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**SESSION 1: RECONSTRUCTING THE PAST**

**MANAGING CHANGES TO STANDARD GEOGRAPHIES IN THE UK**

Report submitted by the Central Statistical Office of the United Kingdom\* /

I. INTRODUCTION

1. If one goes back far enough in history, virtually every European country has seen its border change at one time or another. One might suppose that an island nation ought to be immune, though of course it has not been: Northern Ireland has only been part of the UK since 1919; Scotland has been part of Great Britain for rather longer, since 1707. Nevertheless, in recent years we have not had to contend with shifting borders of the sort experienced by Poland or Slovakia.

2. Our problems lie not in the consistency over time of national statistics, but in the consistency of sub-national statistics both over time and at a point in time. These problems partly stem from the fact that there is no regional tier of government in the UK: we have national government and

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1/ Prepared by D. Holt, G. Everett, J. Church, UK Government Statistical Service.

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local government, but nothing in between. However, for many administrative purposes, the country has to be divided up in some way, and because there is no obvious political structure on which to base the sub-division, a multitude of different boundaries have been developed.

3. The key to solving the user's problems in making both cross-sectional and inter-temporal comparisons of regional statistics must be to construct

datasets using the smallest geographical building blocks possible, and then allowing access through a flexible geographic information system. The more flexible systems we can build - consistent with the need to avoid disclosure - the better we can meet user needs.

4. The main body of this paper discusses the application of these principles mainly using the area of labour market statistics for illustration, including:

- the Office for National Statistics' current practices for geographic referencing in the release of labour market data;
- the need for a policy on geographic referencing within a central statistical agency, including developing a national standard geographic base;
- the impact of a new frozen geographic base, using claimant unemployment data as an example; and
- a discussion of the geographies available, including general descriptions.

## II. UK ADMINISTRATIVE GEOGRAPHIC STRUCTURES

5. For many statistical purposes, the UK is divided into eleven "Standard Statistical Regions": Wales, Scotland, Northern Ireland, and eight regions within England. The average inhabitant of England would probably be hard put to tell you in which "standard region" they live. Concepts such as "the North" and "the South-East" are used frequently, but usually with only vague notions about where their boundaries might lie. Not so of course with Wales, Scotland and Northern Ireland. For obvious historical reasons their boundaries are well-known, and their inhabitants identify strongly with them. They are of course countries rather than regions, with differing measures of developed decision-making which in turn result in different legislation covering data collection. The differences do not end in the legislation; different concepts and definitions are sometimes used in compiling statistics. These can result either from historically different administrative systems such as the education and legal systems in Scotland, or from conscious decisions to adopt different concepts to measure the same phenomena. Compilation of UK statistics can therefore be anything but straightforward: this is why, despite our best efforts, you will see in so many of our compendia publications tables and charts referenced as Great Britain, or England & Wales, even England only.

### Multiple sub-national geographies

6. Although England is divided into eight "standard statistical" regions, recent research has identified nearly a hundred regional structures of public

administration ranging from the six regional crime squads (covering England and Wales) to the nine Bee Health Inspection Regions of the Ministry of Agriculture in England. These regional structures are of great diversity in terms of boundaries, corresponding to the nature of the function they are designed to deliver. Since the statistics produced by and for them need also to follow these boundaries, this can result in statistics on such a variety of different bases as to appear almost anarchic. It can create tremendous frustration for users, who might like to relate river quality to GDP for example, but find that the former statistics are compiled on the basis of National Rivers Authority areas (defined in terms of physical geography) and the latter on the basis of counties (at the lowest level of disaggregation), which cannot be matched.

7. These are the sorts of difficulties faced by statisticians in providing consistent sub-national statistics at a point in time. Inter-temporal comparisons have the added problem of changes in administrative structures over time. Administrative and electoral boundaries are constantly being updated for a variety of reasons. These include the need to take account of demographic changes and to reflect changing political structures. Responsibility for defining the new boundary rests with an independent body known as the Boundaries Commission.

#### Major geographic structures

8. The UK has multiple, non-nested geographies using different boundaries for different purposes. However, it has two main structures - an administrative structure, plus an electoral structure.

