Office for National Statistics

Statistical bulletin

Regional economic activity by gross value added (balanced), UK: 1998 to 2017

Annual estimates of economic activity by UK country, region and local area using balanced regional gross value added (GVA(B)). Estimates are available in current basic prices and in chained volume measures.

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1 . Main points

- In November 2018, the balanced measure of regional gross value added (GVA), along with both of its constituent parts, was awarded National Statistics status, following an assessment by the Office for Statistics Regulation.

- In 2017, GVA for the UK, in chained volume measures, increased by 1.9%; the highest annual "real" growth of NUTS1 areas was in London at 3.0% and the lowest annual growth was in Yorkshire and The Humber at 0.7%.

- GVA for the UK in current basic prices grew by 3.6% between 2016 and 2017; the highest annual nominal growth of NUTS1 areas was in London at 4.2% and the lowest annual growth was in Yorkshire and The Humber at 2.5%.

- At the NUTS1 level, in 2017, London had the highest GVA per head, in current basic prices, at £48,857, while Wales had the lowest GVA per head at £19,899.

- In 2017, the highest annual growth in real GVA of the four capital city regions was in Edinburgh at 3.3% and the lowest annual growth was in Belfast at 0.9%.

- In 2017, the highest annual growth in real GVA of combined authority areas was in the Liverpool City Region at 3.3%, while the lowest growth was in the Tees Valley at 0.5%.

- In 2017, the highest annual growth in real GVA of NUTS3 areas was in Causeway Coast and Glens at 9.1%, while the lowest growth was in Mid and East Antrim at negative 6.1%, both areas in Northern Ireland.

- At the NUTS3 level, in 2017, Camden and City of London had the highest GVA per head, in current basic prices, at £340,340, while Ards and North Down had the lowest at £9,862; both extremes are highly affected by commuting flows.

2 . Things you need to know about this release

Balanced gross value added

We have produced estimates of regional gross value added (GVA) using estimates from gross value added income (GVA(I)) and gross value added production (GVA(P)) to produce a balanced measure of regional GVA, known as GVA(B). This gives users a single measure of economic activity within a region. The balanced measure of regional GVA has been granted National Statistics status following a review by the Office for Statistics Regulation.

What is gross value added?

Gross value added (GVA) is a measure of the increase in the value of the economy due to the production of goods and services. For the balanced measure, GVA(B), it is measured at current basic prices (value in £ million), which include the effect of inflation, and in "real" terms in chained volume measures (CVM), with the effect of inflation removed.

The CVM are presented as indices referenced to 2016 equals 100 and are consistent with the UK National Accounts, The Blue Book: 2018. They are also provided in cash terms equivalent to the value of money in 2016.

GVA plus taxes (less subsidies) on products is equivalent to gross domestic product (GDP).

GVA(I) is measured at current basic prices, which include the effect of inflation, excluding taxes (less subsidies) on products (for example, Value Added Tax). This involves adding up the income generated by UK resident individuals or corporations in the production of goods and services. It is calculated gross of deductions for consumption of fixed capital, which is the amount of fixed assets used up in the process of production in any period.

GVA(P) is measured at both current prices and in chained volume measures (CVM). It is calculated for a given reference period as the total value of all goods and services produced (output), less goods and services used up or transformed in the production process, such as raw materials and other inputs (intermediate consumption). The production approach to compile GVA is conceptually equivalent to the income approach, but allows deflation of current prices to produce constant price measures, since the production components relate to goods and services that can be broken down into price and volume indices.

These estimates are consistent with the UK National Accounts, The Blue Book: 2018. National aggregates for the components of GVA are allocated to regions using the most appropriate regional indicator available.

Real estimates of regional GVA are available for the first time in this release at lower geographical breakdowns and new areas formed by aggregating these small areas, which are:

- NUTS3 local areas

- local authority or council areas

- local enterprise partnerships

- combined authorities

- city regions

- other economic and enterprise regions

Geographic levels for gross value added estimates

GVA estimates in this bulletin are available at four geographic levels, in accordance with the Nomenclature of Units for Territorial Statistics (NUTS) classification that came into force on 1 January 2018. The NUTS provides a single uniform breakdown for the production of regional statistics for the EU. In the UK the areas are:

- NUTS1: Wales, Scotland, Northern Ireland and the nine English regions

- NUTS2: 41 subregions – mainly groups of counties and unitary authorities

- NUTS3: 179 local areas – principally individual counties and unitary authorities

- LAU1: 391 local authority or local council areas

- the term Extra-Regio is applied to economic activity that cannot be assigned to any specific region within a country

Local authority data for the UK have also been published alongside the NUTS1, NUTS2 and NUTS3 estimates of GVA. Although there are 400 areas listed at the LAU1 level, these include a further division of Scottish Council areas to enable aggregation to NUTS3 local areas. The local authority estimates can be aggregated to form other geographic breakdowns such as combined authorities, local enterprise partnerships (LEPs), city regions and other economic and enterprise regions, which are available to download from the "View all data used in this release" button.

Further information can be found in chapter 1 of the [Regional accounts methodology guide (PDF, 615.48KB)](#).

Gross value added (GVA) per head

The GVA(B) estimates presented in this bulletin are compiled on a workplace basis (allocated to the location where the economic activity takes place). GVA per head of population is a useful way of comparing regions of different size and is an important indicator for both domestic and European policy purposes. Total GVA(B) estimates in millions of pounds sterling (£ million) are divided by the total resident population of a region (including the economically inactive) to give GVA per head in pounds sterling (£). While GVA per head can be a useful way of comparing regions of different size, comparisons can be affected by commuting flows into or out of the region. They should therefore be [used with caution](#).

3 . England was the fastest growing country in the UK in 2017

UK gross value added (GVA), in chained volume measures, was estimated to have increased by 1.9% in 2017. Between 2016 and 2017, England increased by 2.0%, the highest increase of the four countries in the UK. Northern Ireland saw the second highest increase of 1.7%. Wales had the lowest growth between 2016 and 2017, at 1.4%, while Scotland grew by 1.6%.

