GLAECONOMICS

Working Paper 67

Updated employment projections for London by sector and trend-based projections by borough

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July 2015

MAYOR OF LONDON

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Published by
Greater London Authority
City Hall
The Queens Walk
London SE1 2AA

www.london.gov.uk
Tel 020 7983 4922

Minicom 020 7983 4000

ISBN 978-1-84781-605-4

Cover photograph

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Executive summary

This working paper presents updated interim projections for London by sector to 2036. The paper also provides trend-based employment projections for London boroughs, although it is important to note that the borough projections are not ones that would be used in any Replacement London Plan.

The central projections estimate that employment in London will grow by an annual average rate of 0.69 per cent, equivalent to 40,800 jobs per annum, to reach 6.418 million in 2036. Similarly to the previous projections jobs in the professional, real estate, scientific and technical sector is expected to grow strongly, accounting for nearly two-fifths of the total increase expected in London to 2036. Strong employment growth is also expected in the administrative and support service, accommodation and food service, and information and communication sectors – collectively accounting for just over half the expected total London increase to 2036.

Like previous projections, the central projections in this paper use the latest employment data point (2014) from which to project from. Given the extremely strong growth in employment in the past few years – much stronger than would have been expected given output growth (the so-called 'productivity puzzle') - the potential consequences of this approach are explored further in this paper.

Introduction

This working paper presents GLA Economics' interim medium-term trend-based projections of employment (jobs) in London, disaggregated by sector and by borough.

It is important to note that the borough projections are not ones that would be used in any Replacement London Plan. The projections that were used for the recent Further Alterations to the London Plan (2014/2015[1]) use the trend-based methodology but in addition compare ('triangulate') the results with forecasts for transport accessibility and for workplace capacity. The triangulation of the forecasts generates new employment projections, according to a set of (borough-specific) rules which identifies which of the three forecasts dominates[2].

This working paper begins with a brief overview of the methodology used and revisions in the underlying data that the projections are dependent on. It then presents the results for London as a whole and is followed by some sensitivity analysis. Subsequently the results by sector, for boroughs, and for the Central Activity Zone (CAZ) and North Isle of Dogs (NIOD) are presented.

[1] https://www.london.gov.uk/priorities/planning/london-plan/draft-further-alterations-to-the-london-plan
[2] See Appendix 5 of GLA Economics 'London Labour Market Projections'
http://www.london.gov.uk/sites/default/files/llmp.pdf

Methodology & data revisions

The medium-term trend-based projections in this paper use the same methodology as previous projections[3] (the rationale for this methodology and further details can be found in *Box 1: Should the employment projections 'jump off' from the 2014 level of employment* and *Appendix A: Methodology for GLA Economics' trend-based medium-term projections*). The projections are, again, based on the employee and self-employed components of ONS Workforce Jobs series[4]. They are also constructed by using the latest data point from which to project from. Previous papers have highlighted a potential issue with this approach[5] and this issue is explored further in this paper given recent productivity trends (what has come to be known as the 'productivity puzzle').

The last year of data in the previous projections (published in 'London's Labour Market Projections' paper) was 2011. There are now an additional three years of data from which to construct the projections[6]: the last year of data is 2014.

The historic data that are used to construct the London total and sectoral trend-based projections in this paper go back to 1984. The estimates from that time to 1995 (inclusive) are, as with the previous projections, taken from GLA Economics Working Paper 52 ('London's jobs history – a technical paper'). From 1996 to 2014 the data comes from the ONS Workforce Jobs series (WFJ).

For borough trend-based projections the data used goes back to 1981 but covers employee jobs only. This is constructed using a number of sources and steps:

- Borough employee estimates for 1981 to 1983 (inclusive) are estimated by interpolating between the 1984 estimate in WP52 and the estimates from the 1980 Census of Employment. To these, estimates of employee jobs for 1984 to 2008 (inclusive) from Working Paper 52 (WP52) are added.
- Since the generation and publication of the historic borough data, the ONS have revised their WFJ time-series for employee and self-employed jobs (due to a change in the treatments of working owners[7]). As a result, the borough *proportion* of London's employee jobs from 1981 to 2008 are applied to the latest employee jobs component of the WFJ.
- Estimates for 2009 to 2013 were then derived by applying each borough's share of London employee jobs from the ONS Business Register and Employment Survey (BRES)[8].

[3] Available in GLA Economics 'London Labour Market Projections' (https://www.london.gov.uk/sites/default/files/llmp.pdf) and on the London Datastore
[4] Annual averages, excluding sectors T (activities of households as employers; undifferentiated goods and services producing activities of households for own use) and U (activities of extraterritorial organisations and bodies)
[5] See, for example, GLA Economics 'Working Paper 38: Employment projections for London by sector and trend-based projections by borough', p.6.
[6] The historic data for boroughs is 2013; 2014 is a forecast
[7] See for example 'Reconciliation of Estimates of Jobs', April 2013, ONS. Available at: http://www.ons.gov.uk/ons/rel/lms/labour-market-statistics/april-2013/comparison-of-estimates-of-jobs.html#tab-Reconciliation
[8] The ONS Business Register and Employment Survey (BRES) provides estimates of employee jobs at a lower geographical level than the WFJ (which does not go below regional level). However, WFJ is the ONS's preferred (and headline) measure of jobs at the regional level.

- Estimates for 2014 are produced by applying a linear trend to the last three years of borough shares from BRES. Again, this share estimate is applied to the employee jobs component of WFJ.

To these borough employee trend projections it is necessary to add estimates of self-employed jobs. This is done by first producing estimates of employee and self-employed[9] projections at the London-wide level (the sum of which are constrained to the total employment projections) - constructed using the same trend-based methodology as for London's total employment. The self-employed projections are then allocated to boroughs following a number of stages:

- First, the historic trend (2004 to 2014) in each borough's share of London self-employed jobs was analysed (using data from the Annual Population Survey, ONS). For most boroughs there were no statistically significant[10] changes in the shares (at the 95 per cent confidence interval). However for a very few number of boroughs there were statistically significant changes. This is particularly true for the City of London where its share has nearly doubled over the last decade such that in 2014 it accounted for just over a tenth of the London total. As a result, and given sampling variability, the average share over the last three years was taken as the expected share in 2036[11];
- These shares were then assumed to be reached in a linear manner (to ensure a smooth transition) from their 2014 share and these were then applied to the projections of self-employed jobs in London as a whole.

Changes to the historic data

Since trend-based projections rely heavily on historic data, changes in, and additional years, of historic data will cause changes in the projections. Along with forecast errors, appreciating data revisions is thus critical to understanding the projections and why they can change over time. Specifically, the projections rely on historic productivity in London – or output (GVA) divided by employment.

Tables 1 and 2 show how the most recent historical employment and output (GVA) data compares to those that formed the basis of the projections in the 'London Labour Market Projections' paper[12].

The source of the historic employment data remains the ONS WFJ series for data from 1996 onwards combined with GLA Economics' estimates (as presented in Working Paper 52). As Table 1 shows the revision in the jobs history has been relatively small, ranging from -19,000 (in 2011) to 31,000 (in 2010) or from -0.4 per cent (in 2011) to 0.6 per cent (in 2010).

[9] The historic series for self-employed jobs in London is constructed as the difference between total London employment estimates and estimates of London employee jobs from the ONS Workforce Jobs series.
[10] A statistical significant change/difference suggests that the change is (within a probability of likelihood or confidence interval) is a true result rather than a random one caused by sampling variability (changes in the underlying sample). For example, a statistically significant change at the 95% confidence interval suggests that if the sample was re-run 100 times then in 95 of those times a difference would still be observed.
[11] Projecting forward trends in the shares was also considered, however this resulted in some boroughs having what appears to be an unreasonable share of the London total in 2036 (particularly given the number of years over which a statistically significant change in their trend is apparent)
[12] GLA Economics, London Labour Market Projections, 2013 (http://www.london.gov.uk/mayor-assembly/mayor/publications/gla-intelligence/london-labour-market-projections)

Table 1: Total London employment – previous and revised data

Employment (000s)	Current estimates	Estimates in previous projections	Absolute difference (new less old)	Percentage difference
1984	4,094	4,094	0	0.0%
1985	4,126	4,126	0	0.0%
1986	4,085	4,085	0	0.0%
1987	4,183	4,183	0	0.0%
1988	4,262	4,262	0	0.0%
1989	4,282	4,282	0	0.0%
1990	4,211	4,211	0	0.0%
1991	4,012	4,012	0	0.0%
1992	3,858	3,858	0	0.0%
1993	3,803	3,803	0	0.0%
1994	3,897	3,897	0	0.0%
1995	3,960	3,960	0	0.0%
1996	3,952	3,935	17	0.4%
1997	4,091	4,070	21	0.5%
1998	4,280	4,264	16	0.4%
1999	4,443	4,426	17	0.4%
2000	4,610	4,598	12	0.3%
2001	4,636	4,619	17	0.4%
2002	4,564	4,546	18	0.4%
2003	4,588	4,578	10	0.2%
2004	4,564	4,556	8	0.2%
2005	4,665	4,658	7	0.2%
2006	4,717	4,709	8	0.2%
2007	4,771	4,758	13	0.3%
2008	4,912	4,902	10	0.2%
2009	4,809	4,801	8	0.2%
2010	4,804	4,773	31	0.6%
2011	4,877	4,896	-19	-0.4%
2012	5,087			
2013	5,250			
2014	5,520			

Source: Workforce Jobs, ONS and GLA Economics estimates.