9. Both structures have the ward as their basic building block. Wards build directly into the lower tier of the two-tier local authorities, usually known as Local Authority Districts or Boroughs, which in turn build to the higher tier usually known as County. Counties, in turn, are used to define the Regional structures mentioned earlier, both the Standard Statistical Regions and the Government Office Regions. Wards also build directly into the single tier authorities.

10. The Parliamentary Constituencies also use the ward as their basic building block as well, and they in turn build into the European Constituencies.

11. In addition, because of their key place in constructing the higher geographies, wards are used to constrain the Enumeration Districts (ED) for the collection of the Census of Population, thus ensuring that the higher level geographies can be readily defined and outputs obtained.

12. Labour Market data will be used to illustrate many of the issues and problems related to the plethora of geographies in the UK. Detailed descriptions of the main geographies used in the dissemination of Labour Market information are attached at Annex A.

### Geographic changes

13. The UK is facing two significant changes at present: a Local Government Review, which is resulting in reorganisation of county and district levels of government, and the creation of Government Offices for the Regions. The Local Government Review has abolished the previous two-tier system of local government in Wales and Scotland and created a single tier, however, in England, it has introduced a mixture of two-tier and single-tier local authorities. The creation and development of the Government Offices for the Regions have in fact gone some way towards creating a little more order by bringing together the regional structures within England of four major government departments. It has been decided that these areas will be used as the standard for presentation of official statistics from 1 April 1997, replacing the "Standard Statistical Regions" mentioned above and proposals will be made to form a new classification of NUTS Level 1 areas.

### III. POSTAL GEOGRAPHY

#### Postcodes

14. In the UK, the Royal Mail devised a system to aid the sorting and delivery of mail. A postcode, a hierarchical set of alpha-numeric codes, is allocated to all addresses (see Annex A for further details). There are approximately 1.5 million postcodes in the UK - generally referring to an average of about 20 households each, but a postcode may refer to a single address in the instance of a large business. This division of the UK population into postcodes is independent from the administrative subdivisions and the two do not coincide.

15. Much of the data supplied and collected by ONS have a postcode reference. However, postcodes are not a geography in the true sense and do not necessarily cover the entire country, although they attempt to represent all addresses (for example, national parks may not have a postcode allocated to them). All that is needed is a means to convert postcodes into other recognisable geographies to add further value.

#### Central Postcode Directory

16. A Central Postcode Directory (CPD) is the tool used to link the postcodes to specific geographies for Labour Market Statistics. The basic methodology used to allocate postcodes to wards is through an estimated co-ordinate for a postcode being linked to an estimated co-ordinate of a ward. Annex B shows the hierarchical structure of the commonly used geographies.

17. There are "current" and "frozen" versions of a CPD. They are administered jointly by ONS and Royal Mail and are updated approximately twice a year to reflect new postcodes that have been created in the interim period, for example as the result of a new housing estate.

18. Geographies are "frozen" by using a frozen Central Postcode Directory (CPD) which allocates the latest list of postcodes to wards as they existed at a past point in time (e.g. the last Census date, April 1991). "Current" geographies are defined by means of a CPD that allocates the latest list of valid postcodes to the latest available administrative area definitions.

19. ONS is, therefore, able to use the postcodes, albeit with this imperfect link, as a base for constructing the higher level geographies because the wards will build into both the basic administrative and electoral structures, as well as many other geographies such as Travel-to-Work Areas and Training and Enterprise Councils. The propensity of postcodes - appearing on almost all correspondence, and the public's acceptance and extensive use of them - has meant that they have become an important part of the collection, dissemination and use of data.

#### IV. CURRENT PRACTICES IN DISSEMINATING LABOUR MARKET INFORMATION

20. Current ONS practices are varied and, in part at least, reflect the nature of the different databases managed by the Department. The reason behind these differences will usually be in the way the data was collected. A sample survey tends to only be able to support higher level geographies, whereas a census can output data for very small areas. The principle use of each dataset may also, in part, determine the geography used in outputs. Listed below are the current practices in respect of disseminating key Labour Market statistics to illustrate these differences:

21. Claimant unemployment - a monthly administrative by-product - uses a frozen Central Postcode Directory to allocate claimants' postcodes to an April 1991 **frozen** ward base. The frozen wards are then used as building blocks to construct other standard geographies, such as Local Authority Districts, Parliamentary Constituencies, Travel-to-Work Areas (TTWAs) and Counties. Data are also available for postcode sectors. The updated (from 1981) frozen base was introduced in May 1996 (see later paragraphs for details of the impact of its introduction). In addition, a current series is being considered.