Table 1: Summary of gross value added (GVA) statistics for the NUTS1 countries and regions, 2017 [1,2]

Country	Population [3]	Total GVA (£ million) [4]	Annual growth in total GVA (%) [4]	Annual growth in 'real' GVA (%) [5]	GVA per head (£) [1,6]	Annual growth in GVA per head (%) [6]
UK	66,040,229	1,819,754	3.6	1.9	27,555	3.0
England	55,619,430	1,562,707	3.5	2.0	28,096	2.9
North East	2,644,727	53,235	3.1	1.6	20,129	2.8
North West	7,258,627	173,607	3.8	2.1	23,918	3.3
Yorkshire and The Humber	5,450,130	116,772	2.5	0.7	21,426	2.0
East Midlands	4,771,666	104,243	3.4	1.5	21,845	2.4
West Midlands	5,860,706	133,128	3.7	1.9	22,713	2.6
East of England	6,168,432	152,799	4.0	2.5	24,772	3.4
London	8,825,001	431,161	4.2	3.0	48,857	3.8
South East	9,080,825	267,126	3.0	1.4	29,415	2.3
South West	5,559,316	130,635	2.6	1.1	23,499	1.8
Wales	3,125,165	62,190	3.1	1.4	19,899	2.7
Scotland	5,424,800	138,231	3.2	1.6	25,485	2.8
Northern Ireland	1,870,834	39,613	3.6	1.7	21,172	3.1
Extra-Regio [7]	n/a	17,012	19.5	-1.8	n/a	n/a

Source: Office for National Statistics

Notes:

1. Figures may not sum due to rounding in totals; per head (£) figures are rounded to the nearest pound.

2. 2017 estimates are provisional.

3. Population estimates are sourced from Population Estimates for UK

4. GVA(B) in current prices.

5. GVA(B) in chained volume measures.

6. Per head figures exclude Extra-Regio: the off-shore contribution to GVA that cannot be assigned to any region.

7. n/a = not applicable.

Table 1 shows that in 2017, the balanced measure of GVA (GVA(B)) in chained volume measures increased in all NUTS1 countries and regions.
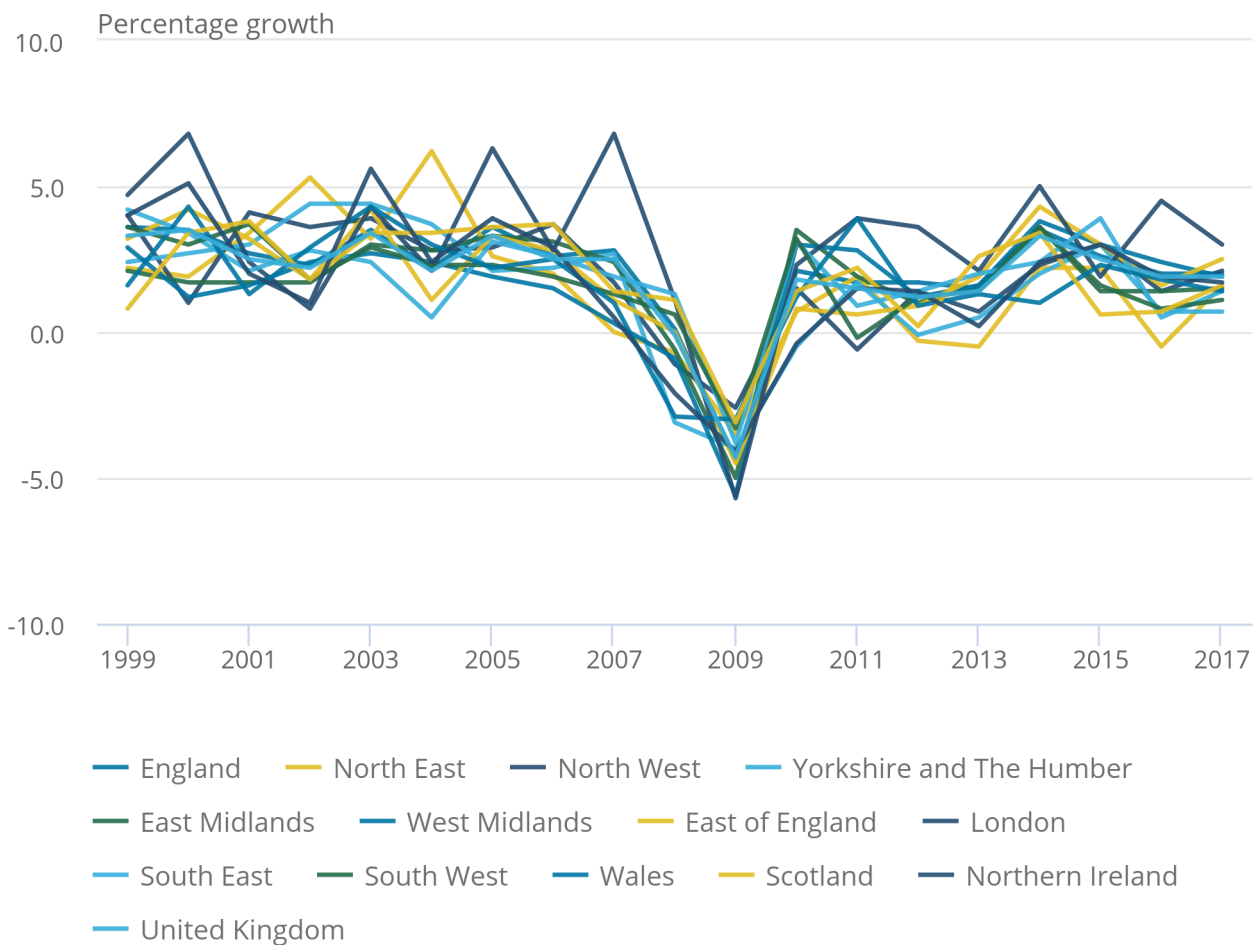
In 2017, there were increases in GVA(B) in all NUTS1 countries and regions at current basic prices; the highest growth was in London (4.2%) and the lowest growth was in Yorkshire and The Humber (2.5%).

