Towards a common standard: comparing European and American cities

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Abstract

This paper assesses to what extent it is possible to construct standardised geographical definitions of cities that will allow American and European cities to be compared in a consistent manner.

It reproduces, in citable form and, for scholarly purposes, the report of the same name produced by the author for the Greater London Authority , which is available on www.london.gov.uk/mayor/economic_unit/docs/wp13_towards_a_common_standard.pdf

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Towards a common standard: comparing European and American cities

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Summary

This working paper assesses to what extent it is possible to construct standardised geographical definitions of cities that will allow American and European cities to be compared in a consistent manner.

A standard legal reporting framework for defining the geographical extent of a city exists throughout the United States of America (US). There is no such standard for Europe, resulting in estimates of even such basic variables as population, employment, output, productivity, and growth, varying widely depending on how a European city is defined.

This working paper compares three standards or approaches for comparing cities:

1. The US system of Core Based Statistical Areas (CBSAs) known as the Metro Areas approach.

2. The standard defined by Eurostat's Urban Audit programme.

3. The Greater London Authority (GLA)'s own 'pragmatic-functional' approach.

This working paper shows that there are broad similarities between the Metro Areas' CBSA and Urban Audit's Larger Urban Zone (LUZ) concepts, which consist of one or more central cities together with surrounding areas from which there is substantial commuting.

However a number of significant differences remain:

1. Urban Audit's approach to defining the central city is almost wholly administrative in character, referring to the existing political boundaries of the city. The Metro Areas approach is wholly functional, referring to the densely settled area containing the city.

2. The Metro Areas approach permits a further subdivision of CBSAs to identify single cities called Metropolitan Divisions. Thus New Jersey, New York, Long Island and South-Western Connecticut form a single CBSA covering parts of three US States. Within that, New York and other cities can be distinguished as distinct entities.

3. The basic geographical reporting unit for the Metro Areas approach is the US county, on the basis of which all US metropolitan areas are constructed. Urban Audit attempts to standardise on a comparable unit within the Unified Nomenclature for Territorial Statistics (NUTS) system called NUTS3, but does not apply it everywhere in Europe, notably in the UK, where LUZs are constructed from NUTS4 units.

4. With the exception of a variant system for the US region of New England, the Metro Areas approach defines a uniform legal standard for determining which counties are in a given CBSA. The Urban Audit definition of a LUZ has an indicative standard but has permitted each national statistical agency to exercise discretion when applying.

This paper assesses the possible impact of each of these variations, and sets out a programme of research to establish their actual quantitative significance for indicators that the GLA and London Development Agency (LDA) require to benchmark.

For this purpose the programme will attempt to establish two datasets for a shortlist of 27 European cities. The first dataset will be a US-comparator set which will test the extent to which it is possible to approximate metropolitan areas as defined within the US system using NUTS3 areas, and will allow the testing of the effect of variations in geographical definition for a variety of indicators.

The second dataset will be an interim one and will provide a provisional, restricted set of indicators for benchmarking and comparing city performance, and as a comparison standard for evaluating estimates of performance from other sources.

1. Introduction

This working paper discusses the extent to which it is possible to create standardised geographical definitions of cities that allow American and European cities to be consistently compared. In particular, the compatibility of three common standards used for comparing cities is examined:

- The United States of America (US)'s Core Based Statistical Areas (CBSAs)[1] approach, henceforth called the Metro Areas approach.

- Eurostat's[2] Urban Audit programme which recently published estimates of a wide range of indicators for 189 cities in the EU15 countries[3] and is expecting to extend this to a further 69 cities in the accession countries and Romania and Bulgaria.

- The Greater London Authority (GLA)'s own 'pragmatic-functional' approach.

One of the key questions that will be answered is if London is compared with US cities based on the US' CBSA and compared with European cities based on Eurostat's Urban Audit programme, will the results be compatible?

This working paper arises from a joint GLA-LDA (London Development Agency) research programme to collate robust and comparable city indicators against which London can be benchmarked. In May 2004, GLA Economics published *Working Paper 9: Measuring and Comparing World Cities*[4] which found major differences between economic performance estimates from different data suppliers. A significant (but not the only) source of these differences was the lack of a common geographical definition for the cities under consideration. This working paper will be followed by further research.

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[1] Until 2004 these were known as *Metro*politan Statistical Areas (MSAs) which were distinct from *Micro*politan Statistical Areas (similarly defined concepts but the second contains less than 50,000 people). In the terminology now being introduced (see Appendix B), Core Based Statistical Area is the generic term for both Metropolitan and Micropolitan Statistical Areas.

[2] For more information about Eurostat, view: http://epp.eurostat.cec.eu.int/

[3] EU15 countries are the 15 countries (Belgium, Denmark, Germany, Spain, Greece, France, Ireland, Italy, Luxembourg, the Netherlands, Austria, Portugal, Finland, Sweden and the UK) which made up the European Union prior to 1 May 2004 when eight new countries (the accession countries) joined. For further information: http://www.eurunion.org/legislat/agd2000/agd2000.htm

[4] GLA Economics, 2004, Working Paper 9: Measuring and Comparing World Cities, GLA, London

Throughout this working paper, notes are made about the type of further research that is required.

For data to be compared, common standards and definitions are needed. Since London is a world city, these common standard and definitions should ideally be applied to all the world's major cities. A wide range of international standards regulate many national statistics. However, no world standard exists for the classification of cities, and in many parts of the world, even continental or national standards do not exist.

A number of nations, in particular Canada and US, do have such standards. But can these national standards serve as a basis on which to construct comparable statistics for cities outside North America?

The US system for defining and collating data about cities has existed since early last century. It is administered by the Office of Management and Budget (OMB) and provides a legal reporting framework for statistics from all US metropolitan areas.

In Europe however, there is no effective, standard definition of the concept of a city. The European standard for the definition of regions is called the Unified Nomenclature for Territorial Statistics (NUTS)[5]. Eurostat's Urban Audit[6] project has started using NUTS as the basis for collating European city statistics. This involved coordinating statistical agencies across the European Union (EU) and Bulgaria and Romania to produce indicators for 258 cities.

Urban Audit's second report (commonly called *Urban Audit II*[7]) provides information for more than 250 indicators, currently covering the 189 Urban Audit cities in the EU15. Although the data is in many cases incomplete, Urban Audit establishes a geographical framework for defining cities, sub-city regions and Larger Urban Zones (LUZs) which correspond conceptually to US Core Based areas.

Before Urban Audit II, the GLA adopted what it termed a 'pragmatic-functional' approach, defining cities as a group of NUTS3 regions (for more information about NUTS3 regions, please see Appendix F) in some sense connected to the geographical entity bearing the name of the city in question.

1.1 Outline

The next section of this working paper (section 2) provides definitions and explanations of key concepts including further detail about the Metro Areas, Urban Audit and pragmatic-functional approaches.

Section 3 examines two key differences between the Metro Areas and Urban Audit approaches that highlight the problems with using the two approaches to make comparisons.

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[5] NUTS is a hierarchical classification system. The highest level (largest) regions are called NUTS1 and contain a number of NUTS2 regions which in turn contain NUTS3 regions and so on down to NUTS5. As an example, London is a NUTS1 region while the London boroughs are NUTS4 regions. For more information: http://europa.eu.int/comm/eurostat/ramon/nuts/home_regions_en.html

[6] For more information about Urban Audit, please visit: www.urbanaudit.org.

[7] Urban Audit II, 2004a, Demographic, economic and social data on 258 cities across Europe, Document 82/2004, 25 June 2004, Luxemburg.

Section 4 explores the issue of deciding what the basic building block of a city is when trying to define its geography.

Section 5 looks at the core unit of the two approaches and considers whether the difference in core units can be overcome.

Section 6 outlines issues that could be addressed by future work.

As an understanding aid, a list of the abbreviations and their meanings used in this report has been included on page 39.`

2. Definitions and concepts

As noted in GLA Economics' *Working Paper 9,* there are two basic ways to define a city:

- Administratively – focusing on the existing political boundary

- Functionally – focusing on the economic entity.

This distinction is of key importance. Because cities grow, their real economic development leaves their administrative boundaries behind, the most extreme example being perhaps the City of London itself. To understand the modern city's economic reality, geographers and demographers think of it functionally as a bounded but continuous space in which people live, work and interact with each other on a daily basis.

Geographers and statisticians apply two basic criteria for defining what is functionally a city or part of a city:

- Urbanisation, which usually refers to population or building density.

- Interconnection, which usually refers to commuter flows but has in the past, at least within the Metro Areas approach, referred to telephone traffic.

This section now discusses the three approaches for comparing cities: the Metro Areas, Urban Audit and pragmatic-functional approaches.

2.1 Metro Areas

As the US' Metro Areas approach is a reference point for international benchmarking, it is discussed first.

The Metro Areas approach is based on the concept of an urbanized area which is defined by the American Bureau of the Census as a contiguous area of dense settlement (see Appendix B). The OMB identifies a core set of counties, known as central counties, which contain this urbanized area[8] (the concept of a core is discussed further in Section 5). In the event that a county could potentially qualify to be associated with more than one urban area, it is allocated to the urban area with the most population within the county.

Around these, the OMB constructs a wider geographical entity, the CBSA[9], defined as the core plus connected urban areas known as outlying counties[10]. An outlying county is

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[8] OMB defines a central county as 'The county or counties of a Core Based Statistical Area containing a substantial portion of an urbanized area or urban cluster or both, and to and from which commuting is measured to determine qualification of outlying counties'.

[9] Urban Audit defines a 'sub-city' level consisting of city districts. There is no comparable US concept.

defined as one in which 25 per cent of the employed workforce commutes into the central counties. In 2004, for the first time, the system also classified counties as outlying on the basis of out-commuting as well: if 25 per cent of the people that work in such a county travel into it from the core, it qualifies that county as an outlying county of that core. In the event that a county potentially qualifies as an outlying county of two cores, it is associated with the core to which the majority of its commuters travel. Finally, the OMB will amalgamate these two as determined by a magnitude termed the 'employment interchange measure'[11].