22. Labour Force Survey - a quarterly survey of approximately 60,000 households - uses the latest available CPD at time of processing to allocate respondents' postcodes (taken from the Postal Address File (PAF) used in the sampling frame) to **current** geographies as at the time of each survey.

23. Census of Employment - a biennial census of all employers - the postcode of the workplace selected is allocated to geographies on both frozen and **current** ward-based geographies (the current geographic base refers to the time the Census is undertaken). The release of 1993 Census data has been on both a 1991 frozen base and a 1993 current base. Data are also available for postcode sectors.

24. New Earnings Survey - an annual survey of 1% of employees - the latest available CPD is used to allocate the postcode of the selected workplaces to the corresponding County or Local Authority District (LAD) on a **current** basis. Assuming the sample size permits, this allows outputs for additional geographies to be available at LAD level or combinations of LADs.

25. Jobcentre vacancies - a monthly administrative by-product - these data are Jobcentre-based and the basic geographical building block is the area allocated to a Jobcentre by the Employment Service for business purposes. Vacancy figures are only available for Jobcentre areas and for aggregates of Jobcentre areas. Information is made available on a "best fit" basis for Standard Statistical Regions (SSRs), Counties and Travel-to-Work Areas (TTWAs). These areas effectively relate to **frozen** geographies as they are constructed using a 1985 frozen definition of Jobcentres.

## V. THE ISSUES

### Dealing with boundary changes over time

26. There are two basic approaches to coping with the changing geographic boundaries. The first is to "freeze" the geographies, thus producing a time series related to a single geographic definition at a particular point in time. The second is to attempt to produce up-to-date geographic definitions for the dissemination of the data reflecting the current political and electoral structures in place at the time.

27. Labour Market statistics produced by the ONS currently use both **current** and **frozen** geographies in dissemination practices. Frozen geographies are used to allow comparisons over time unaffected by geographic change, whereas current geographies are used to reflect the position at the date to which the data refer.

28. In practice, the larger the geography the less likely it is to be affected by changes in geographical referencing. This difference between "current" and "frozen" geographic definitions is likely to be most significant for small area outputs and, in particular, for wards where there is no scope for changes balancing one another out (notwithstanding the wholesale redrawing of boundaries in an exercise such as the introduction of the single-tier local authorities as a result of the Local Government Review).

29. Similarly, with survey data the degree of sampling variability, particularly for small areas, is likely to have a greater effect at a point in time than minor and routine administrative boundary changes. However, the balance changes the longer the time period over which comparisons are being made.

30. Royal Mail is constantly revising, deleting and introducing new postcodes and even when current geography is used there is a lag before changes can be introduced. For the CPD all boundary changes are cumulated for six months and then the CPD is updated. In general the discontinuities caused by this process are small and effects are insignificant but changes to postcodes tend to be geographically clustered and significant local effects are possible. At higher level geographies these effects are insignificant.

31. For example, in 1994 a small TTWA in the Midlands had its claimant unemployment rate affected to the degree that it fell from 8.2% to 4.3% in one month, largely due to the effect of the creation of four new postcode sectors. Before the introduction of the CPD that recognised these postcode sectors, unemployed claimants with these postcodes would have been considered "invalid" and allocated on a best-fit basis by reference to the geographical distribution of other claims in the region. This is an extreme and rare case, but demonstrates the difficulty of linking postcodes to other geographies, particularly when both are in a constant state of flux.

#### Changing frozen bases

32. Even when frozen geography is used, it is necessary to change to a new frozen geography from time to time. This permits all minor boundary changes to be introduced in a single adjustment. However, the timing of changes needs to balance user needs for up-to-date geographic definitions with the need for consistent time series data.

33. The impact of a new frozen geographic base can be illustrated best by using the Claimant Unemployment data series. The monthly production of Claimant Unemployment data in the UK is a high profile data series that has extensive geographic coverage being a full census. The basic data is collected as an administrative by-product produced from records of the payment of unemployment-related benefits.