Figure 1 shows the annual rate of "real" growth in regional GVA(B) in chained volume measures for each NUTS1 country and region across the period 1999 to 2017.

Click on the region names to toggle the lines on and off.

Figure 1: Growth in the balanced measure of "real" gross value added [1] in NUTS1 countries and regions, 1999 to 2017

Figure 1: Growth in the balanced measure of "real" gross value added^1^ in NUTS1 countries and regions, 1999 to 2017

Source: Office for National Statistics

Notes:

1. GVA(B) in chained volume measures.

London was the fastest growing NUTS1 region in 2017 at 3.0%, in chained volume measures. Looking at the industrial composition of London for industry groupings, in chained volume measures, motion picture, video and television programme production, sound recording and music publishing activities saw the highest growth of 21.9%. Between 2016 and 2017, there were strong increases in other personal service activities, for example, hairdressing and dry cleaning (17.3%), repair of computers and personal and household goods (16.4%) and postal and courier activities (15.2%).

These regional data can add to our understanding of UK-level trends. In 2017, at total UK industry level, there were strong increases in GVA(B), in chained volume measures, in motion picture, video and television programme production, sound recording and music publishing activities (14.9%), postal and courier activities (12.5%) and repair and installation of machinery and equipment (12.1%). Between 2016 and 2017, in chained volume measures, 8 out of 13 NUTS1 countries and regions (including England) experienced positive growth in motion picture, video and television programme production, sound recording and music publishing activities, with London showing the strongest growth at 21.9%. The slowest growth of 0.1% was in the North East.

There were increases in all NUTS1 countries and regions in postal and courier activities. The strongest growth was in Wales at 17.5%. The slowest growth was in Yorkshire and The Humber at 3.5%.

In 2017, in chained volume measures, repair and installation of machinery and equipment saw strong growth in all NUTS1 countries and regions. The fastest growing region was Northern Ireland at 20.6%. The slowest growth was in the South East at 6.2%.

Between 2016 and 2017, at total UK industry level, GVA(B) in chained volume measures also saw strong growth in repair of computers and personal and household goods (13.8%) and manufacture of leather and related products (12.5%). However, as these are smaller industries, it should be noted that they have minimal impact on total GVA.

4 . New areas of economic interest

Historically, we have produced gross value added (GVA) estimates for areas of the UK according to the Nomenclature of Units for Territorial Statistics (NUTS), the EU classification of regions. These areas are principally designed to facilitate international comparisons at a subnational level, and were used, for instance, to inform the allocation of EU structural funds for economic redevelopment.

In recent years, other geographic areas of the UK have emerged that are of interest to UK policymakers and administrators, and many of these do not match areas within the NUTS classification. This process has been accelerated by events such as the replacement of the UK's Regional Development Agencies, which aligned to the English regions, with a collection of local enterprise partnerships, many of which cover non-standard areas. The establishment of combined authorities with elected Mayors, and City and Growth Deals, has further devolved administrative responsibilities to parts of the UK, and in many cases the areas covered do not match NUTS regions.

As part of our role in meeting the needs of domestic users, we set up a Flexible Geography project, with the aim of developing the capability to provide economic statistics for any area of the UK of interest to users. The first phase of this project has concentrated on developing statistics for the local authorities of the UK, from which many of the new emerging areas can be built.

In last year's bulletin we included estimates for local authorities, local enterprise partnerships and English combined authorities, in current basic prices and with a broad industry breakdown into 10 sectors of the economy. This year we have gone further, including a range of new emerging areas across all the countries of the UK, and with a more detailed industry breakdown in both current prices and in real terms, with price inflation removed, as chained volume measures. Many of these new areas are based around city regions, and some represent economic enterprise regions that are the focus of devolved government targets for economic growth and development.

Not all of these areas are completely finalised in terms of their official ratification by government, so it is possible that some may change over time. We believe it is important to provide the best coverage we can at the point we release statistics, regardless of the official status of these areas, and we will adapt our coverage each year to move in accordance with the evolution of these economic regions. You can find the current list of local authority areas that we have used to build each of these regions in the data tables published with this bulletin.

One important development since last year's publication is the emergence of city regions covering each of the four capital cities of the UK. These areas are far wider in scope than the NUTS3 and local authority areas that we highlighted in last year's bulletin. Only London is unchanged in geography.

In Table 2 we present summary statistics for the four capital city regions. Here, London is represented by the Greater London Authority, Cardiff by the Cardiff Capital Region, Edinburgh by the Edinburgh and South East Scotland City Region, and Belfast by the Belfast Region City Deal area.

Table 2: Summary of gross value added (GVA) statistics for the UK capital city regions, 2017 [1,2]

Capital City Region	Population [3]	Total GVA (£ million) [4]	Annual growth in total GVA (%) [4]	Annual growth in real GVA (%) [5]	Three-year growth in real GVA (%) [5]	Real GVA growth since 2009 (%) [5]
Greater London Authority [6]	8,825,001	431,164	4.2	2.9	9.4	25.6
Cardiff Capital Region	1,524,557	31,807	3.4	1.8	7.2	12.7
Edinburgh and SE Scotland City Region	1,375,880	32,300	4.6	3.3	11.0	15.6
Belfast City Region	1,101,803	27,399	2.6	0.7	4.9	10.2

Source: Office for National Statistics

Notes:

1. Figures may not sum due to rounding in totals.

2. 2017 estimates are provisional.

3. Population estimates are sourced from population estimates for UK.

4. GVA(B) in current prices.

5. GVA(B) in chained volume measures.

6. Although they cover the same area, estimates for the GLA and London LEP may differ slightly from those for the London NUTS1 region, due to rounding.

In Table 3 we present summary statistics for the officially approved English combined authorities with elected Mayors. The first of these were established in 2014, so the three-year growth rates shown represent a measure of how much the combined authorities have grown since they were first set up.

