case very well for a more valid form of analysis in which whole cities are compared. The whole point of the TTWA definitions is to systematise the definition of 'whole

cities' in a way which is specifically relevant to the analysis of unemployment viz. to identify labour market areas. Only on such a basis can cities' unemployment problem be validly compared. It is just the same danger of a distorted emphasis on London's unemployment problem which would emerge from analysing local authority areas -- because here again a relatively constant size of area is used, as shown by London's partition into over 30 units when most major provincial cities are covered by just one or two areas (which are thereby much more mixed in their composition than are London boroughs).

Of course, TTWAs do not meet every need. A different set of areas is needed to identify neighbourhood-scale unemployment concentrations -- not just different to TTWAs but different to Constituencies or, for that matter, local authority areas. At the same time, TTWAs remain 'fit for purpose' so far as it remembered that their purpose is to provide a consistently-defined set of the smallest areas for which unemployment rates can, with reasonable levels of confidence, be calculated to provide valid comparisons between labour market areas.

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