34. Claimant unemployment data had been produced using a 1981 frozen CPD from 1983 until March 1996, thus all geographies published in this series represent definitions of these areas as they existed in 1981. The main purpose for freezing the geographic base is so that comparisons over time may be made unaffected by any possible geographic change in the same period. The "frozen date" was chosen to coincide with the Census of Population to maximise the benefit of comparisons with its comprehensive social and economic indicators.

35. Administrative and electoral boundaries are subject to constant change over time. A range of geographies is in demand by a variety of users for a variety of purposes. Therefore, it is necessary to strike a balance between using up-to-date geographic definitions (i.e. current) and being able to make valid comparisons over time unaffected by geographic change. If ONS was to publish claimant unemployment data just on the latest geographic definitions at the time of processing, any comparisons over time would include the

effects of boundary changes, as well as genuine increases/decreases in claimant unemployment. Users would ideally like time series data disseminated by current geographic definitions on a consistent (through time) basis. To achieve this using current techniques, historical data series would need to be re-processed - a presently impossible task because of resource constraints, but alternative means to achieve this result are being investigated (see Section 6). Continuing with the 1981 frozen base indefinitely was not an option because approximately three-quarters of all wards had some degree of change over the inter-censal period 1981 to 1991. The balance reached was to introduce a more up-to-date frozen base for the data series. As before, the "frozen date" was decided to coincide with the date of the previous Census of Population (i.e. April 1991).

36. The series moved to a 1991 frozen basis for the May Press Notice (i.e. April 1996 data). January, February and March 1996 were re-processed on a 1991 base to provide a link between the series and also ensure that annualized data (calendar year) can be produced on a common base.

37. In order to assess the full impact of the move from a 1981 to a 1991 frozen ward basis, statisticians from ONS have looked at the dual processed claimant count data in conjunction with population changes that occurred over the same period. Information on population movements due to boundary changes between 1981 and 1991 was extracted from the 1991 Census of Population County Reports. These gave a 1981 population count for the Local Authority Districts and Counties on both a 1981 boundary definition and a 1991 boundary definition, thus excluding any population differences due to normal growth/decline over the period.

38. It was not readily possible to calculate precise population effects from boundary changes between 1981 and 1991 for Travel-to-Work Areas (TTWAs) and Parliamentary Constituencies. In these cases, the differences in the unemployment counts between the two bases for these areas were examined in conjunction with population change in the Local Authority areas that roughly make them up. In addition, statisticians examined the employment estimates for these areas from the 1991 Census of Employment on a 1981 and 1991 ward base to determine whether the movements between the two bases were reflected in the unemployment statistics.

39. The introduction of the new 1991 CPD has had no significant effect on the Regional level data (changes in the number of claimant unemployed of less than 0.02 per cent in all cases). The effect on Counties has also been very minor with 11 Counties experiencing no change, 39 Counties seeing a change of less than 0.1 per cent, 14 Counties seeing a change between 0.1 and 0.4 per cent and only two Counties experiencing a change in unemployment of more than 0.4 per cent. Given the relatively small effect on the distribution of numbers of claimant unemployment it is not surprising that the move to the 1991 base has not had a significant impact on Regional or County unemployment rates. The County rates differ by a maximum of 0.03 percentage points.

Further investigation shows that the annual updating of denominators has had a greater impact.

40. As might be expected, given their smaller size, the move to a frozen 1991 base has had slightly more of an effect for Local Authority Districts than for Regions and Counties although, in the majority cases, the change is still less than 5 per cent (in January 1996). This in part reflects the improved allocation from using a more up-to-date CPD. In all cases where the percentage change was greater than 5 per cent a similar movement was seen in the population count for the two bases.

41. The impact of the new CPD was greatest for Parliamentary Constituency data - not surprisingly as these were the smallest areas examined. However, even with these, the impact on the count of the claimant unemployed was in the majority of cases less than 5 per cent. Of the 651 Parliamentary Constituencies, only 41 experienced a change of more than 5 per cent. These were examined in more detail. As explained earlier, it was not possible to calculate precise population effects from boundary changes between 1981 and 1991 for Parliamentary Constituencies. Therefore, as with TTWAs, these differences were looked at in conjunction with the movements in population in the surrounding local areas and employment figures on the two bases. In addition, ward definitions of the Parliamentary Constituencies were examined for April 1981 and April 1991. In general, the differences between the two bases can be attributed to genuine boundary changes.