Because of the distinct pattern of urbanisation in America's New England region and the relatively greater significance of existing town and city boundaries, a distinct but related statistical system known as the New England City and Town Area (NECTA) is maintained in parallel with the CBSA system. In the NECTA system the units making up the core are defined by city and town boundaries instead of a demographically-defined urban core.

CBSAs may just contain a single city, for example Atlanta, or may contain a number of distinct cities with their outlying counties. Within CBSAs, subunits called Metropolitan Divisions[12] are distinguished, each containing a distinct integrated city plus surrounds. For example, the New York-Long Island-northeastern New Jersey-southwestern Connecticut CBSA contains the New York Metropolitan Division and eight others.

Sociologists and geographers have suggested broader groupings since metropolitan areas have grown to form continuous built-up stretches, for example the Eastern 'megalopolis' which potentially runs from Washington to Boston. The OMB restricts itself to entities connected by substantial commuting[13].

The OMB is concerned that neither central nor outlying counties, so defined, should be identified as urban. A central county may contain substantial rural tracts but it qualifies as a central county because a significant part of its people live in an urbanized area, not because it itself is urbanized. This is comparable to the situation found in London whose boundaries contain substantial tracts of green spaces including both parkland and farmland.

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[10] Note that the word 'core' in the US system, and more generally in the literature on Functional Urban Regions, does not have the same meaning as in the UK 'core cities' report (Parkinson et al 2004, Simmie et al 2005). Every US metropolitan area contains an 'urban core', whereas in the above reports, the word has been used to single out a special type of city.

[11] This is defined as 'the sum of the percentage of commuting from the entity with the smaller total population to the entity with the larger population and the percentage of employment in the entity with the smaller total population accounted for by workers residing in the entity with the larger total population'. CBSAs are automatically interconnected with an interchange measure of more than 25 per cent; between 15 and 25 per cent they may optionally be declared interconnected, but local opinion is taken into account.

[12] Until 2004 these were known as Primary Metropolitan Statistical Areas (PMSAs) and the wider conglomeration, if it included more than one central city, was known as a Combined Metropolitan Statistical Area (CMSA).

[13] More recently Peter Hall (1999, 2004) and others have advanced the concept of a 'Mega-city Region' which would consist of a set of functional regions, each an independent economic entity with an economic core, but which are also strongly interconnected by commuter and other flows – for example, London and, say, Reading or Luton.

2.2 Urban Audit

Eurostat's Urban Audit approach contains the same basic ideas as the US' Metro Areas approach of a core and a surrounding commuter field (the concept of a core is discussed further in Section 5). However its focus is primarily administrative with the basic unit being the administrative city (for example, the Urban Audit approach would classify the City of Manchester as the 'city' but in reality, the City of Manchester is merely one of ten boroughs in the statistical region of Greater Manchester). The Urban Audit approach defines a Larger Urban Zone (LUZ) as the functional urban region containing one (or more) such cities, using definitions that are assessed in Section 3.

Table 2.1 highlights the terms which are roughly equivalent to each other in the Metro Areas and Urban Audit approaches:

Table 2.1: Equivalent Metro Area and Urban Audit concepts

Metro Areas	Urban Audit
Central Counties	City
Core Based Statistical Area	Larger Urban Zone

2.3 The pragmatic-functional approach

GLA Economics' *Working Paper 9* provided geographical definitions for a shortlist of 27 benchmark cities. These definitions were based on an approximate of the functional concept on the basis of NUTS3 regions rather than a smaller region.

For this purpose, estimates of key indicators were collated from a variety of suppliers and a judgement was made based on the best information available as to which NUTS3 regions to include in the definition of each city.

There were two reasons for doing this. Firstly, such geographical definitions were the best, readily available approximation to the functional concept and there existed suppliers with substantial experience in deriving city indicators from NUTS3 units. The pragmatic-functional approach therefore offered a means of arriving at interim benchmark measures which could be used by the GLA and LDA until such time as superior standards became available.

The second reason was that two sources of variation were discovered between the estimates of productivity and growth which GLA Economics receives from its suppliers. These were due to differences in geographic definitions and the indicator itself. For example, even when the same geographic definition is adopted for Frankfurt, the average productivity growth of Frankfurt between 1995 and 2000 can vary by as much as 2.5 percentage points because of differences in the definition of productivity.

How much of this variation arose from the geographical definition and how much from other sources needs to be quantified. A standard geography on the basis of which to test various measures of growth, output, productivity and other indicators is therefore needed.

Such a pragmatic approximation is thus needed not only to provide interim benchmarks, but to control for geographic variations while assessing different estimates of city performance. In the next phase of the research this will be extended to all 27 cities in the

original shortlist so that indicators of city performance across a completely standardised geography will be able to be compared.

3. The differences – Metro Areas versus Urban Audit

Despite the general similarity between the Metro Areas and Urban Audit approaches, there are also significant differences which cause difficulties when making comparisons. Two differences in particular demonstrate the scope of the problem.

Firstly, the Urban Audit approach does not contain the notion of a Metropolitan Division. This makes quite a difference for places such the combined LUZ of Leeds-Bradford, which is treated as a single urban entity, and perhaps more problematically for the Ruhrgebiet (Germany), which fuses several distinct but contiguous towns and their catchment areas. In the case of North Holland, this is quite an intractable problem. The area including Amsterdam, Rotterdam and The Hague is a more or less a continuously urbanized economic zone which corresponds approximately to the Urban Audit LUZ called 's Gravenhaage. In these cases the distinct cities that these LUZs contain, cannot be distinguished.

Within the Urban Audit approach, Leeds cannot be distinguished from Bradford, whereas in the US system, New Jersey can be distinguished from New York. This also affects the definition of London. Watford might conceivably, within the US system, be constituted as a distinct Metropolitan Division and, in consequence, London would have its own, smaller Metropolitan Division. However towns such as Watford are included by Urban Audit in the LUZ of London.

Secondly, the two approaches have very divergent conceptions of what the core is. The Metro Areas approach's core is termed an *urbanized area* and is defined functionally by its level of population settlement. The Urban Audit system does not have an equivalent. The only unit that is smaller than the LUZ is the *administrative city*, which corresponds approximately to the US *incorporated place,* a generic term for an urban administrative unit (see Appendix C). There is no corresponding notion of a densely-settled space around this basic unit. The CBSA is defined, moreover, in terms of commuting into any of the central counties containing a significant part of this core urbanized area. It appears, from the guidelines which Urban Audit has given national statistical agencies, that membership of the LUZ is defined only in terms of commuting into the administrative city. If this is so, differences could be quite significant.

As a consequence, the US concept of a *city* may therefore correspond only loosely if at all to the corresponding Urban Audit concept. Within the US system the city is defined entirely demographically as the *central counties* or the core that contains an urbanized area. Within the Urban Audit approach, the city is just an administrative entity that happens to bear the name of the city.

Thus it would seem that a comparison, for example, between urbanized Atlanta and the City of Birmingham would be more likely to create errors than a comparison between the CBSA of Atlanta and the LUZ of Birmingham. The appropriate comparison would be with something like the West Midlands conurbation – the densely settled contiguous urban area surrounding Birmingham (including for example Wolverhampton) – but omitting any additional commuting field. Such urban conurbations have been identified in several

countries and, for example, the Office for National Statistics (ONS) has recently published detailed maps of urban spaces[14] based on the 2001 census. However, such entities play no role in the Urban Audit system as yet.

4. What are cities made of? The basic building block

The first issue confronting anyone seeking to define the geography of a city is to decide on the basic building block in terms of how this city will be defined.

The Metro Areas and Urban Audit approaches alike employ a basic geographic unit out of which larger units (e.g. cities and metropolitan areas) are constructed. For the Metro Areas approach, this basic geographic unit is the county, which is a very stable entity covering the whole country. Once established, the boundaries of US counties do not change although those counties established later tend to be bigger than those established earlier. Generally speaking, the further west the counties are, the larger they tend to be.

Europe, however, uses the NUTS hierarchical classification system (for a an overview of this system, please see Appendix F). The NUTS unit for which the widest range of data is available is NUTS3. An initial GLA Economics study suggests that NUTS3 is more or less cognate with the US concept of a county (see Appendix F). However, whereas the Metro Areas approach adopts the county quite uniformly as the statistical building block, the Urban Audit approach has a mixed system as follows:

- In most countries (Denmark, Germany, Spain, Greece, Italy, the Netherlands and Austria), NUTS3 regions are taken as the basic unit.

- In some countries (Portugal and, notably, the UK), NUTS4 areas[15] are used with some NUTS5 areas exceptionally.

- In Belgium, Finland and Sweden, NUTS5 areas are used.

- In France a distinct geographical unit, the Aire Urbaine, is the basis of the definition.

The difficulty is that the system cannot readily be used to construct LUZ data on a uniform basis and that NUTS4 and NUTS5 data is not readily available. This suggests that for practical purposes the system adopted by the GLA (the pragmatic-functional approach), which uses NUTS3 units only[16], may be required as an approximation to the LUZ.

4.1 Future studies

However there are difficulties with the pragmatic-functional approach. Where NUTS3 areas are quite large, a simple system does not fully capture the reality of the functional region. The simplest way to test this will be empirically. GLA Economics' analysis will attempt to construct a US-comparator dataset. This will be a best-fit NUTS3-based functional urban region applying criteria derived from the Metro Areas approach to the 27

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[14] Office for National Statistics, 2004, Key Statistics for Urban Areas in the South East, London. Available at: http://www.statistics.gov.uk/downloads/census2001/ks_urban_south_east_part_1.pdf

[15] NUTS4 is also known as Local Authority Unit 1 (LAU1), and NUTS5 as LAU2.

[16] Except for Helsinki as it is impossible to capture meaningfully data at the NUTS3 level for this city because the NUTS3 region Helsinki is part of is much larger than Helsinki itself.

European cities. The results will be compared with the statistics given for the official Urban Audit LUZs and for other definitions of functional urban regions for these cities[17].

