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# Regional, sub-regional and local gross value added estimates for London, 1997-2016

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## Executive summary

In December 2017, the Office for National Statistics (ONS) released provisional estimates of regional and sub-regional (GVA) for 2016 measured by the income approach<sup>1</sup>. The GVA is the most common measure of regional output, equivalent to the GDP at the national level. On the same date, the ONS also published experimental results for real and nominal regional GVA as measured by both the production approach<sup>2</sup> and the balanced approach<sup>3</sup> for the years 1998-2016. This latter release was the first publication of GVA estimates by the ONS following a balanced methodology and included estimates of GVA at the local authority level in the UK.

This report summarises and analyses the ONS data of these publications. The key findings are presented below:

- In 2016, London's total nominal GVA (as measured by GVA (I)<sup>4</sup>) was under £396 billion (up 4.4 per cent on 2015). This represented 22.7 per cent of the UK's total GVA (I)<sup>5</sup> in 2016, up from 22.5 per cent in 2015 and 18.5 per cent when going even further back to 1997.
- London's GVA (I) has increased by 34.2 per cent in nominal terms compared to 22.9 per cent for the UK between 2008 and 2016. That was the fastest rate of growth among the 12 UK nations and regions. This divergence increases every year and it is even more pronounced when looking over a longer time period.
- London had the highest GVA (I) per head in the UK at £45,046 in 2016, 69.4 per cent higher than average UK GVA (I) per head which was £26,584.
- London also had in 2016 a significantly higher productivity (measured by GVA (I) per worker) than the UK as a whole. However, since 2012 the productivity annual growth (measured in these terms) has been permanently lower in London compared to the UK except for the year 2014.
- The two largest London sectors by share of GVA (I) are Real estate activities and Financial and insurance activities with 16 per cent and 15 per cent shares of total GVA in 2016, respectively. The strongest growth by main sector of the economy was registered in Construction (11.8 per cent), followed by Professional, scientific and technical activities (9.1 per cent) and in the Information and communication sector (8.3 per cent). London Financial and insurance services accounted for more than half of the sector's total GVA (I) in the UK and for 3.4 per cent of the UK's total GVA (I). London's Real estate activities sector accounted for a further 3.6 per cent of UK GVA (I).
- Within London, Inner London accounts for 67 per cent of London's GVA (I), with Inner London – West alone accounting for 42.6 per cent of the total.

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<sup>1</sup> ONS, December 2017, '[Regional Gross Value Added \(Income Approach\), 1997 to 2016](#)'.

<sup>2</sup> ONS, December 2017, '[Regional Gross Value Added \(Production Approach\), 1998 to 2016, constrained tables](#)'.

<sup>3</sup> ONS, December 2017, '[Regional Gross Value Added \(Balanced Approach\), 1998 to 2016](#)'.

<sup>4</sup> GVA as measured by the income approach.

<sup>5</sup> Unless otherwise stated, UK output/GVA in this document refers to United Kingdom including Extra-Region and statistical discrepancy. Extra-Region, comprises compensation of employees and gross operating surplus which cannot be assigned to regions.

- The ONS has published a new balanced estimate of GVA (B) which balances the published historic nominal GVA (I) and the GVA (P)<sup>6</sup> series for London, both in levels and in growth rates. In real terms, the findings of the GVA (B) approach are broadly consistent with the GVA (P) approach.
- In terms of London local authorities (LA) (as measured by GVA (B)), Westminster and the City of London remained as the areas with highest output in London (£59 billion and £49.1 billion, respectively) in 2016. By contrast, Greenwich with £4.5 billion and Barking and Dagenham with £3.9 billion were the London LAs with the lowest GVA (B) in London.
- Tower Hamlets and the City of London increased the size of their nominal GVA (B) by over 207 per cent and 205 per cent, respectively, between 1998 and 2016 while at the other end of the growth spectrum Bromley and Croydon saw their nominal GVA (B) increase by 69 per cent and 60 per cent, respectively.
- In 2016, there was a GVA (B) per employee job difference of over £46,000 between the highest (the City of London with £101,812) and the lowest (Greenwich with £55,223) London LA.
- Seven industries saw an increase in nominal GVA (B) for all the 33 London LAs between 1998 and 2016: Real estate activities; Professional and administrative services; Public administration, education and health; Construction; Distribution, transport, accommodation and food; Information and communication; and Other services and household activities.

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<sup>6</sup> GVA as measured by the production approach.

## Introduction

This report is structured as follows: Section I presents the findings for London from the main national statistics GVA release (using the income approach), including the analysis by industries and by NUTS 2 geographical level. In Section II, headlines of the experimental data using the production approach are shown. Finally, in Section III headlines of the new GVA (B) results are provided, with a focus on the breakdown by London local authorities. In addition, the recent ONS methodological changes on the GVA estimates and the innovative GVA Balanced approach are explained in two separate boxes.

## Background notes

- “Gross Value Added (GVA) is a measure of the increase in the value of the economy due to the production of goods and services”<sup>7</sup>. The GVA estimates in this note are workplace-based, where GVA is allocated to the area in which the economic activity takes place.
- GVA measured by the income approach “involves adding up the income generated by 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”<sup>8</sup>. No adjustment has been made to remove the effects of inflation. Over time, even if the true (economic) value of GVA is unchanged, GVA in current prices would increase in line with price rises (inflation).
- The GVA estimates measured by the production approach (currently experimental statistics) calculates the total value of all goods and services that are produced during the reference period (output), “less goods and services used up or transformed in the production process, such as raw materials and other inputs (intermediate consumption)”<sup>9</sup>. These estimates are both in real (or constant prices, via chained volume measures (CVM<sup>10</sup>)) and nominal terms.
- The new “balanced estimate” of regional gross value added (GVA (B)) “balances” the income and production approaches by taking the strengths of both approaches to measuring the economy into a single estimate at a regional level<sup>11</sup>. GVA (B) is also measured at current basic prices (valued in £ million), which includes the effect of inflation, and in “real” terms in chained volume measures (CVM), with the effect of inflation removed. The GVA (B) measures are currently experimental statistics like it is the case of GVA (P).
- GVA per head (income approach) relates the value added by production activity in a region to the resident population of that region, and it can therefore be subject to distortion due to the effects of commuting and variations in the age distribution of the population. Small areas, such as local authorities, can be subject to very large distortions and this should be borne in mind when interpreting the statistics as an indicator of relative economic prosperity.
- GVA (I) estimates are published using NUTS boundaries from the 2013 review (Table 1), which came into force on 1 January 2015. The NUTS classification for the UK was established by Eurostat in the early 1970s as a single, coherent system for dividing up European Union territory in order to produce regional statistics for the EU. In addition, the geographic breakdown of the GVA (B) data by London local authorities (LAs) is also provided in Table 1. LA level estimates (GVA (B)) does not have national statistics standing.

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<sup>7</sup> ONS, December 2017, [‘Regional Gross Value Added \(Income Approach\), 1997 to 2016’](#).

<sup>8</sup> Ibid.

<sup>9</sup> ONS, December 2016, [‘Regional Gross Value Added \(Production Approach\), 1998 to 2014’](#).

<sup>10</sup> CVM is a statistical methodology that obtains only the production volume changes from raw series that include changes in volumes and prices.

<sup>11</sup> ONS, December 2017, [‘Regional Gross Value Added \(Balanced Approach\), 1998 to 2016’](#).

**Table 1. Geographic classification employed in this paper**

NUTS 1 (UK)	NUTS 2 (Greater London)	NUTS 3 (Greater London)	London LA's
1 Wales	1 Inner London - West	1 Camden and City of London	1 Barking and Dagenham
2 Scotland	2 Inner London - East	2 Westminster	2 Barnet
3 Northern Ireland	3 Outer London – East and North East	3 Kensington & Chelsea and Hammersmith & Fulham	3 Bexley
4 North East	4 Outer London – South	4 Wandsworth	4 Brent
5 North West	5 Outer London – West and North West	5 Hackney and Newham	5 Bromley
6 Yorkshire and the Humber		6 Tower Hamlets	6 Camden
7 East Midlands		7 Haringey and Islington	7 City of London
8 West Midlands		8 Lewisham and Southwark	8 Croydon
9 East of England		9 Lambeth	9 Ealing
10 Greater London		10 Bexley and Greenwich	10 Enfield
11 South East		11 Barking & Dagenham and Havering	11 Greenwich
12 South West		12 Redbridge and Waltham Forest	12 Hackney
		13 Enfield	13 Hammersmith and Fulham
		14 Bromley	14 Haringey
		15 Croydon	15 Harrow
		16 Merton, Kingston upon Thames and Sutton	16 Havering
		17 Barnet	17 Hillingdon
		18 Brent	18 Hounslow
		19 Ealing	19 Islington
		20 Harrow and Hillingdon	20 Kensington and Chelsea
		21 Hounslow and Richmond upon Thames	21 Kingston upon Thames
			22 Lambeth
			23 Lewisham
			24 Merton
			25 Newham
			26 Redbridge
			27 Richmond upon Thames
			28 Southwark
			29 Sutton
			30 Tower Hamlets
			31 Waltham Forest
			32 Wandsworth
			33 Westminster



- The ONS methodology used to produce the LA level GVA estimates “is a simplified process, in which seven aggregated components of GVA at NUTS 3 level are broken down to local authorities according to proportions calculated from ... [various] datasets. It is important to note that in each of the datasets used to calculate these proportions, data are only available at local authority level for the latest few years. The proportions calculated from these years have been used to apportion earlier years in the time series. Calculated in this way, the time series assumes a lack of change in the regional distribution of local authorities within a NUTS 3 region, which may not give a true reflection of the activity taking place in those areas. Going forward, each subsequent year will be apportioned using the latest available local authority level data and further efforts will be made to obtain comparable data for earlier years”.<sup>12</sup>

### **Box 1: Main methodological changes (other than the GVA (B)) with respect to the 2016 release**

Since the publication of the last estimate of regional GVA in December 2016, two main methodological changes have been included in the most recent ONS publications in addition to the new GVA Balanced approach:

First, the production measure (GVA (P)) was previously a year behind the income measure (GVA (I)) owing to the lack of source data for the latest year. To produce balanced estimates for 2016, the ONS has produced GVA (P) estimates for that year, otherwise an income-only estimate for the latest period may have led to erratic movements in the GVA (B) time series. The ONS has used the annual growth in turnover between 2015 and 2016, as measured by the Value Added Tax (VAT) administrative data that they receive from HM Revenue and Customs, to project forward one year from the survey-based estimates for 2015. The ONS observe that turnover is a reasonable proxy for output and is also used in the quarterly measures of UK gross domestic product. This is the first ONS publication to make use of this new administrative data source.

Second, a re-conversion from Standard Industrial Classification (SIC) 2003 to SIC 2007 on the back series (periods 1998 to 2007) of the Annual Business Survey data, which is used to regionalise components in the gross value-added income (GVA (I)) approach. By completing this conversion at a more detailed level of industrial disaggregation, the ONS has been able to improve the quality of the data and bring the GVA(I) and gross value-added production (GVA (P)) estimates closer together prior to balancing.

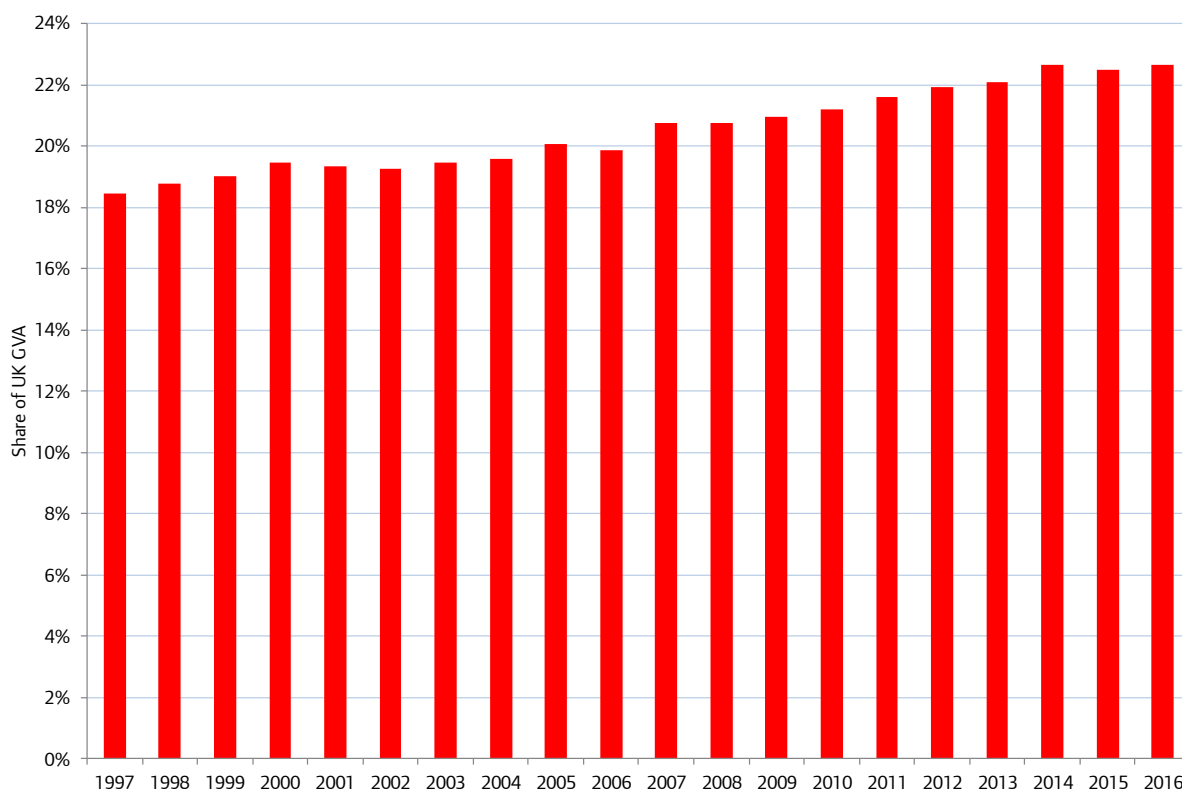
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<sup>12</sup> ONS, March 2017, '[Regional GVA\(I\) by local authority in the UK](#)'.

## Section I. London GVA (Income approach)

In 2016, the provisional estimate of London’s total GVA (I) was £395,857 million (up 4.4 per cent on 2015). This accounted for 22.7 per cent of the UK’s total GVA, up from 18.5 per cent in 1997 (see Figure 1). The growth in London’s nominal GVA accounted for 26.6 per cent of the UK’s total GVA increase between 2015 and 2016.