#### Confidentiality and Flexible Outputs

42. The issue of disclosure is very important when considering geographic referencing and dissemination policies. By being more flexible and attempting to meet more customers' needs, the issue of disclosure cannot be forgotten.

43. The problem of residual disclosure will arise when making data available via flexible outputs. It could be possible to create outputs for two largely overlapping areas and then to calculate the difference between the two. This derived output could be disclosive. Output systems need to be aware of this possibility and set out rules such as limiting areal analyses and rounding outputs to avoid or limit this possibility. The legal conditions under which users access geographically disaggregated data can also be set to inhibit disclosure. Often the data itself will impose further limitations (e.g. sample size and measurement error) so that the data so obtained could not be considered disclosive.

44. It may be important to hold and store data at the lowest geographic building block, but may be impossible to output for these areas because they could possibly disclose confidential material. Again, it is important for a central statistical agency such as ONS to get the balance right - to ensure respondents' confidentiality is respected and protected, yet produce flexible outputs to meet the needs of a wide range of customers.

## VI. FUTURE DEVELOPMENTS

### The need for a policy on geographical referencing

45. Because of the multitude of geographies in use in the UK, a consistent and standard approach to geographic referencing would provide users with a greater facility for comparisons across different data series. In addition it might also provide additional quality assurance, particularly if the introduction of a policy leads to greater user awareness of which geographical basis is being used in a particular series.

46. On the other hand, a policy needs to reflect both the differing uses made of each dataset and the practical difficulties associated with the geographical referencing (which will vary between different sources), including resource limitations.

ONS is currently considering a policy that:

- a. each data series be held at the smallest available geography (compatible with the methodology used to collect the data) and, where possible, down to full postcode.
- b. Data should be made available on both a frozen and current basis. Data should be produced on a frozen basis so that outputs may be used for temporal comparisons; and data should also be produced on the latest available geographic definitions (i.e. current) so that up-to-date boundary definitions are available. Further, when a new frozen base is introduced there should be a link between the series (i.e. at least a single period is dual processed).
- c. For all sub-regional geographies the reference date that applies to the geography should be included with outputs.

47. The above policy would give the maximum flexibility for disseminating data now and in the future. It is necessary to have the frozen base to ensure comparisons can be made over time unaffected by geographic change. Ideally the frozen base should also be on the latest available geographic definition (i.e. the current year, with back data re-processed - unfortunately current methodologies and resources do not allow such an approach), but for practical reasons a compromise is necessary using a frozen base and maintaining it for an (unspecified) period into the future. Any frozen base would require periodic updating - preferably to link with the Census of Population to maximise the benefit of comparisons with its comprehensive social and economic indicators, and detailed geographic outputs.

48. It is recognised that the ability to implement such a policy in full may be dependent on the source of the data. For example, some survey data series and some administrative sources could not be produced in this manner

because of the restriction of the available source data and the added limitations of sample size.

49. A corresponding dissemination policy would need to be agreed relating to the choice of geography to be used in ONS publications, in answering parliamentary questions, general requests for data, etc. For example, whether frozen geographies could be used for temporal comparisons and current geographies used for all other purposes, or frozen geographies could be treated as the 'standard' and current geographies used for special purposes only. These issues have not yet been resolved by ONS.

#### Alternative Methods

50. The use of the CPD to allocate postcode to wards has its weaknesses and does have some critics. The errors created from deficiencies in CPD versions can create errors that are clustered geographically (e.g. due to the exclusion of recent postcode changes) - a problem when analysing information at the microdata level. Until recently there was not a viable alternative.

51. However, two new products currently being developed by Ordnance Survey (Great Britain's national mapping agency) could provide a reasonable alternative. These are "Address Point" and "Boundary Line". Address Point allocates a unique code (incorporating grid references) for every addressable location (rather than an estimated point representing a postcode, as with the CPD). Boundary Line offers up-to-date digitised information on electoral and administrative boundaries. Using GIS techniques, a point-in-polygon method could be applied that would permit the user to apply the "point" (the postcode) into a set of frozen or current polygons (representing administrative or electoral areas as defined at a point in time), thus giving greater flexibility and more accurate allocation of addresses. This option still needs to be fully tested and considered on cost-benefit grounds, but may provide an alternative to current methodology.

