

## FEATURE

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# Regional gross value added

## SUMMARY

This article presents estimates for regional gross value added (GVA) at current basic prices, published in December 2007. These data are published using the European Union Nomenclature of Units for Territorial Statistics (NUTS) regions. Data are published at the NUTS1 level for the time period 1989 to 2006 and at the NUTS2 and NUTS3 level for the time period 1995 to 2005. This is followed with an overview of the methodology used in the calculation of regional GVA and the article concludes with the Office for National Statistics' future plans for regional economic data.

NUTS1 gross value added (GVA) data were looked at in the February 2008 *Economic & Labour Market Review* article Regional economic indicators with a focus on regional productivity (Dey-Chowdhury *et al* 2008) and the NUTS1 GVA data were used in the calculation of the GVA productivity data analysed in that article. This article focuses on regional GVA data at the different NUTS levels.

## NUTS1 data

Total GVA has been increasing in all NUTS1 regions (Table 1). At current prices,

the regions that experienced the highest growth in total GVA between 2005 and 2006 were London (5.7 per cent), Northern Ireland (5.6 per cent) and the North East (5.5 per cent). Most regions experienced a growth rate similar to the UK average of 5.1 per cent. Growth in the North West was the lowest (4.5 per cent).

GVA per head of population for the UK as a whole, excluding Extra-regio, was £18,631 in 2006. London had the highest GVA per head (£26,192). The South East and East of England were also above the UK average at £21,514 and £19,599, respectively.

Table 1  
NUTS1 regional GVA,<sup>1,2</sup> 2006<sup>3</sup>

Region	Total (£bn)	Share of UK (%)	Growth on 2005 (%)	Per head (£)	Per head index (UK=100)
United Kingdom <sup>4</sup>	1,128.8	100.0	5.1	18,631	100
North East	38.8	3.4	5.5	15,177	81
North West	111.3	9.9	4.5	16,234	87
Yorkshire and The Humber	82.1	7.3	4.6	15,968	86
East Midlands	74.1	6.6	5.0	16,982	91
West Midlands	89.0	7.9	5.0	16,583	89
East of England	109.9	9.7	4.7	19,599	105
London	196.8	17.4	5.7	26,192	141
South East	177.2	15.7	5.1	21,514	115
South West	89.5	7.9	5.4	17,467	94
England	968.6	85.8	5.1	19,082	102
Wales	42.7	3.8	4.9	14,396	77
Scotland	91.0	8.1	5.4	17,789	95
Northern Ireland	26.4	2.3	5.6	15,175	81

### Notes:

- 1 GVA at current basic prices on residence basis.
- 2 Figures may not sum due to rounding in totals; per head (£) figures are rounded to the nearest pound.
- 3 2005 and 2006 estimates are provisional.
- 4 Excluding statistical discrepancy and Extra-regio (offshore contribution to GVA that cannot be assigned to any region).

**Box 1****Regional gross value added methodology**

Gross value added is the difference between the value of goods and services produced (output) and the cost of raw materials and other input which are used in production (intermediate consumption); that is, the value added by any unit engaged in production. This is calculated gross of any deductions for depreciation or consumption of fixed capital.

Regional gross value added (GVA) is estimated at current basic prices and comprises gross domestic product (GDP) less taxes (plus subsidies) on products. Taxes on products are taxes that are payable per unit of some good or service produced or transacted. Examples include value-added tax and excise duties. Subsidies are payments made to producers by the government or institutions of the European Union to influence production.

The headline estimates presented in this article are produced using a five-period moving average. These adjusted series remove some year-to-year volatility in the unadjusted series. The unadjusted data are also published on the Office for National Statistics (ONS) website.

NUTS1 GVA data are calculated on both a residence (GVA allocated to where someone lives) and workplace (GVA allocated to the location of production) basis. It is currently assumed that net commuting only has a significant impact in London, the East of England and the South East so these are the only regions which have different estimates for residence-based and workplace-based GVA. NUTS2 and NUTS3 data are only calculated on a workplace basis, in line with European standards.

All regional GVA data are at current prices, in other words, the effects of price inflation and regional price variation are not removed from these data.

Regional GVA data are calculated using the UK National Accounts as control totals and then prorated to the regions on a top-down basis. Regional information in the form of a wide range of indicator data sets is used to allocate the national GVA, initially to the NUTS1 regions. The NUTS1 totals are then allocated to the constituent NUTS2 and NUTS3 regions. These data are published in line with the ESA 95 requirement to produce NUTS2 and NUTS3 data and associated industrial breakdowns, within two years of the reference period. Additionally, ONS publishes provisional data at NUTS1 within one year of the reference period.