The estimates for London's real (inflation adjusted) output is based on a number of national statistics and derived via the following stages:

- London's nominal output for 1997 to 2013 inclusive is taken from the ONS Regional Accounts;
- Estimates for London's nominal output for 1984 to 1996 and 2014 inclusive are then created by applying the growth rate of the UK GVA from the ONS National Accounts;
- Finally, the time series is adjusted for inflation by applying the UK implied GVA deflator (again from the ONS National Accounts).

Table 2: Total London output – previous and revised data

GVA (£ million)	Current estimates	Estimates in previous projections	Absolute difference (new less old)	Percentage difference
1984	144	120	25	17.2%
1985	150	125	25	17.0%
1986	154	130	25	16.1%
1987	163	136	26	16.1%
1988	172	144	29	16.7%
1989	177	147	29	16.7%
1990	178	151	27	15.3%
1991	177	149	28	15.9%
1992	178	150	27	15.4%
1993	183	155	27	15.1%
1994	189	162	27	14.5%
1995	193	167	27	13.9%
1996	199	172	27	13.6%
1997	203	178	25	12.1%
1998	215	189	26	12.0%
1999	224	200	24	10.7%
2000	239	209	30	12.6%
2001	241	215	26	10.8%
2002	244	224	20	8.3%
2003	255	233	22	8.6%
2004	262	240	22	8.3%
2005	277	248	29	10.6%
2006	282	258	24	8.5%
2007	299	271	28	9.5%
2008	304	274	30	9.9%
2009	291	270	21	7.4%
2010	299	270	30	9.9%
2011	315	272	43	13.5%
2012	320			
2013	327			
2014	336			

Source: London GVA estimates from the ONS Regional Accounts (IGLG and DGPI variables for previous and current estimates respectively) for 1997 to 2010/13 for previous and current estimates respectively. GLA Economics estimates for all other years using ONS estimates for the UK GVA (ABML) and implied UK GVA deflator (CGBV)

As Table 2 shows there have been significant changes in the estimates of London's real GVA. These revisions have ranged from £20 million (in 2002) to £43 million (in 2011) or, in percentage terms, from 7.4 per cent (in 2009) to 17.2 per cent (in 1984). There are a number of reasons behind these changes. The output estimates in the previous projections were consistent with the ONS Blue Book 2012 whereas the latest are based on the ONS Blue Book 2014. In the Blue Book 2014, changes were introduced to lift outstanding European System of Accounts (ESA) 1995 reservations, including drugs and prostitution, and to meet the new ESA 2010 standards, including R&D. ONS also made other changes (not related to the ESA),

including improvements to the measurement of Gross Fixed Capital Formation (GFCF). Some of these changes, in particular the improvements to GFCF, had an impact on the relationship between the current price and the chain volume measure of the UK GVA and thus have affected the implied UK GVA deflator. In addition, in ONS's Regional GVA (Income Approach) publication[13], which is the source used for estimates of nominal GVA for London, there were improvements in 2013 to the methods for allocating two components of GVA – compensation of employees and gross trading profits – to the regions. This altered the distribution of GVA between London and other parts of the UK.

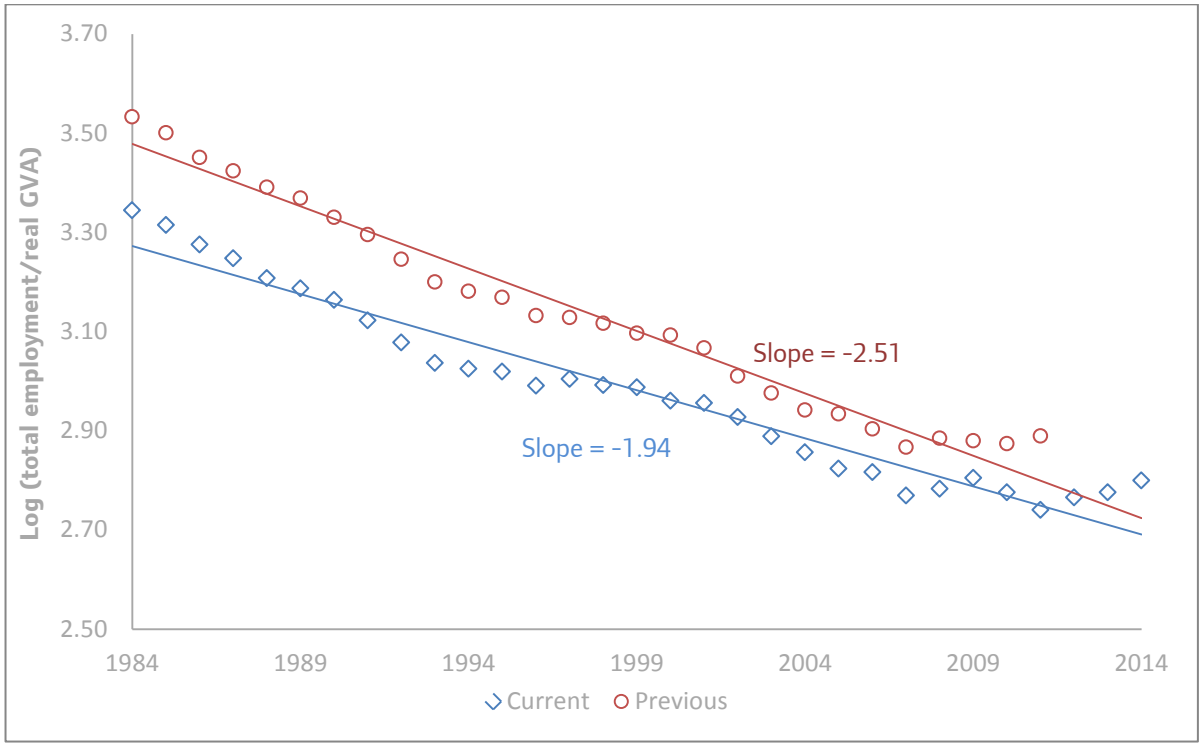
The cumulative impact of the employment and output revisions is explored in the next chapter.

[13] http://www.ons.gov.uk/ons/rel/regional-accounts/regional-gross-value-added--income-approach-/index.html

Total London employment projections

As mentioned above, the projections rely on historic productivity (output divided by employment). Figure 1 shows the logged ratio of employment to output (the inverse of productivity) for London-wide employment underlying both the current and previous projections. The chart also includes a fitted local regression curve to highlight the historic trend. As a log, the negative gradient is equal to the output growth that would be required to maintain stable employment i.e. a gradient of -1.0 suggests that an annual output growth of 1.0 per cent would maintain zero employment growth.

Figure 1:_ Log of total employment as a proportion of total output growth in London – current and previous estimates (1984-2011/14)[14]



Source: GLA Economics

Figure 1 shows that the impact of the revised historic output and employment estimates is to both increase the historic productivity *levels* in all years but reduce the productivity *trend growth* across history. In other words, the revised history suggests that productivity in each year was higher than previously estimated but (given a less steep fitted regression curve for the most recent historic estimates – which can also be seen by the fact that the magnitude of revision diminishes over time) that over time productivity grows at a slightly slower rate such that the output growth needed to maintain zero employment growth is lower (1.94 per cent compared to the previously estimated 2.51 per cent). Similarly, the revision implies that for a given output growth in the future the employment required will be higher should this new long-run productivity trend continue (as opposed to the pre-revised trend).

[14] Due to data availability, the GVA growth rate for 1984 to 1976 (inclusive) and for 2013 is the growth rate of the UK and not specifically of London.

Figure 1 shows that, in most years, productivity is close to trend (where trend is represented by the fitted regression line) with it moving closely around trend depending on the economic cycle.

Recently, however, productivity growth has significantly diverted from trend. Since 2011 growth in employment has been exceptionally strong compared to output growth resulting in negative productivity growth (such that productivity has been declining and moving increasingly away from trend since 2011). This recent trend in productivity has been puzzling many respected organisations and economists and its implication for the projections in this paper is explored further in Box 1.

The data behind Figure 1 suggests a trend slope of 1.9 per cent. In other words, London's output needs to increase by more than 1.9 per cent per annum for employment to grow. Output growth less than this would see employment fall.