Table 3: Summary of gross value added (GVA) statistics for combined authorities, 2017 [1,2]

Combined Authority (CA)	Population [3]	Total GVA (£ million) [4]	Annual growth in total GVA (%) [4]	Annual growth in 'real' GVA (%) [5]	Three-year growth in real GVA (%) [5]	Real GVA growth since 2009 (%) [5]
Greater Manchester CA	2,798,799	66,413	3.5	1.9	7.1	10.9
West Midlands CA	2,897,303	66,667	3.9	1.9	10.4	19.1
Liverpool City Regions CA	1,544,420	32,030	5.0	3.3	4.1	3.0
North of Tyne CA	819,345	18,863	4.5	3.0	7.1	12.4
Tees Valley CA	672,497	13,122	2.1	0.5	-1.3	1.9
Cambridgeshire and Peterborough CA	847,151	24,463	3.3	1.8	7.3	19.1
West of England CA	926,957	29,295	2.2	0.8	1.9	10.5

Source: Office for National Statistics

Notes:

1. Figures may not sum due to rounding in totals.

2. 2017 estimates are provisional.

3. Population estimates are sourced from population estimates for UK.

4. GVA(B) in current prices.

5. GVA(B) in chained volume measures.

In Table 4 we present summary statistics for other city regions and growth deal areas across the UK that have emerged in recent years. Some of these areas are still evolving, in terms of their precise geographic coverage, and are at various stages of the process of securing an official growth deal.

Table 4: Summary of gross value added (GVA) statistics for other UK city regions, 2017 [1,2]

Region	Population [3]	Total GVA (£ million) [4]	Annual growth in total GVA (%) [4]	Annual growth in real GVA (%) [5]	Three-year growth in real GVA (%) [5]	Real GVA growth since 2009 (%) [5]
Sheffield City Region	1,393,445	25,991	2.5	2.3	6.4	12.8
Leeds City Region	3,063,074	69,622	3.2	1.5	5.5	10.6
Glasgow City Region	1,827,240	41,368	4.1	2.6	3.4	12.4
Aberdeen City Region	490,600	18,606	0.7	-0.9	-11.6	4.1
Stirling and Clackmannanshire City Region	145,450	3,493	1.8	0.4	9.9	5.9
Tay Cities Region	787,500	6,278	3.1	1.6	4.9	12.2
Ayrshires	370,410	5,777	7.0	4.8	4.8	9.3
Scottish Island Councils	72,030	1,835	1.5	-0.6	-0.8	1.1
South of Scotland	264,220	4,703	7.1	4.9	6.0	14.2
North Wales Growth Deal	696,284	14,450	4.4	2.9	6.9	16.3
Mid Wales Growth Deal	205,591	3,626	-1.5	-2.9	0.9	6.9
Swansea Bay City Region	698,733	12,305	2.4	0.0	2.4	11.6
Derry-Londonderry City Region	150,497	2,588	5.4	3.5	9.5	9.1

Source: Office for National Statistics

Notes:

1. Figures may not sum due to rounding in totals.

2. 2017 estimates are provisional.

3. Population estimates are sourced from population estimates for UK.

4. GVA(B) in current prices.

5. GVA(B) in chained volume measures.

In Table 5 we present summary statistics for some of the 38 English local enterprise partnerships. There are too many of these areas to clearly show in a single table here, so we have just included the top five and bottom five according to their overall growth in real GVA since the low point of the economic recession in 2009. In this way, we can show the areas that have recovered most strongly since the recession, and those that have struggled the most since that time. You can find statistics for all of the local enterprise partnerships in the data tables published with this bulletin.

Table 5: Summary of gross value added (GVA) statistics for local enterprise partnerships, 2017 [1,2]

Local Enterprise Partnership (LEP)	Population [3]	Total GVA (£ million) [4]	Annual growth in total GVA (%) [4]	Annual growth in real GVA (%) [5]	Three-year growth in real GVA (%) [5]	Real GVA growth since 2009 (%) [5]
Top five by real GVA growth since 2009						
Coventry and Warwickshire LEP	924,711	26,039	3.5	1.3	6.8	33.4
London LEP[6]	8,825,001	431,164	4.2	2.9	9.4	28.4
South East Midlands LEP	2,016,952	57,114	4.6	2.8	11.8	26.0
Greater Birmingham and Solihull LEP	2,031,281	51,270	3.5	1.6	12.1	22.7
Worcestershire LEP	588,370	13,314	4.7	2.9	6.2	21.6
Bottom five by real GVA growth since 2009						
Cumbria LEP	498,375	11,568	0.5	-1.4	-0.3	5.8
York, North Yorkshire and East Riding LEP	1,157,857	25,348	2.9	1.2	2.7	4.7
Tees Valley LEP	672,497	13,122	2.1	0.5	-1.3	2.8
Liverpool City Region LEP	1,544,420	32,032	5.0	3.3	4.1	2.4
Humber LEP	929,854	18,612	-0.7	-3.0	0.4	-5.2

Source: Office for National Statistics

Notes:

1. Figures may not sum due to rounding in totals.

2. 2017 estimates are provisional.

3. Population estimates are sourced from population estimates for UK.

4. GVA(B) in current prices.

5. GVA(B) in chained volume measures.

6. Although they cover the same area, estimates for the GLA and London LEP may differ slightly from those for the London NUTS1 region, due to rounding.

In Table 6 we present summary statistics for the other economic and enterprise regions of the UK that we are aware of that are of interest to regional policymakers and administrators. Some of these share geographic coverage with other areas included in this bulletin. For example, the South East Wales Economic Region covers the same area as the Cardiff Capital Region. We have included these areas under each title that we know is being used, to help users find statistics appropriate to the area they are looking for, whichever name they are familiar with.