Regional GVA data referred to in this article are calculated using an income approach. This involves adding up all the income earned by the resident individuals or corporations in the production of goods and services.

There are several components of GVA. The largest are compensation of employees (CoE) (payment in cash or kind payable by an enterprise to an employee in return for work done), taxes on production, gross operating surplus (which includes profits and rental income) and income from self employment (mixed income) (GOS/MI).

**Data sources**

The data are allocated to the regional level using the most appropriate indicators available and are drawn from a wide variety of survey and administrative sources. The main data sets used are HM Revenue and Customs (HMRC) pay-as-you-earn and self-assessment tax data, as well as ONS surveys: the Annual Business Inquiry (ABI) (Parts 1 and 2), the Short-Term Employment Survey (STES) and the Annual Survey of Hours and Earnings (ASHE) earnings data.

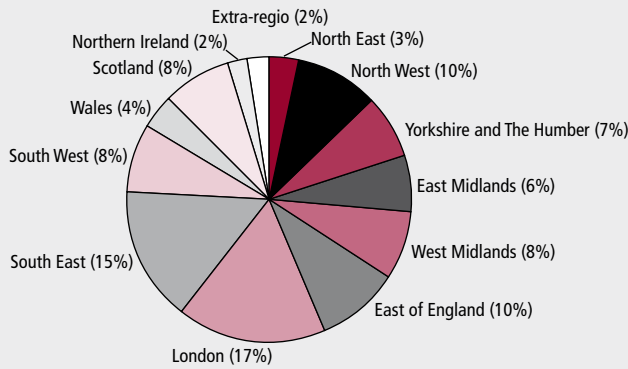
All the input data are subject to a rigorous quality assurance process to determine that they are the best indicators available.

**Box 2****Regional classification**

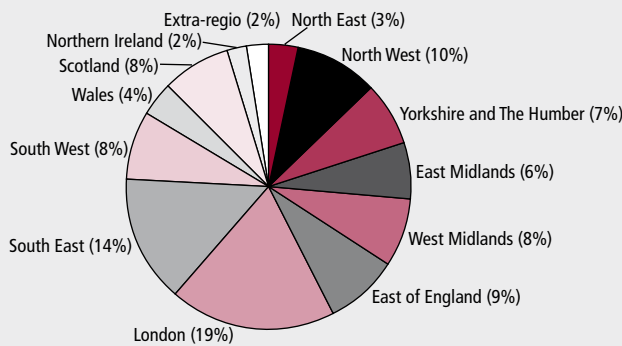
The Nomenclature of Units for Territorial Statistics (NUTS) provides a single uniform breakdown for the production of regional statistics for the European Union. Regional GVA are produced at three levels of NUTS in the UK. These are:

- NUTS1: the devolved administrations of Scotland, Wales and Northern Ireland and the Government Office Regions of England
- NUTS2: 37 areas – sometimes referred to as subregions
- NUTS3: 133 areas – generally groups of unitary authorities or districts, also known as local areas
- Extra-regio GVA is that which cannot be assigned to regions, such as the GVA of embassies and UK armed forces stationed overseas, along with the elements relating to activities on the continental shelf

**Figure 1**  
**Regional share of UK residence-based GVA, 2006**



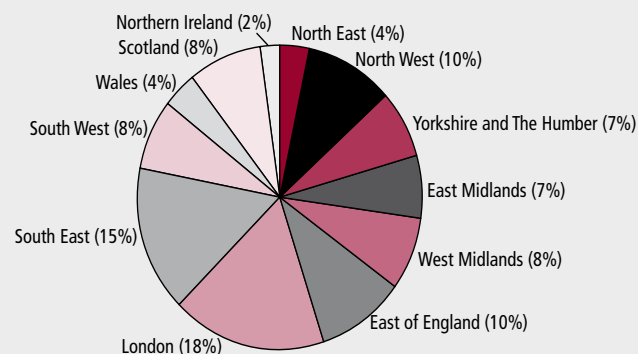
**Figure 2**  
**Regional share of UK workplace-based GVA, 2006**



**Figure 3**  
**GVA per head: by NUTS1 region**



**Figure 4**  
**Regional share of total compensation of employees, 2006**



All other regions had a GVA per head value below the UK average. Wales had the lowest (£14,396) followed by Northern Ireland (£15,175) and the North East (£15,177) (see **Map 1**).

London (17.4 per cent) and the South East (15.7 per cent) had the largest share of total GVA in 2006, while Northern Ireland (2.3 per cent) and the North East (3.4 per cent) had the smallest share. London's and the South East's share of GVA have increased since 1995 when they accounted for 15.3 per cent and 14.9 per cent, respectively. **Figure 1** and **Figure 2** show the proportions including Extra-regio.