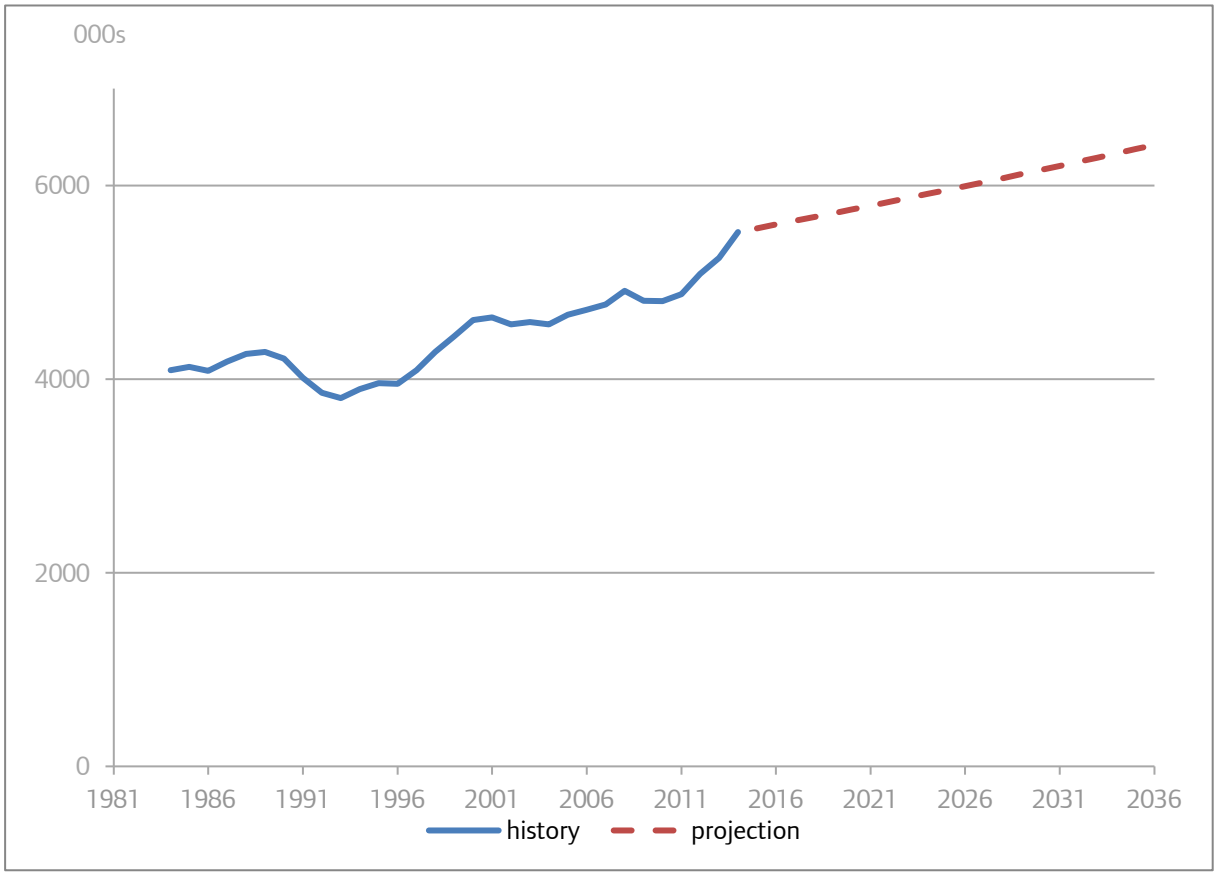
As with the previous projections, the current projections generate a long-term productivity forecast which has been constructed by weighting the productivity trend from 1984 to 2014 at 60 per cent and an additional 40 per cent for the more recent history from 1996 onwards.

The projected productivity trend from these weights is then combined with an assumed output growth of 2.5 per cent per annum to create the long-run employment projections for London. This rate of output growth is consistent with what the Office for Budget Responsibility (OBR) estimates for the UK's long-term output potential[15].

The results of the projection are presented in Figure 2. The projections estimate that employment will grow by an annual average rate of 0.69 per cent, equivalent to 40,800 per annum, to reach 6.418 million in 2036.

[15] See the OBR's 'Economic and Fiscal Outlook', March 2015:
http://cdn.budgetresponsibility.independent.gov.uk/March2015EFO_18-03-webv1.pdf

Figure 2: Historic and projected employment in London (thousands), 1984-2036



Source: GLA Economics

Box 1: Should the employment projections 'jump-off' from the 2014 level of employment?

The trend methodology used to construct the projections in this paper is based on the premise that a variable's history includes the effects of everything that has driven it. In other words, to get to its current level, employment has been impacted by economic growth, population, migration, changes in sectoral growth, technology, working practices and so on. The relationship between all these drivers and employment is implicit in the historic employment data.

Although, as many other forecasters do, it is possible to look at each of these drivers individually to assess their impact and model them individually there are likely to be so many drivers that attempting to model them would likely only partially explain the history. Moreover, to model the drivers requires an understanding of the drivers of those drivers that results in a myriad of variables each supposedly impacting on employment. For example, if international migration is thought to affect employment then it is necessary to consider what affects international migration (so things like conditions in the individuals' home country, relative output growth, cost of travel and so on). It is then necessary to be able to say how these factors are likely to change in 20 years, or so, time, such that the employment forecasts also depend heavily on these necessary underlying assumptions. This approach may be reasonable when considering what employment may be in the short-term. However, the further into the future one goes the greater the compound error is likely to be on the forecasts for the drivers of employment. The cumulative effect of this across all the drivers can then raise doubts as to the reliability of the future employment estimates that are dependent on them.

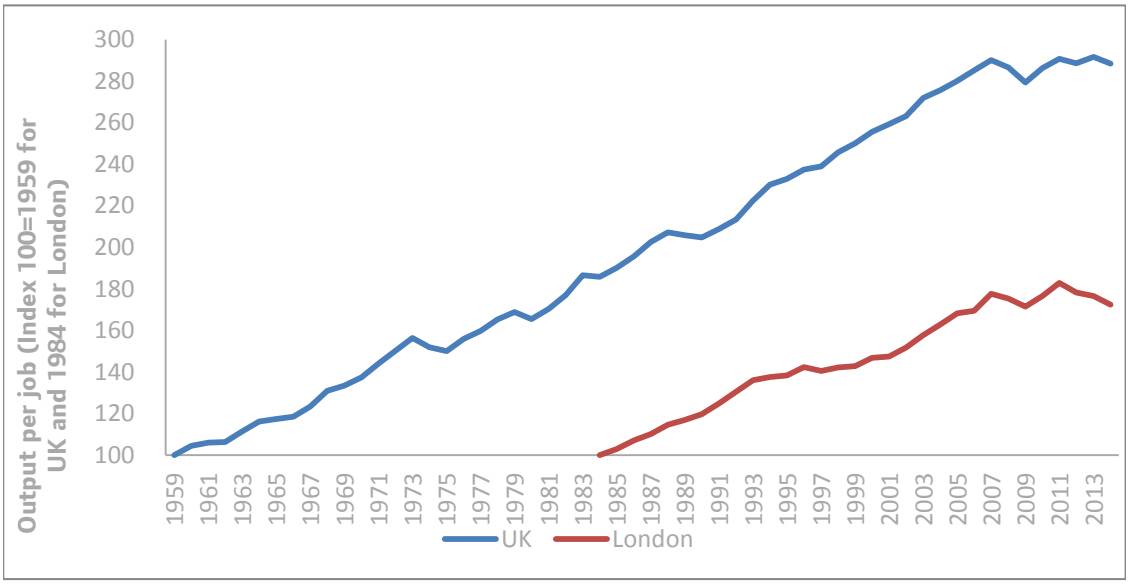
The trend-based methodology that GLA Economics adopts is arguably a reasonable approach so long as (a) the variable is not random (in other words, it follows a relatively stable path) and, (b) future shocks or structural changes do not differ in magnitude to those in the past. Applying this to productivity (which is used as the basis for our projections given the mathematical relationship between employment and output whereby Δ in employment = Δ in output – Δ in productivity), as can be seen in Figure 1, productivity is not a random variable and has historically followed a trend. Regarding structural changes, this is ultimately a point of judgement. Whilst Figure 1 does not suggest clearly structural changes in the productivity trend, there have been questions as to whether more recently the trend in productivity is reflective of a new trend/structural change.

In the three years since 2011 alone, employment has grown by 13.2 per cent, which equates to an annual average growth rate of 4.2 per cent or 214,000 jobs per year. This contrasts starkly to a total growth of 19.1 per cent, or an annual average growth rate of 0.7 per cent or 29,000 jobs per year, over the 27-year history from 1984 to 2011. At the same time, however, output in London has grown by an average annual rate of 2.2 per cent, which compares to the estimated 2.9 per cent per annum experienced between 1984 and 2011

The impact of these relative changes in employment and productivity growth is, perhaps, particularly stark when looking at productivity over the long run and over a number of economic cycles (see figure A).