Table 6: Summary of gross value added (GVA) statistics for other UK economic regions, 2017 [1,2]

Region	Population [3]	Total GVA (£ million) [4]	Annual growth in total GVA (%) [4]	Annual growth in real GVA (%) [5]	Three-year growth on real GVA (%) [5]	Real GVA growth since 2009 (%) [5]
The Borderlands Partnership	1,081,625	21,506	2.4	0.5	0.5	7.2
Scottish Enterprise	4,935,000	114,154	3.7	2.1	2.9	12.3
Highlands and Islands Enterprise	489,800	11,774	-1.0	-2.8	-2.8	5.3
North Wales Economic Region	696,284	14,450	4.4	2.9	6.9	20.6
Mid and South West Wales Economic Region	904,324	15,932	1.5	-0.7	2.0	14.3
South East Wales Economic Region	1,524,557	31,806	3.4	1.8	7.2	13.0

Source: Office for National Statistics

Notes:

1. Figures may not sum due to rounding in totals.

2. 2017 estimates are provisional.

3. Population estimates are sourced from population estimates for UK.

4. GVA(B) in current prices.

5. GVA(B) in chained volume measures.

The areas we have included in this year's bulletin go a long way towards meeting the needs of regional users for monitoring the economic activity of their regions of interest. It is not the end of the journey, however. We intend to make use of the administrative data that are now available to us, following enactment of the Digital Economy Act 2017, to compile GVA estimates for even smaller areas, which can then be used to construct any areas of interest to users, no matter how precise their geographic coverage.

We intend to publish a statement in summer 2019 that will outline the extent to which we believe we can achieve this aim, and any limitations we need to put in place to maintain the confidentiality of personal (or individual company) information. If all goes well, we will make even more flexible geographic data available with next December's bulletin.

5 . Belfast enters the top five NUTS3 regions

In accordance with the Nomenclature of Units for Territorial Statistics (NUTS) classification, the 10 NUTS3 local areas with the highest gross value added (GVA) per head and the 10 areas with the lowest GVA per head in 2017 are shown in Table 7.

Table 7: Top 10 and bottom 10 NUTS3 local areas[1] by gross value added (GVA)[2] per head, 2017[3,4]

NUTS3 local areas	GVA per head (£) [3,5]	Annual growth in GVA per head (%) [3]	Population [6]	Total GVA (£ million) [2]	Annual growth in total GVA (%) [2]	Annual growth in "real" GVA (%) [7]
United Kingdom	27,555	3.0	66,040,229	1,819,754	3.7	1.9
Top ten GVA per head						
Camden and City of London	340,340	0.9	261,015	88,834	3.1	2.0
Westminster	257,265	6.1	244,796	62,977	4.9	3.8
Tower Hamlets	96,923	5.0	307,964	29,849	6.0	5.1
Kensington & Chelsea and Hammersmith & Fulham	75,797	4.8	338,739	25,675	5.5	4.5
Belfast	49,204	3.8	340,220	16,740	4.0	1.5
Haringey and Islington	48,666	4.4	506,224	24,636	3.3	1.7
Milton Keynes	47,764	1.3	267,521	12,778	2.5	3.5
City of Edinburgh	44,117	3.1	513,210	22,641	4.3	3.7
Hounslow and Richmond upon Thames	43,300	3.1	464,780	20,125	2.6	2.6
Berkshire	41,574	1.1	905,813	37,658	2.1	0.3
Bottom ten GVA per head						
Wirral	15,598	4.9	322,796	5,035	5.4	3.3
Torbay	15,553	3.3	135,247	2,103	4.3	2.5
Mid and East Antrim	15,206	1.8	138,152	2,101	2.1	-7.0
Gwent Valleys	15,062	4.9	342,668	5,161	5.0	2.1
Isle of Anglesey	13,957	0.9	69,794	974	1.0	1.1
Newry, Mourne and Down	13,700	4.2	178,996	2,452	4.9	2.8
East Ayrshire and North Ayrshire mainland	13,680	7.3	251,842	3,445	7.2	5.3
Fermanagh and Omagh	13,093	4.0	116,289	1,523	4.4	4.2
Causeway Coast and Glens	12,129	3.5	143,920	1,746	3.8	8.9
Ards and North Down	9,862	2.4	160,098	1,579	2.7	2.3

Source: Office for National Statistics

Notes:

1. Data for all NUTS3 local areas are included in reference tables 1 to 5 in dataset "Nominal regional GVA(B) per head and income components".

2. GVA at current basic prices on workplace basis.

3. Figures may not sum due to rounding in totals; per head (£) figures are rounded to the nearest pound sterling.

4. 2017 estimates are provisional.

5. Per head figures exclude Extra Regio: the off-shore contribution to GVA that cannot be assigned to any region.

6. Population estimates are sourced from Population Estimates for UK.

7. GVA in chained volume measures.

When ordered by GVA per head in 2017, all of the top 10 NUTS3 local areas were in the London, South East, Scotland or Northern Ireland NUTS1 areas, the top four of which were in London, with Belfast in Northern Ireland appearing at position five for the first time. The bottom 10 local areas were mainly from Northern Ireland and Wales, with one each from Scotland, the South West and the North West.

Please note that while GVA per head can be a useful way of comparing regions of different size, it is not such a good indicator for those areas with high net in- or out-commuting. This is because it compares a workplace measure of economic output (GVA), which includes the contribution of in-commuters, with a residence-based denominator (population). For such areas, it is advisable to refer to ONS subregional productivity data for a direct measure of economic performance.

"Real" GVA increased in 149 of the 179 NUTS3 local areas between 2016 and 2017. The largest percentage increases were in:

- Causeway Coast and Glens (Northern Ireland), at 8.9%

- Southampton (South East), at 5.7%

- Scottish Borders (Scotland), at 5.7%

"Real" GVA decreased in 30 local areas. The largest decreases were in:

- Mid and East Antrim (Northern Ireland), at negative 7.0%

- North and North East Lincolnshire (Yorkshire and The Humber), at negative 4.6%

- Caithness and Sutherland and Ross and Cromarty (Scotland), at negative 4.0%

Figure 2 shows how gross value added (GVA) per head varied across NUTS3 local areas in the years 1998 to 2017.

