ARTICLE

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Regional gross value added

SUMMARY

This article presents estimates for regional gross value added (GVA) published in December 2009, using the European Union Nomenclature of Units for Territorial Statistics (NUTS) regions (please see **Box 1** for a detailed explanation of the NUTS regional classification). Data are published at the NUTS1 level for the period 1989 to 2008 and at the NUTS2 and NUTS3 level for the period 1995 to 2007.

Data are at current prices, which means that the effects of price inflation and regional price variation are not removed from these data. All comparisons in this article are made between workplace based data for the first year available and for the latest year. **Box 2** gives an overview of the methodology used to compile these estimates. This concludes with ONS future plans for regional economic data.

This analysis explores various aspects of regional GVA. The generation of GVA by regions, sub-regions and local areas is compared with national (UK) performance, in the context of total GVA, GVA per head and GVA per head indices. The article focuses on relative regional performance but also considers changes within regions between the start of the time series and the latest published years' data. The industrial breakdown of UK GVA has changed considerably over this period and the impact at regional level is explored. The inter-relationship between lower level NUTS3 areas and their associated sub-regions is also examined, along with regional

demographic variations which may influence data.

Regional (NUTS1) data

Total GVA increased in all regions between 1989 and 2008 (**Table 1**). As a percentage of the 1989 value, London increased the most by 208.3 per cent, followed by Northern Ireland at 205.5 per cent and the South East at 195.4 per cent. Wales increased the least at 133.1 per cent, followed by the North East at 133.9 per cent and the North West at 138.6 per cent.

GVA per head values are calculated by dividing the total GVA by the total population for a region (**Map 1**). In 2008, as a percentage of the 1989 value,

Table 1
NUTS1 regional GVA¹ 1989 and 2008²

Region	GVA total (£m)		GVA per head (£)		GVA per head index (UK=100)	
	1989	2008	1989	2008	1989	2008
UK ³	463 221	1259 576	8 116	20 520	100.0	100.0
North East	17 492	40 916	6 774	15 887	83.5	77.4
North West	50 581	120 702	7 411	17 555	91.3	85.6
Yorkshire and The Humber	35 689	89 122	7 265	17 096	89.5	83.3
East Midlands	30 629	79 977	7 703	18 041	94.9	87.9
West Midlands	38 836	94 494	7 449	17 463	91.8	85.1
East of England	39 222	111 555	7 736	19 473	95.3	94.9
London	85 987	265 063	12 736	34 786	156.9	169.5
South East	61 531	181 750	8 130	21 688	100.2	105.7
South West	34 712	97 840	7 459	18 782	91.9	91.5
Wales	19 570	45 610	6 854	15 237	84.5	74.3
Scotland	39 566	103 814	7 791	20 086	96.0	97.9
Northern Ireland	9 407	28 734	5 915	16 188	72.9	78.9

Notes:

- Figures may not sum to totals due to rounding, per head figures are rounded to the nearest £.
- 2008 estimates are provisional.
- Excluding statistical discrepancy and Extra-Region (see Box 1).

Source: Office for National Statistics

Northern Ireland had the highest increase of 173.7 per cent, followed by London with 173.1 per cent and the South East with 166.8 per cent. Wales had the smallest percentage increase with 122.3 per cent, followed by the East Midlands with 134.2 per cent (**Figure 1**).

Per head indices are calculated taking the UK average GVA per head as 100 (**Figure 2**). Only London and the South East had per head indices above the UK average in both 1989 and 2008, London at 156.9 and 169.5 and the South East at 100.2 and 105.7. The lowest per head index

in 1989 was Northern Ireland at 72.9, but in 2008 the lowest was Wales at 74.3. The only two regions to positively narrow the gap towards the UK average over the period were Scotland and Northern Ireland. In 1989 Northern Ireland had an index value of 72.9, increasing to 78.9 in 2008. Scotland increased from 96.0 to 97.9. The East of England and the South West both showed very little movement, dropping 0.4 index points over the period. The largest negative movement away from the UK average was in Wales, which dropped 10.2 index points.

As seen in **Figure 3** London accounted for the largest shares of the UK total (excluding Extra-Region) in both 1989 and 2008, with 18.6 per cent and 21.0 per cent respectively. The South East had the second largest shares with 13.3 per cent in 1989 and 14.4 per cent in 2008. London and the South East also showed the greatest increase in GVA over the period. Northern Ireland has the smallest shares of the UK with 2.0 per cent and 2.3 per cent. The largest reduction in shares was in the North West, from 10.9 per cent in 1989 to 9.6 per cent in 2008.