Box 1 continued

Figure A: Productivity in London and the UK over the long-run



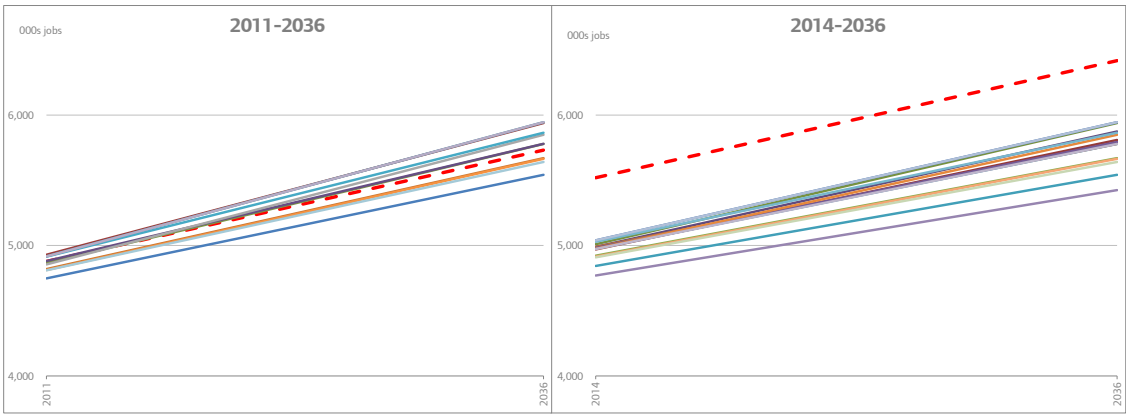
Source: GLA Economics

The recent exceptional growth in employment raises the question of where the GLA Economics projections should start from – or from what year they should 'jump off' from. This is something that the projections have previously considered (see, for example, Working Paper 38 page 6) but has become an increasingly important issue with the recent productivity trend. So the question of what the jumping-off point for the projections should be comes down to whether the 2014 level of employment is representative of an 'on-trend' point in the economic cycle, and if not, what year is?

To understand this better GLA Economics looked at a series of economic commentators to see when they estimated the economy to be on trend. The corresponding employment levels in these periods were then trended to produce a range of on-trend employment projections (see Appendix B for further details). In the balance of that work, 2011 appears to be the last year that London's employment was 'on-trend'. This can also be seen by looking at Figure B. The various solid lines show a range of potential on-trend employment levels through to 2036. The doted red lines show how GLA Economics employment projections would sit within that range if they jump-off the on-trend 2011 estimate of employment (left hand) and if they jump-off the 2014 employment estimate (right hand).

Box 1 continued

Figure B: Performance of GLA Economics employment projections starting from different base years compared to a range of estimated on-trend projections



Source: GLA Economics

As Figure B shows, the projections which use the latest employment data point to jump off from are likely to both start and end above the existing estimates of trend, suggesting projected levels of employment in 2036 that may be too high.

However, estimates of output gaps and trend points in the economy are notoriously difficult to estimate and the likely future long-run path of productivity remains unclear. This is an area that GLA Economics, alongside others, continue to monitor closely. Given productivity has previously diverted from the trend line (albeit perhaps not as much) (see Figure 1) and the remaining uncertainty, GLA Economics do not believe that revising the methodology for the purposes of interim projections for long-term planning would be either proportionate or appropriate. Nonetheless, as the situation evolves, GLA Economics will continue to monitor the situation and review their methodology.

Sensitivity testing

Given the recent employment performance (see Box 1), a number of alternative employment projection scenarios have been produced as a means of sensitivity testing the central scenario. These are based on alternative assumptions for the key underlying assumption in the 'central' projections presented in the previous chapter, and are summarised in Table 3. The table also includes summary information on the historic employment growth experienced in London, something which is key to put these alternative scenarios into wider context.

Table 3: Summary results from alternative assumptions

	2036 employment level (millions)	Per annum projected employment growth (2014-2036)	
		average %	level
Historic 1984 to 2014	-	1.00	47,540
Historic 1984 to 2011	-	0.65	29,010
Central growth assumption (2.5% pa)			
Central scenario, 2014 jump-off	6.42	0.69	40,830
2011 jump-off	5.73	0.17	9,640
High growth assumption (2.9% pa)			
2014 jump-off	6.99	1.08	66,930
2011 jump-off	6.25	0.56	32,950
Low growth assumption (2.1% pa)			
2014 jump-off	5.89	0.29	16,790
2011 jump-off	5.26	-0.22	-11,840

Note: 2036 employment levels have been rounded to the nearest 10,000; percentages have been rounded to the nearest 2 decimal places, and the per annum projected growth in employment numbers to the nearest 10.

One of the fundamental assumptions underpinning the projections is regarding the long-run annual rate of output growth in London. Under the 'central' scenario GLA Economics assumes a growth rate of 2.5 per cent per annum. This is consistent with what bodies such as the Office for Budget Responsibility assume for the UK's long-run output growth rate. As such, it assumes that London grows at the same rate as the UK in the long run – if a higher growth rate was assumed for London this would suggest that in the very long run the size of London's economy would overtake the UK (something that is clearly not possible). On the other hand, an output growth for London that is lower than that for the UK would suggest that London's share of the UK's output tends to 0 per cent in the very long run (something which is not very likely).

To test the sensitivity of the projections to the assumed output growth rate, the model has been re-run under the assumption of a 2.9 per cent per annum GVA growth rate in London. Indeed, between 1984 and 2014 this is the estimated average annual growth in London's output (see Table 2). Under this assumption, with employment projected off from the 2014 level, employment grows at 1.08 per cent per annum – this is marginally higher than the annual growth rate seen in employment from 1984 to 2014 (1.00 per cent) and significantly higher than the growth rate seen from 1984 to 2011 (0.65 per cent). By 2036 employment in this scenario is projected to reach 6.99 million – equivalent to an additional 66,930 jobs per annum (33.6 per cent higher and 130.7 per cent higher than the annual employment growth

experienced from 1984-2014 and 1984-2011 respectively). This level of employment in 2036 is 8.9 per cent higher than under the 'central' scenario.

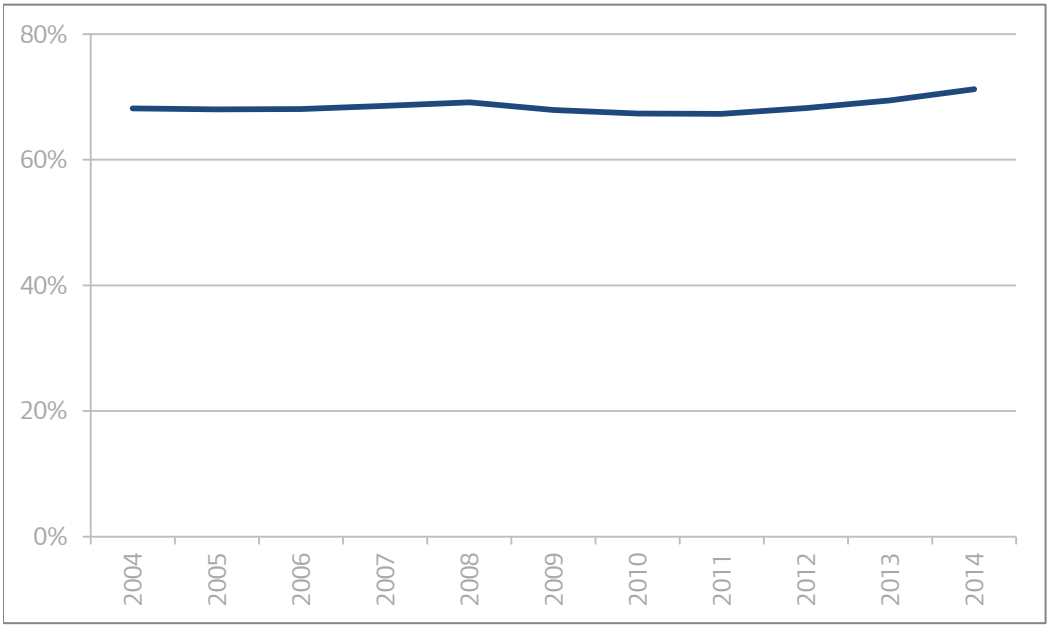
The projections model has also been re-run under a low output growth scenario of 2.1 per cent. Under this assumption employment grows only at 0.29 per cent per annum, equivalent to 16,790 jobs. By 2036 employment is estimated to reach 5.89 million under this scenario – 9.0 per cent lower than under the central scenario.