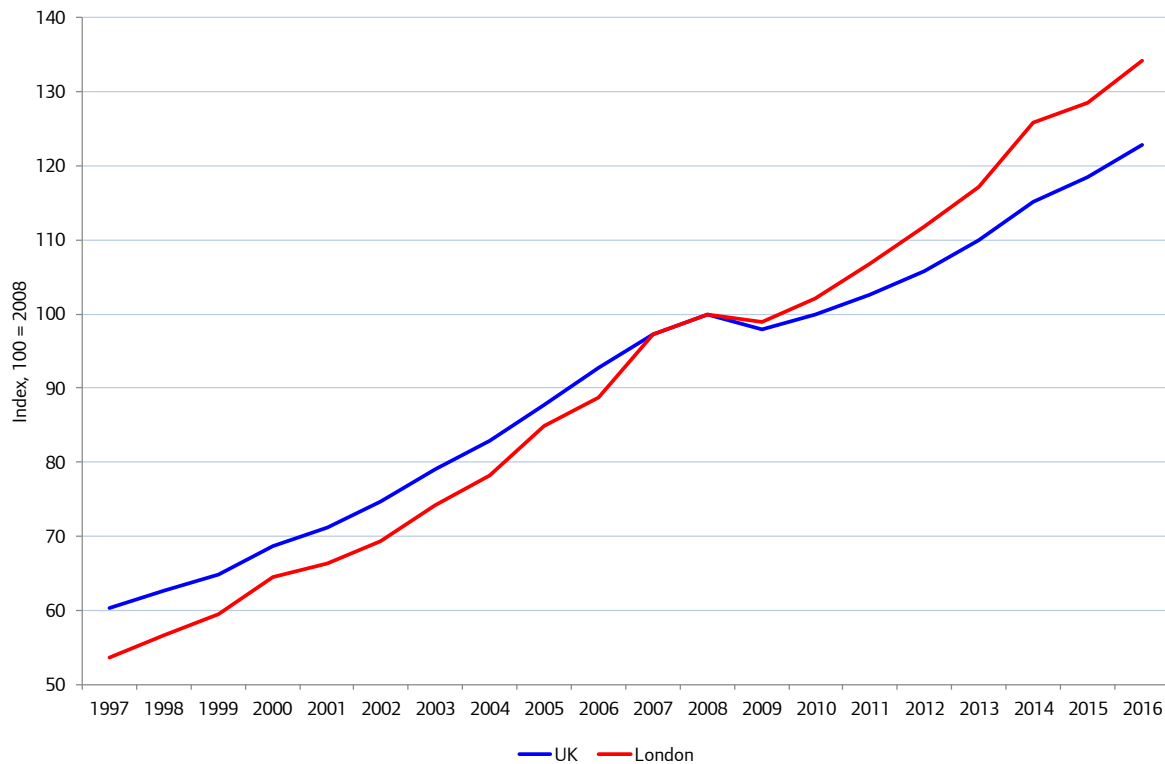
**Figure 1: London’s share of UK GVA (I), 1997 – 2016**



Source: *Regional Accounts, ONS*

Since 2008, London’s GVA has increased by 34.2 per cent in nominal terms (i.e. without taking account of inflation), compared to 22.9 per cent for the UK (see Figure 2). That was the fastest rate of growth among the 12 UK nations and regions. This divergence increases every year and it is even more pronounced when looking over a longer time period. London’s GVA has increased by a nominal 150.3 per cent since 1997 – when it was £158 billion – compared to a 104 per cent increase for the UK as a whole.

**Figure 2: Indexed UK and London's GVA (I) increase since 1997, base value 2008=100**

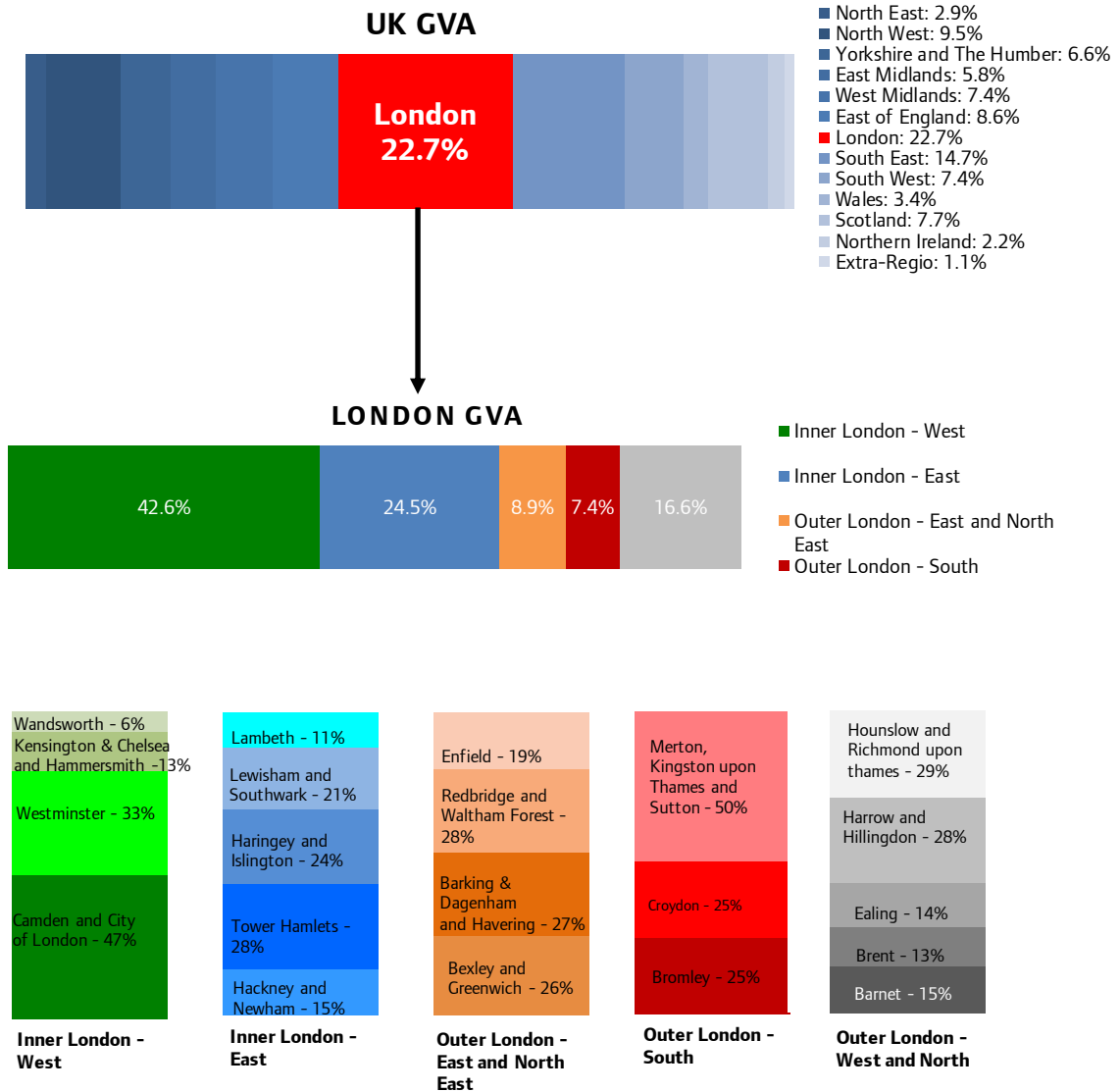


Source: *Regional Accounts, ONS*

### GVA (I) across London

Sixty-seven per cent of London's GVA was produced in Inner London in 2016 (see Figure 3), with 42.6 per cent of London's total GVA produced in Inner London - West alone. Indeed, Inner London - West had a higher GVA than all UK regions or nations except for the South East (and, of course, London). Inner London - West also saw the greatest change in its relative importance to London's economy, having accounted for 36.7 per cent of London's GVA in 1997, by 2016 this was up to 42.6 per cent. In contrast, all parts of Outer London declined in importance compared to 1997 (see Figure 4). The Greater London region as a whole has increased its share of the UK's total GVA by 4.2 percentage points since 1997.

Figure 3: Geographic breakdown of Headline<sup>13</sup> UK GVA (I) in 2016



Source: Regional Accounts, ONS

<sup>13</sup> UK includes Extra-Regio (which comprises compensation of employees and gross operating surplus which cannot be assigned to regions)

**Figure 4: Geographical breakdown of London's headline GVA (I)<sup>14</sup>, 1997 and 2016**



Source: Regional Accounts, ONS

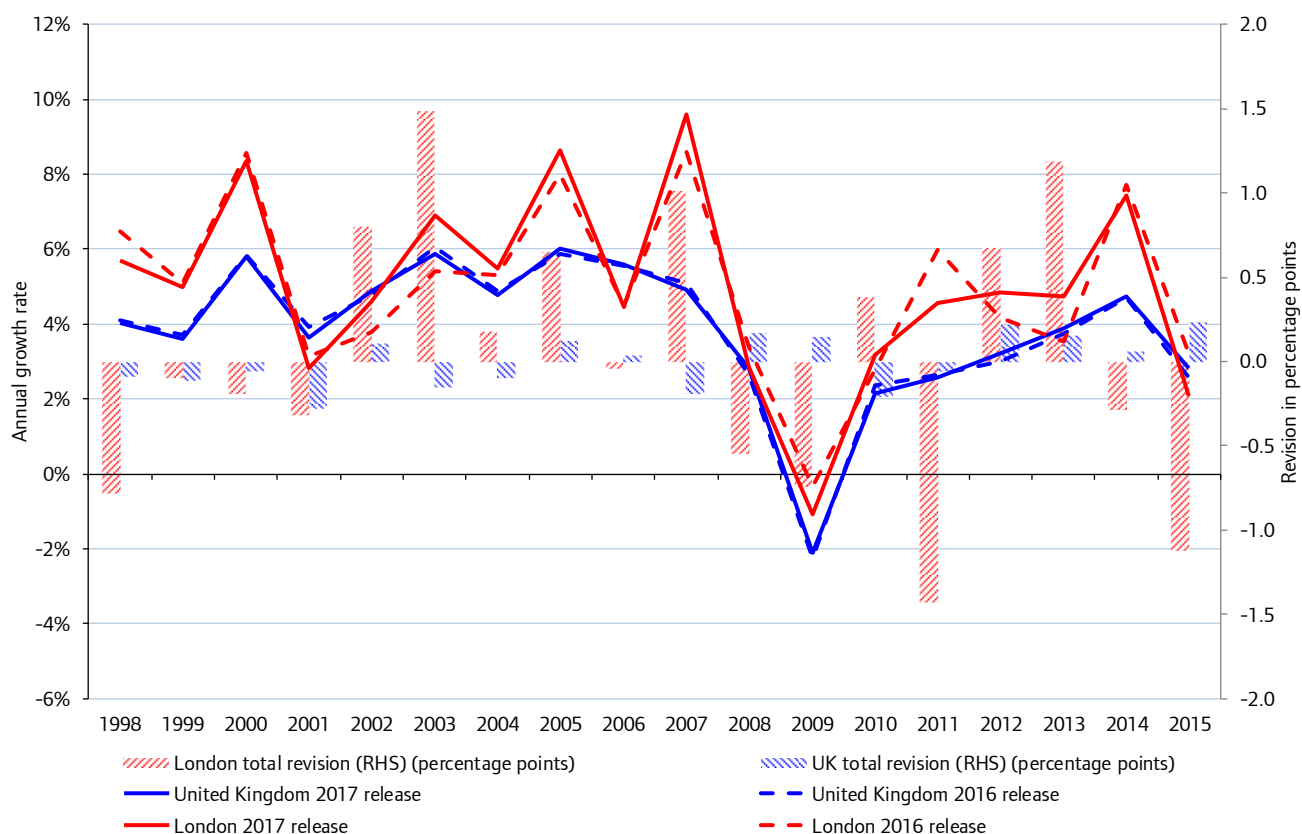
## Revisions

Revisions to ONS GVA estimates have been made throughout the years. In particular, compared to the previous release in 2016<sup>15</sup> data revisions of between -0.3 and 0.2 percentage points for the UK and between -1.4 and 1.5 percentage points for London have been estimated in the 2017 release for the historical comparable data (1998-2015). Figure 5 illustrates the impact on the historical growth rates for London and the UK due to the last revision to the series (2016 release vs 2017 release). As it can be observed, the magnitude of revisions to London GVA figures has been significantly larger than the magnitude of UK GDP revisions and consistently so over time.

<sup>14</sup> Estimates are for workplace based GVA allocating incomes to the region in which the economic activity takes place.

<sup>15</sup> ONS, December 2016, '[Regional Gross Value Added \(Income Approach\), 1997 to 2015](#)'.

**Figure 5: Comparison of the nominal growth rates in GVA (I) in London and the UK 1998 to 2015 from the 2016 and 2017 regional accounts releases**



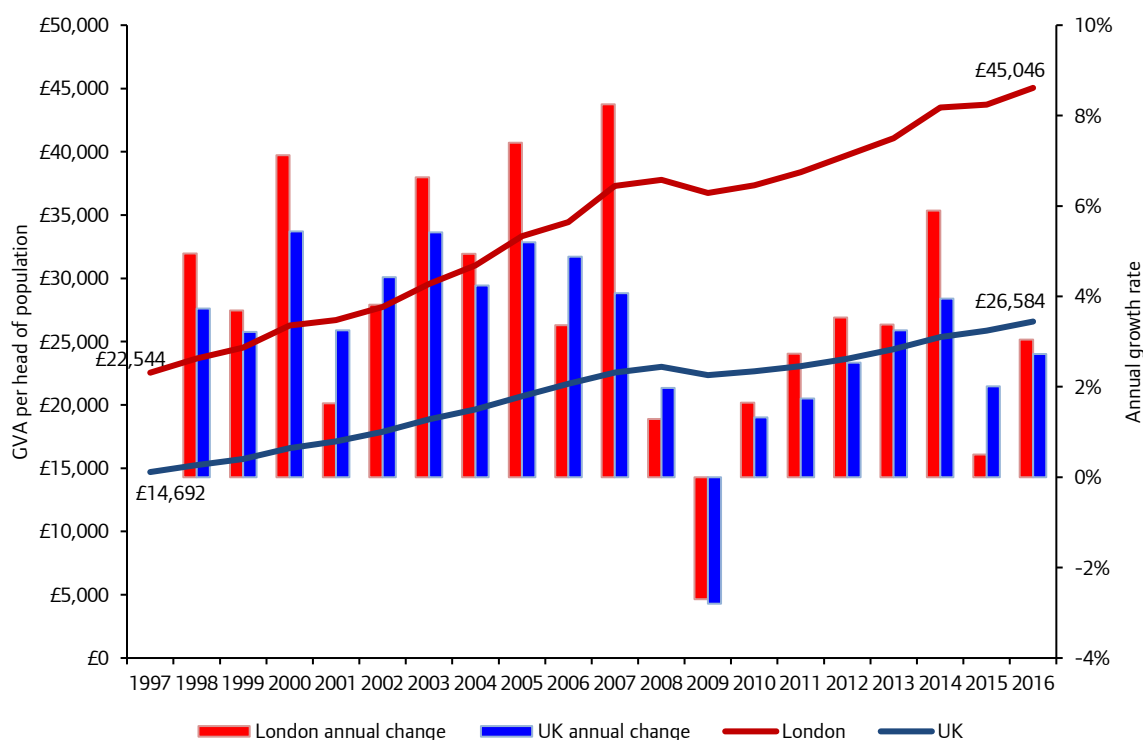
Source: *Regional Accounts, ONS*

### GVA (I) per head, per worker and per employee job

London's GVA performance remains strong even after adjusting for its relative size<sup>16</sup>. GVA per head of population in the capital was £45,046 in 2016 (see Figure 6), the highest of any English region or UK nation and 69.4 per cent higher than that for the UK as a whole which stood at £26,584. GVA per head in London increased by 3 per cent compared to 2015 and compares to an increase of 2.7 per cent for the UK. Since 2008, London's GVA per head has risen by 19.3 per cent, compared to a rate of increase of 15.6 per cent for the UK as a whole.