5. The core

The Urban Audit and Metro Areas approaches have in common the general idea of a core area. Each approach's 'definition' of their core area is different as both approaches begin from opposite extremes. However, it is possible, as with the county and the NUTS3 region, that the difference is less significant in practice than it appears conceptually.

When referring to cities, the instinct of a US economist is to consider the metropolitan area, whereas the European economist considers the political or administrative entity. Consequently, the variation between administrative definitions of cities is greater in Europe than in the US. In particular if European LUZs are defined in terms of commuting into an administrative core, as stated in the Urban Audit guidelines, the differences could be quite large as in the case of Birmingham (as discussed in Section 3, *The differences – Metro Areas versus Urban Audit*).

Therefore if administratively-based definitions are used, the result could be a high degree of non-comparability between LUZs depending on the extent to which the administrative unit coincides with the actual urban core. A functional concept is more or less essential for any systematic economic comparisons. A European definition that is broadly compatible with the US Metro Areas' system is therefore unavoidable if comparisons with US cities are needed. But is such a definition possible?

The extent of the problem must be first understood. Generally, European cities are older and have more complex political histories than US cities. Therefore some European cities are administratively defined but no longer have any relation to the economic or even political reality in which they are contained. Moreover the extent to which the *administrative* city diverges from its economic reality varies from country to country.

As noted earlier, Manchester City Council is only one borough within the statistical district of Greater Manchester. However, the district of Greater Manchester bears the same name as the city and as a consequence some economic data suppliers confuse it with definition of the City of Manchester. Similarly, Birmingham City Council is within the West Midlands metropolitan county. The West Midlands metropolitan county, although quite close to the functional region of Birmingham, does not bear its name. As a result almost any administrative definition of Birmingham is likely to create difficulties when it comes to making economic comparisons. However, administratively based units combined to approximate either a functional urban region or the urban limits of a city, may be of use. Investigating this further forms part of GLA Economics' future work programme.

Within the US system, this is less of a concern. However commentaries exist that allow it to judge whether US administratively-based city definitions are as variable as their European counterparts. These commentaries suggest that such US city-level data is probably, if not as varied as European data, at least differentiated enough that the problems are broadly comparable.

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[17] See GLA Economics' *Working Paper 9* for the shortlist of cities included in the GLA-LDA study.

Mills and Hamilton (1994) note that 'Practices in designating urban government jurisdictions vary greatly from country to country and, in the United States, from state to state. What one country or state designates a city, another may designate a town. More important, the part of an urban area included in a city or other political subdivision varies from place to place and from time to time. In 1980, the city of Boston contained only 20 per cent of the 2.8 million people in its metropolitan area, whereas the city of Austin contained 64 per cent of the 537,000 people in its metropolitan area.'

US definitions have changed and continue to evolve, suggesting that the task of standardisation should involve matching essential concepts between the different approaches rather than having the approaches comply with each other identically. When the system began in the late 1940s its core or central place was a city defined by its administrative boundary, although the connected areas were defined functionally by their degree of urbanisation and connectedness. Remembering that there are basically two ways to define a city – administratively or functionally – it is useful to think of this as a hybrid or mixed system.

However from 1980 the definition of a *central place* became more complex and, in particular, included for the first time an *urbanized area*. This was a decisive step away from an administrative conception of the city and towards a uniform standard based on functional definitions alone. The concept of an urbanized area is defined and maintained by a distinct agency, the American Bureau of the Census, which specifies a complex algorithm (see Appendix D) based on demographic considerations alone. The bureau groups contiguous, urbanized, census blocks, where contiguous may include blocks with no common boundary that are connected by short road journeys.

Within such urbanized areas, one or more *central cities* are identified. Among these a *principal city* is identified. However these central and principal cities play no role in the statistical definition of the surrounding CBSA nor in the definition of the urbanized area; they are used instead to supply the names of the CBSAs thus constructed.

Finally, in the absence of a counterpart to the US metropolitan division there will be cities that simply cannot be studied independently because they form part of an LUZ that contains another city. Within the Urban Audit framework, on a functional basis such cities can only be analysed together. This problem as difficult in the old US system, since now the Metropolitan Division is separated after the CBSA has been constructed as a totality, like Urban Audit's LUZ. There are no insurmountable obstacles to importing this concept into the Urban Audit classification system, though of course it remains to be done.

5.1 What is connected?

The final point to consider is the way that the two systems define the notion of connectedness. The US system attempts to be uniform. In particular, the criteria for the degree of urbanisation required to constitute an urban place, and the level of connectedness required to be included in an CBSA, are quite clearly defined and applied uniformly[18].

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[18] In this case as in others it is worth noting that many of the arguments offered in favour of 'local definitions' in Europe have just as much force in the USA, but are nevertheless ignored. Thus the population density in an urbanized area such as New York or even Chicago is utterly different from that in, say, Los Angeles. Nevertheless the same criteria are applied to qualify LA and NY as urban spaces. Perhaps a lesson

There is a variant classification for NECTA, but as from 2004 this is maintained in parallel with the CBSA system. The definition of the core and connected counties, and the concept of CBSA are now universal across the USA.

It is important that the US system is transparent and part of the legal framework. The geographical definitions are established by federal law, are available to the public, and are the basis for clear rule-governed methods for calculated benchmarked statistics. The Urban Audit is not yet part of the legal European statistical framework and its methods are not all fully available.

Section 2.1.2 of the Urban Audit's *Methodological Handbook* (Urban Audit, 2004b) specifies that LUZs are constructed on the basis of the *functional urban region* concept. However it does not specify the commuting or other thresholds by which this concept is defined. According to information supplied by Eurostat to the GLA, Urban Audit set a guideline for including a region neighbouring a city, specifying that commuting levels of 20 per cent would qualify it for inclusion. Conceptually this is similar to the US system. This was, however, an indicative guideline only and national statistical agencies were left free to determine how and whether to apply it, with GLA Economics understanding that it has not been widely followed in practice [19].

The precise rules used by the various national statistical offices in defining LUZs for *Urban Audit II* is not know. It seems highly likely that different countries have used different rules. At present it is difficult to say what degree of non-comparability this introduces.

This creates difficulties in using *Urban Audit II* as a general benchmarking framework. The difficulty with accommodating local knowledge or peculiarities is that unless there is an overall regulatory framework, there is a risk that variations in definitions in fact reflect different ideas of what a city consists of, in which case the idea of an overall standard becomes blurred. It may be that there are differences in the pattern of urbanisation in Europe but considering the differences between some US cities (e.g. New York and Los Angeles), there is no obvious reason to suppose that differences across Europe are greater than those across the USA.

The practical issue is that in order to form a judgement on the usability of data derived in this way, the effects of varying the assumptions made about commuting levels need to be explored to see whether this produces substantial changes in geographical area and, most importantly, in the resultant levels of output, employment, productivity, and so on.

6. A case study – Cologne, Frankfurt and Munich

To illustrate the problems which arise when constructing a coherent and consistent functional city definition, the definition of three German cities are compared along with the

Europe could learn from the USA is that a uniform statistical standard does less damage, in relation to the opposite danger of failing to capture what they are trying to measure, than might be thought.

[19] There is one remaining exception to the general US rule of preferring a uniform statistical standard over deference to local opinion, which is the decision on whether to combine two CBSAs defined separately but connected by intercommuting. In the case where the employment interchange measure is between 15 and 25, local knowledge is consulted to determine whether to merge the two conglomerations statistically. If below 15 there is no merger; if above 25 the merger is automatic.

population estimates derived from these definitions. Appendix A provides maps derived from the same definitions.

Table 6.1: NUTS3 areas included in the definition of three German cities by three suppliers

	CE encoding	BAK encoding	Urban Audit II encoding	Year 2000 population ('000s)
Cologne		dea2 =dea21		244
	dea23	dea22	dea23	301
	dea24	dea23	dea24	962
	dea27	dea24	dea27	160
		dea25	dea2b	306
		dea26		267
		dea27		453
		dea28		189
		dea29		249
		dea2a		287
		dea2b		276
		dea2c		575
Frankfurt	de712	de712	de712	645
	de713	de713	de713	117
	de717	de718	de718	248
	de718	de71a	de719	225
	de71a	de71c	de71b	405
	de71c		de71c	219
			de71e	100
				334
				293
Munich	de212	de212	de212	1201
	de217	de217	de217	129
	de21h	de218	de218	118
		de21c	de21a	115
		de21h	de21b	151
		de21l	de21c	192
			de21h	292
			de21k	235
				124

Notes: Codes represent NUTS3 areas which correspond to the maps in Appendix A.

Sources: Urban Audit, Cambridge Econometrics and BAK Basel

The fact that three authoritative providers have constructed such diverse definitions of three key German cities illustrates the decisive importance of standardisation, in this case with respect to the criteria for inclusion in a connected LUZ/Core Based Area.

The differences are not insignificant. As a first indicator the metropolitan populations into which these translate has been calculated and can be seen in Table 6.2[20]. It is clear that they are far from uniform. In particular it should be noted that the Urban Audit population departs, sometimes substantially, from that of the London School of Economics/Group for European Metropolitan Comparative Analysis who have until now been the principal providers of data employing the FUR concept, and also from that of BAK and CE, two providers who have taken some care to construct functionally reasonable city definitions as the basis for their regional information.

Table 6.2: Population estimates (thousands, 2003)

	UA LUZ population	LSE FUR population	CE population	BAK population
Frankfurt am Main	2,494	997	1,853	643
München	2,446	N/A	1,621	1,193
Köln	1,855	10,902	1,585	4,303

Notes: UA = Urban Audit, LSE = London School of Economics, FUR = Functional Urban Area, CE = Cambridge Econometrics

Sources: Urban Audit, London School of Economics, Cambridge Econometrics and BAK Basel

7. Issues to be addressed

Future work will need to assess, as far as possible, the numerical differences arising from adopting geographical definitions due to:

1. Urban Audit

2. Potential systems standardised on the basis of the Metro Areas system, at least conceptually

3. The GLA's own functional-pragmatic system.

In particular, the following is needed:

1. To estimate how big a difference arises if the Urban Audit definitions were adopted instead of the GLA's existing definitions.