When calculated on a workplace basis, London has a share of 18.8 per cent of UK GVA. In the calculation of NUTS1 GVA, net commuting is only considered to be significant for London, the East of England and the South East.

London had the highest regional per head of population index in 2006 (141, where UK=100), more than a third greater than the UK average and 13 points above the 1995 average (128) as calculated on a residence basis (**Figure 3**). Wales had the lowest index (77), 23 index points below the UK average.

**GVA NUTS1 component analysis**

Compensation of employees (CoE) and gross operation surplus/mixed income (GOS/MI) are the two largest components of GVA. **Table 3** shows the levels of CoE and GOS/MI and the proportion of GVA from CoE and GOS/MI for 1995 and 2006 (see **Box 1** for definitions).

In 2006, the North East, Wales and Scotland had the joint largest CoE as a proportion of GVA, at 65 per cent, while Northern Ireland with 59 per cent had the smallest proportion. CoE as a proportion of GVA has risen, while the proportion of GVA due to GOS/MI has fallen in all regions except Northern Ireland, which has remained constant. The largest change was seen in Wales, whose CoE as a proportion of GVA rose from 59 per cent in 1995 to 65 per cent in 2006.

London has the highest CoE and GOS/MI per head in 2006 (£16,847 and £9,345 respectively) (**Table 4**). Northern Ireland has the lowest CoE per head in 2006 (£8,975) and Wales the lowest GOS/MI per head (£5,110).

London had the highest proportion of CoE (18 per cent) and GOS/MI (16 per cent) (**Figure 4** and **Figure 5**). Northern Ireland had the smallest share of CoE and GOS/MI (both 2 per cent). Less than 1 per cent of CoE, but 6 per cent of GOS/MI is allocated to Extra-regio.

## Box 3

**Diversity of the NUTS1 regions**

Scotland, Wales, Northern Ireland and the regions of England are all different in character, industrial structure and economic performance. **Table 2** shows some of the differences.

**Table 2**  
**Key regional statistics**

Region	Area 2006 (% of total)	Population <sup>1</sup> 2006 (% of total)	Total economically active <sup>2</sup> 2006 (% of total)	Gross value added <sup>3</sup> 2006 (% of total)	Percentages
					Total gross disposable household income <sup>4</sup> 2005 (% of total)
North East	3.5	4.2	4.1	3.4	3.6
North West	5.8	11.3	11	9.9	10.4
Yorkshire and The Humber	6.3	8.5	8.3	7.3	7.7
East Midlands	6.4	7.2	7.3	6.6	6.7
West Midlands	5.3	8.9	8.8	7.9	8.1
East of England	7.8	9.3	9.4	8.8	9.8
London	0.7	12.4	13	19.3	14.9
South East	7.8	13.6	14.1	14.8	15.3
South West	9.8	8.5	8.4	7.9	8.4
England	53.4	83.8	84.3	85.8	85.1
Wales	8.5	4.9	4.6	3.8	4.4
Scotland	32.3	8.4	8.5	8.1	8.0
Northern Ireland	5.8	2.9	2.6	2.3	2.5
United Kingdom (=100%)	244,167 sq km	60.6m	30.6m	£1,128.8bn	£799.5bn

**Notes:**

- 1 Mid-year population estimates.
- 2 Labour Market Statistics 2006 (average of four quarters, seasonally adjusted).
- 3 Excluding Extra-regio and statistical discrepancy.
- 4 Regional household income estimates as published by ONS on 27 March 2007, UK less Extra-regio.

Scotland has the largest area but a small population. London has by far the smallest area, but the second largest population, over 12 per cent of the UK total. The South East has the largest share of the UK population, nearly 14 per cent. At the other extreme, Northern Ireland has the smallest population, 2.9 per cent of the UK total. These variations are reflected in the size of regional GVA and incomes.

The wide variation in the size of the regions makes it difficult to compare their economic performance using cash totals. Comparisons are therefore usually expressed in terms of the amounts per head of the population. However, it is important to note that the growth in totals may be quite different from the growth per head in regions where the population has increased or decreased. Furthermore, the level per head is determined both by the average amount of cash of the working population and by the proportion of dependants. Households in Northern Ireland have a high proportion of children (23 per cent of the population were aged under 16 in 2006 compared with 19 to 21 per cent in other regions). This will tend to depress amounts per head. Ideally, the age structure of the population should be taken into account when comparing figures on a per head basis.