<sup>16</sup> Adjusting for relative size is important as it provides a clearer understanding of the regions relative prosperity and is generally correlated with living standards. The importance of this can be observed when we compare national incomes. For example, China has significantly higher output than Singapore; however the output per head and living standards of Singapore are higher.

**Figure 6: Headline GVA (I)<sup>17</sup> per head (£) and annual percentage change for London and UK 1997-2016, current prices**



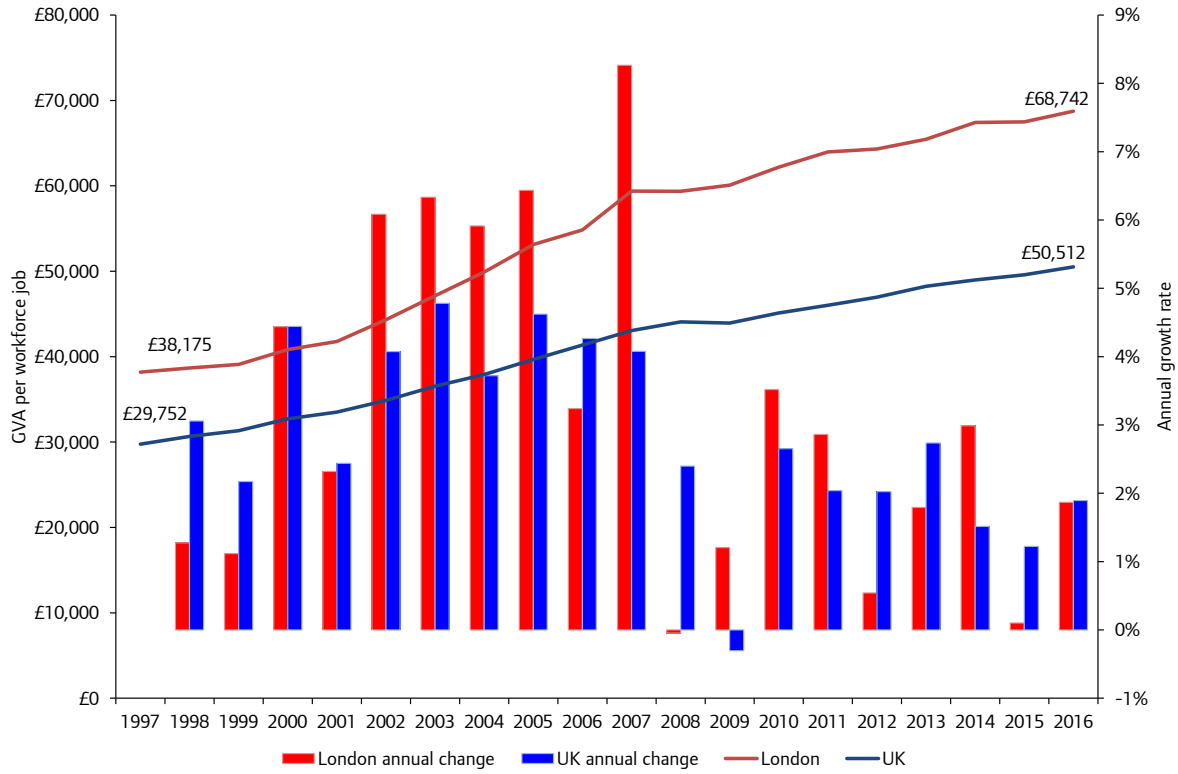
Source: *Regional Accounts, ONS*

However, given the importance of commuters in producing London’s output, GVA per head in London might be considered a somewhat misleading statistic. In terms of productivity, a more representative measure is GVA per worker (see Figure 7). As can be observed, GVA per worker is significantly higher in London when compared to the UK as a whole with it standing in 2016 in London at £68,742 compared to a figure of £50,512 for the UK as a whole. Compared to 2015, GVA per worker increased by around 1.9 per cent in both London and the UK. It seems also important to highlight that since 2012 (except for the year 2014) the productivity annual growth (measured in these terms) has been permanently lower in London compared to the UK. Figure 8 shows the difference between GVA per worker and GVA per head in London<sup>18</sup> and highlights the different growth rates that these two measures give.

<sup>17</sup> Estimates are for workplace based GVA allocating incomes to the region in which the economic activity takes place.

<sup>18</sup> In this paper the analysis looks at GVA per workforce job. For more detailed work on GVA per workforce job for London and the UK: [Working Paper 87: Gross Value Added per Workforce Job estimates for London and the UK, 1997-2015](#).

**Figure 7: Headline GVA (I)<sup>19</sup> per worker<sup>20</sup> (£) and annual percentage change for London and UK 1997-2016, current prices**



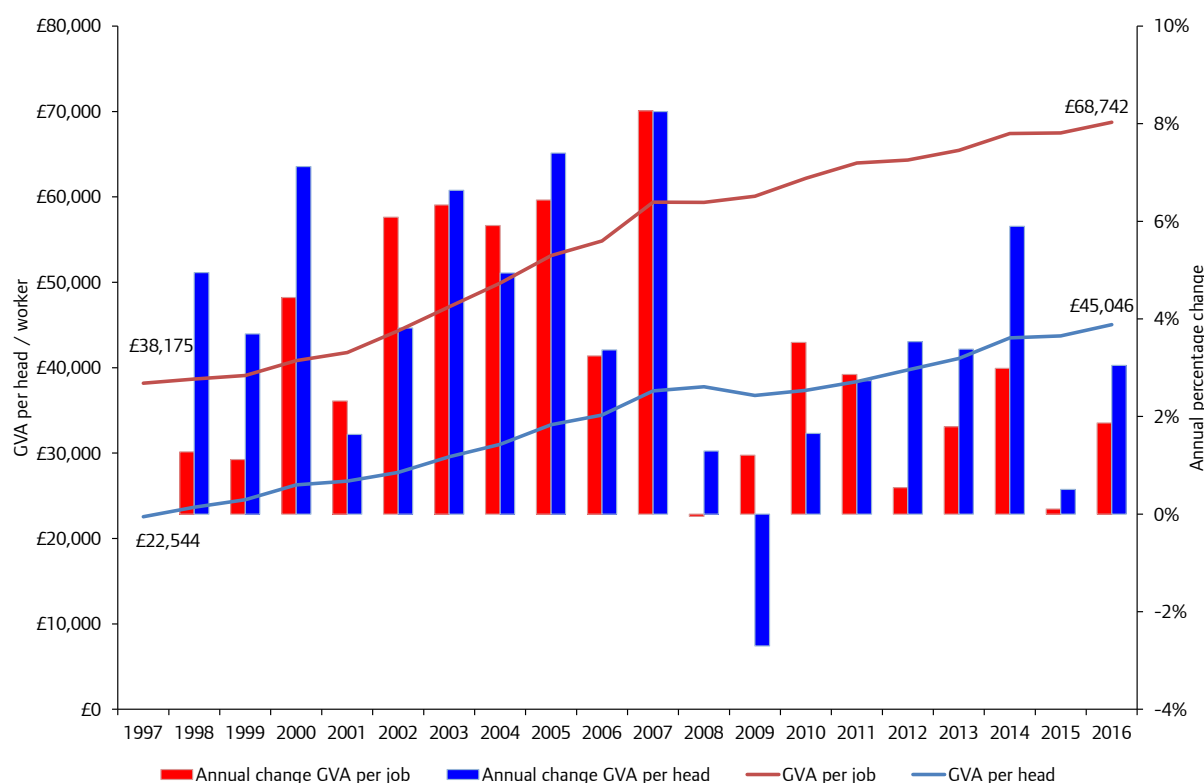
Source: Regional Accounts & Workforce Jobs, ONS and GLA Economics calculations

<sup>19</sup> Estimates are for workplace based GVA allocating incomes to the region in which the economic activity takes place.

<sup>20</sup> Calculated by dividing headline GVA by the average workforce jobs level per annum.



**Figure 8: Comparison of headline GVA (I)<sup>21</sup> per worker<sup>22</sup> and GVA (I) per head (£) and annual percentage change for London, 1997-2016, current prices**



Source: Regional Accounts & Workforce Jobs, ONS and where applicable GLA Economics calculations

However, the London-wide GVA per worker estimates may hide some significant variation across London's sub-regions and local areas. Unfortunately, in order to examine output per job at the sub-regional level other measures of employment need to be used as the workforce jobs data that was used to produce the analysis in Figure 7 is not available at the sub-regional level. Thus, instead, employee jobs data from the Business Register and Employment Survey (BRES) will be used in the following analysis. It should be noted that this data gives over 1 million fewer jobs at the London level as it does not include the self-employed which are included in the workforce jobs data. Therefore, this leads to a higher estimate here of output per job in London as this estimate is output per employee job only. Further, the data is only available from the year 2009 and there is not available data for Northern Ireland. Consequently, in the following analysis, London's results will be compared to the results for Great Britain as a whole<sup>23</sup>. Figures 9 and 10 show GVA per job (as measured by employees only) across London since 2009. As can be observed London has a much higher GVA per employee job than Great Britain as a whole. Further, all NUTS 2 regions in London also outperform Great Britain.

Looking at these areas in London in more detail, there are large variances among them. In 2016, there was a GVA per employee job difference of £22,776 between the highest (Inner London – West) and the lowest (Outer London – South) sub-region. All of London's NUTS 2 areas saw a rise in GVA per employee job in 2016 but as has been happening since 2009 differences among areas are evident. Focusing on this period 2009-2016, within Inner London, GVA per employee

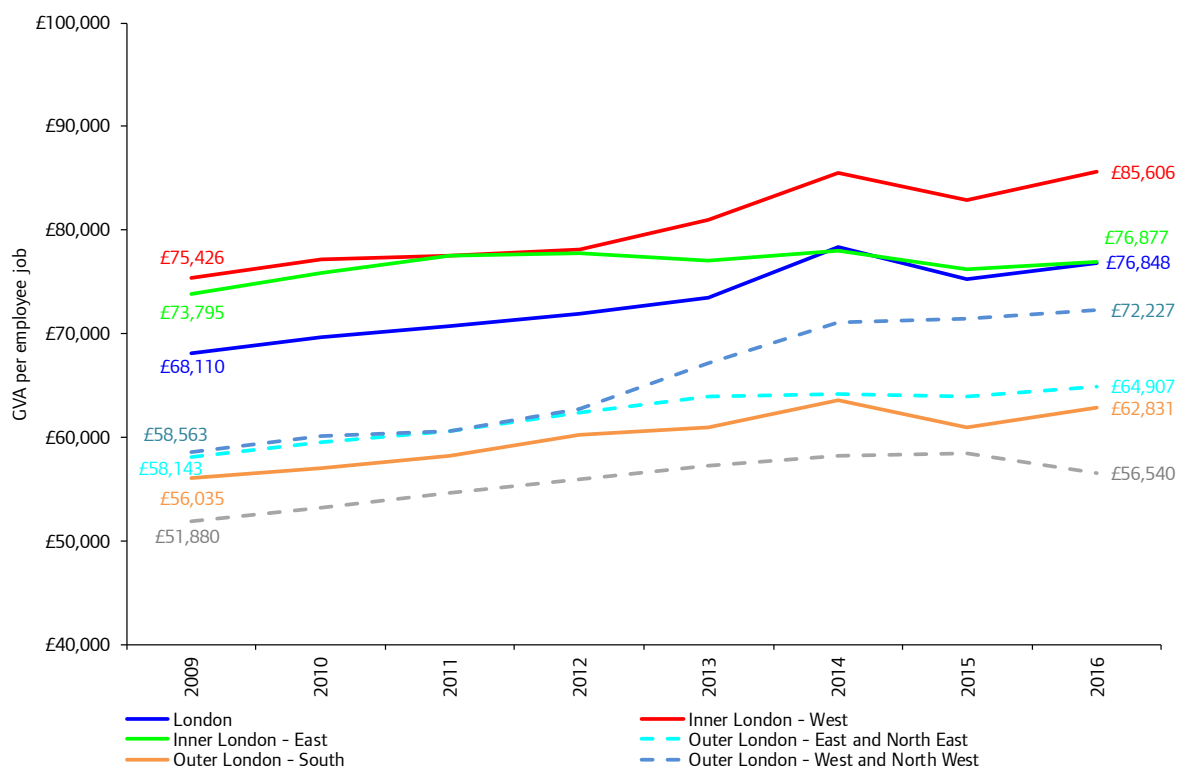
<sup>21</sup> Estimates are for workplace based GVA allocating incomes to the region in which the economic activity takes place.

<sup>22</sup> Calculated by dividing headline GVA by the average workforce jobs level per annum.

<sup>23</sup> This figure is calculated by the sum of the output of England, Scotland and Wales (and thus excludes Extra- Regio) divide by the employee jobs measure given by BRES.

job increased by 13.5 per cent in Inner London – West while in Inner London – East the growth was 4.2 per cent. For Outer London, GVA per employee job increased in Outer London – West and North by a significant 23.3 per cent (the highest of any London NUTS 2 area), compared to growth of 12.1 per cent and 11.6 per cent in Outer London –South and Outer London – East and North East, respectively.