2. To estimate how big a difference arises from substituting the NUTS3 building block for NUTS4 and NUTS5 building blocks (sometimes known as LAU1 and LAU2[21] respectively) used by Urban Audit in some countries.

3. To investigate the differences that result from the use of different commuting thresholds in deciding which NUTS3 areas to incorporate in the functional region.

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[20] A further estimate comes from the London School of Economics which supplies statistics for functional regions around a number of European cities. The LSE is unable to release its geographical definitions for commercial reasons. Hence their data features only in Table 6.2 and not in Table 6.1.

[21] LAU = Local Authority Unit

4. To attempt a best-fit NUTS3-based LUZ for a range of the 27-shortlisted cities and to test how the results compare with the statistics given for the official Urban Audit LUZs[22].

7.1 Programme of research

As a future programme of research, GLA Economics will attempt to establish two datasets for a shortlist of 27 European cities. These datasets are as follows:

1. A US-comparator set which will provide a 'best-fit' approximation to the US CMSA system in terms of NUTS3 areas. This will be used to construct a range of indicators.

2. An interim dataset based on the GLA's pragmatic-functional city definitions. This will provide estimates of employment, and also a variety of output measures.

The US-comparator set will test the extent to which it is possible to approximate metropolitan areas as defined within the US system using NUTS3 areas, and will allow the testing of the effect of variations in geographical definition for a variety of indicators.

The interim dataset will provide a provisional, restricted set of indicators for benchmarking and comparing city performance, and as a comparison standard for evaluating estimates of performance from other sources.

8. Conclusion

This working paper assessed the extent it which it is possible to construct standardised geographical definitions of cities to allow American and European cities to be compared in a consistent manner.

Three approaches for comparing cities were analysed in this paper:

1. Metro Areas approach (US)

2. Eurostat's Urban Audit programme

3. The GLA's 'pragmatic-functional' approach.

This working paper found that there were broad similarities between the Metro Areas and Urban Audit approaches such as the CBSA and LUZ concepts. However, a number of significant differences remain:

1. Urban Audit's approach to defining the central core is administrative while the Metro Areas approach is demographic.

2. The Metro Areas approach permits a further subdivision of CBSAs to identify single cities.

3. The Metro Areas approach uses the US county as the basic geographical reporting unit. Urban Audit attempts to standardise across Europe by using the NUTS3 building blocks but with significant exceptions.

4. The Metro Areas approach defines a uniform legal standard for determining which counties are in a given CBSA. Urban Audit's definitions are indicative giving national

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[22] See GLA Economics' *Working Paper 9* for the shortlist of cities included in the GLA-LDA study.

statistical agencies considerable discretion which they have exercised, rendering the results less standard.

The GLA and LDA will develop two datasets for a shortlist of 27 European cities. The first dataset, will provide a 'best-fit' approximation to the US CMSA system in terms of NUTS3 areas. It will test the extent to which it is possible to approximate metropolitan areas as defined within the US system using NUTS3 areas, and will allow the testing of the effect of variations in geographical definition for a variety of indicators.

The second dataset, will be an interim one based on GLA's pragmatic-functional city definitions. It will provide a provisional, restricted set of indicators for benchmarking and comparing city performance, and as a comparison standard for evaluating estimates of performance from other sources.

Appendix A: City maps based on alternative definitions

This appendix provides maps illustrating some of the points discussed in the working paper. Firstly, maps of three German cities are provided demonstrating the differences between the various data sources.

A1 German cities

The following maps of the German cities Frankfurt, Munich and Cologne are constructed from Urban Audit, Cambridge Econometrics (CE) and BAK Basel data (the same sources used in Table 6.1).

Map A1.1: Frankfurt – CE encoding at NUTS3 Level (with LAU2 boundaries)[23]

Map A1.2: Frankfurt – BAK encoding at NUTS3 Level (with LAU2 boundaries)

Map A2.1: Munich- CE encoding at NUTS3 Level (with LAU2 boundaries)

Map A2.2: Munich - BAK encoding at NUTS3 Level (with LAU2 boundaries)

Map A3.1: Cologne - CE Encoding at NUTS3 Level (with LAU2 boundaries)

Map A3.2: Cologne – BAK encoding at NUTS3 Level (with LAU2 boundaries)

A2 English cities – London, Birmingham and Manchester

The maps below present the *Urban Audit II* definition of three key English cities and their LUZs. Manchester is compared with the Greater Manchester statistical region and Birmingham with the West Midlands statistical region.

Map A4: London

Map A5: Birmingham

Map A6: Manchester

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[23] © EuroGeographics throughout this section

Appendix B: Standards for defining metropolitan and micropolitan statistical areas

Reproduced from:

> Office of Management and Budget, 2000, Standards for Defining Metropolitan and Micropolitan Areas: Notice, Federal Register, Wednesday December 27 2000

> View: http://www.census.gov/population/www/estimates/00-32997.pdf

The Office of Management and Budget began using these standards to define Core Based Statistical Areas (CBSAs) in 2004. A CBSA is a geographic entity associated with at least one core of 10,000 or more population, plus adjacent territory that has a high degree of social and economic integration with the core as measured by commuting ties.

The standards designate and define two categories of CBSAs: Metropolitan Statistical Areas and Micropolitan Statistical Areas. The purpose of the Metropolitan and Micropolitan Statistical Area Standards is to provide nationally consistent definitions for collecting, tabulating, and publishing Federal statistics for a set of geographic areas. The Office of Management and Budget establishes and maintains these areas solely for statistical purposes.

Metropolitan and Micropolitan Statistical Areas are not designed as a general purpose geographic framework for nonstatistical activities or for use in program funding formulas. The CBSA classification does not equate to an urban-rural classification; Metropolitan and Micropolitan Statistical Areas and many counties outside CBSAs contain both urban and rural populations.

CBSAs consist of counties and equivalent entities throughout the United States and Puerto Rico. In view of the importance of cities and towns in New England, a set of geographic areas similar in concept to the county based CBSAs also will be defined for that region using cities and towns. These New England City and Town Areas (NECTAs) are intended for use with statistical data, whenever feasible and appropriate, for New England. Data providers and users desiring areas defined using a nationally consistent geographic building block should use the county based CBSAs in New England.

The following criteria apply to both the nationwide county based CBSAs and to NECTAs, with the exceptions of Sections 6, 7, and 9, in which separate criteria are applied when identifying and titling divisions within NECTAs that contain at least one core of 2.5 million or more population. Wherever the word ``county'' or ``counties'' appears in the following criteria (except in Sections 6, 7, and 9), the words ``city and town'' or ``cities and towns'' should be substituted, as appropriate, when defining NECTAs.

Section 1: Population size requirements for qualification of Core Based Statistical Areas

Each CBSA must have a Census Bureau defined urbanized area of at least 50,000 population or a Census Bureau defined urban cluster of at least 10,000 population. (Urbanized areas and urban clusters are collectively referred to as "urban areas.")

Section 2: Central counties

The central county or counties of a CBSA are those counties that:

(a) have at least 50 percent of their population in urban areas of at least 10,000 population; or

(b) have within their boundaries a population of at least 5,000 located in a single urban area of at least 10,000 population.

A central county is associated with the urbanized area or urban cluster that accounts for the largest portion of the county's population. The central counties associated with a particular urbanized area or urban cluster are grouped to form a single cluster of central counties for purposes of measuring commuting to and from potentially qualifying outlying counties.

Section 3: Outlying counties

A county qualifies as an outlying county of a CBSA if it meets the following commuting requirements:

(a) at least 25 percent of the employed residents of the county work in the central county or counties of the CBSA; or

(b) at least 25 percent of the employment in the county is accounted for by workers who reside in the central county or counties of the CBSA.

A county may appear in only one CBSA. If a county qualifies as a central county of one CBSA and as outlying in another, it falls within the CBSA in which it is a central county. A county that qualifies as outlying to multiple CBSAs falls within the CBSA with which it has the strongest commuting tie, as measured by either (a) or (b) above. The counties included in a CBSA must be contiguous; if a county is not contiguous with other counties in the CBSA, it will not fall within the CBSA.

Section 4: Merging of adjacent Core Based Statistical Areas

Two adjacent CBSAs will merge to form one CBSA if the central county or counties (as a group) of one CBSA qualify as outlying to the central county or counties (as a group) of the other CBSA using the measures and thresholds stated in 3(a) and 3(b) above.

Section 5: Identification of principal cities

The Principal City (or Cities) of a CBSA will include:

(a) the largest incorporated place with a Census 2000 population of at least 10,000 in the CBSA or, if no incorporated place of at least 10,000 population is present in the CBSA, the largest incorporated place or census designated place in the CBSA; and

(b) any additional incorporated place or census designated place with a Census 2000 population of at least 250,000 or in which 100,000 or more persons work; and

(c) any additional incorporated place or census designated place with a Census 2000 population of at least 50,000, but less than 250,000, and in which the number of jobs meets or exceeds the number of employed residents; and

(d) any additional incorporated place or census designated place with a Census 2000 population of at least 10,000, but less than 50,000, and one-third the population size of the largest place, and in which the number of jobs meets or exceeds the number of employed residents.

Section 6: Categories and terminology

A CBSA receives a category based on the population of the largest urban area (urbanized area or urban cluster) within the CBSA. Categories of CBSAs are: Metropolitan Statistical Areas, based on urbanized areas of 50,000 or more population, and Micropolitan Statistical Areas, based on urban clusters of at least 10,000 population but less than 50,000 population.

Counties that do not fall within CBSAs will represent "Outside Core Based Statistical Areas."

A NECTA receives a category in a manner similar to a CBSA and is referred to as a Metropolitan NECTA or a Micropolitan NECTA.

Section 7: Divisions of metropolitan statistical areas and New England city and town areas

(a) A Metropolitan Statistical Area containing a single core with a population of at least 2.5 million may be subdivided to form smaller groupings of counties referred to as Metropolitan Divisions. A county qualifies as a "main county" of a Metropolitan Division if 65 percent or more of its employed residents work within the county and the ratio of the number of jobs located in the county to the number of employed residents of the county is at least .75. A county qualifies as a "secondary county" if 50 percent or more, but less than 65 percent, of its employed residents work within the county and the ratio of the number of jobs located in the county to the number of employed residents of the county is at least .75.