Box 1

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. Estimates of 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 nine Government Office Regions (GORs) of England

- NUTS2: 37 areas, sometimes referred to as sub-regions
- NUTS3: 133 areas, generally groups of unitary authorities or districts, also known as local areas
- Extra-Region GVA is that which cannot be assigned to regions, such as the GVA of embassies and UK armed forces stationed overseas, along with that of activities on the continental shelf

Box 2

Regional gross value added methodology

Regional gross value added (GVA), the primary indicator of economic activity within a region, can be estimated in two ways. The first is the production approach (or GVA(P)), where GVA is calculated as the total of all goods and services produced during the reference period (output) less goods and services used up or transformed in a productive process, such as raw materials and other inputs (intermediate consumption). The second approach is the income approach (GVA(I)), which is the sum of all income from employment (compensation of employees), self-employment (mixed income) and other income generated by the production of goods and services (gross operating surplus). As gross operating surplus is defined as the difference between GVA and compensation of employees for all parts of the economy except the self-employed, the two approaches are conceptually equal. In the UK, regional GVA is estimated using the income approach, due to the greater availability of regional income-based data. As described before, these data are still comparable with regional GVA data produced by other countries using the production approach.

Regional 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 weighted five-year moving average. These adjusted series remove some year-to-year volatility in the unadjusted series. The

unadjusted data are also published on the ONS website: www.statistics.gov.uk/StatBase/Product.asp?vlnk=14650

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, as defined in the following sub section on Data sources. 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.

Data sources

The data are allocated to the regional level using the most appropriate indicators available, which 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 (Parts 1 and 2), the Short-Term Employment Survey (STES) and the Annual Survey of Hours and Earnings (ASHE) data.

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

Map 1

GVA per head: by NUTS1 area, 2008

Source: Office for National Statistics

Figure 1
GVA £ per head: by NUTS1 region, 1989 and 2008

Source: Office for National Statistics

Figure 2
GVA per head indices: by NUTS1 region, 1989 and 2008

Source: Office for National Statistics

Figure 3
Share of UK GVA: by NUTS1 region, 1989 and 2008

Source: Office for National Statistics

Industrial breakdown of regional (NUTS1) GVA between 1989 and 2007

Industrial data for NUTS1 regions are published to 2007 and full data are available here: www.statistics.gov.uk/StatBase/Product.asp?vlnk=14650. Data are published broken down by 31 and 17 industries.

In 1989 the three industries at the broad seventeen industry level making the largest contribution to UK GVA (Table 3) were: manufacturing (24.0 per cent); real

estate, renting and business activities (14.6 per cent); and wholesale and retail trade (11.3 per cent). Together these industries contributed 49.8 per cent of UK GVA.

By 2007, these industries when combined contributed 48.5 per cent of UK GVA. However the relative significance of manufacturing and real estate, renting and business activities has shifted notably, with these industries accounting for 12.7 per cent and 24.2 per cent of UK GVA respectively. The contribution of wholesale and retail trade (11.6 per

cent in 2007) has increased very slightly since 1989. Of the remaining industries, the largest percentage points change in contribution to UK GVA was in financial intermediation, increasing from 6.3 per cent of UK GVA in 1989 to 8.5 per cent in 2007.

The increase in significance of financial intermediation over this period is most apparent within London and Scotland, where the contribution of this industry to the GVA of these regions has increased from 13.4 per cent to 18.3 per cent and from 4.8 per cent to 7.7 per cent respectively.

The declining contribution of manufacturing to UK GVA over the period 1989 to 2007 is apparent throughout the UK. The largest shift occurred in the West Midlands where the contribution of manufacturing to the region's GVA fell from 32.9 per cent in 1989 to 16.1 per cent in 2007, followed by the North West (from 31.5 per cent to 16.8 per cent) and Wales (from 31.1 per cent to 17.9 per cent).

The increased importance of real estate renting and business activities is apparent throughout the UK. The largest shift occurred in the South East where the contribution of this industry to regional GVA increased from 17.1 per cent in 1989 to 29.1 per cent in 2007. In addition to the South East, the increased importance of this industry at regional level was most apparent in the East of England (from 14.7 per cent to 24.8 per cent) and Northern Ireland (from 7.7 per cent to 17.8 per cent).