**Figure 9: Headline GVA (£)<sup>24</sup> per employee job<sup>25</sup> at London NUTS 2 level and Great Britain, 2009-2016, current prices**



Source: Regional Accounts & BRES, ONS and GLA Economics calculations

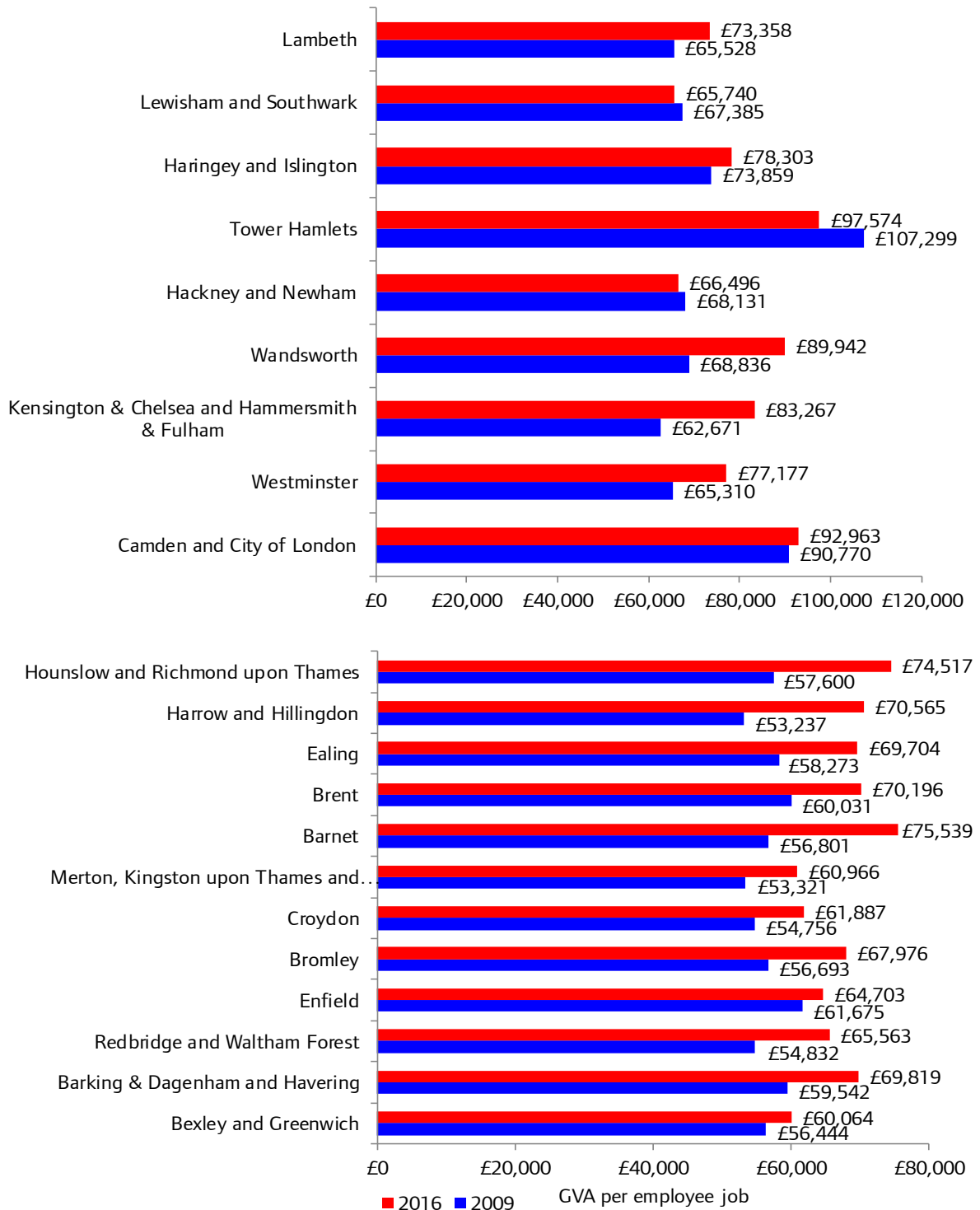
The variations in output per employee job in London at the NUTS 3<sup>26</sup> level are also evident as shown in Figure 10. On the top side, Tower Hamlets showed the highest output per employee job in London with £97,574 in 2016 (72.6 per cent higher than the Great Britain average) followed by Camden and City of London £92,963 (64.4 per cent higher than the Great Britain average). On the bottom side, Bexley and Greenwich output per employee job was £60,064 (only a 6.2 per cent higher than the Great Britain average). Three London NUTS 3 areas saw a fall in output per employee job over the years 2009 and 2016: Tower Hamlets, Lewisham and Southwark, and Hackney-Newham.

<sup>24</sup> Estimates are for workplace based GVA allocating incomes to the region in which the economic activity takes place.

<sup>25</sup> Calculated by dividing headline GVA by annual employee jobs data from BRES.

<sup>26</sup> As a caveat, it is important to remind that the NUTS 3 geographical level does not correspond to the local authority level in London. The GVA data by local authority can be found at: ONS, December 2017, 'Regional GVA(B) by local authority in the UK'.

**Figure 10: Headline GVA (I)<sup>27</sup> per employee job<sup>28</sup> at London NUTS 3 level, 2009-2016, current prices**



Source: Regional Accounts & BRES, ONS and GLA Economics calculations

<sup>27</sup> Estimates are for workplace based GVA allocating incomes to the region in which the economic activity takes place.

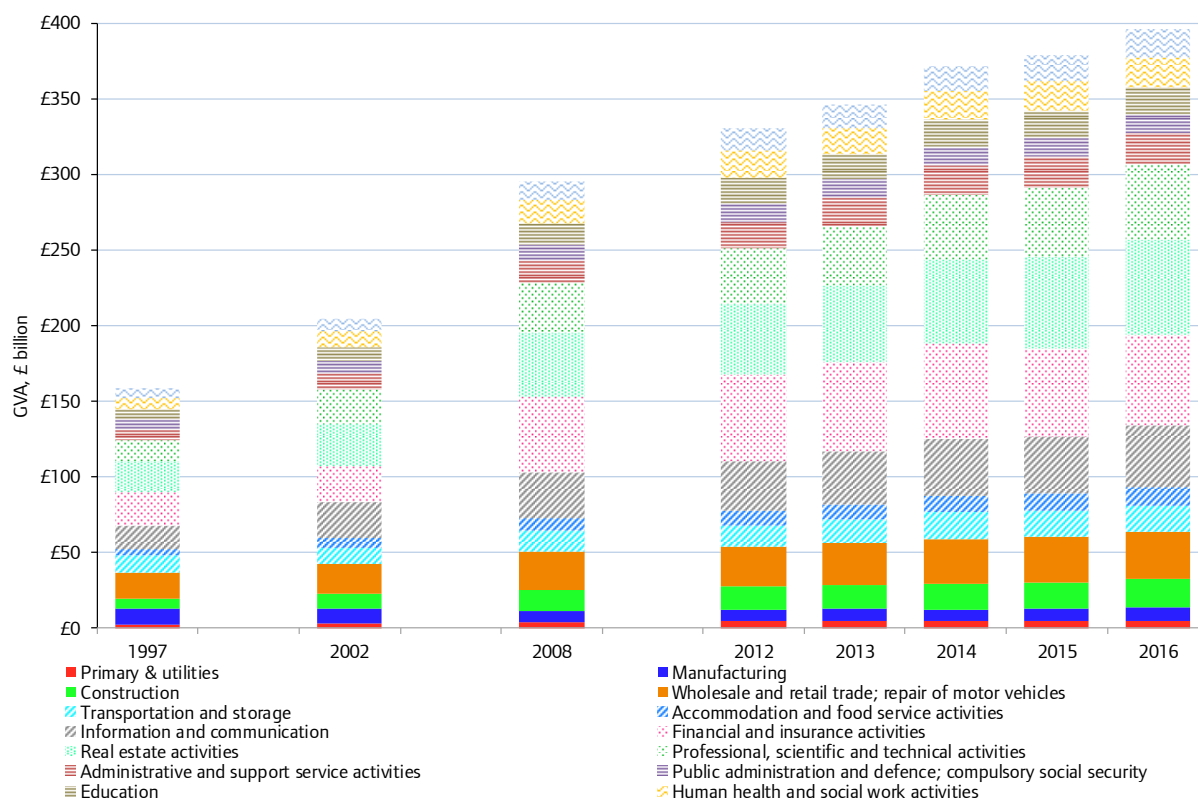
<sup>28</sup> Calculated by dividing headline GVA by annual employee jobs data from BRES.

## GVA (I) by industry

In 2016, over 31 per cent of London’s GVA was generated by Real Estate activities (16 per cent) and the Financial and insurance industry (15.1 per cent) combined, totalling £122.9 billion (see Figure 11 and Table 2). The value of these industries represented 13.1 per cent and 13.8 per cent, respectively, of London’s total GVA in 1997. Professional, scientific and technical activities show the largest increase as a share of the London economy between 1997 and 2016, from 8.8 per cent to 12.6 in 2016 while Manufacturing saw the largest decrease for the same period, from 6.7 per cent in 1997 to 2.1 per cent in 2016. In 2016, 51.8 per cent of the UK’s GVA in the Financial and insurance industry was generated in London (up from 42.6 per cent in 1997) (see Figure 12).

Professional, scientific and technical activities and Information and communication industries also played an important role in London’s economy, accounting for 12.6 per cent and 10.3 per cent, respectively, of London’s GVA in 2016.

**Figure 11: Headline GVA (I)<sup>29</sup> in London by industry, 1997-2016, current prices and selected years**



Source: *Regional Accounts, ONS*

<sup>29</sup> Estimates are for workplace based GVA allocating incomes to the region in which the economic activity takes place.

**Table 2: Headline GVA (I)<sup>30</sup> in London by industry (£ billion and as per cent of total London GVA (I)), 1997, 2008 and 2016, current prices**

	1997		2008		2016	
	Industry GVA (£b)	% of London's economy	Industry GVA (£b)	% of London's economy	Industry GVA (£b)	% of London's economy
<b>Primary &amp; utilities<sup>31</sup></b>	£2.0	1.2%	£3.8	1.3%	£4.7	1.2%
<b>Manufacturing</b>	£10.6	6.7%	£7.8	2.6%	£8.5	2.1%
<b>Construction</b>	£6.9	4.3%	£13.7	4.6%	£19.5	4.9%
<b>Wholesale and retail trade; repair of motor vehicles</b>	£17.4	11%	£25.6	8.7%	£31.3	7.9%
<b>Transportation and storage</b>	£10.8	6.8%	£13.8	4.7%	£16.8	4.2%
<b>Accommodation and food service activities</b>	£4.4	2.8%	£8.0	2.7%	£12.1	3.1%
<b>Information and communication</b>	£15.7	10%	£30.5	10.4%	£40.9	10.3%
<b>Financial and insurance activities</b>	£21.8	13.8%	£49.8	16.9%	£59.7	15.1%
<b>Real estate activities</b>	£20.6	13.1%	£42.1	14.3%	£63.3	16%
<b>Professional, scientific and technical activities</b>	£14	8.8%	£32.9	11.1%	£49.8	12.6%
<b>Administrative and support service activities</b>	£7.3	4.6%	£14.9	5.0%	£20.9	5.3%
<b>Public administration and defence; compulsory social security</b>	£6.5	4.1%	£10.9	3.7%	£12.3	3.1%
<b>Education</b>	£6.8	4.3%	£13.9	4.7%	£17.4	4.4%
<b>Human health and social work activities</b>	£7.2	4.6%	£15.1	5.1%	£20	5%
<b>Arts and other services<sup>32</sup></b>	£6.2	3.9%	£12.3	4.2%	£18.8	4.7%
<b>Total</b>	£158.1	100.0%	£295	100.0%	£395.9	100.0%

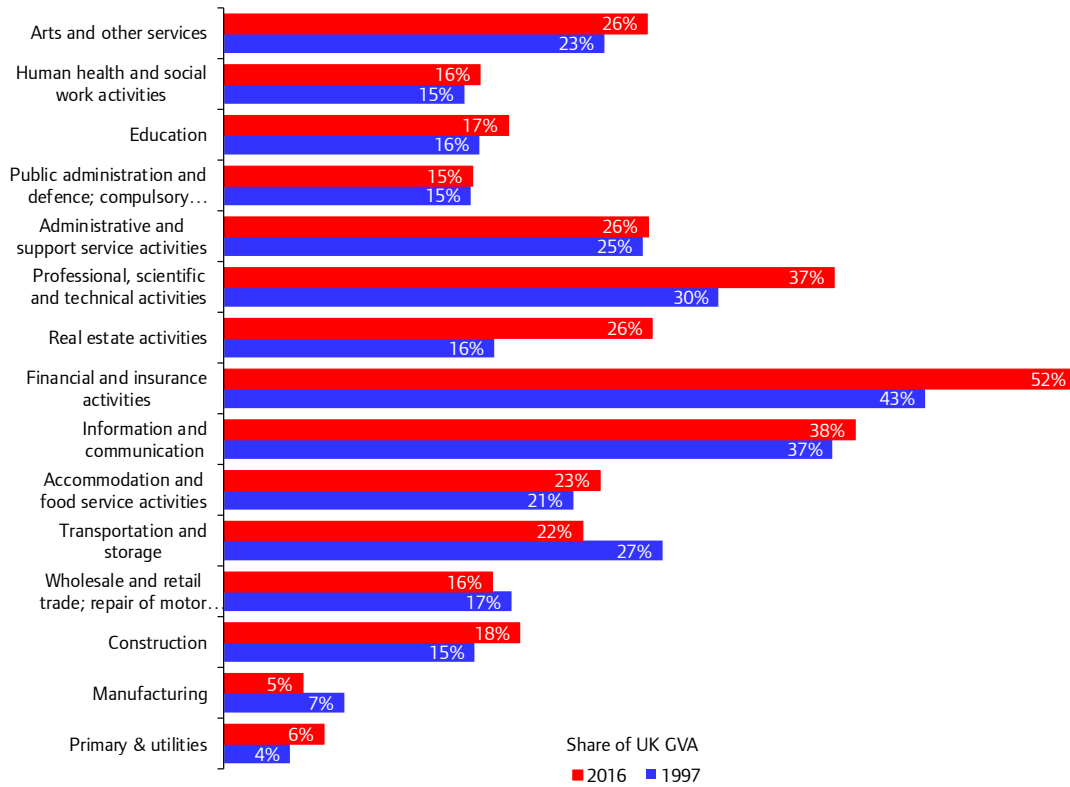
Source: Regional Accounts, ONS

<sup>30</sup> Estimates are for workplace based GVA allocating incomes to the region in which the economic activity takes place.

<sup>31</sup> This includes the following sectors: Agriculture, Forestry and Fishing; Mining and Quarrying; Electricity, gas, steam and air conditioning supply; and Water supply, sewerage, waste management and remediation activities.