A main county automatically serves as the basis for a Metropolitan Division. For a secondary county to qualify as the basis for forming a Metropolitan Division, it must join with either a contiguous secondary county or a contiguous main county with which it has the highest employment interchange measure of 15 or more.

After all main counties and secondary counties are identified and grouped (if appropriate), each additional county that already has qualified for inclusion in the Metropolitan Statistical Area falls within the Metropolitan Division associated with the main/secondary county or counties with which the county at issue has the highest employment interchange measure. Counties in a Metropolitan Division must be contiguous.

(b) A NECTA containing a single core with a population of at least 2.5 million may be subdivided to form smaller groupings of cities and towns referred to as NECTA Divisions.

A city or town will be a "main city or town" of a NECTA Division if it has a population of 50,000 or more and its highest rate of out- commuting to any other city or town is less than 20 percent. After all main cities and towns have been identified, each remaining city and town in the NECTA will fall within the NECTA Division associated with the city or town with which the one at issue has the highest employment interchange measure.

Each NECTA Division must contain a total population of 100,000 or more. Cities and towns first assigned to areas with populations less than 100,000 will be assigned to the qualifying NECTA Division associated with the city or town with which the one at issue has the highest employment interchange measure. Cities and towns within a NECTA Division must be contiguous.

Section 8: Combining adjacent Core Based Statistical Areas

(a) Any two adjacent CBSAs will form a Combined Statistical Area if the employment interchange measure between the two areas is at least 25.

(b) Adjacent CBSAs that have an employment interchange measure of at least 15 and less than 25 will combine if local opinion, as reported by the congressional delegations in both areas, favors combination.

(c) The CBSAs that combine retain separate identities within the larger Combined Statistical Areas.

Section 9: Titles of core based statistical areas, metropolitan

Divisions, New England city and town divisions, and combined statistical areas

(a) The title of a CBSA will include the name of its Principal City with the largest Census 2000 population. If there are multiple Principal Cities, the names of the second largest and third largest Principal Cities will appear in the title in order of descending population size. If the Principal City with the largest Census 2000 population is a census designated place, the name of the largest incorporated place of at least 10,000 population that also is a Principal City will appear first in the title followed by the name of the census designated place.

(b) The title of a Metropolitan Division will include the name of the Principal City with the largest Census 2000 population located in the Metropolitan Division. If there are multiple Principal Cities, the names of the second largest and third largest Principal Cities will appear in the title in order of descending population size. If there are no Principal Cities located in the Metropolitan Division, the title of the Metropolitan Division will use the names of up to three counties in order of descending population size.

(c) The title of a NECTA Division will include the name of the Principal City with the largest Census 2000 population located in the NECTA Division. If there are multiple Principal Cities, the names of the second largest and third largest Principal Cities will appear in the title in order of descending population size. If there are no Principal Cities located in the NECTA Division, the title of the NECTA Division will use the name of the city or town with the largest population.

(d) The title of a Combined Statistical Area will include the name of the largest Principal City in the combination, followed by the names of up to two additional Principal Cities in the combination in order of descending population size, or a suitable regional name, provided that the Combined Statistical Area title does not duplicate the title of a component Metropolitan or Micropolitan Statistical Area or Metropolitan Division. Local opinion will be considered when determining the titles of Combined Statistical Areas.

(e) Titles also will include the names of any state in which the area is located.

Appendix C: Evolution of MSA/CBSA standards by decade[24]

Decade	Area Name	Central City and Central Core Criteria	Minimum Measures of Integration for outlying County	Minimum Measures of Metropolitan Character for outlying County
1950s	Standard Metropolitan Area	City of 50,000 or more population	* 15% or more commuting to central county, **OR** * 25% or more of the jobs in the county are accounted for by commuting from central county, **OR** * at least four phone calls per subscriber per month to central county	* 10,000 or more nonagricultural workers, **OR** * 10% or more of the nonagricultural workers in the MA, OR * 50% or more of population residing in MCDs with population density of at least 150 persons per square mile and contiguos to central city * two-thirds or more of labour force must be nonagricultural

Decade	Area Name	Central City and Central Core Criteria	Minimum Measures of Integration for outlying County	Minimum Measures of Metropolitan Character for outlying County
1960s	Standard Metropolitan Statistical Area	City of 50,000 or more population, OR two contiguous cities with combined population of 50,000 or more	* 15% or more commuting to central county, **OR** * 25% or more of the jobs in the county are accounted for by commuting from central county	* 75% or more of labour force must be nonagricultural, **AND** * 50% or more of population residing in contiguous MCDs with population density of at least 150 persons per square mile, **OR** * nonagricultural employment is either equal to at least 10% of the nonagricultural employment of the central county or at least 10,000, **OR** * number of nonagricultural workers residing in county is either at least 10% of nonagricultural workers residing in central county or at least 10,000

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[24] Office of Management and Budget, 2000, Alternative Approaches to defining metropolitan and nonmetropolitan areas: Notice, Federal Register, Vol 63 No 244. From 2004 this has been revised and the new definitions are not included in this table.

				residing in central county or at least 10,000

Decade	Area Name	Central City and Central Core Criteria	Minimum Measures of Integration for outlying County	Minimum Measures of Metropolitan Character for outlying County
1970s	Standard Metropolitan Statistical Area	City of 50,000 or more population, **OR,** city of at least 25,000 population together with contiguous places of population densities of at least 1,000 persons per square mile having a combined population of at least 50,000 in a county of at least 75,000 population	30% or more commuting to central county	* 75% or more of the labour force must be nonacrigultural If less than 30% commute to central county, must meet two of the following: * 25% or more of population urban * 15% population growth rate * density of 50 or more persons per square mile and one of the following: * 15% or more commuting to central county * 15% or more commuting from central county * 20% or more commuting exchange with central county

Decade	Area Name	Central City and Central Core Criteria	Minimum Measures of Integration for outlying County	Minimum Measures of Metropolitan Character for outlying County
1980s	* Metropolitan Statistical Area (MSA), * Consolidated Metropolitan Statistical Area (CMSA), * Primary Metropolitan Statistical Area (PMSA), * New England County Metropolitan Area (NECMA)	* UA of at least 50,000 population * If largest city has less than 50,000 population, MSA/CMSA must have at least 100,000 population * Central cities include largest city in MSA **AND** each city of at least 250,000 population or 100,000 workers **AND** each city of at least 25,000 population and 75 jobs per 100 workers and less than 60% out commuting **AND** each city of at least 15,000 population that is at last one-third the size of the largest central city and meets employment ratio and commuting percentage above.	Commuting: 50% or more and ---> 40% or more and ---> 25% or more and --->

15% or more and ---> | Character: 25 or more persons per square mile, **OR** 35 or more persons per square mile, **OR** 35 or more persons per square mile and one of the following: * 50 or more persons per square mile * 35% or more urban population * 10% or more population, or at least 5,000 persons in UA, **OR** 50 or more persons per square mile and two of the following: * 60 or more persons per square mile * 35% or more urban population * population growth rate of at least 20% * 10% or more of population, or at least 5,000 persons in UA |

Decade	Area Name	Central City and Central Core Criteria	Minimum Measures of Integration for outlying County	Minimum Measures of Metropolitan Character for outlying County

| 1990s | Metropolitan Areas
* MSA
* CMSA
* PMSA
* NECMA | * City of at least 50,000 population, **OR**
* UA of at least 50,000 population in an MA of at least 100,000 population
* Central cities include largest city in MSA/CMSA **AND** each city of at least 250,000 population or at least 100,000 workers **AND** each city of at least 25,000 population and at least 75 jobs per 100 workers and less than 60% out commuting **AND** each city of at least 15,000 population that is at least 1/3 size of largest central city and meets employment ratio and commuting percentage above **AND** largest city of 15,000 population or more that meets employment ratio and commuting percentage above and is in a secondary noncontiguous UA **AND** each city in a secondary noncontiguous UA that is at least 1/3 of largest central city of that UA and has at least 15,000 population and meets employment ratio and commuting percentage above. | Commuting:
50% or more and --->
40% to 50% and --->
25% to 40% and --->

15% to 25% and --->

15% to 25% and ---> | Character:
25 or more persons per square mile, or 10% or more of population, or at least 5,000 persons in UA
OR
35 or more persons per square mile, or 10% or more pf population, or at least 5,000 persons in UA
OR
35 or more persons per square mile and one of the following:
* 50 or more persons per square mile
* 35% or more urban population
* 10% or more of population, or at least 5,000 persons in UA, **OR**
50 or more persons per square mile and two of the following:
* 60 or more persons per square mile
* 35% or more urban population
* population growth rate of at least 20%
* 10% or more of population, or at least 5,000 persons in UA
Less than 50 persons per square mile and two of the following:

* 35% or more urban population
* population growth rate of at least 20%
* 10% or more of population, or at least 5,000 persons in UA |

Source: Office of Management and Budget

Appendix D: Bureau of the Census procedure for delineating Urbanized Areas[25]

The text below refers to CBSA and associated concepts using words and phrases which predate the Office of Management and Budget's new (2000) terminology which has been used elsewhere in this report. Equivalent terms are given in Table D1.

Table D1: Equivalent terms for CBSA and associated concepts

Old terminology	*New terminology*
Metropolitan Statistical Area (MSA)	Core Based Statistical Area (CBSA)
Combined Metropolitan Statistical Area	Core Based Statistical Area
Primary Metropolitan Statistical Area (PMSA)	Metropolitan Division
Micropolitan Statistical Area	Micropolitan Statistical Area

II. UA and UC Delineation Process Criteria

The following criteria are provided in the sequence in which they are used by the Census Bureau in an automated software program, with limited interactive modifications, to delineate the UAs and UCs. The purpose of providing the criteria in sequence and in technical terms is to ensure that others can develop similar software to replicate the Census Bureau's urban area delineations.