Another necessary assumption regarding these projections is in which year the projections should start (see Box 1). Table 3 presents summary numbers behind the scenario of projecting from the 2011 employment level in Box 1. It also presents the results of combining the alternative 2011 jump-off year with the high and low output growth scenario above (of 2.9 and 2.1 per cent respectively). Under a high output growth of 2.9 per cent per annum employment is estimated to grow to 6.25 million by 2036 – this is only 2.7 per cent (or 0.17 million) below the central scenario presented in this paper.

Box 2: An alternative method of estimating future employment in London?

In 2003 GLA Economics considered an alternative methodology to estimate long-run employment (Working Paper 4: Long-term Employment Projections for London, GLA Economics). The methodology employed is repeated here - using projections of the population and the employment rate - to see what it may suggest for employment levels in 2036. Under this alternative model the assumption is made to hold the employment rate constant. Some may argue that results from such a model present a potential underestimate because of the likely impact from changes in the state pension age and abolition of the compulsory retirement age. However, such impacts would need to be balanced against factors that may reduce the employment rate, such as the raising of the participation age for young people. Nonetheless, given the complexity of the labour market, arguments suggesting the long-run employment rate may move in either direction, and the historic trends in London's employment rate (see Figure C) this could be considered a reasonable alternative approach against which to benchmark the central projections in this paper.

Figure C: London's historic working age employment rate



Source: Annual Population Survey, ONS

Under this alternative methodology (for which further details, including data sources, are provided in Appendix C) jobs in London are estimated to reach 6.29 million in 2036 – representing an average annual increase of 0.6 per cent, or an additional 35,020 jobs per annum. This estimate lies within the range of those in the sensitivity testing. Indeed, as this alternative method is based on the working age population it may be considered a cautious alternative, but nonetheless suggests that the jobs projected seems reasonable (particularly when balanced against the latest GLA population projections).

Employment projections for London's sectors

Sector level projections for London are constructed using the same trend-based methodology as is used for London's total employment in the previous chapter. The data for employment across sectors comes from the same data sources, with productivity across sectors then measured against the estimated total London output as set out above.

Taking each of the sectors in turn, breaks in the historic trend of productivity (or, more specifically, logged sector employment over London GVA) and the trends that are most likely to direct future developments are identified. For this data from 1984 to 2014 inclusive is used. However, for these projections it was necessary to make a slight adjustment to the data used for the professional, real estate, scientific and technical activities sector. For this sector, employment growth since 2011 has been exceptionally high even compared to the strong growth experienced across London as a whole (see Box 1). Indeed, the professional, real estate, scientific and technical activities sector employment has grown by an annual average rate of 7.3 per cent, or 56,000 jobs per annum, since 2011. This compares to a significantly more modest annual average growth rate of 3.0 per cent, or 14,500 jobs per annum, from 1984 to 2011.This recent growth, in the absence of output growth to match, significantly skews the productivity trends for this sector resulting in employment projections that appear unrealistically high (the sector would be estimated to grow by 86 per cent over the period to 2036). As a result, the weighting of historic trends used to inform the likely future productivity trend for this sector excludes data post 2011.

Charts showing the logged employment over London output for each sector are presented in Appendix D.

As a final step to producing sector employment projections the results across sectors are constrained to the London total projections above to reconcile them.

Table 4 shows the trends identified to use in projecting for each of the sectors as well as summary information on the resultant projections. Figures 3a and 3b show the projected employment levels.

Similarly to the previous projections, jobs in the professional, real estate, scientific and technical sector is expected to grow strongly, accounting for nearly two-fifths of the total increase expected in London to 2036. Strong employment growth is also expected in the administrative and support service, accommodation and food service, and information and communication sectors – collectively accounting for just over half the expected total London increase to 2036.

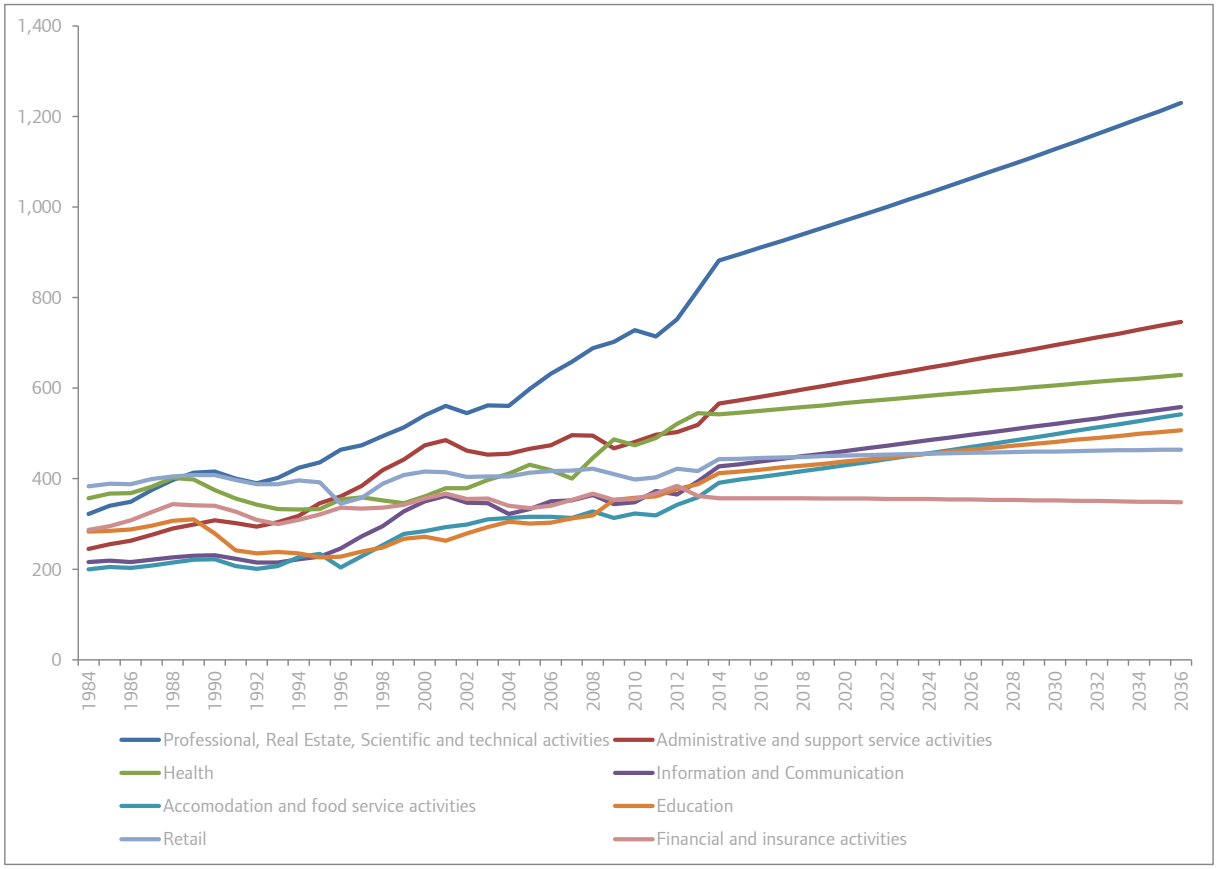
On the other hand, employment in primary and utilities, manufacturing, wholesale, and public administration and defence sectors are all expected to decline over the period to 2036.

Table 4: Summary of trends used and results for sector employment projections

	Trend for projections to 2036	Output growth required for stable employment	Employment growth per annum with London output growth of 2.5% per annum	Annual average growth in jobs with London output growth of 2.5% per annum
Primary & utilities	1/2 trend from 1984 to 2014 1/2 trend from 2003 to 2014	3.08%	-0.60%	-180
Manufacturing	4/5 trend from 1984 to 2014 1/5 trend from 2011 to 2014	6.09%	-3.42%	-3,270
Construction	trend from 1993	2.50%	0.60%	1,810
Wholesale	trend from 1984	4.05%	-1.52%	-2,820
Retail	1/2 trend from 1984 to 2014 1/2 trend from 2007 to 2014	2.48%	0.21%	970
Transportation & storage	1/2 trend from 1984 to 2014 1/2 trend from 2002 to 2014	2.95%	-0.48%	-1,310
Accommodation and food service activities	trend from 1984	0.95%	1.50%	6,870
Information & communication	3/5 trend from 1984 to 2014 2/5 trend from 1999 to 2014	1.22%	1.23%	5,990
Financial & insurance activities	trend from 1984 to 2014	2.50%	-0.12%	-410
Professional, real estate, scientific and technical	4/5 trend from 1984 to 2011 1/5 trend from 2009 to 2011	0.92%	1.52%	15,810
Administrative & support service activities	1/2 trend from 1984 to 2014 1/2 trend from1998 to 2014	1.18%	1.27%	8,200
Public admin & defence	3/4 trend from 1984 to 2014 1/4 trend from 2001 to 2014	3.69%	-1.19%	-2,330
Education	1/2 trend from 1984 to 2014 1/2 trend from 1990 to 2014	1.49%	0.95%	4,340
Health	3/4 trend from 1984 to 2014 1/4 trend from 1990 to 2014	1.77%	0.68%	3,960
Arts, entertainment & recreation	1/4 trend from 1984 to 2014 3/4 trend from 1996 to 2014	1.73%	0.78%	1,540
Other services	1/2 trend from 1984 to 2014 1/2 trend from 1999 to 2014	1.41%	1.03%	1,660
London total	3/5 trend from 1984 to 2014 2/5 trend from 1996 to 2014	1.80%	0.69%	40,830