<sup>32</sup> This category includes the subsectors: 'Arts, entertainment and recreation', 'Other service activities', and 'Activities of households'.

**Figure 12: London’s share of UK headline GVA (I)<sup>33</sup> by industry, 1997-2016, current prices**

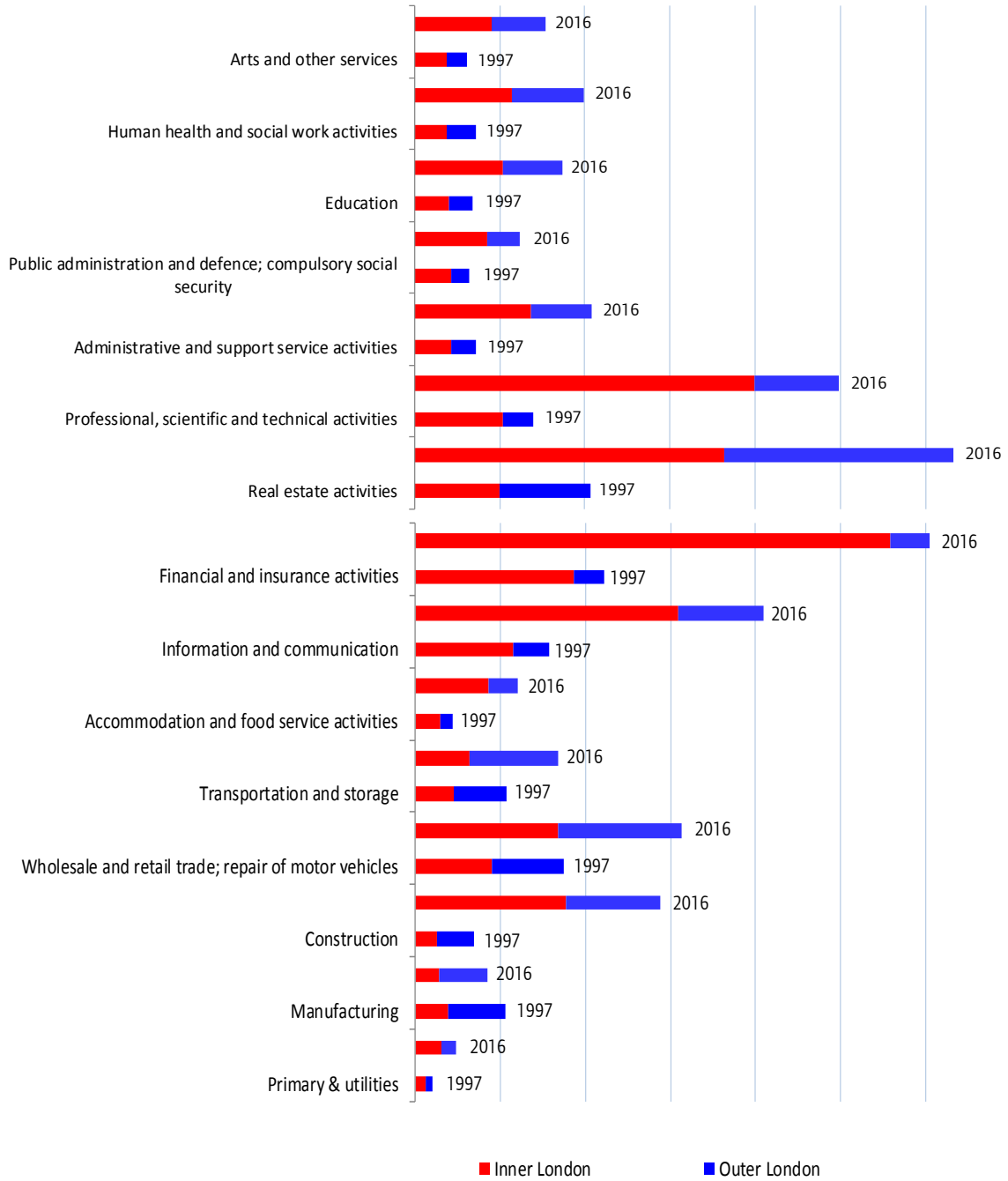


Source: *Regional Accounts, ONS*

Figure 13 shows how London’s GVA by industry is spread between Inner and Outer London in both 1997 and 2016. In 2016, Manufacturing (66.7 per cent) and Transportation and storage (62.3 per cent) were concentrated in Outer London whilst Inner London produced 92.6 per cent of London’s GVA in Financial and insurance activities; 80.1 per cent of Professional, scientific and technical activities; and 75.5 per cent of Information and communication.

<sup>33</sup> Estimates are for workplace based GVA allocating incomes to the region in which the economic activity takes place.

Figure 13: Inner and Outer London GVA (I)<sup>34</sup> by industry, 1997 and 2016, £ million



Source: Regional Accounts, ONS

<sup>34</sup> Estimates are for workplace based GVA allocating incomes to the region in which the economic activity takes place.

## Section II. London GVA (Production approach)

Due to the new publication of GVA estimates based on the balanced approach, after December 2016 the ONS ceased to publish the statistical bulletin of regional GVA using the production approach (GVA (P)). However, a dataset with the main data tables for the GVA (P) estimates for the years 1998 - 2016 was provided in December 2017<sup>35</sup> so that recurrent analysis using this measure can be still done.

The production measure (GVA (P)) was previously one year behind the income measure (GVA (I)) in terms of data covered owing to the lack of source data for the latest year of the GVA (I) release. To produce balanced estimates for 2016, ONS has produced GVA (P) estimates for that year. ONS has used the annual growth in turnover between 2015 and 2016, as measured by the Value Added Tax (VAT) administrative data that they receive from HM Revenue and Customs, to project forward one year from the survey-based estimates for 2015. Turnover is a reasonable proxy for output and is also used in the quarterly measures of UK gross domestic product. This is the first ONS publication to make use of this new administrative data source.

It is important to highlight that these estimates are experimental and do not have National Statistics status.

### Headline GVA (P)

Figure 14 shows the growth rate of real GVA (P) in London and in the UK between 1999 and 2016. London's real GVA (P) has grown at a faster rate than the UK economy during the whole period except for the years 2001, 2002, 2004, 2009 and 2015. Between 1998 and 2016, London's real GVA (P) increased by 70.2 per cent (compared to 39.9 per cent for the UK) at an average compound annual growth rate of 3 per cent (1.9 per cent for the UK). That was the highest historical growth in real GVA according to this approach of any NUTS 1 region, with Scotland (40.9 per cent) and South West (39.9 per cent) regions following but very far.

Further, between 1998 and 2007 (pre-downturn) London experienced an increase in real GVA (P) of 45 per cent at an average annual growth rate of 4.2 per cent over the period. The whole UK growth was 28.2 per cent at an annual average rate of 1.9 per cent.

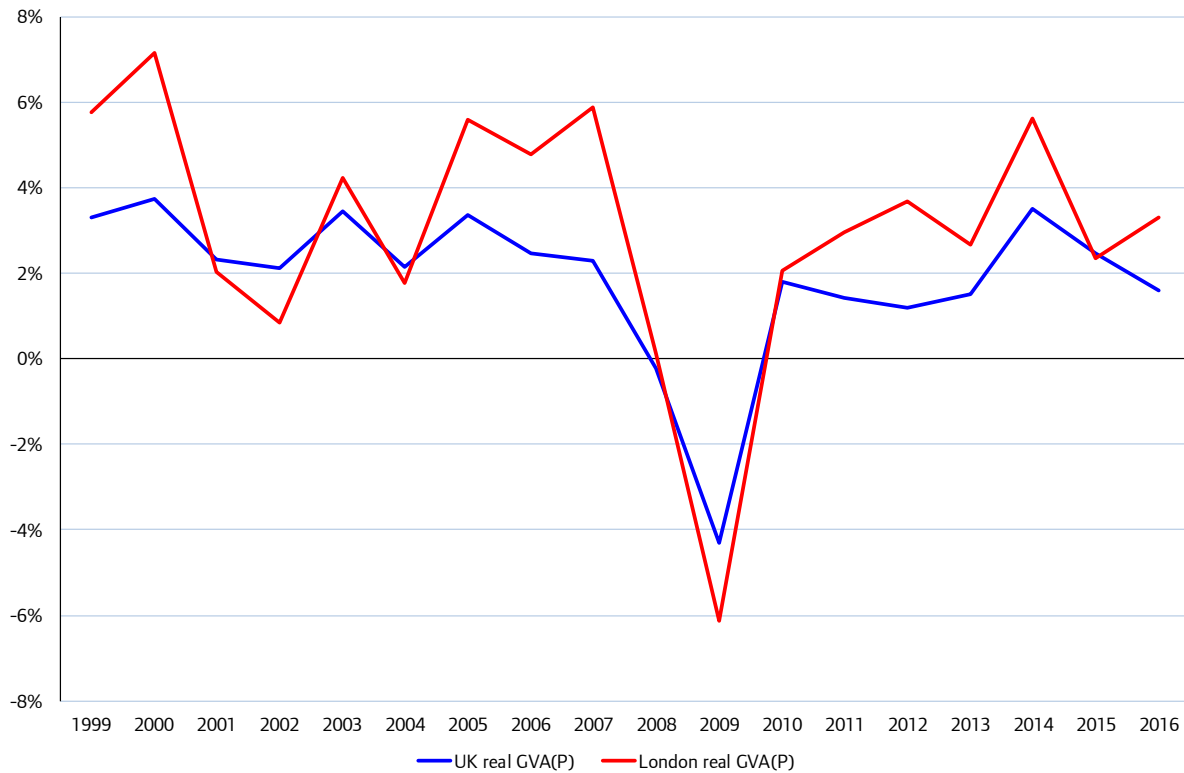
For the years between 2008 and 2016, London's real GVA (P) grew by 17.4 per cent at an average annual growth rate of 1.8 per cent while the UK region did it at a rate of 9.1 per cent and 1 per cent average rate annually.

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<sup>35</sup> ONS, December 2017, ['Regional Gross Value Added \(Production Approach\), 1998 to 2016, constrained data tables'](#)



**Figure 14: Headline real GVA (P) growth (chained volume measure) for London and the UK, 1999-2016**



Source: *Regional Accounts, ONS, GLA Economics calculations*

Table 3 shows the growth rate of real GVA (P) in London by sectors between 1998 and 2016. Information and communication has been London’s fastest growing sector over the period, with total growth of 145.3 per cent and average annual growth of 5.3 per cent. This was closely followed by Real Estate activities, with total growth of 142.8 per cent, and average annual growth of 5.1 per cent. Professional, scientific and technical activities also grew by an important 137.1 per cent over the period, 5 per cent annually on average. In contrast, Primary and Utilities fell by 13.1 per cent between 1998 and 2016, at an average annual rate of -0.4 per cent. This was the only sector to see negative growth over the period.

Despite an increase of 18.9 per cent in real GVA (P) in London between 2008 and 2014, real GVA (P) in a number of industry sectors remained below the 2008 level. For example, between 2008 and 2014, the real GVA (P) of the Financial and insurance activities (the second largest industry in the region in 2016) contracted by 6.4 per cent giving an average annual growth rate of -0.7.

**Table 3: Real GVA (P) growth in London for selected key industries, 1998 – 2016**

	Total growth	Average annual growth
<b>Primary &amp; utilities<sup>36</sup></b>	-13.1%	-0.5%
<b>Manufacturing</b>	Not reported	Not reported
<b>Construction</b>	65.9%	3%
<b>Wholesale and retail trade; repair of motor vehicles</b>	24.1%	1.3%
<b>Transportation and storage</b>	18.3%	1.1%
<b>Accommodation and food service activities</b>	54%	2.5%
<b>Information and communication</b>	145.3%	5.2%
<b>Financial and insurance activities</b>	51.9%	2.5%
<b>Real estate activities</b>	142.8%	5.1%
<b>Professional, scientific and technical activities</b>	137.1%	5%
<b>Administrative and support service activities</b>	111.8%	4.6%
<b>Public administration and defence; compulsory social security</b>	5.4%	0.4%
<b>Education</b>	32%	1.6%
<b>Human health and social work activities</b>	99.4%	3.9%
<b>Arts, entertainment and recreation</b>	4.9%	0.5%
<b>All industries<sup>37</sup></b>	70.8%	2.7%

Source: *Regional Accounts, ONS*

A comparison between GVA (P) and GVA (I) data expressed in current basic prices (nominal terms) at the London level demonstrates that there are differences between the two measures used, despite both measures being considered “conceptually identical”<sup>38</sup>. As can be seen from Figure 15, the estimate of GVA (P) in London was permanently higher than the estimate of GVA (I) between 1998 and 2016. This is mainly due to a persistent overestimation of the levels produced by the GVA (P) estimates in some industries, compared to the GVA (I) data<sup>39</sup>. However, in terms of growth rates the differences are relatively small. The growth for the whole period was 136.8 per cent for the GVA (I) approach and 135.4 per cent for the GVA (P) approach and both presented an average annual nominal growth rate of 4.9 per cent for the period. In fact, the absolute average difference in the growth rates between the two series for the whole period 1998–2016 was 0.89 percentage points. 2006 was the year where the discrepancy between the two measures was the greatest (see Figure 16); GVA (P) exceeded growth in GVA (I) by 3.5 percentage points.

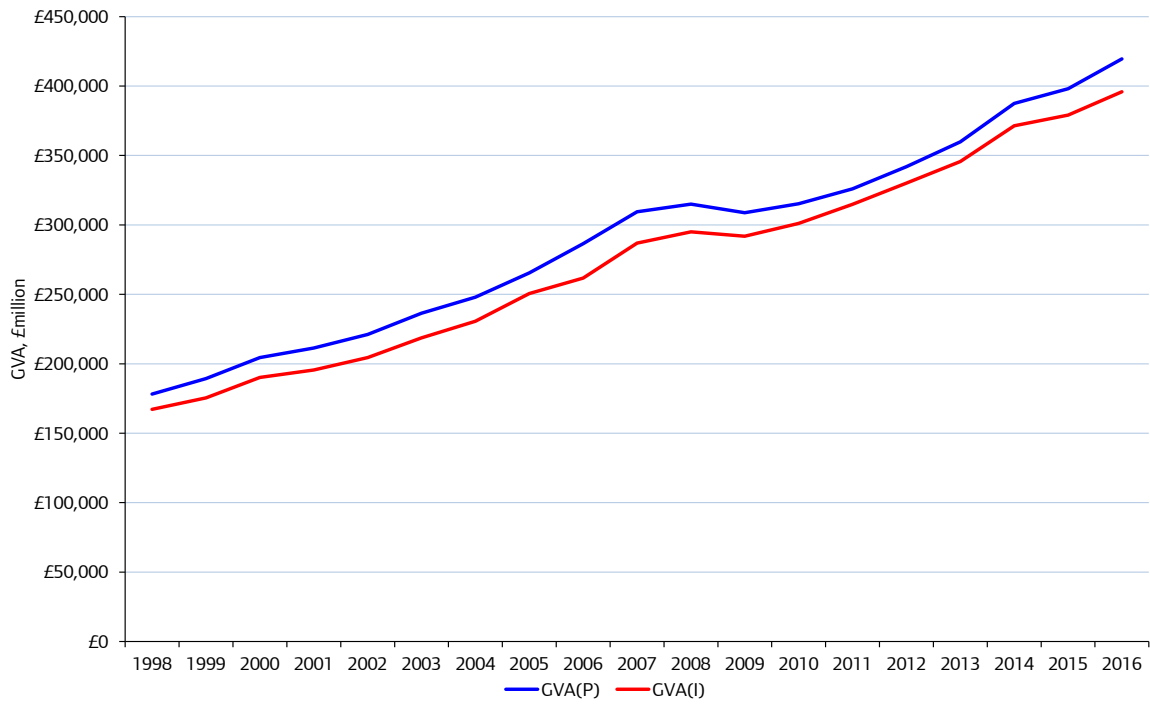
<sup>36</sup> This includes the following sectors: Agriculture, Forestry and Fishing; Mining and Quarrying; Electricity, gas, steam and air conditioning supply; and Water supply, sewerage, waste management and remediation activities.