In 1989, public administration and defence contributed 6.4 per cent of UK GVA but was most significant to the GVA of Northern Ireland, where it accounted for 16.3 per cent of the region's GVA. In 2007 the contribution of this industry to the GVA of Northern Ireland had fallen to 9.0 per cent.

In 1989, health and social work accounted for 6.2 per cent of the GVA for Wales, slightly higher than this industry's proportion of UK GVA (5.5 per cent). In 2007, health and social work accounted for 10.1 per cent of the GVA for Wales, the largest proportion for this industry at regional level, diverging further from the proportion of UK GVA (7.2 per cent).

Sub-regional (NUTS2) data

GVA per head values by NUTS2 area in 2007 are presented in Map 2.

The regions that showed the greatest increase in GVA as a percentage of

Box 3

Diversity of the NUTS1 regions

Wales, Scotland, Northern Ireland and the Government Office Regions of England have differing demographic characteristics and economic performance. **Table 2**, included as part of this Box, shows some of these differences.

Scotland has the largest area, but a relatively small population; London has by far the smallest area, but the second largest percentage of the population (12.4 per cent). At the other extreme, Northern Ireland has the smallest population at 2.9 per cent of the UK total. These large variations in the regions' populations are reflected in the size of regional GVA and incomes. The wide variation in the size of the regions makes it difficult

to compare the regions' economic performance using cash totals. Comparisons are therefore usually expressed in terms of 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 affected both by the average amount of income of the working population and by the proportion of the population who are economically inactive. Some regions will have a high proportion of children, which will tend to depress amounts per head. The appropriate use of GVA per head as an indicator is discussed in the National Statistician's article: Measuring regional economic performance (Dunnell 2008).

Table 2
Key regional statistics, 2008

Region	Area (as per cent of UK)	Population ¹ (as per cent of UK)	Economic Activity Rate (per cent)	Gross Value Added per head indices ³ UK=100	Percentages of the UK
					Gross Disposable Household Income per head indices ⁴ UK=100
United Kingdom	100 per cent = 244,167 sq km	100 per cent = 61.4 m	79.2	100.0	100.0
North East	3.5	4.2	76.2	77.4	84.3
North West	5.8	11.2	77.2	85.6	90.0
Yorks & Humber	6.3	8.5	78.2	83.3	88.2
East Midlands	6.4	7.2	81.0	87.9	91.5
West Midlands	5.3	8.8	77.7	85.1	89.7
East of England	7.8	9.3	81.8	94.9	104.3
London	0.7	12.4	76.9	169.5	128.0
South East	7.8	13.7	82.9	105.7	112.9
South West	9.8	8.5	82.1	91.5	98.7
Wales	8.5	4.9	76.1	74.3	87.9
Scotland	32.3	8.4	80.0	97.9	96.2
Northern Ireland	5.8	2.9	73.0	78.9	89.2

Notes:

Source: Office for National Statistics

- 1 Mid-year population estimates.
- 2 Labour Market Statistics 2008 (average of four quarters), seasonally adjusted.
- 3 Calculated on a workplace basis, excluding Extra-Region and statistical discrepancy.
- 4 Regional household income estimates as published on 31 March 2010, UK less Extra-Region.

Table 3
Industrial share of regional GVA: by NUTS1, selected industries

Region	GVA total (£m)		Of which: manufacturing (per cent)		Of which: wholesale and retail trades (per cent)		Of which: real estate, renting and business activities (per cent)	
	1989	2007	1989	2007	1989	2007	1989	2007
UK	463 221	1216 524	24.0	12.7	11.3	11.6	14.6	24.2
North East	17 492	39 648	30.4	17.3	9.9	10.7	11.2	19.2
North West	50 581	116 466	31.5	16.8	11.2	12.2	12.4	21.8
Yorks & Humber	35 689	86 307	29.2	16.8	11.7	12.4	11.8	19.3
East Midlands	30 629	77 497	30.8	18.4	11.8	13.3	11.7	20.6
West Midlands	38 836	91 727	32.9	16.1	11.2	13.0	12.8	21.7
East of England	39 222	108 029	24.2	13.3	12.0	13.3	14.7	24.8
London	85 987	254 621	12.4	5.2	11.2	8.8	20.2	29.9
South East	61 531	176 541	20.3	10.9	12.2	13.2	17.1	29.1
South West	34 712	94 421	20.9	13.1	11.5	11.8	14.9	22.6
Wales	19 570	44 263	31.1	17.9	9.3	11.1	10.9	18.6
Scotland	39 566	99 114	23.2	13.7	10.0	10.0	12.8	19.9
Northern Ireland	9 407	27 890	21.6	14.8	10.1	12.5	7.7	17.8