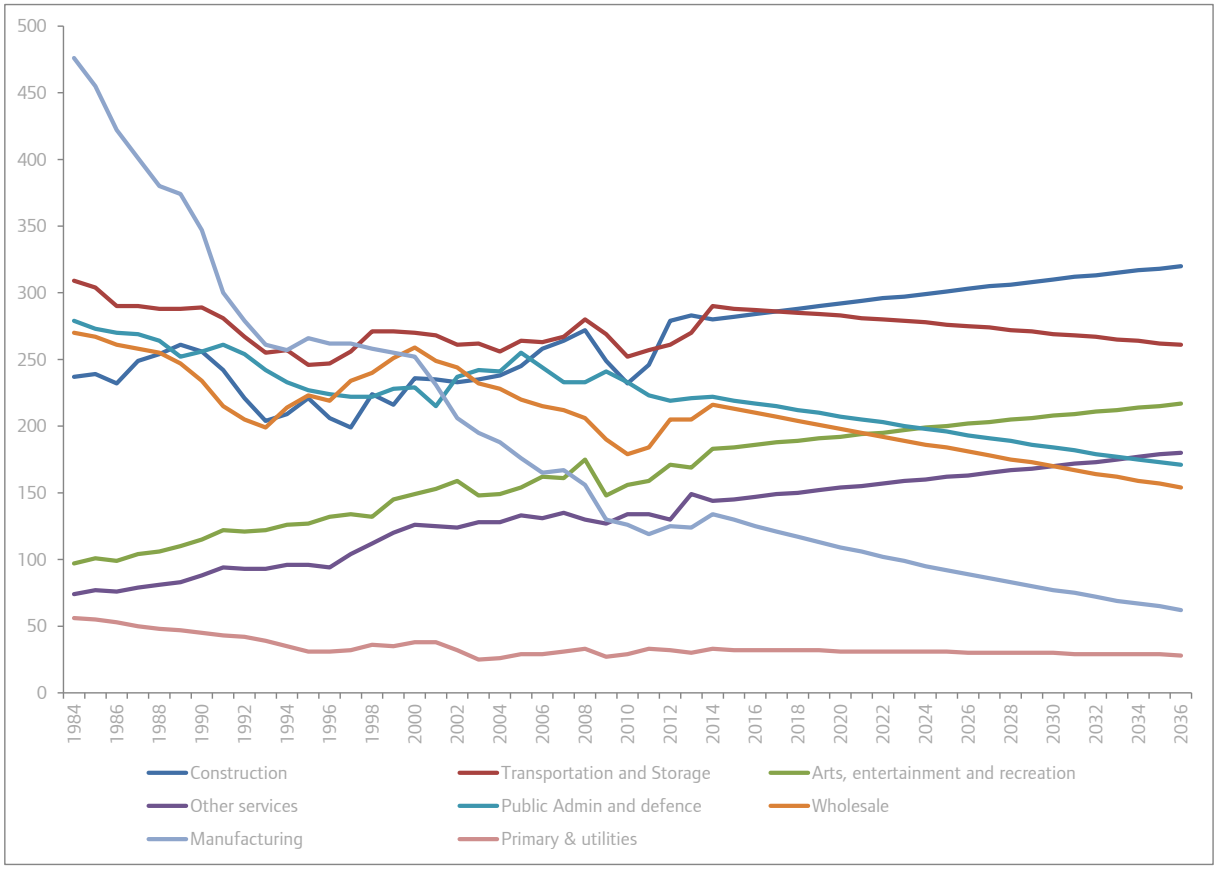
Note: Numbers may not add due to rounding

Figure 3a: Historic and projected employment (000s) in London's largest sectors, 1984 to 2036



Source: GLA Economics

Figure 3b: Historic and projected employment (000s) in London's smaller sectors, 1984 to 2036



Source: GLA Economics

Trend-based employment projections for London's boroughs

This chapter sets out GLA Economics' updated trend-based borough employment projections.

It is important to note that these borough projections are not ones that would be used in any Replacement London Plan. The projections that were used for the recent Further Alterations to the London Plan (2014/2015[16]) use the trend-based methodology but in addition compare ('triangulate') the results with forecasts for transport accessibility and for workplace capacity. The triangulation of the forecasts generates new employment projections, according to a set of (borough-specific) rules which identifies which of the three forecasts dominates[17].

As set out in the 'Introduction and Methodology' section of this paper, the borough projections are done in two parts: employee and self-employed estimates are constructed separately. In order to do this it is necessary to first project estimates of each at the London level. This is done using the same trend-based methodology and a 2.5 per cent per annum output growth assumption as is employed for London's total employment, with the results constrained to the projections of London's total output presented above. The weights placed on the historic productivity trends for employee and self-employed jobs and the summary of the results are presented in Table 5.

Table 5: Summary of trends used and results for London employee and self-employed projections

	Trend for projections to 2036	Employment growth per annum with London output growth of 2.5% per annum	Annual average growth in jobs with London output growth of 2.5% per annum
Employee jobs	2/5 trend from 1984 to 2014 3/5 trend from 2004 to 2014	0.58%	29,580
Self-employed jobs	trend from 1989 to 2014	1.32%	11,250

Note: percentages have been rounded to the nearest 2 decimal places, number to the nearest 10.

To project employee jobs by borough, again, a trend-based methodology is applied so that first the historic trends of employee jobs by borough against London GVA are analysed (the corresponding charts are presented in Appendix E). Depending on the characteristics of the historic productivity trends in each borough a judgement is made on the trends that are most likely to direct future developments (ignoring transport and workplace capacity constraints). The results are then constrained to the total London-wide employee job projections (as estimated above) using the borough forecast proportions.

The trends identified to use in projecting employees for each borough are presented in Table 6. A summary of the results and the historic and projected borough employee values are presented in Tables F1 and F2 respectively in Appendix F.

[16] https://www.london.gov.uk/priorities/planning/london-plan/draft-further-alterations-to-the-london-plan
[17] See Appendix 5 of GLA Economics 'London Labour Market Projections'

Table 6: Summary of trends used for borough employee projections

	Trend for projections to 2036
Barking and Dagenham	1/2 trend from 1981 to 2014 1/2 trend from 2000 to 2014
Barnet	7/10 trend from 1981 to 2014 3/10 trend from 2002 to 2014
Bexley	1/10 trend from 1981 to 2014 9/10 trend from 1992 to 2014
Brent	4/5 trend from 1981 to 2014 1/5 trend from 2006 to 2014
Bromley	3/4 trend from 1981 to 2014 1/4 trend from 2010 to 2014
Camden	trend from 1981
City of London	1/5 trend from 1981 to 2014 4/5 trend from 1990 to 2014
Croydon	trend from 1981
Ealing	1/2 trend from 1981 to 2014 1/2 trend from 2006 to 2014
Enfield	2/5 trend from 1981 to 2014 3/5 trend from 2004 to 2014
Greenwich	1/2 trend from 1981 to 2014 1/2 trend from 2001 to 2014
Hackney	2/5 trend from 1981 to 2014 3/5 trend from 1996 to 2014
Hammersmith and Fulham	7/10 trend from 1981 to 2014 3/10 trend from 1987 to 2014
Haringey	1/2 trend from 1981 to 2014 1/2 trend from 2006 to 2014
Harrow	1/4 trend from 1981 to 2014 3/4 trend from 2005 to 2014
Havering	7/10 trend from 1981 to 2014 3/10 trend from 2006 to 2014
Hillingdon	trend from 1983
Hounslow	4/5 trend from 1981 to 2014 1/5 trend from 1995 to 2014
Islington	trend from 1981
Kensington and Chelsea	3/5 trend from 1981 to 2014 2/5 trend from 2004 to 2014
Kingston-upon-Thames	1/4 trend from 1981 to 2014 3/4 trend from 2003 to 2014
Lambeth	3/10 trend from 1981 to 2014 7/10 trend from 1996 to 2014
Lewisham	1/10 trend from 1981 to 2014 9/10 trend from 1996 to 2014
Merton	trend from 1981
Newham	3/10 trend from 1981 to 2014 7/10 trend from 1995 to 2014
Redbridge	trend from 1989
Richmond-upon-Thames	trend from 1987
Southwark	1/2 trend from 1981 to 2014 1/2 trend from 2004 to 2014
Sutton	trend from 1981
Tower Hamlets	trend from 1981
Waltham Forest	trend from 1996
Wandsworth	3/5 trend from 1981 to 2014 2/5 trend from 2007 to 2014
Westminster, City of	1/10 trend from 1981 to 2014 9/10 trend from 1993

Note: Numbers may not add due to rounding

As mentioned above, borough total employment projections are constructed in two parts – trend based employee projections (the results of which are projected in Table 8), and estimates for self-employed jobs. The methodology for the latter is set out in the 'Introduction and Methodology' section and the results are presented in Table F3 of Appendix F. The summary results for these, along with the historic and projected levels are presented in Appendix G.