<sup>37</sup> This includes industries not listed within the table.

<sup>38</sup> ONS, December 2015, ‘[Regional Gross Value Added \(Production Approach\), 1997 to 2013](#)’

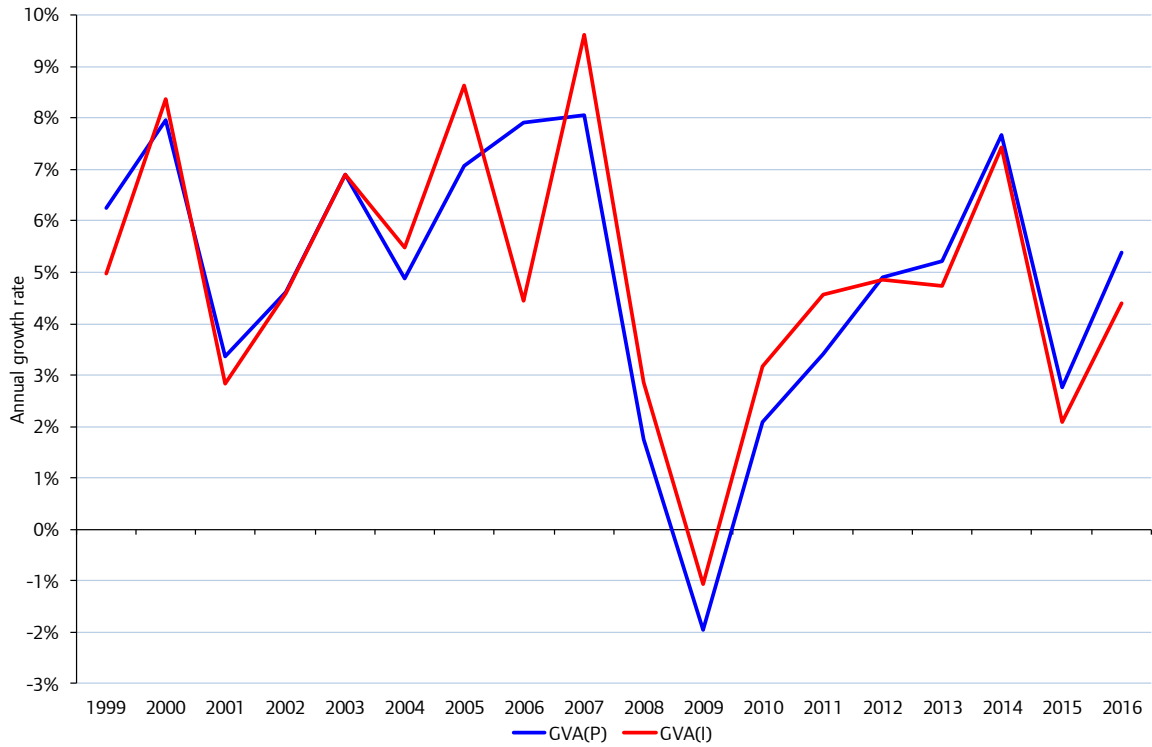
<sup>39</sup> However, for the December 2017 release the ONS has carried out a re-conversion of the industrial classification to improve the quality of the data and bring the GVA(I) and the (GVA (P) estimates closer together.

**Figure 15: Comparison of current price GVA (I) and current price GVA (P) all industries total for London, 1998 to 2016**



Source: *Regional Accounts, ONS*

**Figure 16: Comparison of growth rates of current price GVA (I) and current price GVA (P) for London, 1999 to 2016**



Source: Regional Accounts, ONS

## Section III. London GVA (Balanced approach)

The ONS released for the first time in December 2017 a “balanced estimate” of regional gross value added (GVA (B))<sup>40</sup> for the period 1998-2016; this new measure “balances” the income and production approaches to simulating the economy into a single estimate at a regional level. A new breakdown of the data by UK local authorities was also provided with the same release. Similarly to the GVA (P) statistics, GVA (B) is an experimental approach measured at both current and constant prices.

### Box 2: The new GVA Balanced approach (GVA (B))

The ONS observes that “having two independent estimates of regional GVA (GVA (I) and GVA (P)) presents a communication issue. There is only one true value of GVA for any given area and no statistical estimate based on sample surveys will ever be able to guarantee complete accuracy. However, a combination in a balancing process that seeks to identify the strengths and weaknesses of each measure and give them the appropriate weight may create a single balanced and quality estimate of the GVA. This development will provide a significant increase in the data made available to users, as the production approach includes the capacity to provide more detailed industry estimates alongside the component breakdown of income-based GVA, all based on a coherent and internally consistent framework of balanced regional GVA”<sup>41</sup>.

GVA (B) is measured at current basic prices, which include the effect of inflation. For larger geographic areas, it is also presented in “real” terms in chained volume measures, with the effect of inflation removed.

The methodology used for producing the GVA (B) approach can be summarised in six stages: 1. Assign weights to each component of the income and production measures; 2. Assign quality metrics to each component in each region; 3. Multiply quality by weight and aggregate to a single quality metric for each measure; 4. Use these two quality metrics to derive a single weighted estimate for each region; 5. Apply any necessary manual intervention to address anomalous results; 6. Feed the balanced estimates back into the detailed industry and component breakdown.

The balanced measure of GVA should be more reliable and more stable than either of its component estimates, as it gives more weight to the component that is judged to be of better quality, for each industry and for each region. It is therefore less prone to variation coming from anomalous survey data affecting any single component of output or income. This greater reliability means that we can have more confidence in estimates that are disaggregated to more detailed industries (according to the Standard Industrial Classification (SIC) 2007), and to smaller geographic areas. Therefore, the main aim of the GVA (B) is to provide estimates at the 2-digit level of SIC 2007. However, as of yet the GVA (B) measure does not have national statistics standing and therefore GVA (I) remains the official measure of London’s output.

The following table summarises the three GVA approaches (GVA (I), GVA (P), and GVA (B)) employed by the ONS in its latest GVA release in December 2017:

<sup>40</sup> ONS, December 2017, [‘Regional Gross Value Added \(Balanced Approach\), 1998 to 2016’](#).

<sup>41</sup> ONS, December 2017, [‘Development of a balanced measure of regional gross value added’](#).

	<b>Income approach (GVA (I))</b>	<b>Production approach (GVA (P))</b>	<b>Balanced approach (GVA (B))</b>
Approach	Involves adding up the income generated by 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	Calculates the total value of all goods and services that are produced during the reference period (output), less goods and services used up or transformed in the production process, such as raw materials and other inputs (intermediate consumption)	Balances the income and production approaches by taking the strengths of both approaches to measuring the economy into a single estimate at a regional level
Regional breakdown	Down to NUTS 3*	Down to NUTS 2	Down to local authority
Sector breakdown	Down to Section level	Down to Section level	Down to Division level
Nominal prices	Y	Y	Y
Real prices	N	Y	Y
Accreditation	National Statistic	Experimental	Experimental

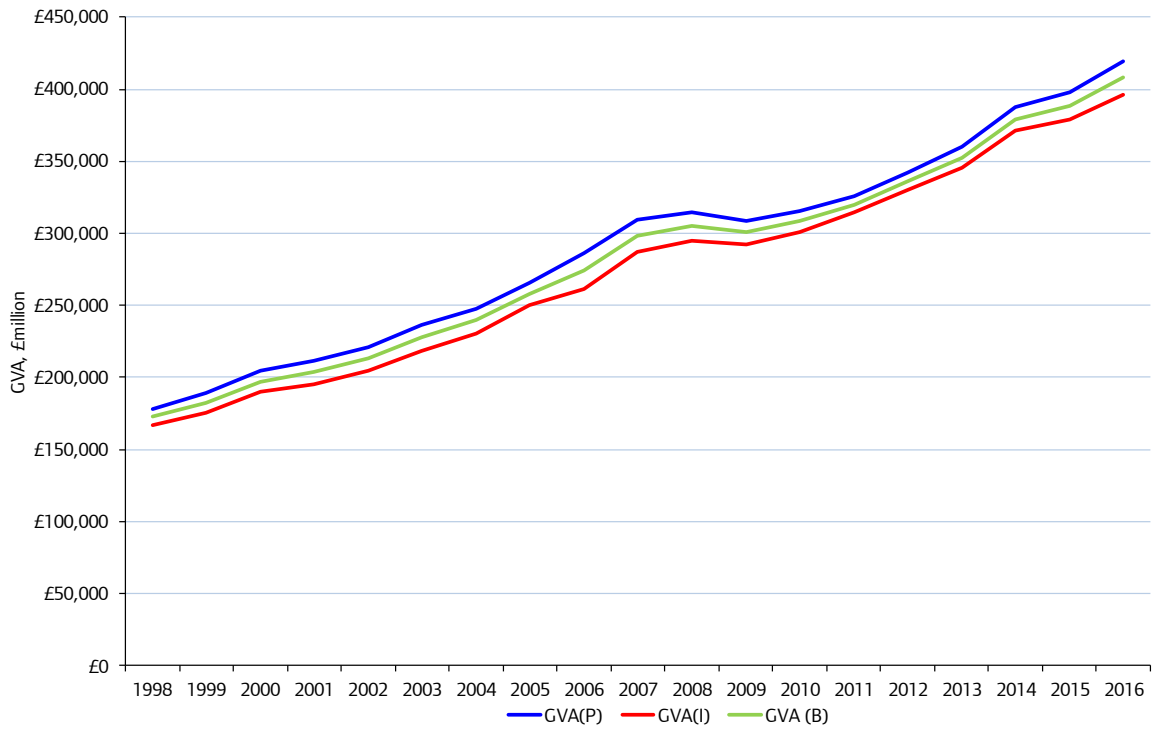
\*Previously was available down to local authority (with a publication time lag), but this has been discontinued in favour of the GVA (B) breakdowns.

## Headline GVA (B)

In constant prices (real terms), the GVA (P) analysis presented in the section above for London is broadly consistent with the GVA (B) findings.

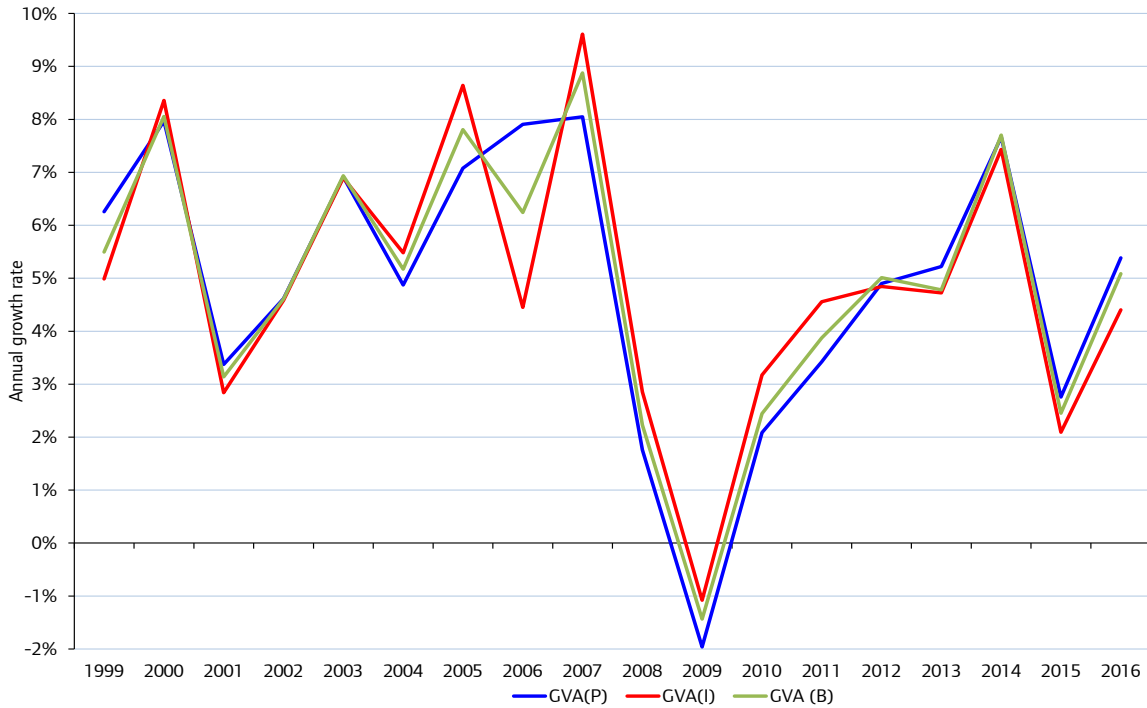
In nominal terms, Figure 17 (GVA levels) and Figure 18 (GVA growth rates) show that, as presented, the new GVA (B) data fit accurately between the GVA (I) and the GVA (P) historical series. In 2016, GVA (B) in London was £408,479 (GVA (P) was £419,563 and GVA (I) was £395,857). The GVA (B) growth rate for the period 1998-2016 was found to be 136.0 per cent, (between the 136.8 per cent registered by the GVA (P) and the 135.4 per cent rate of the GVA (I) approach as expected). The GVA (B) approach also matched with the GVA (I) and the GVA (P) results in the average annual growth rate for the entire period (4.9 per cent in all approaches).