A.The Census Bureau initiates its delineation of a potential urban area by delineating a densely settled 'Initial Core'. The Initial Core is defined by sequentially including the following qualifying territory:

1. One or more contiguous census BGs[26] that have a total land area less than 2 square miles and a population density of at least 1,000 people per square mile (ppsm)[27]. NOTE: All

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[25] This procedure is also documented with additional explanatory notes at http://www.census.gov/geo/www/garm.html. Also view: http://www.census.gov/geo/www/ua/uafedreg031502.txt

[26] The Bureau of the Census defines a Block Group (BG) as 'A subdivision of a census tract (or, prior to 2000, a block numbering area), a block group is the smallest geographic unit for which the Census Bureau tabulates sample data. A block group consists of all the blocks within a census tract with the same beginning number.'

[27] The Census Bureau, in agreement with the Department of Defense, imposed restrictions on the selection of features that could be used as block boundaries within military reservations. This resulted in census blocks within military reservations that contain populations of 1,000 or greater, but with unusually low population densities caused by these restrictions. In recognition of this situation, for purposes of urban area delineation, the Census Bureau treats blocks on military reservations that have a population of 2,500 or more as having a population density of 1,000 ppsm, even if the actual density is less than 1,000 ppsm, and those that have a population of 1,000 to 2,499 as having a population density of 500 ppsm.

calculations of population density include only land; the areas of water contained within census BGs and census blocks are not used to calculate population density.

2. If no qualifying census BG exists, one or more contiguous census blocks that have a population density of at least 1,000 ppsm.

3. One or more census BGs that have a land area less than 2 square miles, a population density of at least 500 ppsm, and are contiguous with the BGs identified by criterion II.A.1.

4. One or more contiguous census blocks, each of which has a population density of at least 500 ppsm, and at least one of which is contiguous with the qualifying census BGs or census blocks identified by criterion II.A.1., II.A.2., or II.A.3.

5. Any enclave of contiguous territory that does not meet the criteria above but that is surrounded by census BGs and census blocks that qualify for inclusion in the initial core by criteria II.A.1. through II.A.4., provided the area of the enclave is not greater than 5 square miles.

B. The Census Bureau continues its delineation of a potential urban area by adding, to all initial cores that have a population of 1,000 or more[28], other territory with qualifying density that can be reached using a "hop" connection. That is, from the edge of the initial core, the Census Bureau will define a road connection of no greater than 0.5 mile across land that is not classified as "exempted" territory[29] and that consists of one or more nonqualifying census blocks that connect the initial core to a contiguous area of census BG(s) and/or census blocks(s) that otherwise qualify based on population density and land area.

1. The territory being added to the initial core using a hop connection, which includes the connecting census block(s), census BG(s), and census block(s) that have a population density of at least 500 ppsm, and any enclave blocks within the connecting block(s) or area with qualifying density, must:

a. Have a combined overall population density of at least 500 ppsm,

or

b. Have 1,000 or more total population in the qualifying area being added.

2. When adding qualifying territory to the initial core using a hop connection, the Census Bureau tests the five shortest road connections and:

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[28] All cores of less than 1,000 population are not selected as the starting point for the delineation of a separate urban area; however, these core areas still are eligible for inclusion in a UA or UC, using subsequent criteria and procedures.

[29] The Census Bureau defines 'exempted' territory as areas in which normal residential development is significantly constrained or not possible due to either topographic or land use reasons. Exempted territory is limited to bodies of water, national parks and monuments, military installations, and those segments of a road connection where the populations of the census blocks on both sides of the road are zero and, additionally, the road connection crosses at least 1,000 feet of water. Because the Census Bureau does not have access to or maintain a comprehensive land use database for the entire United States, Puerto Rico, and the Island Areas, only the aforementioned land use types, which are included in or can be derived from the Census Bureau's TIGER database, will be used when identifying exempted territory.

a. Selects the shortest qualifying road connection that does not exceed 0.5 mile across land that is not classified as "exempted" territory, and

b. Selects the connecting block(s) along that road connection that forms the highest overall population density for the entire area (hop blocks plus qualifying blocks) being added to the initial core.

3. Territory that is added to the initial core by means of a hop connection becomes part of the adjusted initial core. The Census Bureau then determines if there is additional qualifying territory that can be added to the adjusted initial core. All measurements of distance and contiguity to the core are made from the adjusted initial core, not from the original initial core. The Census Bureau continues to add qualifying territory by means of a hop connection, modifies the adjusted initial core to include the added territory, and continues to add more qualifying territory via a hop connection, until no additional territory qualifies to be added via a hop connection.

C. After completing the process that adds all territory to an initial core that can be added via hop connections, those cores that have a population of 1,500 or more, now termed "interim cores," continue the delineation process by adding qualifying territory via a "jump" connection[30].

The determination of jumps starts with the interim core that has the greatest population and continues in descending order of population size of each interim core. Starting from the edge of the interim core, the Census Bureau identifies a road connection of greater than 0.5 mile and no more than 2.5 miles across land that is not classified as "exempted" territory, and that consists of one or more nonqualifying census blocks that connect the interim core to contiguous qualifying territory based on population density, land area, and connections made using the hop criteria.

1. The territory being added to the interim core using a jump connection, including the connecting census block(s), qualifying census BG(s), and census block(s) that have a population density of at least 500 ppsm, and any enclave blocks within the connecting block(s) or territory with qualifying density, must:

a. Have a combined overall population density of at least 500 ppsm,

or

b. Have a population of 1,000 or more in the qualifying territory being added.

2. When adding qualifying territory to the interim core using a jump connection, the Census Bureau tests the five shortest road connections and:

a. Selects the shortest qualifying road connection that does not exceed 2.5 miles across land that is not classified as "exempted,"

and

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[30] All adjusted initial cores of less than 1,500 population are not selected to continue the delineation of a separate urban area; however, these core areas are still eligible for inclusion in an urban area using subsequent criteria and procedures.

b. Selects the connecting block(s) along that road connection that forms the highest overall population density for the entire territory (jump blocks plus qualifying blocks) being added to the interim core.

3. No additional jumps may originate from a qualifying area after the first jump in that direction unless the territory being included as a result of the jump was an interim core with a population of 50,000 or more.

D. After territory has been added to the interim core via jump connections, the Census Bureau again includes additional noncontiguous territory to the adjusted interim core using a hop connection, provided the territory qualifies as defined in the criteria associated with II.B.

E. During all phases in which qualifying territory that is discontiguous to the initial or interim cores is being added to the cores, the Census Bureau adds to the cores any qualifying territory where the hop or jump road connections pass through "exempted" territory.

1. Discontiguous territory is added to the cores using hop or jump connections that cross "exempted" territory, provided that:

a. The road connection is no greater than 5 miles between the core and the qualifying area, and

b. The road connection does not cross more than a total of 2.5 miles of territory not classified as "exempted" (those segments of the road connection where "exempted" territory is not on both sides of the road), and

c. The territory being added meets either the population density criteria or total population criteria specified in Sections II.B.1 and II.C.1.

2. The Census Bureau selects the road connection using the criteria specified in Sections II.B.2 and II.C.2.

3. The Census Bureau considers linkages over exempted territory as a hop connection when the total distance of the road segments, excluding the distance across "exempted" territory, does not exceed 0.5 mile, and as a jump connection when the total distance of the road segments is from 0.5 to 2.5 miles, excluding the distance across "exempted" territory.

F. After all territory has been added to the interim core via jump and hop connections, the Census Bureau adds whole tabulation blocks that approximate the territory of major airports, provided at least one of the blocks that represent the airport is included within or contiguous with the interim core.

G. The Census Bureau then adds to the interim cores territory that constitutes enclaves, provided that:

1. The territory is contiguous, surrounded only by land, and consists of census BGs and census blocks that qualify for inclusion in the interim core, and

a. The area of the enclave is not greater than 5 square miles, or

b. All area of the enclave is more than a straight-line distance of 2.5 miles from a land block that is not part of the interim core, or

2. The territory is contiguous, surrounded by both land consisting of census BGs and census blocks that qualify for inclusion in the interim core, and water, and the linear contiguity of the enclave to the land that is within the interim core is greater than the linear contiguity of the enclave to the water.

H. The Census Bureau then inspects the interim cores and, where necessary, splits the interim cores into separate interim cores for purposes of identifying individual urban areas, following the criteria specified in Section III.

I. Upon completing the separation of interim cores, the Census Bureau completes the delineation of urban areas by identifying and adding territory that qualifies as "indentations."

1. The Census Bureau examines and qualifies only those potential indentation areas that are within the same interim core, not between separate interim cores.

2. Starting from the outermost part of the potential indentation, the Census Bureau will define a "closure qualification line," defined as a straight line no more than 1 mile in length, that extends from one point along the edge of the interim core across area that is not within the interim core to another point along the edge of the interim core, with both points on land.

3. The Census Bureau then determines if there are any tabulation blocks that have at least 75 percent of their area within the territory formed between the closure qualification line and the interim core.

4. If there are no blocks that have 75 percent or more of their area within that territory, the potential indentation does not qualify to be added to the interim core.

5. If there are any blocks that have 75 percent or more of their area within the territory formed between the closure qualification line and the interim core, the total area of those blocks that meet or exceed the 75-percent criterion is compared to the area of a circle, the diameter of which is the length of the closure qualification line.

6. Those territories under review that have at least four times the area of the circle qualify as an indentation, and the Census Bureau will add the entire area of all those blocks to the interim core.

7. If the collective area of the indentation blocks is less than four times the area of the circle, the Census Bureau defines a different closure qualification line, if possible, and continues the testing and qualification of the potential indentation until it determines if the potential indentation qualifies or fails.

J. As a result of the urban area delineation process, an incorporated place[31] or census designated place (CDP)[32] may be partially within and partially outside an urban area. Any place that is split by an urban area boundary is referred to as an extended place.

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[31] An incorporated place is a governmental unit designated as a city, town (except in New England and Wisconsin), village, city and borough, municipality, or borough (except in New York and Alaska); the term also includes all consolidated cities.