Table 3

### Compensation of employees and gross operating surplus/mixed income and as a proportion of GVA:<sup>1</sup> by NUTS1 region

Region	Compensation of employees		CoE as a proportion of GVA (%)		Gross operating surplus/mixed income		GOS/MI as a proportion of GVA (%)	
	1995	2006	1995	2006	1995	2006	1995	2006
<b>United Kingdom</b>	386,035	721,287	60	62	257,714	434,225	40	38
North East	15,191	25,339	65	65	8,341	13,449	35	35
North West	41,507	71,172	61	64	26,029	40,079	39	36
Yorkshire and The Humber	30,075	52,707	62	64	18,324	29,409	38	36
East Midlands	25,595	47,469	61	64	16,539	26,643	39	36
West Midlands	33,258	56,573	62	64	20,205	32,425	38	36
East of England	37,760	70,313	62	64	23,476	39,572	38	36
London	58,134	126,558	60	64	38,141	70,206	40	36
South East	57,056	111,230	61	63	37,049	65,994	39	37
South West	27,868	54,577	58	61	20,011	34,924	42	39
England	326,443	615,937	61	64	208,115	352,701	39	36
Wales	15,668	27,542	59	65	10,719	15,156	41	35
Scotland	33,800	59,420	61	65	21,508	31,605	39	35
Northern Ireland	8,489	15,631	59	59	5,954	10,798	41	41
Extra-regio	1,635	2,757	13	10	11,418	23,965	87	90

**Note:**

1 Headline GVA at current basic prices on a residence basis.

Table 4

### Compensation of employees and gross operating surplus/mixed income per head

Region	Compensation of employees per head		Gross operating surplus/mixed income per head	
	1995	2006	1995	2006
<b>United Kingdom</b>	6,653	11,905	4,441	7,167
North East	5,882	9,915	3,230	5,262
North West	6,079	10,385	3,812	5,848
Yorkshire and The Humber	6,063	10,250	3,694	5,719
East Midlands	6,255	10,877	4,042	6,105
West Midlands	6,327	10,541	3,844	6,042
East of England	7,254	12,541	4,510	7,058
London	8,409	16,847	5,517	9,345
South East	7,350	13,502	4,773	8,011
South West	5,828	10,651	4,185	6,816
England	6,747	12,134	4,301	6,948
Wales	5,424	9,286	3,711	5,110
Scotland	6,623	11,612	4,214	6,177
Northern Ireland	5,148	8,975	3,610	6,200

Figure 5

### Regional share of total gross operating surplus/mixed income, 2006

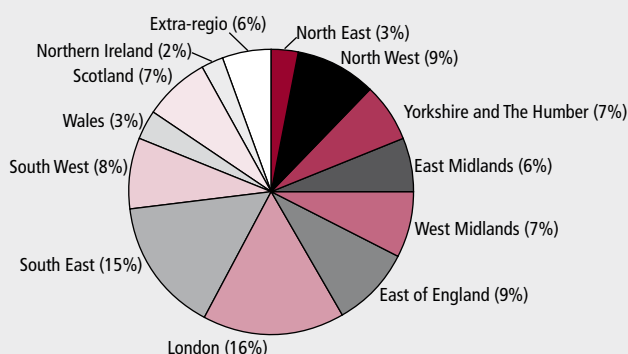


Table 5

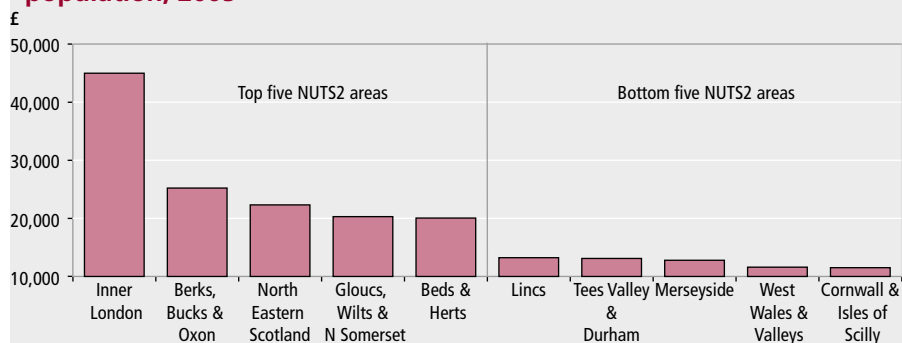
Top five and bottom five GVA<sup>1,2</sup> per head: by NUTS2 region, 2005<sup>3</sup>