**Figure 17: Comparison of current price GVA (I), current price GVA (P) and current price GVA (B) all industries total for London, 1998 to 2016**



Source: Regional Accounts, ONS

**Figure 18: Comparison of growth rates of current price GVA (I), current price GVA (P) and current GVA (B) for London, 1999 to 2016**



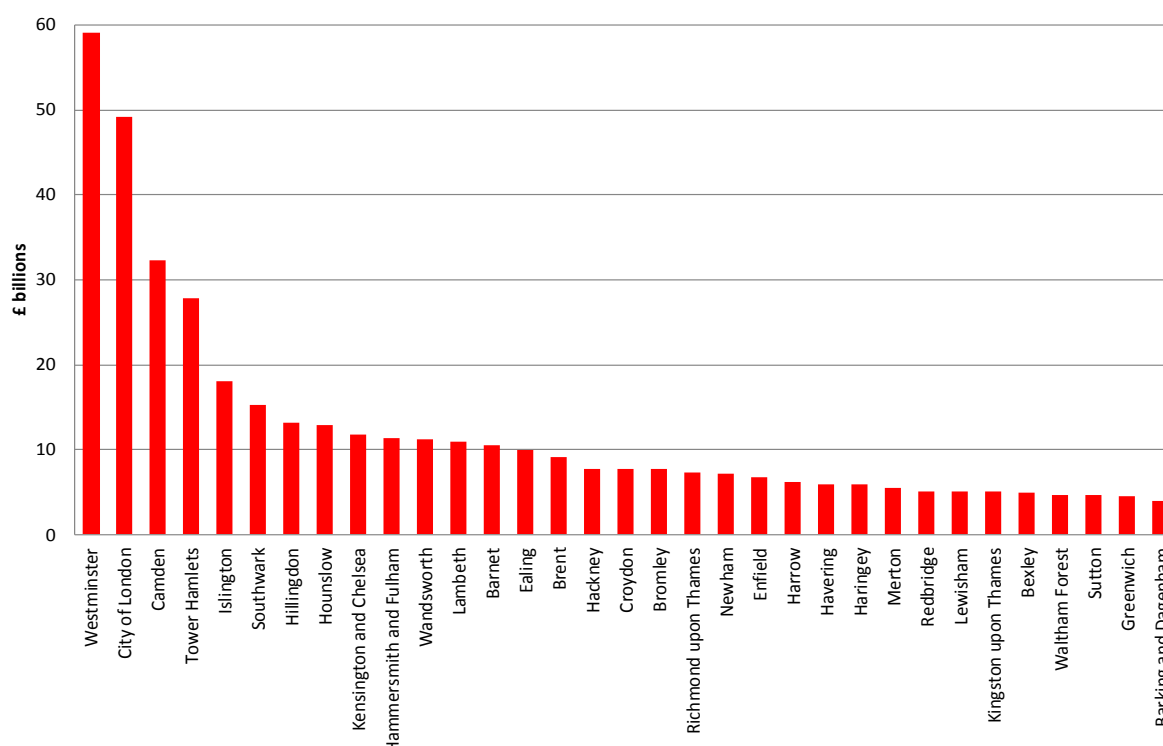
Source: Regional Accounts, ONS

## GVA (B) by London local authorities

In December 2017, the Office for National Statistics (ONS) released for first time estimates of gross value added (GVA) at the UK local authority (LA) level for the period 1998-2016 measured by the balanced approach<sup>42</sup>. This followed on from previous published estimates from the ONS of output at the LA level measured at the GVA (I) level. The main findings for London’s LAs are presented below.

In 2016, the provisional estimate of London’s GVA (B) by LA is presented in Figure 19. Westminster and the City of London remain as the areas with the highest output in London (£59 and £49.1 billion, respectively). By contrast, Greenwich with £4.5 billion and Barking and Dagenham with £3.9 billion were the London LAs with the lowest GVA in 2016.

**Figure 19: GVA (B) by London LA in 2016**



Source: ONS

Table 4 shows the nominal GVA growth rate between 1998 and 2016 among the 33 London’s LAs. For example, Tower Hamlets and the City of London increased the size of their nominal GVA by over 207 per cent and 205 per cent, respectively, in the mentioned period while Bromley and Croydon saw their nominal GVA increase by 69 and 60 per cent, respectively.

<sup>42</sup> ONS, December 2017, [‘Regional Gross Value Added \(Balanced\), by local authority in the UK’](#).



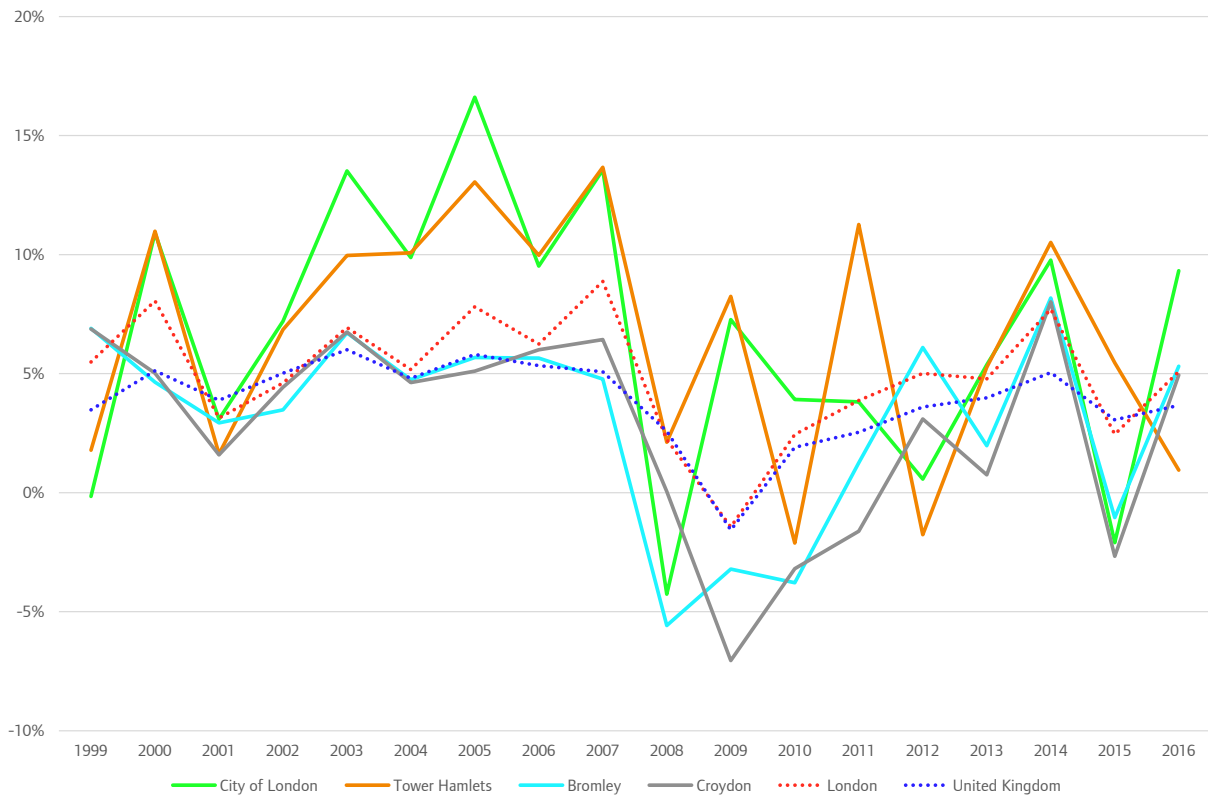
**Table 4: Nominal GVA (B) growth rate of London's LAs 1998-2016**

Rank	LA	% increase	Rank	LA	% increase	Rank	LA	% increase
1	Tower Hamlets	207%	12	Haringey	122%	23	Sutton	93%
2	City of London	205%	13	Hammersmith and Fulham	118%	24	Kingston upon Thames	92%
3	Camden	183%	14	Kensington and Chelsea	116%	25	Barking and Dagenham	92%
4	Newham	163%	15	Wandsworth	115%	26	Greenwich	91%
5	Hounslow	163%	16	Richmond upon Thames	115%	27	Ealing	89%
6	Lambeth	160%	17	Barnet	113%	28	Enfield	87%
7	Westminster	160%	18	Brent	111%	29	Bexley	85%
8	Southwark	148%	19	Merton	104%	30	Redbridge	83%
9	Islington	142%	20	Waltham Forest	103%	31	Hillingdon	76%
10	Lewisham	131%	21	Harrow	102%	32	Bromley	69%
11	Hackney	130%	22	Havering	99%	33	Croydon	60%

Source: ONS and GLA Economics' calculations

Examining the annual growth rates of nominal GVA for the London LAs with the largest and smallest increases in nominal GVA between 1998-2016, Figure 20 highlights the generally large difference between the growth rates of these LAs year-on-year. Also highlighted for comparison purposes is the growth rates of London as a whole and also the UK.

**Figure 20: Annual growth in nominal GVA (B) in the City of London, Tower Hamlets, Bromley and Croydon between 1998 and 2016**



Source: ONS and GLA Economics' calculations

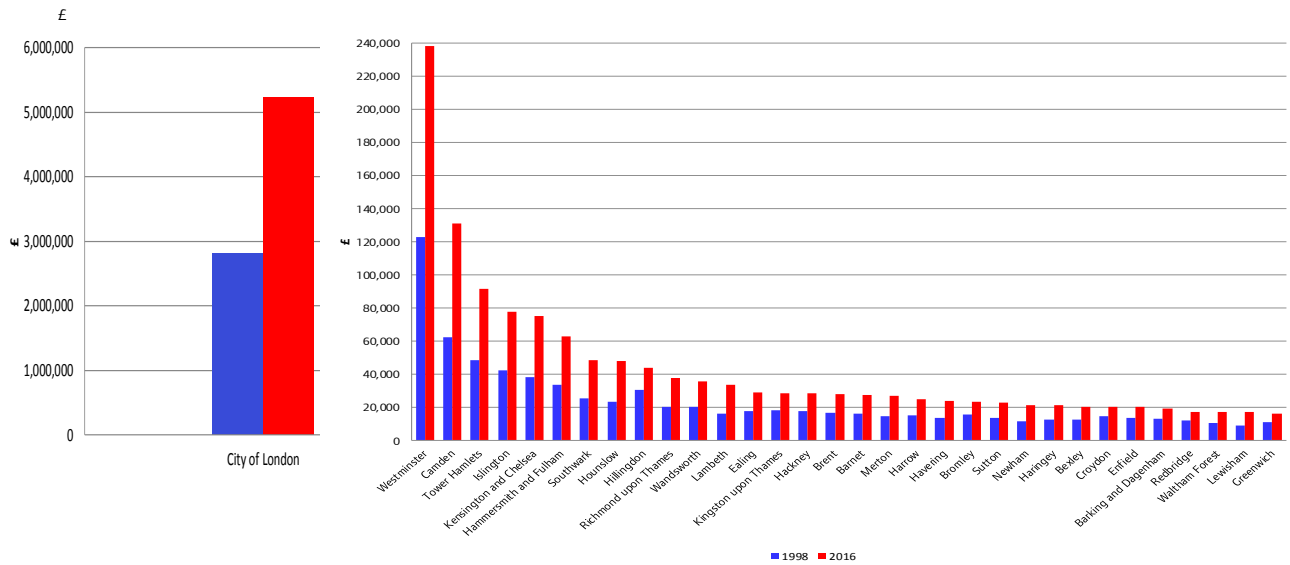
These differences in growth rates of nominal GVA have led to changes in the importance of individual LAs to London's total output over time. This can be seen in Table 5 which shows the share of London's total GVA by LA in 1998 and 2016. The City of London, Westminster, Tower Hamlets and Islington have been the LAs that became more important to London's total output in that period. In contrast, even though they saw an increase in their total GVA over this period Bromley, Kensington and Chelsea, and Wandsworth saw the largest contraction in their proportion of London's total GVA (B) between 1998 and 2016.

**Table 5: Local Authority share of total London GVA (B) in 1998 and 2016**

	1998	2016
<b>City of London</b>	9.3%	12%
<b>Camden</b>	6.6%	7.9%
<b>Westminster</b>	13.1%	14.5%
<b>Hammersmith and Fulham</b>	3%	2.8%
<b>Kensington and Chelsea</b>	3.2%	2.9%
<b>Wandsworth</b>	3%	2.7%
<b>Hackney</b>	2%	1.9%
<b>Newham</b>	1.6%	1.8%
<b>Tower Hamlets</b>	5.2%	6.8%
<b>Haringey</b>	1.5%	1.4%
<b>Islington</b>	4.3%	4.4%
<b>Lewisham</b>	1.3%	1.3%
<b>Southwark</b>	3.5%	3.7%
<b>Lambeth</b>	2.4%	2.7%
<b>Bexley</b>	1.5%	1.2%
<b>Greenwich</b>	1.4%	1.1%
<b>Barking and Dagenham</b>	1.2%	1%
<b>Havering</b>	1.7%	1.5%
<b>Redbridge</b>	1.6%	1.3%
<b>Waltham Forest</b>	1.3%	1.1%
<b>Enfield</b>	2.1%	1.6%
<b>Bromley</b>	2.6%	1.9%
<b>Croydon</b>	2.8%	1.9%
<b>Kingston upon Thames</b>	1.5%	1.2%
<b>Merton</b>	1.6%	1.3%
<b>Sutton</b>	1.4%	1.1%
<b>Barnet</b>	2.9%	2.6%
<b>Brent</b>	2.5%	2.2%
<b>Ealing</b>	3%	2.4%
<b>Harrow</b>	1.8%	1.5%
<b>Hillingdon</b>	4.3%	3.2%
<b>Hounslow</b>	2.8%	3.2%
<b>Richmond upon Thames</b>	2%	1.8%