Source: Office for National Statistics

Map 2

GVA per head: by NUTS2 area, 2007

Source: Office for National Statistics

Figure 4

GVA: by NUTS2, highest and lowest percentage increases 1995–2007

Percentages

Source: Office for National Statistics

Figure 5

GVA per head: by NUTS2, highest and lowest percentage increases 1995–2007

Percentages

Source: Office for National Statistics

the 1995 value were Inner London at 138.1 per cent, followed by Berkshire, Buckinghamshire and Oxfordshire at 112.3 per cent and Cornwall and Isles of Scilly at 110.0 per cent (**Figure 4**). Cumbria showed the smallest increase as a percentage of the 1995 value, with an increase of 51.4 per cent. The next smallest percentage increases were in Tees Valley and Durham with 51.9 per cent and East Yorkshire and Northern Lincolnshire with 55.3 per cent.

Of the NUTS2 regions, Inner London had the greatest increase in GVA per head as a percentage of the 1995 per head value, increasing by 108.6 per cent. Berkshire, Buckinghamshire and Oxfordshire followed with 97.2 per cent and Cornwall and Isles of Scilly with 89.8 per cent

(**Figure 5**). Lincolnshire had the lowest percentage increase with 46.7 per cent, followed by Cumbria with 48.3 per cent and Tees Valley and Durham with 50.8 per cent.

Of the 37 NUTS2 regions, only 13 increased their per head index values (**Figure 6**). Inner London increased from 248.1 in 1995 to 286.6 in 2007, followed by Berkshire, Buckinghamshire and Oxfordshire, from 123.2 to 134.6 and Hampshire and Isle of Wight, from 94.6 to 99.2. The largest falls over the period were in Lincolnshire, from 86.2 to 70.0 and Cumbria, from 90.6 to 74.4, followed by North Eastern Scotland, from 145.4 to 129.6.

Several regions positively closed the gap towards the UK average, the strongest

movement of which was in Hampshire and Isle of Wight. East Wales was the only region to be above the UK average in 1995 but to have fallen below by 2007, from 101.5 to 93.9.

Local area (NUTS3) data

GVA per head values by NUTS3 area in 2007 are presented in **Map 3**.

The NUTS3 regions that showed the greatest increase in GVA as a percentage of the 1995 value were Inner London East with an increase of 139.9 per cent, followed by Inner London West with 137.2 per cent and Milton Keynes with 129.3 per cent (**Figure 7**). Inverclyde, East Renfrewshire and Renfrewshire had the smallest percentage increase of 35.3 per cent, followed by Stoke-on-Trent at 36.8

Map 3

GVA per head: by NUTS3 area, 2007

Source: Office for National Statistics

Figure 6

GVA per head indices: by NUTS2, greatest decreases and increases 1995–2007United Kingdom
Index = 100 **Note:**

1 Inner London shown separately as the increase is far greater than in other regions.

Source: Office for National Statistics

Figure 7

GVA: by NUTS3, highest and lowest percentage increases 1995–2007United Kingdom
Percentages

Source: Office for National Statistics

per cent and West Cumbria at 37.2 per cent.

Inner London East had the greatest increase in GVA per head as a percentage of the 1995 value, increasing by 117.0 per cent (**Figure 8**). Belfast followed with 114.7 per cent and Peterborough with 113.1 per cent. Hartlepool and Stockton on Tees had the lowest percentage increase with 34.4 per cent, followed by West Cumbria with 37.9 per cent and Inverclyde, East Renfrewshire and Renfrewshire with 40.3 per cent.

Of the 133 NUTS3 regions, only 49 increased their per head index values. The largest movement was in Inner London West which increased from 466.6 in

1995 to 507.1 in 2007, followed by Inner London East, from 131.2 to 157.6 and Belfast, from 127.2 to 151.2 (**Figure 9**). The largest falls over the period were in Hartlepool and Stockton-on-Tees, from 99.2 to 73.8, followed by Flintshire and Wrexham, from 109.1 to 86.5 and Inverclyde, East Renfrewshire and Renfrewshire, from 96.7 to 75.1.