Region	Share of UK (%)	Growth on 2004 (%)	Per head (£) <sup>4</sup>	Per head index (UK=100)
United Kingdom	100.0	4.1	17,827	100
<b>Top five GVA per head</b>				
Inner London	12.3	5.5	44,982	252
Berkshire, Buckinghamshire & Oxfordshire	5.0	4.3	25,213	141
North Eastern Scotland	1.0	3.6	22,315	125
Gloucestershire, Wiltshire & North Somerset	4.2	3.9	20,295	114
Bedfordshire & Hertfordshire	3.1	3.7	20,051	112
<b>Bottom five GVA per head</b>				
Lincolnshire	0.8	2.3	13,227	74
Tees Valley & Durham	1.4	5.1	13,097	73
Merseyside	1.6	2.7	12,784	72
West Wales & Valleys	2.0	3.7	11,598	65
Cornwall & Isles of Scilly	0.6	3.6	11,510	65

**Notes:**

- 1 GVA at current basic prices on workplace basis.
- 2 Excluding Extra-regio.
- 3 2005 estimates are provisional.
- 4 Per head figures are rounded to the nearest pound.

**Figure 6**  
NUTS2 areas with the highest and lowest GVA<sup>1,2</sup> per head of population, 2005<sup>3</sup>

**NUTS2 GVA data**

Total GVA increased in all NUTS2 regions in 2005. Within NUTS2 areas, growth in total GVA between 2004 and 2005 was highest in Inner London (5.5 per cent) and Tees Valley and Durham (5.1 per cent) (Table 5). The NUTS2 region with the lowest growth rate between 2004 and 2005 was Lincolnshire (2.3 per cent).

The NUTS2 regions with the highest GVA per head of population in 2005 were Inner London (£44,982), Berkshire, Buckinghamshire and Oxfordshire (£25,213) and North Eastern Scotland (£22,315) (Figure 6). The areas with the lowest GVA per head were Cornwall and Isles of Scilly (£11,510), West Wales and the Valleys (£11,598), Merseyside (£12,784) and Tees Valley and Durham (£13,097) (see Map 2).

**Box 4****European Union Structural Funds**

Under the European System of Accounts 95 (ESA 95) and the current transmission requirements, ONS provides GVA plus the CoE component with a 17-way industrial split at NUTS2 and GVA with a three-way industrial split at NUTS3 to Eurostat. The industrial breakdown uses the Standard Industrial Classification 2003 (SIC 03). Eurostat requires the unadjusted data rather than the five-period data presented in this article. In 2007, ONS only provided the regional GVA totals because of the reduced scope of the 2007 National Accounts *Blue Book*.

Eurostat takes the NUTS2 GVA estimates and allocates the difference between national GVA and GDP on a pro rata basis and then applies purchasing power parities to produce estimates that are comparable across the EU. Funding criteria are set to these estimates.

The Structural Funds account for approximately one-third of the EU budget and are used to support regional development and employment, particularly in poorer regions and Member States. The funds can be used to finance a wide range of activities including supporting innovation, enterprise and business development, protecting and enhancing the environment, supporting specific sectors of regional economies, delivering active labour market policies and improving skills.

**Table 6**  
**Top five and bottom five GVA per head: by NUTS3 region, 2005**

Region	Share of UK (%)	Growth on 2004 (%)	Per head (£) <sup>3</sup>	Per head index (UK=100)
<b>United Kingdom</b>	100.0	4.1	17,827	100
<b>Top five GVA per head</b>				
Inner London West	7.9	5.4	78,285	439
Berkshire	2.2	4.3	29,235	164
Edinburgh, City of	1.2	4.7	28,432	159
Swindon	0.5	4.0	27,354	153
Milton Keynes	0.6	4.3	26,934	151
<b>Bottom five GVA per head</b>				
South West Wales	0.4	4.7	10,859	61
East & West Dunbartonshire	0.2	2.4	10,819	61
Gwent Valleys	0.3	3.8	10,298	58
Wirral	0.3	2.2	10,115	57
Isle of Anglesey	0.1	4.3	9,392	53

**Notes:**

- 1 GVA at current basic prices on workplace basis.
- 2 Excluding Extra-regio.
- 3 2005 estimates are provisional.
- 4 Per head figures are rounded to the nearest pound.

NUTS regions. The graph represents the constituent NUTS3 region with the highest and lowest GVA per head in each NUTS1 region in 2005. London shows the biggest contrast, with Inner London West having the highest GVA per head (£78,285) and Outer London East and North East the lowest (£12,210). The region with the least variation was the North East, with Darlington having the highest GVA per head (£17,199) and Durham CC the lowest (£11,554).

Bedfordshire and Hertfordshire provide an example of a divergence in economic activity between regions in the same NUTS area (in this case the NUTS2 region of Bedfordshire and Hertfordshire) (Figure 8). In 1995, all the NUTS3 areas had a similar GVA per head: £11,282 in Luton, £10,977 in Bedfordshire CC and £12,045 in Hertfordshire. By 2005, the spread of GVA per head had changed substantially, with Luton (£17,844) 11 per cent below (£20,051), Bedfordshire (£15,554) 22 per cent below and Hertfordshire (£22,153) 11 per cent higher than the NUTS2 value.