[32] A CDP is a statistical equivalent of an incorporated place and represents a locally defined named area. CDPs are called communidades and zonas urbanas in Puerto Rico.

III. Splitting UAs

The Census Bureau uses the definition of metropolitan areas (MAs), which include metropolitan statistical areas (MSAs), consolidated metropolitan statistical areas (CMSAs), and primary metropolitan statistical areas (PMSAs), in effect for Census 2000 (those MAs established by the Office of Management and Budget on June 30, 1999) to determine when to define separate contiguous UAs. (Note: UCs are never split to recognize MA boundaries.) After delineating the boundary of each UA, the Census Bureau will examine the relationship between that UA and any MSA, CMSA, or PMSA, using the following criteria to determine if the UA should be split and, if so, where the boundary should be located between the resulting separate UAs.

A. UA Split Criteria When There Are Separate MAs

The Census Bureau splits an initial UA that contains at least 50,000 people in two or more separate MAs when the following conditions exist:

1. The UA has at least 50,000 people in each of at least two different MSAs or PMSAs, and the distance along which their areas are contiguous is less than 3 miles. The split will occur at a location near the MSA or PMSA boundary along which their area of contiguity is less than 3 miles.

2. The UA has at least 50,000 people in each of at least two different CMSAs, and the distance along which their areas are contiguous is less than 3 miles. The split will occur at the CMSA boundary.

B. UA Split Criteria Within the Same MA or County

The Census Bureau splits an initial UA within the same MA, or within a county that is not in an MA, when the following conditions exist:

1. The only connection linking or causing contiguity between areas, each of which has an initial core population of at least 50,000, includes either a hop or jump connection,

or

2. The connection between areas, each of which has an initial core population of at least 50,000, is not greater than a point-to-point connection.

In both cases, the split will occur at the point-to-point connection, or at both ends of the hop or jump connection that initially linked the areas into a single UA.

Appendix E: Urban audit LUZ definitions and comments, by country

Reproduced from Urban Audit, 2004b, Methodological Handbook, Luxembourg

Country	No. of cities with LUZ	Building blocks
Belgium	all 6	Communes NUTS 5 - delimitation of commuting zones based on 1991 census
Denmark	all 4	Amter (NUTS 3). Copenhagen: several units
Germany	28 of 37 (common LUZ for Ruhr)	Groups of NUTS 3 /Kreise
Spain	all 18	Provincias / NUTS 3
Greece	all	Nomos (NUTS 3) except outlying islands which belong to Attiki
France	all	Aires Urbaines, statistically defined
Ireland	3 of 4	Two NUTS 3 units for Dublin. NUTS 5 used for Cork and Limerick.
Italy	all 27	Provincie NUTS 3
Luxembourg	1 of 1	Communes NUTS 5
Netherlands	all 10	COROP-regios (NUTS 3), in some cases 2 regions for one LUZ
Austria	all 3	NUTS 3 units (Gruppen von politischen Bezirke). LUZ of Vienna has 3 units
Portugal	2 of 8 (the other 6 towns use one concelho each)	Concelhos NUTS 4
Finland	all 4	NUTS 5 units which constitute metropolitan areas
Sweden	all 5	NUTS 3 for Stockholm; NUTS 5 units which constitute metropolitan areas for 2 cities; Local Labour Market areas for remaining 2 towns
UK	20 of 24 (some cities share a common LUZ)	Districts/Unitary Areas (NUTS 4), with one exception that will use NUTS 5 (Lincoln)

Appendix F: How different are US counties from European NUTS3 regions?

This appendix reports on an initial desktop study which GLA Economics undertook to see whether a 'pragmatic approximation' to the US system was feasible. The question addressed was whether or not the basic building blocks of the two continents (the county for the USA, and the NUTS3 region for Europe) were broadly comparable or not.

F1 Where does data exist?

NUTS regions are defined as a hierarchy of 'levels'; NUTS1, the highest level, is the first major division of a country; NUTS2 regions divide up NUTS1 regions, NUTS3 regions further subdivide NUTS2 regions, and so on[33]. Implementation of the system is variable as NUTS regions have been adapted to pre-existing statistical and administrative boundaries which vary from country to country.

There is however a key similarity between a US county and a NUTS3 region: statistics are readily available for these areas. The county is, and has been for some time, a very stable geographical unit in the USA[34] and data is regularly collected (and is publicly available) for a wide range of indicators for most US counties. NUTS3 regions play a similar role in the emerging European statistical system; Eurostat, the official agency, makes NUTS3 data systematically available and European directives actually require national statistical agencies to provide NUTS3 level data for this purpose.

Data can and is collected at a more local level than NUTS3 and in the US at a more local level than the county. However, in general it requires relatively sophisticated statistical techniques to estimate, on the basis of information that is collected primarily at the NUTS3 or county level, the corresponding data for more localised areas.

The question which obviously arises is, therefore, given that data is available for both US counties and for NUTS3 regions, are these two regions geographically very similar or very different? Does a US county approximately equate to a NUTS3 region, as a rule of thumb?

F2 The USA and Europe: basic differences and similarities

The two basic questions are as follows:

 (1) Are NUTS3 regions bigger or smaller than US counties?

 (2) Are NUTS3 regions more or less *dispersed* than US counties?

If all counties and all NUTS3 regions were the same size, question (1) would be easy to answer. However since they are in fact widely dispersed, the problem is to define exactly what is meant by 'bigger'. Bigger on average or a large concentration of similar entities? Which are the most important from the point of view of making good comparisons – large units or small units?

The second question is thus the key to understanding the answer to the first.

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[33] A further complexity is that in some cases a NUTS1 region may also be a NUTS2 and even a NUTS3 region. Nevertheless, no NUTS3 region is bigger than the NUTS2 region that contains it, no NUTS2 region is bigger than the NUTS1 region that contains it, and so on. The NUTS system is thus a completely hierarchical division of the territory of Europe.

[34] Interestingly, county boundaries (unlike for example UK borough and ward boundaries) hardly ever change. As a result, very long time series of data are easier to construct without such complexities as frozen boundaries.

At first sight, it might be thought that the European system would be much more disparate than the US, since NUTS boundaries have had to adapt to local history and tradition whereas the US system has been, in principle, imposed from the outset.

In fact the US counties seem to be just as disparate, if not more so, than their European counterparts (see Figures F1 – F4). This does not seem to be generally recognised.

F3 Do NUTS3 regions vary more widely than US counties?

The most populous US county (Los Angeles, which is a single county) contains 9,872,000 people while the least (Loving County in Texas) contains 60. In Europe the most populous is the Madrid NUTS3 region containing 5.2 million people and least populous is the Orkney Islands containing 20,000. The largest US county (Yukon-Koyukuk, Arkansas) is 225,137 square kilometres and the smallest (Falls Church City, Virginia) is 20 square kilometres, whereas the largest NUTS3 region (Norbottens Iän, Sweden) is 98,911 square kilometres and the smallest (Blackpool, UK) is 35 square kilometres[35].

A closer look shows, however, that the detailed distribution of sizes is markedly different between the two systems. As Figures F1 – F4 show, the US county populations are overwhelmingly skewed towards smaller counties. Of all 2,599 US counties, 83 per cent have populations under 100,000 compared with only 15 per cent of European counties. For surface area the polarity is somewhat reversed. Of all NUTS3 regions, 41 per cent have a surface area below 1,000 square kilometres compared with only 17 per cent of US counties – although in both systems around 60 per cent fall below 2,000 square kilometres.

F4 Are NUTS3 regions bigger than US counties?

This brings us to the second question. NUTS regions, at a first glance, seem to be more populous but of similar size. The average population of a US county is 92,000 whereas the average population of a NUTS3 region is 342,000.

However, this may be less to do with the construction of regional boundaries than with the way that the populations of the two continents are actually distributed. Europe is nearly three times more densely populated than the US. Europe's surface area is 3,675,664 square kilometres in contrast to the US's 9,342,507; Europe population is 391,325 million compared to the US's 288,426 million. Europe's population density is therefore about 107 people per square kilometre compared with the US's 31.

Moreover, US counties are overwhelmingly less populated compared to Europe. Half the surface area, containing two-thirds of its counties, has a population density under 30 people per square kilometre (the equivalent figure for Europe is one-third the surface area containing 18 per cent of its NUTS3 areas). The very large number of counties containing very few people reflects in part the way the territory is divided up, but also the fact that there are large sections of the US where hardly anyone lives. This corresponds in part to geographical features such as mountains and deserts, and is also an economic consequence of the relatively high productivity of agriculture, which means that less people need to live on it in order to maintain the same acreage under cultivation.

However this report is concerned with measuring cities. Therefore, it is the urbanized and densely settled parts of the two continents which are of interest. A further simple subdivision of the counties and NUTS regions was carried out by isolating only those

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[35] The Spanish overseas possessions of Ceuta and Melilla have been omitted for consistency with all other European countries. Both are smaller than Blackpool.

regions with a population density of more than 200 people per square kilometre. This was to some extent an arbitrary figure (the OMB includes in its urbanised areas all territories with a population density greater than 500 people per square mile, equivalent to 190 people per square kilometre) but it is interesting (and part of the reason for this choice) that the number of 'urbanized' European counties (462) on this definition is not very different from the number of 'urbanized' US counties (486).

This gives rise to a much more similar distribution. Figures F5 – F8 show the frequency distributions of population and area for these urban counties and NUTS3 areas, which, it can be seen, are much more similar.

The average sizes and populations are much closer: the average US urban county has a population of 403 and an area of 1504 square kilometres compared with an average NUTS3 population of 445 and an average area of 915 square kilometres.

Disparities of size at the top end of the distribution still exist, but not to such an extent. Of the US urban counties thus defined the largest (Maricopa County, Arizona) is 26,098 square kilometres while the largest NUTS3 region, Barcelona, is 7,772 square kilometres.

F5 Conclusion

The above statistics are a very schematic first attempt to judge whether there is a case for treating US counties and NUTS3 areas as comparable 'building blocks'. Many steps would be necessary to make a complete analysis. For example, the US system does not appear to have an intrinsic definition of 'urban', as applied to a county, based on population density. Instead, counties are classified as 'metro counties' if they fall within a metropolitan area so that the concept of urbanisation is intimately connected to the statistical definition of the entire area within which the county falls.