Table 7 presents the final borough trend-based employment estimates (self-employed plus employee jobs).

Table 7: Summary of borough employment projections

	Employment growth per annum with London output growth of 2.5% per annum	Annual average growth in jobs with London output growth of 2.5% per annum
Barking and Dagenham	-0.89%	-470
Barnet	0.46%	760
Bexley	0.36%	300
Brent	0.19%	250
Bromley	0.62%	830
Camden	0.58%	2,240
City of London	0.56%	2,780
Croydon	-0.70%	-840
Ealing	0.30%	470
Enfield	0.16%	210
Greenwich	0.14%	140
Hackney	0.28%	380
Hammersmith and Fulham	1.09%	1,830
Haringey	0.16%	130
Harrow	0.24%	210
Havering	0.29%	270
Hillingdon	0.78%	1,900
Hounslow	0.54%	990
Islington	1.12%	2,950
Kensington and Chelsea	0.73%	1,140
Kingston-upon-Thames	0.06%	50
Lambeth	0.51%	960
Lewisham	0.06%	50
Merton	0.58%	620
Newham	0.94%	1,160
Redbridge	0.55%	500
Richmond-upon-Thames	0.79%	790
Southwark	1.56%	4,940
Sutton	0.16%	130
Tower Hamlets	2.56%	9,490
Waltham Forest	0.64%	580
Wandsworth	0.84%	1,210
Westminster, City of	0.50%	3,870
London total	**0.69%**	**40,830**

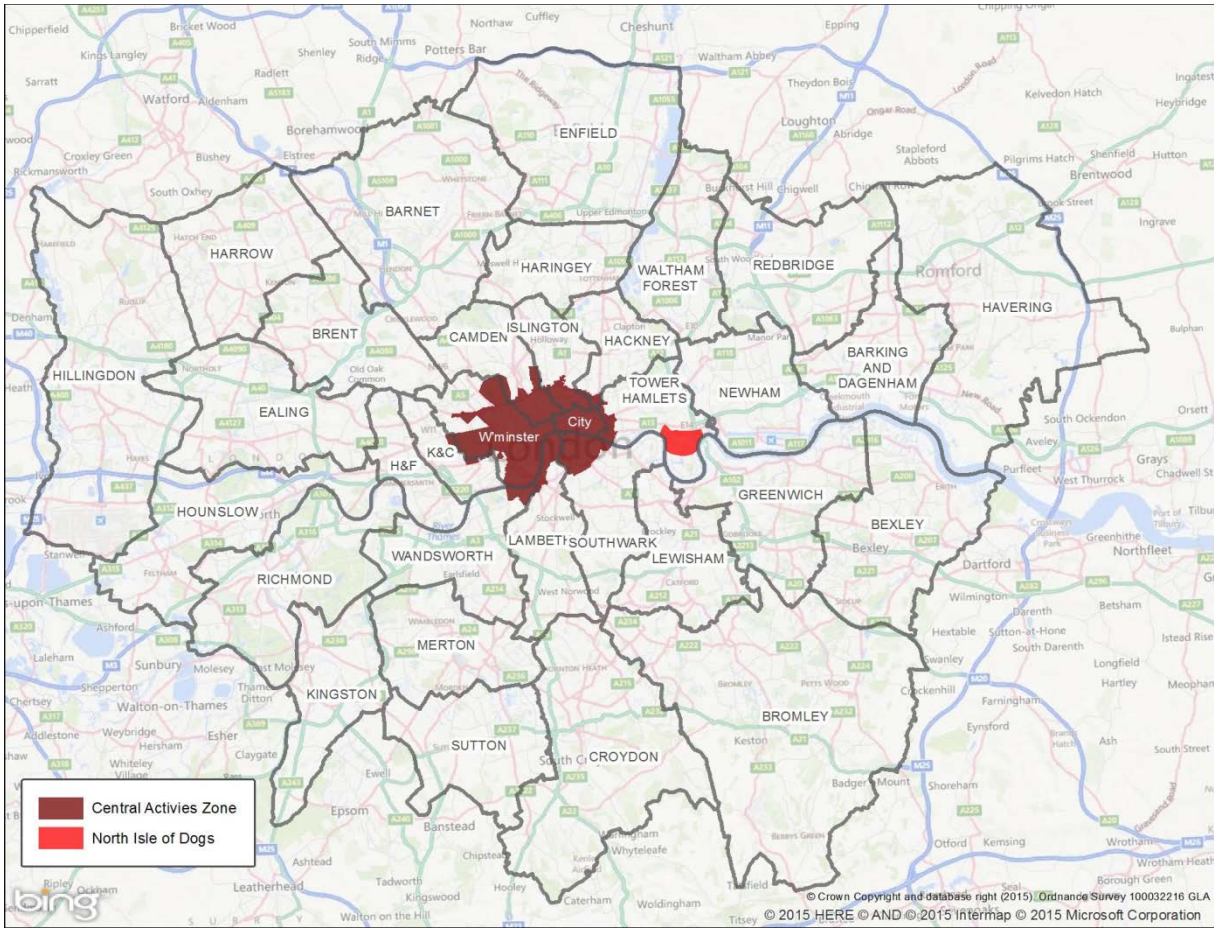
Note: Numbers may not add due to rounding

Trend-based employment projections for London's Central Activity Zone (CAZ) and North Isle of Dogs (NIOD)

The Central Activities Zone (CAZ) contains a unique cluster of vitally important activities including central government offices, headquarters and embassies, and a large concentration of high value adding business activity. This clustering also occurs in the northern part of the Isle of Dogs[18] (NIOD). These two areas are thus of strategic importance to the GLA.

The CAZ and NIOD cover portions of the London boroughs of Camden, Hackney, Islington, Kensington and Chelsea, Lambeth, Southwark, Tower Hamlets, Wandsworth, and Westminster, as well as the total area of the City of London. Map 1 shows the geographic location of these two policy areas.

Map 1: Location of CAZ and NIOD



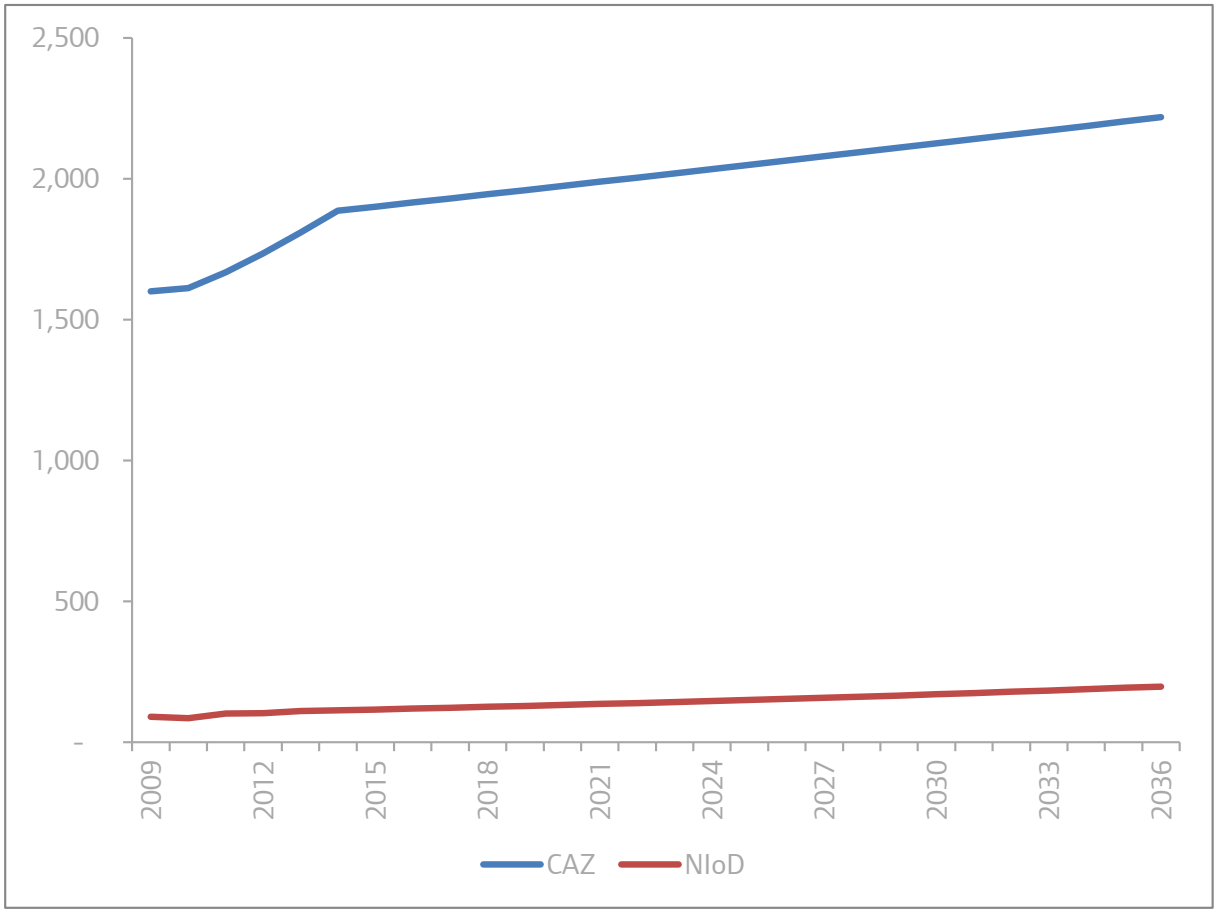
Source: GLA Economics and Crown copyright