**2007 National Accounts Blue Book**

The 2007 UK National Accounts *Blue Book* was reduced in scope in order to free resources as part of the ongoing re-engineering project, part of the ONS programme of modernisation. A summary of the changes which have an effect on regional GVA is given below:

- the latest annual benchmark data were not fully incorporated
- no preliminary balance based on these data was struck for 2005 and the preliminary balance for 2004 was not updated

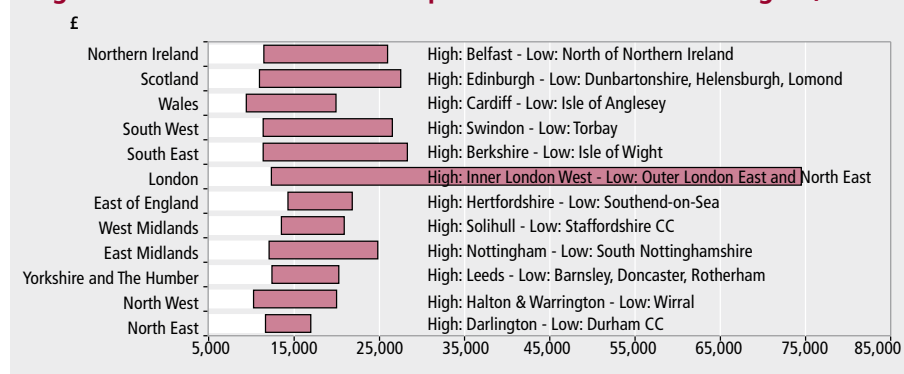
Effects on this regional GVA release were:

- no industrial breakdowns of regional data were published in the December 2007 publication. The existing industrial breakdowns, consistent with the December 2006 release, will remain available on the National Statistics website, but these will not sum to the new regional GVA totals
- the two most recent years (2005 and 2006) are both marked provisional in the December 2007 publication

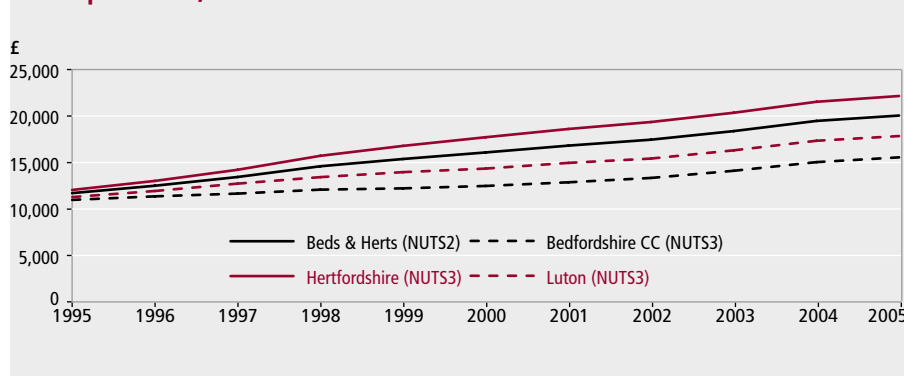
**Revisions**

Revisions in the December 2007 GVA estimates cover the period 1989 to 2005.

**Figure 7**  
**Highest and lowest NUTS3 GVA per head in each NUTS1 region, 2005**



**Figure 8**  
**GVA per head, NUTS3 areas within Bedfordshire and Hertfordshire**



**NUTS3 GVA data**

GVA grew in all NUTS3 regions in 2005. The NUTS3 regions with the highest GVA per head in 2005 were Inner London West (£78,285), Berkshire (£29,235) and Edinburgh (£28,432) (Table 6). These estimates compare with the UK average GVA per head of £17,827. The Isle of Anglesey (£9,392), Wirral (£10,115) and

Gwent Valleys (£10,298) were the NUTS3 areas with the lowest GVA per head in 2005 (see Map 3).

In 2005, Inner London West had the highest GVA per head index of 439, over four times the UK average; in contrast, the Isle of Anglesey had the lowest GVA per head index of 53, which was a little over half the UK average.

Figure 7 shows the variation within

Estimates at lower geographical levels are being revised for the period 1995 to 2004, with the starting point of the NUTS2 and NUTS3 time series being 1995.