#### Development of a UK Standard Geographic Base

52. Allied to these developments, a research project has recently been undertaken to develop and implement a UK Standard Geographic Base.

53. The project's objectives were primarily to develop a framework for describing spatial units, identify those that form a "core set", and make recommendations on standardisation and implementation. The project concluded that for a spatial unit to be included in the "core set" it should be:

- well defined;
- stable, subject to limited change;
- maintainable and robust;
- widely used (for more than its basic purpose);

- related to other units in the scheme;
- providing complete UK coverage; and
- under public control.

54. The project succeeded in defining a general model which enables any spatial unit (e.g. ward, postcode, local authority) to be described uniquely, using common terminology. The adoption of this model is an important issue for data collectors, disseminators and users.

55. Implementation of the project's recommendations may be well justified on economic, operational and environmental grounds. For the successful implementation of these recommendations, close working relationships between key providers and users of geographic information will need to be strengthened to enable the necessary services and products, including the underpinning standards, to be developed and maintained.

56. An additional recent development has been a publication from the Association for Geographic Information entitled "Guidelines for Geographic Information Content and Quality".

## **VII. CONCLUSION**

57. The development of technology, particularly in the areas of the software that is readily available and the corresponding increases in hardware capabilities, has raised many users' expectations and requirements for statistics. It is an irony that in the world where the word "globalization" is on everyone's lips, demand is growing in statistics at a more and more local level. At the same time, there is continued pressure on ONS's resources to deliver users' requirements for an expanded range of data and the challenge faced by ONS includes balancing confidentiality and the costs involved in producing these data.

58. In meeting this challenge, future developments will need to keep abreast with technological developments and encourage a range of statistical techniques (for example, synthetic estimation) so that alternative and better methods can be applied. It is expected that the need to be flexible regarding the outputs available will be important - many non-standard boundary systems will continue to exist and new geographies may be required because of future political structures or significant demographic changes. The key to solving the problem is to construct datasets using the smallest geographical building blocks as possible and then allowing access through a flexible Geographic Information System. This will be an important dimension to ONS's work on constructing an integrated database system.

59. The issues of mass storage and the amount of processing power required to undertake these type of analyses is becoming quite minor. These developments should also allow the potential to recalculate historic time series on any new boundary base - as long as the new geographies use a

"standard" (supported) referencing system and the data is stored in a sufficient "raw" state to allow such further analysis.

60. Thus the issue of standards will increasingly become more important than the technological constraints. Issues such as confidentiality and protecting against disclosure when using multiple geographies will become an ever more important issue. A further benefit of standards is that users can be assured of the quality of the data produced and confident that the analyses of geographically referenced data can be undertaken using like with like.

61. ONS and the wider Government Statistical Service (GSS) have always tried hard, and will continue, to provide as much information as possible in a range of geographies, both for temporal comparisons and current analyses, and to enable users to link old and new series and to reduce the impact of discontinuities, though they cannot entirely be avoided. Therefore the more flexible the systems we build - consistent with the need to avoid disclosure - the better we can meet user needs.

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## Annex I

### Geographies available

1. The following are brief descriptions of the main geographies used in the dissemination of Labour Market information. Annex B shows the hierarchical structure of the commonly used geographies.

#### Wards:

Wards are the smallest electoral and administrative area and are the smallest geography for which we currently make data available. It is a key building block as wards build directly into both electoral (parliamentary constituencies) and administrative areas (e.g. local authorities). Wards are also used as the base for building TTWAs, TECs, etc. There are 11,095 wards in the UK.

#### Postcodes:

Postcodes were devised by Royal Mail to aid the sorting and delivery of mail. The unit (or full) postcode identifies a set of delivery points for the postman and, as such, does not precisely define an area - therefore they are not strictly a geography. However, they are significant in as much as they are used extensively in the collection and coding of data, and to translate (e.g. using the CPD) into other geographies. There are approximately 1.5 million unit postcodes, 10,000 postcode sectors, 2,500 postcode districts, and 120 postcode areas in the UK.