Several regions positively narrowed the gap with the UK average, the strongest movement of which was in North Lanarkshire, from 70.5 to 79.8. Four regions were below the UK average at the start of the period but above it in 2007, with the largest movement in Bournemouth and Poole which moved

from 88.6 to 100.3. Five regions were above the UK average in 1995 but below it in 2007, the largest movement of which was in Flintshire and Wrexham, from 109.1 to 86.5.

Variation within regions

Over time there can be a general divergence in economic activity between regions in the same NUTS area. As shown in **Figure 10**, in 1995, all the NUTS3 local areas in the NUTS2 sub-region of Northumberland and Tyne and Wear had a similar GVA per head: £8,383 in Northumberland, £9,582 in Tyneside and £8,858 in Sunderland. By 2007, the spread of GVA per head had changed and while Tyneside and

Figure 8

GVA per head: by NUTS3, highest and lowest percentage increases 1995–2007

United Kingdom

Percentages

Source: Office for National Statistics

Figure 9

GVA per head indices: by NUTS3, greatest decreases and increases 1995–2007

United Kingdom

Index = 100

Note:

1 Inner London West shown separately as the increase is far greater than in other regions.

Source: Office for National Statistics

Box 4**European Union Structural Funds**

Under the European System of Accounts 1995 (ESA 95) and the current transmission requirements, ONS provides GVA plus the compensation of employees (CoE) component with a 6-way industrial split at NUTS2 and NUTS3 to Eurostat. The industrial breakdown uses the Standard Industrial Classification 2003 (SIC03). Eurostat requires the unadjusted data rather than the five-period data presented in this article. In 2009, ONS provided the regional GVA totals consistent with the 2009 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. Although Eurostat takes the unadjusted data from Member States, they use a three year

average to remove volatility from the data. Funding criteria are set to these estimates and, although it has not yet been confirmed, it is likely that the next funding decisions will be taken based on NUTS2 data for the three years 2007, 2008 and 2009, which will be published by the ONS in December 2011, based on that year's Blue Book.

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.

Figure 10

GVA per head: divergence of NUTS3 regions within Northumberland and Tyne and Wear

Source: Office for National Statistics

Figure 11

GVA per head: NUTS3 variations within NUTS1 regions, 2007 **Note:**

1 London shown separately as the scale of variation is far greater than in other regions.

Source: Office for National Statistics

Sunderland were similar at £18,361 and £17,411 respectively, Northumberland was much lower at £12,417.

Figure 11 illustrates the variation to be found within regions. The range of NUTS3 GVA per head is shown for 2007 for each NUTS1 region, with the highest and lowest values in each NUTS3 being highlighted. London has by far the highest amount of variation, between Outer London East and North East with £13,841 and Inner London West with £101,182.

The region with the least variation is the North East, between Durham CC with £12,124 and Tyneside with £18,361.

Revisions

In the UK National Accounts *Blue Book* 2009, the totals for national GVA by industry were revised as far back as 2004. These lead to revisions in the regional data, which are constrained to the national figures. PAYE data from Her Majesty's Revenue and Customs (HMRC), used in the

compilation of compensation of employees estimates, were revised for 2004/05, 2005/06 and 2006/07 and new estimates supplied for 2007/08. Final estimates for 2007 became available from the Annual Survey of Hours and Earnings, Annual Business Inquiry and other data sources.

Future regional accounts work plans

An article on the March 2010 release of regional gross disposable household

income (GDHI) will be published in *Economic and Labour Market Review* (ELMR) in Summer 2010.

ONS plans to publish estimates of regional GVA for 1989 to 2009 and sub-regional and local GVA for 1995 to 2008 in December 2010.

The publication of regional household income estimates for the period 1995 to 2009 is currently planned for Spring 2011.

The new Eurostat NACE Rev2 and its UK equivalent, the Standard Industrial Classification of All Economic Activities (UK SIC2007) will be implemented in

the UK national accounts (and therefore GDP) in September 2011 (in line with EU regulation). This new classification will be implemented in the regional GVA estimates in December 2011, also in line with EU regulation.

FURTHER INFORMATION

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

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