The main revisions are:

- revisions to the UK National Accounts (*Blue Book* 2007): the only change to the national controls for 2004 and earlier is due to the incorporation of an improved method for estimating investment on own-account software, amounting to total increases of £7.8 billion in 2004 and a decreasing amount to previous years
- revised data from HMRC for use in the calculation of mixed income (sole traders), partnerships' income and compensation of employees became available. There were also minor revisions to STES, ASHE and the ABI data used in the calculation of GVA

### Future work plans

It is planned to publish regional gross disposable household income estimates at the NUTS1, 2 and 3 levels from 1995 to 2006 (consistent with the National Accounts *Blue Book* 2007) in May 2008.

It is also planned to publish regional GVA for 1989 to 2007 at the NUTS1 level and 1995 to 2006 for NUTS2 and NUTS3 in December 2008. These will be consistent with the National Accounts *Blue Book* 2008. A full industrial breakdown will be restored when the supply and use tables have been published at the national level.

The GVA estimates presented in this article are calculated using an income approach. It is planned to publish experimental estimates of GVA using a production approach, at the NUTS1 level, in December 2009. This will present constant prices estimates consistent with the National Accounts *Blue Book* 2009.

### Notes

- 1 The full Regional Accounts gross value added publication can be accessed on the ONS website at [www.statistics.gov.uk/statbase/product.asp?vlnk=14650](http://www.statistics.gov.uk/statbase/product.asp?vlnk=14650)