Postcodes are hierarchical and are classified as follows:

Postcode <u>unit</u>	=	<u>CM11 1RP</u>
Postcode <u>sector</u>	=	<u>CM11 1</u>
Postcode <u>district</u>	=	<u>CM11</u>
Postcode <u>area</u>	=	<u>CM</u>

#### Local Authorities:

Local authority areas (County, Unitary, District, Borough) areas are the primary administrative units used in local government. As part of a recent Local Government Review, Great Britain has been reviewed with the following results:

- Wales, as at 1 April 1996, had a single tier of local government (or Unitary Authorities), replacing the previous two-tier system;
- Scotland has adopted a similar structure;

- England is still involved in a rolling programme, county by county, with decisions varying from the retention of the existing two-tier system of local government to the introduction of single-tier authorities (UAs), or a combination of both. The programme is not expected to be finalised until 1998.

Information for the new UAs is planned to be made available from the time of their introduction. For example, data for the new UAs that came into force as at 1 April 1996 in Wales, Scotland, and the English counties of Avon, Cleveland, Humberside and North Yorkshire were released in the May Regional First Releases (i.e. April 1996 data).

#### **Regions:**

There are several definitions of regions - the two main definitions used are the Standard Statistical Regions (SSRs) and the Government Office Regions (GORs). Other regional definitions include the Employment Service Regions, the Health and Safety Executive, Health Regions, Police Regions, etc. - all of which are defined for that particular organisation's administrative purposes. Both SSRs and GORs are defined using counties (or a combination of Unitary Authorities) as the basic building block. There are 11 SSRs and 12 GORs in the UK.

#### **Travel-to-Work Areas:**

Travel to Work Areas (TTWAs) are statistical geographies that were first developed 20 years ago representing approximations to self-contained labour markets (i.e. areas defined so that all commuting to and from work occurs within the boundary of each respective area). TTWAs cover the whole country (i.e. 334 in the United Kingdom) and represent the smallest areas for which official unemployment rates are currently published.

The basic criteria for defining TTWAs are:

- (a) self-containment of at least 75 per cent (however, self-containment as low as 70 per cent may be accepted if the working population is in excess of 20,000);
- (b) a working population of at least 3,500;
- (c) areas should be contiguous (i.e. they should leave no gaps in the national data set).

The current TTWAs are amalgamations of 1981 wards and are calculated using commuting patterns from the Special Workplace Statistics (SWS) from the 1981 Census of Population.

#### **Parliamentary Constituencies:**

Parliamentary Constituencies are the areas represented by elected Members of Parliament and defined as aggregations of wards - currently 651 in the UK. The present set of Parliamentary Constituencies will be replaced by new definitions for the next general election.

**NUTS:**

NUTS (*Nomenclature of Territorial Unit for Statistics*) was established by Eurostat to provide a single uniform breakdown of territorial units for the production of regional statistics for the EU. The current UK NUTS structure consists of:

- NUTS Level 1 - Standard Statistical Regions (11)
- NUTS Level 2 - Groups of counties (35)
- NUTS Level 3 - Counties (65)
- NUTS Level 4 - Districts (485)
- NUTS Level 5 - Wards (11,095)

Changes to local government areas and the standard regions have implications for the NUTS European classification. Therefore a review of the current NUTS classification is currently being undertaken with consultation underway on an initial set of proposals.

**Training and Enterprise Councils (TECs):**

There are currently 81 Training and Enterprise Councils (TECs) in England and Wales (22 Local Enterprise Companies (LECs) in Scotland). These are defined as aggregations of wards. Many TECs precisely match local authority areas. However, there are exceptions such as the Peterborough TEC that crosses into Lincolnshire, thus also going across a regional (both SSR and GOR) boundary.

**Jobcentres:**

Jobcentres are the basic geography used by the Employment Service. Any information for a Jobcentre reflects the area allocated to a Jobcentre for business purposes. This means that vacancy figures are only available for Jobcentre areas and for aggregates of Jobcentre areas. Data cannot be precisely allocated to standard administrative geographies as, say, with the claimant count or Census of Employment, but instead are allocated on a 'best fit' basis. These allocations do not extend down to Local Authority Districts because of the lack of reliability of a 'best fit' allocation for small areas. However, 'best fit' definitions exist for SSRs, GORs, Counties and TTWAs. There are approximately 1,000 Jobcentres in the UK.