Moreover no attempt has been made to move to the next stage, which would be to try and classify NUTS3 areas on a similar basis to US counties in terms of central places, core cities, and connected areas. Nevertheless, a primary case has been made that such a classification is in principle possible.

Appendix G: Extracts from the opinion paper adopted by the European Economic and Social Committee of the European Parliament, 1 July 2004

6. Data on European regions and metropolitan areas

6.1 The European statistical system is driven by European policies. Hence, we know the number of cows and pigs per region thanks to the CAP[36]. But we do not know the employment statistics or added value per sector in big cities and their spheres of economic influence because there is no relevant policy and because Europe has until recently devoted too few resources to urban statistics. Eurostat's Cities and Regions unit consists of only 5 people. Eurostat's resources are not at all commensurate with its remit.

6.2 Comparative socio-economic studies of metropolitan regions covering the whole of Europe carried out by institutions involved in economic development and the promotion of the regions, universities, consultants or the European Commission are often nothing more than vague and incomplete descriptions. The fact is, they are based on the regional statistics published by Eurostat. These have the advantage of being harmonised at

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[36] Common Agricultural Policy

European level. However, they also have a major drawback: the regional division used by Eurostat, the Nomenclature of Statistical Territorial Units (NUTS), is a patchwork of national administrative units. The divisions reflect the political and administrative history of each country. With a few exceptions, they are geographically inadequate for a reliable picture and comparison of the economic, social and environmental situation in metropolitan areas at European level. The NUTS division was not designed to do this.

6.3 Eurostat statistics do not, then, make it possible to track population trends, activities, unemployment or production in metropolitan areas, nor do they provide for any reliable comparison of strategic indicators such as: population growth rates, production value added, employment, unemployment or overall productivity per job. An analysis of the results of studies into metropolitan areas carried out by private consultants or by national public institutions shows that the lack of any reliable, geographically comparable figures can lead to incorrect or even contradictory conclusions regarding the socio-economic trends that have been 'observed' in European metropolitan areas (e.g. with regard to productivity trends within a single region).

6.4 The absence of data on the socio-economic evolution of regions and metropolitan areas in Europe is a handicap for two main reasons:

> 6.4.1 Metropolitan areas are the engine rooms of growth. The economic activity they generate and the resulting advantages spread to other urban centres in each country. In order to make the most of the constraints and opportunities of the changing international environment, the metropolitan areas need a continually updated performance assessment at European level.

> 6.4.2 It would also be desirable to have reliable analyses and comparisons at European level on important aspects, including problems linked to immigration, job quality, poverty and exclusion, the environment, security and others.

6.5 Over the last few decades, the US has been producing a large number of up-to-date, comparable data on its 276 metropolitan areas and these are freely available on the Internet. In Europe, since every country has its own definition of a 'town' or 'city' (and sometimes metropolis), it is naturally more difficult to agree on a common definition of a metropolitan area. Given that, with regard to implementation of the Lisbon Strategy, it is now important to have reliable, comparable data on European metropolitan areas, the EESC believes the time has come for the latter to defined by Eurostat in cooperation with national statistics offices, and for a large quantity of data to be produced within these confines.

6.6 The European Commission's Urban Audit II, now underway, will produce data on the living conditions of people in 258 cities and conurbations. This project is an important

step forward in terms of informing the debate on social cohesion. However, it will not deliver comparable Europe-wide socio-economic indicators on metropolitan areas. The indicators are assessed in terms of the cities and conurbations of each country as defined nationally. Moreover, the indicators for London, Paris and Berlin will be evaluated within the boundaries of the respective administrative regions (Greater London, Île-de-France and Berlin Land).

6.7 The aim of the ESPON project (European spatial planning observation network) is to gain a better knowledge of land use. But it is hampered in particular by the lack of economic data at local authority level or at NUTS 3 level throughout the EU. The merit of the project is that it shows up the many shortcomings of the European statistical system.

6.8 All these observations highlight the fact that, if Eurostat is to be able to produce reliable, comparable urban and metropolitan data, it must have the extra budgetary and human resources needed to achieve this.

6.9 A recent study presenting data from the European Union *Labour Force Survey*, carried out in metropolitan areas with a population of over 1 million in North Western Europe, is worth reading[37]. It shows that for the larger metropolitan areas, demarcated according to common criteria, it is possible to produce at a marginal cost a great deal of comparable, European socio-economic data by using an annual survey carried out by the national statistics offices and coordinated by Eurostat.

7. Conclusions and recommendations

7.1 The last decade has seen a number of analyses and discussions in several Member States and at regional level regarding the new phenomenon of metropolitan areas in Europe. Although these areas are now more visible at national and international level than was previously the case, their role in implementing the Lisbon Strategy has yet to be recognised.

7.2 Metropolitan areas are crucial for meeting the economic, social and environmental objectives of the Lisbon Strategy and for training, research, innovation, cutting-edge technology, the creation of new activities and the promotion of entrepreneurship. They are also the main transport and telecommunication hubs, making it easier to set up networks of businesses, universities and research centres. The EESC wishes to stress that a more effective mobilisation of the potential for economic growth in Europe depends on the active support of all the public and private stakeholders who are striving to achieve sustainable economic development in metropolitan areas. In other words, given the role played by metropolitan areas in Europe, the objectives of the Lisbon Strategy cannot be achieved unless they are achieved first in metropolitan areas.

7.3 One of the main reasons this development has not attracted sufficient government attention is the fact that the boundaries of the political-administrative regions only rarely correspond to the geographical boundaries of metropolitan areas. As a result, apart from a few exceptions, there is no reliable or comparable data on a European scale that would enable the socio-economic situation and dynamics at work in metropolitan areas to be described.

7.4 The EESC stresses that it is in the interests of the Union that:

- the metropolitan areas in the 25 EU Member States should be defined;

- a set of relevant data on such areas should be produced annually, in particular through the European Labour Force Surveys;

- the main Lisbon Strategy indicators should be evaluated for these areas;

- clusters of activity with high value added should be identified within these areas;

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[37] Study carried out as part of INTERREG by GEMACA (Group for European Metropolitan Comparative Analysis) Published in *Cahiers de l'IAURIF #135.* See www.iaurif.org/en/doc/studies/cahiers/cahier_135/index.htm

- the Commission should report regularly on the socio economic situation of metropolitan areas and their ranking.

7.5 Producing such information and making it available for all should:

- contribute towards the recognition of metropolitan areas and provide more in-depth knowledge of their social, economic and environmental situation;

- make it easier to assess the strengths and weaknesses of these areas on a European scale;

- improve the definition and implementation of both European and national policies, adapting them to the specific characteristics of these areas;

- provide local and regional authorities with an assessment of the competitive ranking of their areas on a European scale. Today such assessments are either non-existent or drawn up at huge expense on the basis of incomplete information;

- enrich the debate on European regional policy by facilitating dialogue between all the parties concerned on the basis of objective information;

- provide the private sector with information which could prove useful when defining business strategies.

7.6 The EESC strongly supports the proposal made by METREX in 2003 to create a European programme for metropolitan areas. This programme – called METROPOLITAN – could be a forum for meetings and discussions. It could also

include working parties tasked with identifying and disseminating best practice in the areas addressed in this opinion.

7.7 The EESC welcomes the importance given to 'competitiveness' and the link established between the recently framed regional policy and the Lisbon Strategy in the Third Report on economic and social cohesion, which has special significance for metropolitan areas. For these areas, certain objectives under the titles 'competitiveness' and 'knowledge' could be supported through the European Regional Development Fund.

7.8 The EESC believes it is essential for a 'metropolitan areas' unit to be set up within Eurostat, which would be responsible for producing the aforementioned data each year.

7.9 The possible difficulties in defining the geographical boundaries of all the metropolitan areas and producing comparable information and data cannot be allowed to justify inaction. Consequently, the EESC suggests that, in line with the recommendations put forward above, a pilot project should be set up in a limited number of metropolitan areas as soon as possible. It also suggests that this pilot programme should be carried out in partnership with DG Regional Policy, Eurostat, the national statistics offices and the metropolitan areas concerned.

7.10 The EESC hopes that the European institutions will agree with the broad thrust of this opinion. The EESC believes that, against the background of the establishment of a forum bringing together metropolitan areas and the Commission, the situation of these areas should also be on the agenda of the Competitiveness Council and the informal Council for Regional Planning and Urban Issues.

METREX – The network of European Regions and Areas – main declared objectives for the METROPOLITAN European programme:

1 – recognise the important role of metropolises in Europe

2 – support the creation of effective metropolitan governance

3 – support the definition by all stakeholders of integrated metropolitan strategies

4 – support metropolitan policies to boost competitiveness and social and territorial cohesion.

Abbreviations

BG	Block Group
CAP	Common Agricultural Policy
CBSAs	Core Based Statistical Areas
CDP	Census designated place
CE	Cambridge Econometrics
CMSA	Combined Metropolitan Statistical Area
EU	European Union
GEMACA	Group for European Metropolitan Comparative Analysis
GLA	Greater London Authority
LAU	Local Authority Unit
LDA	London Development Agency
LUZ	Larger Urban Zone
MSA	Metropolitan Statistical Area
NECTA	New England City and Town Area
NUTS	Unified Nomenclature for Territorial Statistics
OMB	Office of Management and Budget
ONS	Office for National Statistics
PMSAA	Primary Metropolitan Statistical Areas
ppsm	People per square mile
UK	United Kingdom
US	United States of America

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Online Resources:

European Unit	http://europa.eu.int/
Eurostat	http://epp.eurostat.cec.eu.int/
GLA Economics	www.london.gov.uk/mayor/economic_unit
Office for National Statistics	www.statistics.gov.uk
NUTS	www.europa.eu.int/comm/eurostat/ramon/nuts/home_regions_en.html

Urban Audit   www.urbanaudit.org

US Census Bureau   www.census.gov/