Figure 2: Gross value added (GVA) per head for NUTS3 local areas, 1998 to 2017

6 . Links to related statistics

Regional and subregional productivity

Gross value added (GVA) per head can be a useful way of comparing regions of different sizes. This is particularly the case where there are no large net commuting effects, when GVA per head can act as a good proxy for measures of economic performance such as productivity. However, it is not such a good proxy for those areas with high net in- or out-commuting. This is because it compares a workplace measure of economic output (GVA), which includes the contribution of in-commuters, with a residence-based denominator (population). For such areas, it is advisable to refer to Office for National Statistics (ONS) productivity data for a direct measure of economic performance. ONS estimates of regional and subregional productivity, based on the GVA(B) data in this publication, will follow in a subsequent ONS bulletin to be released on 6 February 2019.

Alternative regional volume measures publications

There are additional regional volume measures publications produced by the devolved administrations of the UK. These are all quarterly estimates and are therefore more current than annual regional GVA(B) estimates. These additional publications are detailed in this section.

Gross domestic product (GDP) for Scotland – chained volume measures of GVA at basic prices are produced by the Scottish Government. This release uses similar sources and methods to ONS UK GDP at basic prices and is designated as a National Statistic. Scottish Government publishes several economic measures as part of the Scottish National Accounts Programme (SNAP).

The Northern Ireland Composite Economic Index (NICEI) is an experimental quarterly measure of the performance of the Northern Ireland economy based on official statistics published by the Northern Ireland Statistics and Research Agency (NISRA). The NICEI provides an appropriate short-term indicator for the Northern Ireland economy in advance of more complete figures such as the annual regional accounts information for Northern Ireland from ONS. The Northern Ireland Economic Accounts Project has developed experimental supply and use tables for Northern Ireland.

The Welsh Government (in conjunction with ONS) produces a quarterly index of production and construction and a quarterly index of market services series for short-term output indices covering most of the private sector economy in Wales. These National Statistics show quarterly growth in output in real terms from 1998.

We work with the devolved administrations through the Inter-Administration Committee (IAC) and its subsidiary the Devolved Economic Statistics Co-ordination group (DESC).

Regional gross disposable household income

While regional GVA(B) estimates provide an indication of the economic activity happening within regions, it is not an indicator of wealth. We also produce estimates of regional gross disposable household income (GDHI), which is the amount of money that individuals in the households sector have available for spending or saving and can therefore be considered a measure of wealth or prosperity. Regional GDHI is a residence-based measure, meaning it allocates money to the areas in which people live. Further information on regional GDHI can be found in the Regional accounts methodology guide (PDF, 615.48KB).

Estimates of regional GDHI by combined authority in the UK were published for the first time in May 2018. In July 2018, at the request of the Combined Authority Liaison Group, set up by ONS to engage with these new administrative bodies, we produced a more detailed breakdown of the components of household income and a set of "cash-based" estimates of GDHI. These exclude items such as imputed rental and employers' social contributions.

Regional household final consumption expenditure (HFCE)

Our latest development in the household accounts is the compilation of an experimental set of estimates showing what people spend their disposable income on across the countries and regions of the UK. These data include estimates of the amount spent in each region on a range of goods and services, and the amount spent by the residents of each region, regardless of where the spending takes place. We have also used the household expenditure data in conjunction with our latest GDHI data, to derive estimates of the households' saving ratio, a commonly used measure of prosperity.

If this development proves to be a success we will move into regular production and publication from 2019, and will look to expand the geographic content to smaller areas. To assess the level of user demand and find out more about the specific needs of regional users, we are currently carrying out a public consultation on the experimental HFCE statistics. The consultation is open until the end of December 2018 and we welcome views from anybody with an interest in regional spending patterns.

7 . What's changed in this release?

Following an assessment conducted in 2017 and 2018 by the Office for Statistics Regulation, regional gross value added (GVA) balanced estimates have been accredited with National Statistics status. In addition, the GVA income estimates retained the National Statistics status and the GVA production estimates also gained National Statistics status.

Last year we published additional industry detail for NUTS1 and NUTS2 regions. This year we have also published additional industry detail for NUTS3 and local authority areas across the UK. These have been made available in both value and volume terms. Because of the need to safeguard against the identification of individual company information, these smaller areas do not have the range of industries available for the larger areas, but we have published considerably greater detail than in previous years.

The industrial breakdown now available is:

- 81 industries at the NUTS1 level

- 72 industries at the NUTS2 level

- 48 industries at the NUTS3 level

- 34 industries at the local authority level

In response to users' requirements, we have used the local authority data to build additional areas of economic interest to users. For the first time we have published data for city regions and other economic and enterprise regions of the UK, in addition to the combined authorities and local enterprise partnerships published last year. All of these are available in both value and volume terms and can be found in the data tables of this release.

Our GVA publication has also been affected by changes to Nomenclature of Units for Territorial Statistics (NUTS) boundaries. In January 2018, there were changes to the NUTS boundaries in Scotland and Northern Ireland. In Scotland, a fifth NUTS2 area, Southern Scotland, was created by taking parts from the Eastern Scotland and South Western Scotland NUTS2 areas. In Northern Ireland, changes were made to the NUTS3 areas due to local government re-organisation, with the new NUTS3 areas now matching the 11 local authorities. Our GVA estimates have been produced in accordance with the January 2018 NUTS regions.

In keeping with the UK National Accounts commitment to meeting the European Commission definition of gross national income and the new European System of Accounts 2010: ESA 2010, there have been changes made to the UK National Accounts measure of GVA. These impact upon the regional GVA estimates in the form of different national totals for the various components of income, even where no explicit changes to the regional allocation have been needed.

In October 2015, housing associations were reclassified from the private sector to the public corporations sector, with effect from 22 July 2008. This change for England only, was implemented in public sector finances in 2016 and in the UK National Accounts, The Blue Book: 2017 for the UK National Accounts. To ensure consistency, this reclassification was reflected in the regional GVA estimates in December 2017. The housing associations reclassification for Wales, Scotland and Northern Ireland back to 2008 were incorporated into the UK National Accounts, The Blue Book: 2018 and have been reflected in the regional GVA estimates within this publication.