Source: ONS and GLA Economics' calculations

**Figure 21: GVA (B) per head in London’s LAs in 1998 and 2016**



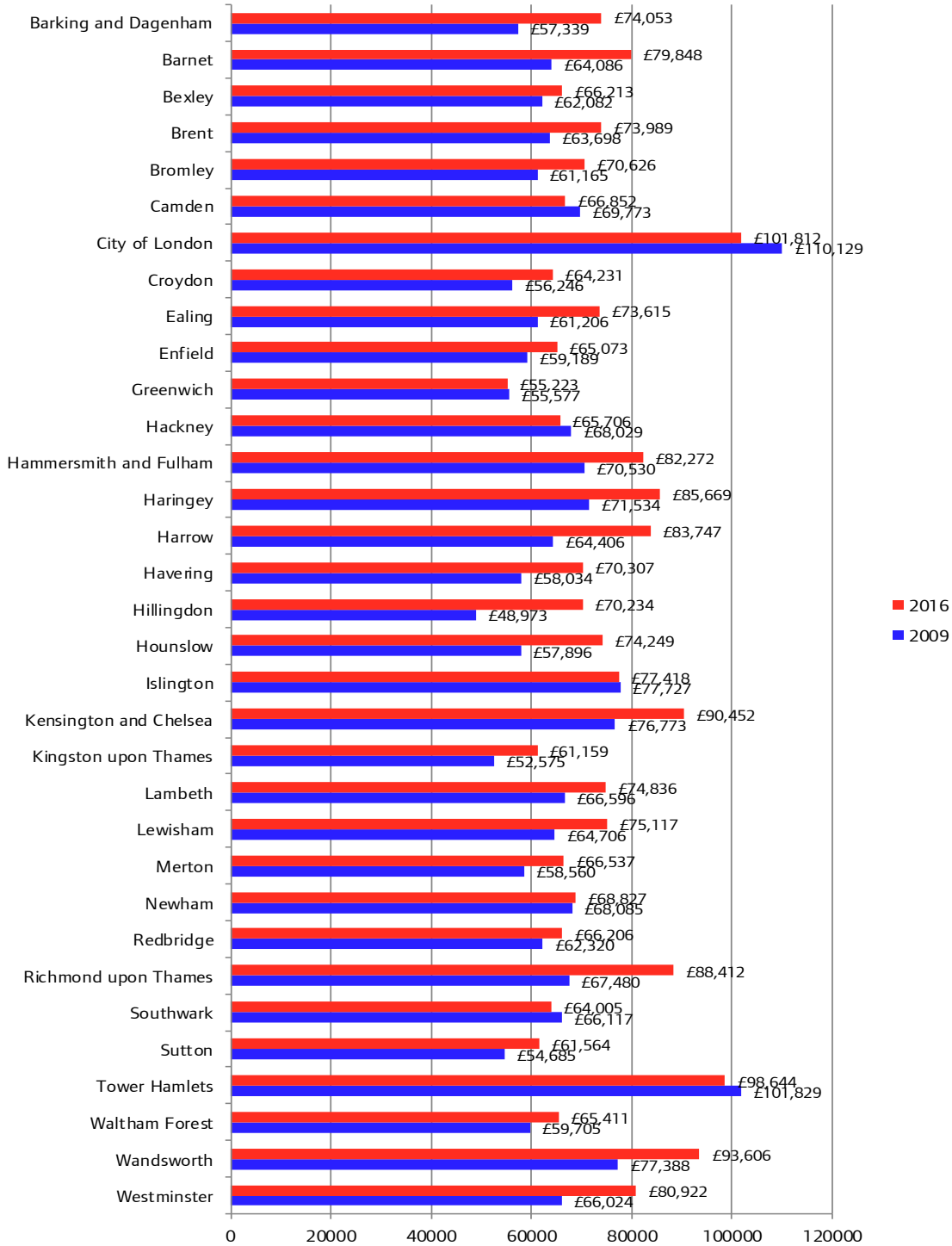
Source: ONS and GLA Economics’ calculations

Figure 21 shows the GVA per head in each of London’s 33 LAs in 1998 and 2016. All the London LAs improved in terms of GVA per head between 1998 and 2016. However, even excluding the City of London which had by far the highest GVA per head of any UK LA, (more than £5.2 million), differences among the rest of the LAs in London were still remarkable in 2016. Westminster and Camden registered the second and third highest GVA per head in London in 2016 (£238,500 and £131,100, respectively) and also the largest increase between 1998 and 2016 while Lewisham (£16,971) and Greenwich (£15,949) had the lowest GVA per head in London for the same year. While Croydon and Greenwich saw the smallest increase of any London LA in GVA (B) per head in the period 1998-2016.

Given the importance of commuters in producing London’s output, GVA per head might be considered a somewhat misleading statistic especially in areas of low resident population such as the City of London. In terms of productivity, a more representative measure would be GVA per worker. Unfortunately, in order to examine output per job at the LA level, other measures of employment need to be used as as previously noted the workforce jobs data is not available at the sub-regional level. Instead, employee jobs data BRES have been used in the following analysis. It should also be re-noted that this data gives over 1 million fewer jobs at the London level as it does not include the self-employed which are included in the workforce jobs data. Therefore, as observed earlier this leads to a higher estimate here of output per job in London as this estimate is output per employee job only.

Looking at London’s LAs in detail, Figure 22 depicts a significant variance among them in both 2009 (the earliest year for which data is available) and 2016. In 2016, there was a GVA per employee job difference of over £46,000 between the highest (the City of London with £101,812) and the lowest (Greenwich with £55,223) London LA. Since 2009, most of London’s LAs saw a rise in GVA per employee job apart from the City of London, Greenwich, Hackney, Islington, Tower Hamlet, and Southwark. Of those London LAs that saw an increase in GVA per employee job between 2009 and 2015, the largest relative increase was in Hillingdon (43 per cent) followed by Richmond upon Thames (31 per cent increase).

**Figure 22: Headline GVA (B)<sup>43</sup> per employee job<sup>44</sup> at London LA level, 2009-2016, current prices**



Source: ONS and GLA Economics calculations

<sup>43</sup> Estimates are for workplace based GVA allocating incomes to the region in which the economic activity takes place.

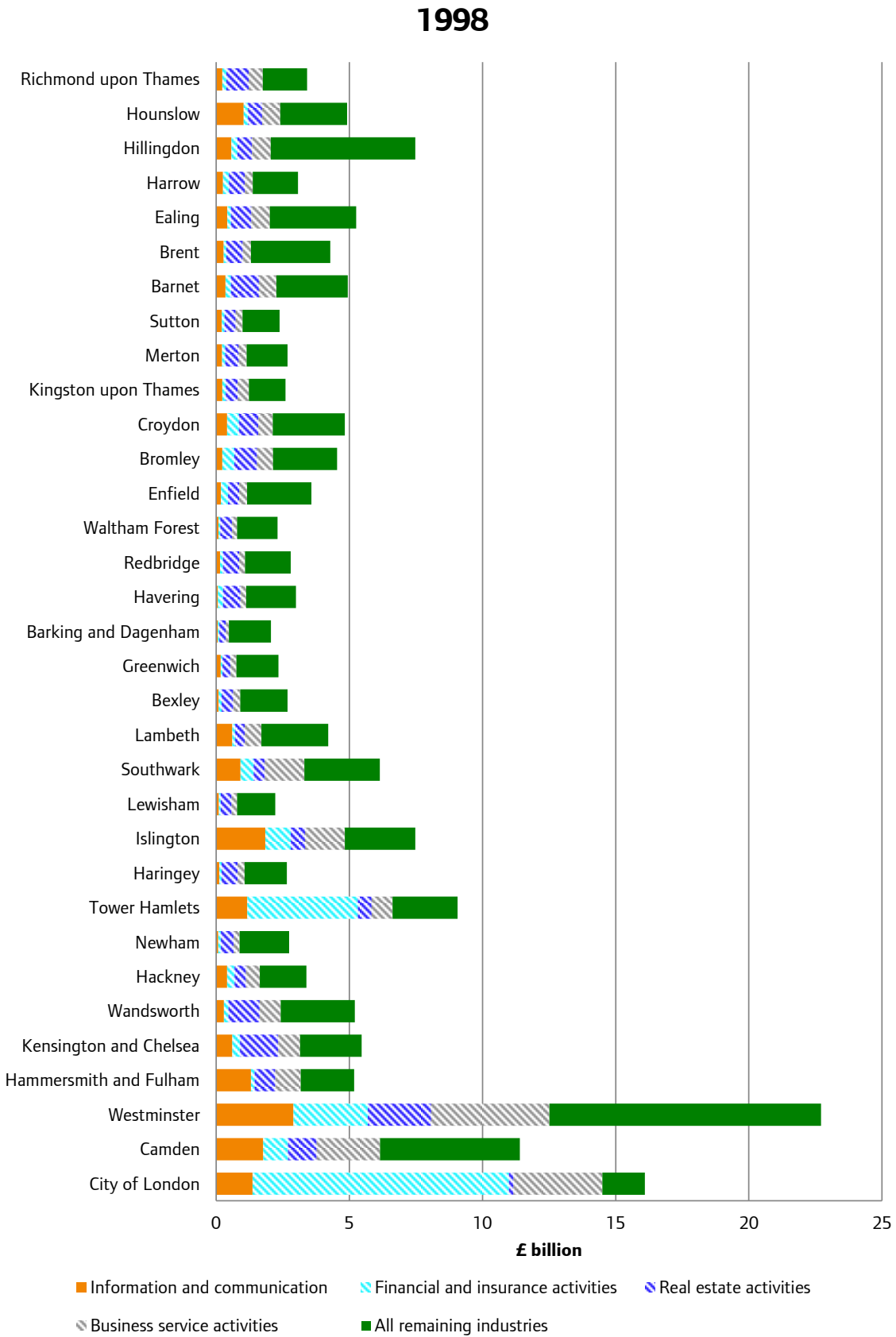
<sup>44</sup> Calculated by dividing headline GVA by annual employee jobs data from BRES.

## London GVA (B) by industry

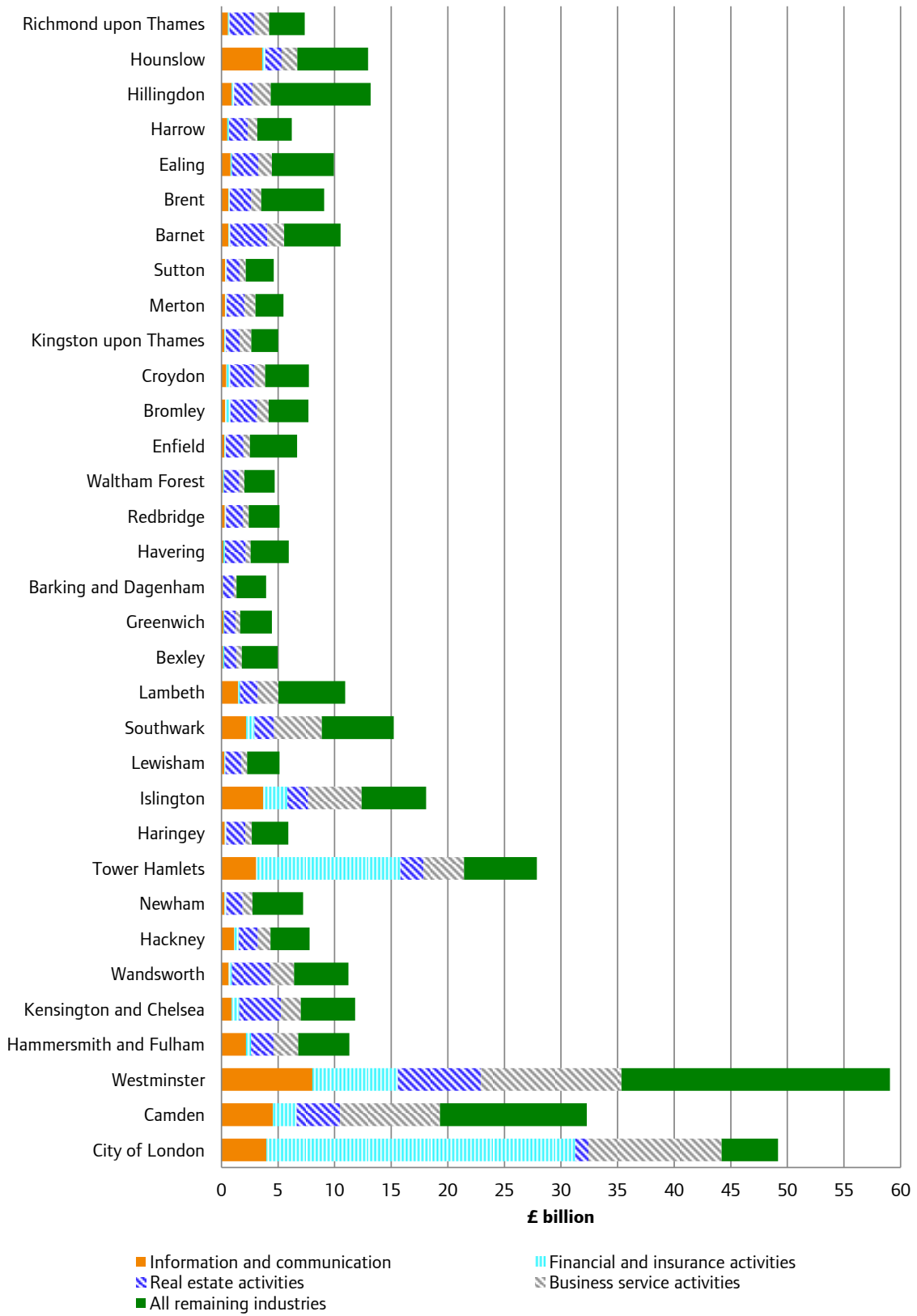
The main finding from the GVA (B) data by LA regarding its sectorial breakdown is that several industries saw an increase in GVA (B) for all the 33 London LAs between 1998 and 2016, these industries are Real Estate activities; Business Services; Public administration, Education, Health; Construction; Distribution, transport, accommodation and food; and Information and communication. No industry saw a reduction in GVA for all London LAs in the same period. In Figure 23, the local authority breakdown of sectoral GVA (B) in London is shown for the years 1998 and 2016. For practical purposes, the four main industries of the London's economy have been highlighted in Figure 23, these sectors account for the 54 per cent of the total London's GVA. As it can be observed, the increase of the City of London in the Financial and insurance activities and also in the Business services is remarkable. Real estate activities also increased notably in most of the London LAs. Conversely, there were strong contractions in GVA in the Manufacturing sector for several local authorities like Merton, Croydon, Southwark and Wandsworth although this is not explicitly presented in Figure 23.

ONS data also show that, in terms of the contribution of each London LA to the London sectors, City of London dominates in Financial and insurance activities accounting for 47 per cent of all London's output in that sector in 2016, up from 41 per cent in 1998. In second place, Tower Hamlets accounted for a further 22 per cent in 2016 in this industry (up from 18 per cent in 1998). Meanwhile, in the Real estate sector -the largest industry of the capital in 2016- Westminster accounted for 11 per cent of London's total output and Camden, Kensington and Chelsea, and Wandsworth accounted for between 5 and 6 per cent each. However, the importance of these LAs in the London Real estate sector has remained relatively stable compared to 1998. Regarding other important London industries in 2016, in the Business services sector Westminster with 17 per cent of London's total output led this sector, followed by the City of London (16 per cent) and Camden (12 per cent). These three local authorities also led the GVA contribution in the London's Information and communication industry with a 19 per cent, 9 per cent and 11 per cent, respectively.

Figure 23: London GVA (B) by LA and industries, 1998 and 2016, £ billion



## 2016



Source: ONS



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