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### CONTACT

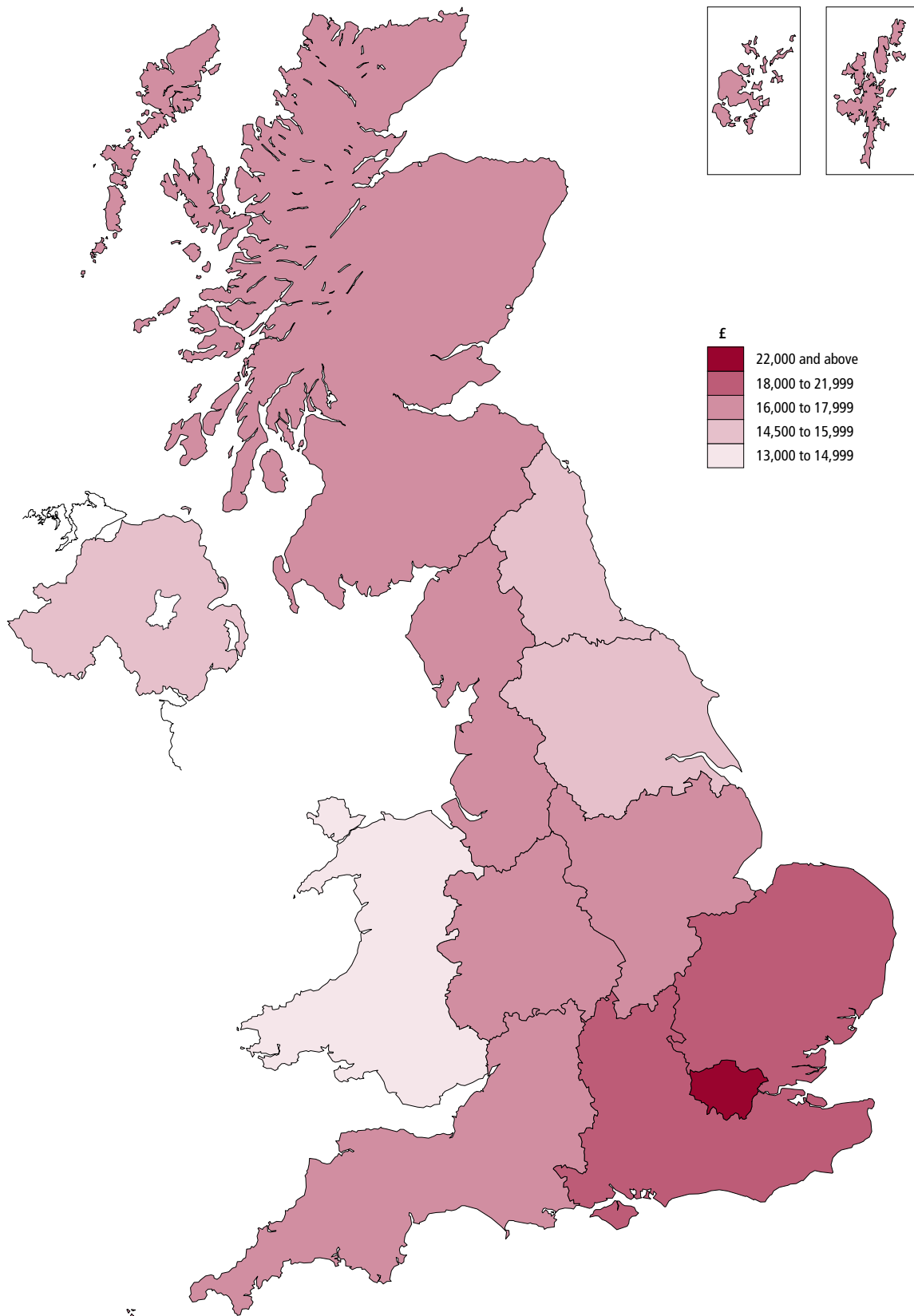
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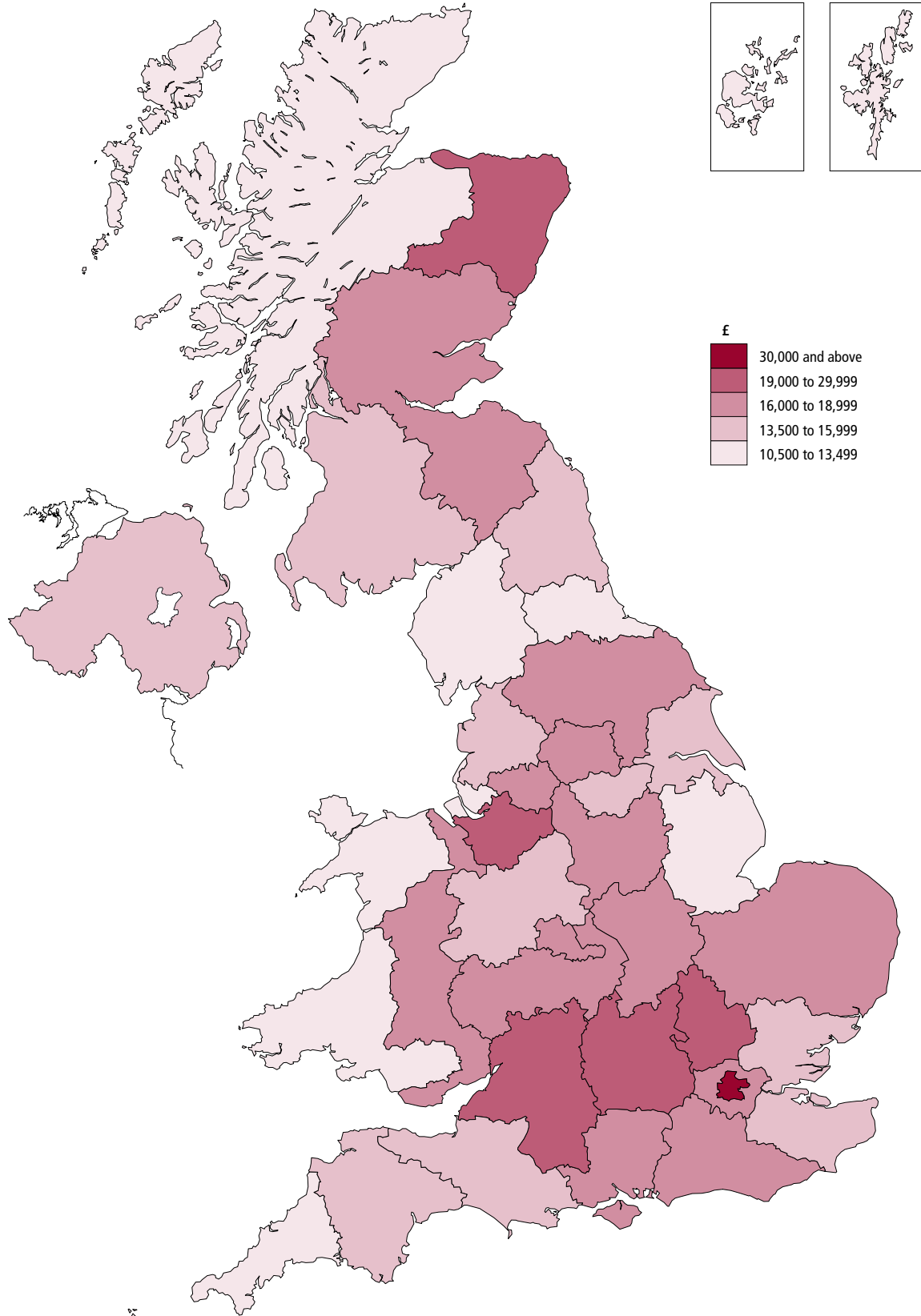
APPENDIX

Map 1

Gross value added per head, 2006, by NUTS1 area



Map 2  
Gross value added per head, 2005, by NUTS2 area



Map 3  
Gross value added per head, 2005, by NUTS3 area