As part of the assessment of regional GVA, a review investigated better methods for the regionalisation of the financial and insurance services industry. We have now implemented an improvement to the regional allocation of compensation of employees, used as a proxy for output in the finance industries. Whereas previously we only had regional average earnings data for the combined industry (Standard Industrial Classification (SIC) Section K), we now have data for each component industry (SIC groups 64.1; 64.2 to 64.9; 65.1 to 65.2; 65.3; and 66). This has provided greater precision in the regional allocation of finance output.

8 . Future work plans

Regional short-term indicators

Work has been progressing on the development of quarterly output indicators for the nine English regions. Along with the existing quarterly indicators produced by the devolved administrations of Scotland, Wales and Northern Ireland, this will complete the coverage of the UK and provide users with timely indicators of economic growth at the NUTS1 level. The English region measures are planned to be published in the first half of 2019.

Ahead of that, a research project by the Economic Statistics Centre of Excellence (ESCoE) has produced the first flash estimates of regional gross domestic product (GDP) growth for NUTS1 countries and regions, using econometric modelling techniques. While these estimates are model-based forecasts and therefore carry a greater risk of missing economic turning points, they are still useful as an early indication of the likely performance of regional economies.

Introducing the H-approach to UK supply and use tables

Next year the UK National Accounts plans to introduce a new model for producing supply and use tables that underpin the national accounts measures of GDP and gross value added (GVA). This will revolutionise the structure of the national accounts and will result in some changes to the national data that we use as the starting point for the regional accounts.

We will benefit from the area of gross operating surplus (GOS), and it is possible that we will no longer be able to provide the full set of detailed income components that we currently provide. The biggest changes are improvements to the "real" GVA data, including better price deflators and greater coherence between estimates in current and previous year's prices.

Further breakdown of GVA to smaller areas

We have made use of administrative turnover data from Value Added Tax (VAT) records to inform the detailed industry breakdown of regional GVA to the NUTS3 and local authority levels, which are published for the first time in this release. Next year we will investigate the potential to break the data down to the very smallest areas possible, ideally workplace zones (or data zones in Scotland). If we can achieve this, those areas can be used as building blocks from which any user-specified area of interest can be made.

The main limitation on this is the need to protect confidential information relating to identifiable businesses, which we call disclosure control. We will never knowingly publish information that can be attributed to an individual person or business, without the subject's prior consent. As there are generally few businesses in each workplace zone, we may find that we are unable to provide any industry breakdown at that level. We aim to publish a note of our findings and plans in the first half of 2019, and if all goes well, we will look to introduce a further expansion of our flexible GVA outputs in next December's (2019) release.

Investigation into the potential use of VAT expenditure data

So far, we have begun making use of VAT turnover data, but the same administrative records also hold information on businesses' expenditure. Some analysis has already been carried out to investigate the potential to use these data to inform estimates of intermediate consumption, which could then be used with the VAT turnover data to provide better estimates of the regional distribution of GVA. In the future, we will look to continue this investigation, although it is too early to give any firm commitment or timescale for this work.

Use of administrative data to provide household income for smaller areas

Similarly to our use of administrative VAT data to break GVA down to small areas, we plan to investigate the potential to do the same for our gross disposable household income (GDHI) data. Since GDHI is a household statistic, allocated by residence, our ultimate aim here is to provide estimates for census output areas, or as close as possible. Again, the intent is to provide a set of building blocks from which any user-specified area can be made.

The administrative data sources we are seeking to use include Pay As You Earn (PAYE) and Self-Assessment data from Her Majesty's Revenue and Customs (HMRC) and benefits data from the Department for Work and Pensions (DWP). We are working closely with HMRC and DWP to secure a regular data supply.

Possible further breakdown of GDHI components and cash-based GDHI

In July 2018, at the request of the Combined Authority Liaison Group, set up by Office for National Statistics (ONS) to engage with these new administrative bodies, we produced a more detailed breakdown of the components of household income and a set of "cash-based" estimates of gross disposable household income (GDHI), which exclude items such as imputed rental and employers' social contributions. This builds on work done in the UK National Accounts and as far as possible uses a consistent methodology with the UK version.

Although we have so far only produced these for the combined authorities, if there is sufficient user demand we will consider the potential to produce these alternative measures for other geographic areas of the UK. There are currently no plans to provide these data on a regular basis.

Development of regional household expenditure

In 2016, we published a [feasibility study on regional household final consumption expenditure (HFCE)](). Further work has been carried out during 2018 to [publish a first set of experimental estimates of regional HFCE]() for the NUTS1 level countries and regions. These data include estimates of the amount spent in each region on a range of goods and services, and the amount spent by the residents of each region, regardless of where the spending takes place. We have also used the household expenditure data in conjunction with our latest GDHI data, to derive estimates of the households' saving ratio, a commonly used measure of prosperity.

If this development proves to be a success, we will move into regular production and publication from 2019, and will look to expand the geographic content to smaller areas. To assess the level of user demand and find out more about the specific needs of regional users, we are currently carrying out a [public consultation on the experimental HFCE statistics](). The consultation is open until the end of December 2018 and we welcome views from anybody with an interest in regional spending patterns.

Further details about our development programme and other related work going on to meet the growing need for regional statistics can be found in the article [Supporting devolution: developments in regional and local statistics]().

9 . Quality and methodology

Quality

The [Regional gross value added (income approach) Quality and Methodology Information]() and [Regional gross value added (production approach) Quality and Methodology Information]() reports contain important information on:

- the strengths and limitations of the data and how it compares with related data

- uses and users of the data

- how the output was created

- the quality of the output including the accuracy of the data

Figures for 2017 are provisional as national estimates have not been through supply and use balancing at the time of this publication. Regional industry estimates for the components of income and production in 2017 have been calculated by applying growth in gross domestic product (output) industry figures and then constraining these to sum to the income and production component totals. The figures used in this process are consistent with those published in the [UK National Accounts, The Blue Book: 2018]().

The statistical discrepancy shown in gross value added income (GVA(I)) is the difference between the sum of the national income components and the definitive national estimate of GVA. For 2017, this national estimate is a simple average (mean) of the three measures, income, output and expenditure. For the balanced measure of GVA (GVA(B)), we have aligned to this average national total and have subsumed the statistical discrepancy, except where it is needed to maintain the additivity of the detailed income components.

We do not yet have a Quality and Methodology Information report for GVA(B), but in time we intend to replace the two existing reports with a single report incorporating the entire process and all component measures. Since the balancing process uses quality measures to assess the relative quality of the income and production estimates, we are able to share these as an indication of how good the two measures are before they are balanced, and therefore how good the balanced estimate might be. We have published the aggregate quality metrics that are used to inform the weighted arithmetic mean of the two estimates in balanced regional GVA.

As part of the [assessment of regional GVA](#), we carried out an analysis of the [extent of modelling and estimation in regional GVA estimates](#). This provides users with a breakdown of the GVA(I) and gross value added production (GVA(P)) data into data collected directly on a regional basis, data estimated using standard sampling and weighting techniques, and data modelled using apportionment of higher-level aggregates or other proxy measures. The analysis presents results for NUTS1 countries and regions with an industry breakdown by Standard Industrial Classification (SIC) section.

Methodology

Various [guidance and methodology](#) documents relating to both regional GVA(I) and GVA(P) are available. The [regional accounts methodology guide (PDF, 615.48KB)](#) provides an overview of the methodology used to compile regional accounts outputs. Quality and Methodology Information (QMI) reports are available, covering the relevance, accuracy, timeliness, accessibility and coherence of each of the regional accounts outputs. Other historical guidance, methodology and update documents are also available.

Regional GVA(B) has been produced using a ground-breaking method. To the best of our knowledge, nobody has ever done this before, using weighted quality metrics to inform an automated balancing process. The improvement in the reliability and stability of regional GVA estimates underpins an expansion in the level of industrial detail for which we can provide estimates. As a by-product of this development, we have also improved by one year the timeliness of our provision of "real" GVA indices with the effect of price inflation removed. Further details on the methods used to produce GVA(B) are included in the paper [Development of a balanced measure of regional gross value added](#).

Regional GVA(B) is a workplace-based measure. The GVA(I) and GVA(P) estimates that feed into it are compiled using a "top-down" approach. National accounts supply and use tables (SUT) provide national totals for 112 industry components. Regional indicator datasets are used to calculate regional proportions for each industry. These proportions are then used to allocate the UK total output and UK total intermediate consumption for each industry, prior to the calculation of regional GVA(P) for each industry. For GVA(I), similarly to GVA(P), regional proportions are used to allocate the UK total for each industry, but in this case for the income components of GVA and for a reduced set of aggregated industries.

The balanced GVA estimates use a matrix of paired quality metrics for each region, by industry, by year. These quality metrics are compiled by assessing the quality of each component that feeds into either of the two measures and multiplying it by the weight that component represents in the GVA estimate. They provide a simple way to compare the relative quality of the GVA(I) and GVA(P) estimates. The two quality metrics are used to calculate a weighted arithmetic mean of the income and production estimates to produce a single regional GVA estimate. The UK totals are consistent with the [UK National Accounts, The Blue Book: 2018](#).

Constant price GVA(B) is derived by deflating the current price estimates for each of the 112 industries using national industry deflators obtained from the UK gross domestic product (output) system. These deflators are consistent with the UK National Accounts, The Blue Book: 2018 and they are used because no regional price indices are currently available.

The Eurostat Manual on Regional Accounts (2013) recommends that in the absence of regional prices the use of national deflators is acceptable, provided that deflation occurs at a minimum level of 38 industries. Greater industrial detail allows the deflation to take account of regional variation in industrial, and hence product, composition. The one exception to this is in the real estate industry, where we have regional rental prices for NUTS1 countries and regions from the experimental [Index of Private Housing Rental Prices](#).

Once deflation has taken place, the resulting time series are constrained so that they sum to the corresponding national figures in constant prices. In this way we ensure that the regional estimates take account of the expenditure-based deflation that occurs nationally, rather than rely solely on output-based deflation, which can produce a different trend over time. The current price and constant price estimates are both used to aggregate industries together to produce chained volume measures (CVM), which are presented as indices referenced to 2016 equals 100.

One additional benefit of producing both current price and constant price estimates is that we can use them to derive aggregate level deflators for each region and for each industry within each region. These "implied" deflators are not true regional price indices, since they are based mostly on national prices, but they do reflect regional differences in the products contributing to GVA. We have included an extra table presenting these implied deflators in the datasets published with this bulletin.

Revisions

Revisions to the GVA(I) and GVA(P) estimates that underpin the GVA(B) estimates cover the period 1997 to 2016 and 1998 to 2016 respectively. GVA(B) estimates show revisions for the period 1998 to 2016.

Very few statistical revisions arise as a result of errors in the popular sense of the word. All estimates, by definition, are subject to statistical error but in this context the word refers to the uncertainty in any process or calculation that uses sampling, estimation or modelling. Most revisions reflect either the adoption of new statistical techniques or the incorporation of new information, which allows the statistical error of previous estimates to be reduced. Only rarely are there avoidable errors such as human or system errors and such mistakes are made clear when they are discovered and corrected.

The main reasons for revisions to the GVA(I) and GVA(P) estimates are detailed in the "What's changed in this release?" section.

We have published revisions triangles for GVA(B), GVA(I) and GVA(P):

- Regional gross value added (production approach) by SIC 2007 industry, chained volume measures: revisions triangles

- Regional gross value added (production approach) by SIC 2007 industry, current basic prices: revisions triangles

- Regional gross value added (production approach) implied deflators: revisions triangles

- Revisions triangles: regional gross value added (balanced) in current basic prices

- Revisions triangles: regional gross value added (balanced) in chained volume measures

- Revisions triangles: regional gross value added (balanced) implied deflators

- Revisions triangles: regional gross value added (balanced) per head and growths in current prices