In order to construct projections for these policy areas GLA Economics firstly applies the share of CAZ and NIOD land that lies within a lower-super output area (LSOA) to the estimate of employee jobs in that LSOA (using data from BRES, ONS). In order to estimate the proportion of boroughs' jobs that falls within the policy areas, the policy area employee estimates in each LSOA is then summed across each borough and divided by BRES employee jobs estimates for the borough.

[18] An area that contains Canary Wharf.

This is done for each of the years for which data is available (2009 to 2013). These proportions are then applied to the borough total employment estimates for 2009 to 2013 whilst the average of the proportions from 2009-2013 are applied to the borough projections from 2014 onwards. The results are presented in Figure 4 and summarised in Table 8.

Figure 4: Historic and projected employment in CAZ and NIOD (000s), 2004-2036



Source: GLA Economics

Table 8: Summary of CAZ and NIOD employment projections

	Employment growth per annum with London output growth of 2.5% per annum	Annual average growth in jobs with London output growth of 2.5% per annum
CAZ	0.74%	15,090
NIOD	2.56%	3,830

Appendix A: Methodology for GLA Economics' trend-based medium-term projections

Box 1 considers the rationale for the trend-based methodology GLA Economics' employs for its medium-term projections. Below is the algebra underlying the model:

Starting with a simple production function:

$$Y = ALe^{\beta t} \qquad (1)$$

where Y is output and L is employment.

It is assumed that in the medium term the rate of growth of potential output is given by:

$$Y_{trend} = Y(0)e^{\gamma t} \qquad (2)$$

Following the Office for Budget Responsibility (OBR) estimate for the UK's long-term output potential[19], it is assumed that $\gamma = 0.025$.

In the absence of constraints[20], in the medium term actual output is assumed to be equal to potential. So (1) can be re-written as:

$$Y(0)e^{\gamma t} = ALe^{\beta t} \qquad (3)$$

and solving for the potential level of demand for employment, subsuming the constant terms Y(0) and A as appropriate into a single term, k1.

$$L_{trend} = k1\ e^{(\gamma - \beta)t} \qquad (4)$$

This is the level of employment which would enable the trend rate of growth to be sustained.

The parameter β is not however time-invariant in the model. Instead, historical data is used to inform a linear function for projecting β into the future.

[19] See the OBR's 'Economic and Fiscal Outlook', March 2015:
http://cdn.budgetresponsibility.independent.gov.uk/March2015EFO_18-03-webv1.pdf

[20] Strictly speaking, it is implicitly assumed that whatever constraints may have existed in the past continue into the future. Hence it is any *additional* constraints which are relevant.

Appendix B: Methodology for producing a range of on-trend employment projections

As mentioned in Box 1, GLA Economics looked at a number of economic commentators to see when they estimated the UK economy to be on trend to produce a range of possible on-trend employment projections. Specifically, GLA Economics looked at the output gap estimates from the following organisations:

- European Commission (EC):
    - Hodrick-Prescott (HP) filter based estimates
    - Production function based estimates
- IMF
- OECD
- Office for Budget Responsibility (OBR)

These estimates were then assessed using three methodologies to try to attain employment levels which correspond to the economy being on-trend. These three methods were:

1. Taking the on-trend years (and employment in those corresponding years) as those where the estimated output gap changed sign between two consecutive years and taking the year where the absolute value of the estimated gap is closest to zero,
2. Taking the on-trend year as all those where the absolute value of the estimated output gap is less than or equal to 0.5 per cent,
3. Combining the resulting years from the two methods above.

Once the year's corresponding to the three methods above had been collated the corresponding employment in those years was selected and interpolated to generate estimates for in-between years. Finally, a line of best fit was applied to these and projected forward. Outlier trends from the results were then excluded.

In addition to the estimates generated from the methodology above two additional estimates were created using historic employment data alone. The first of these took both the peak and trough levels of employment over time and interpolated between them (i.e. interpolated between each peak to peak employment level and each trough to trough employment level separately). A line of best fit was then applied through each and forecasted forwarded and the average of the two lines was taken. The second estimate took the average between the interpolated peak to peak and trough to trough lines before a line of best fit was applied and projected forward.

Appendix C: Further information on an alternative method of estimating future employment in London

The methodology for the alternative method of estimating future employment works as follows:

Let Jik = Jobs in location i filled by people from location k.

and G (x) = growth of the variable x

Then, with the subscripts (L) denoting London and (N) denoting locations outside London,

London's employment on a residence basis is given by:

$E_L = J_{LL} + J_{NL}$ (1)

Similarly London's employment on a workplace based (J_L) basis is given by:

$J_L = J_{LL} + J_{LN}$ (2)

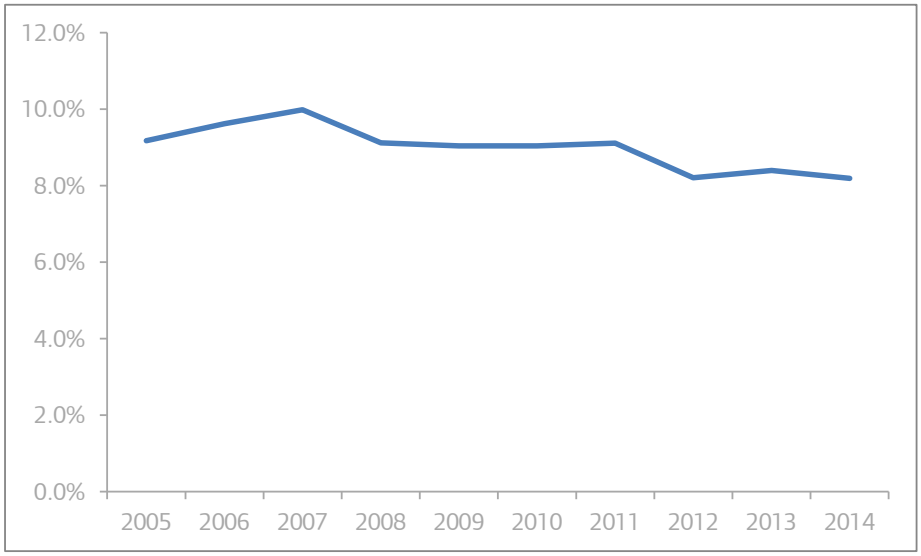
Now $G(E_L) = G(J_{LL}) = G(J_{NL})$ (3), if J_{LL}/E_L is constant over time. This is equivalent to saying that J_{NL} / E_L is also constant over time, i.e. the proportion of Londoners employed who fill jobs out of London is constant. Figure C1 shows that the share of jobs filled by Londoners working outside of London (out-commuting) has been relatively constant, although it appears to have declined slightly in the recent history[21].

Similarly $G(J_L) = G(J_{LL}) = G(J_{LN})$, (4) if J_{LL}/J_L or equivalently J_{LN} / J_L is constant over time. Note J_{LN} / J_L is the proportion of jobs in London that are filled by non-Londoners commuting into London. Figure C2 shows the share of jobs in London filled by those in-commuting. Again, apart from a slight dip in 2005, this share has indeed been relatively constant over time.

If both equations (3) and (4) above hold it follows that since both $G(E_L)$ and $G(J_L)$ equal $G(J_{LL})$ then $G(E_L)$ and $G(J_L)$ are also equal to each other. That is that the growth in employment in London on a workplace basis is equal to the growth in employment in London on a residence basis.

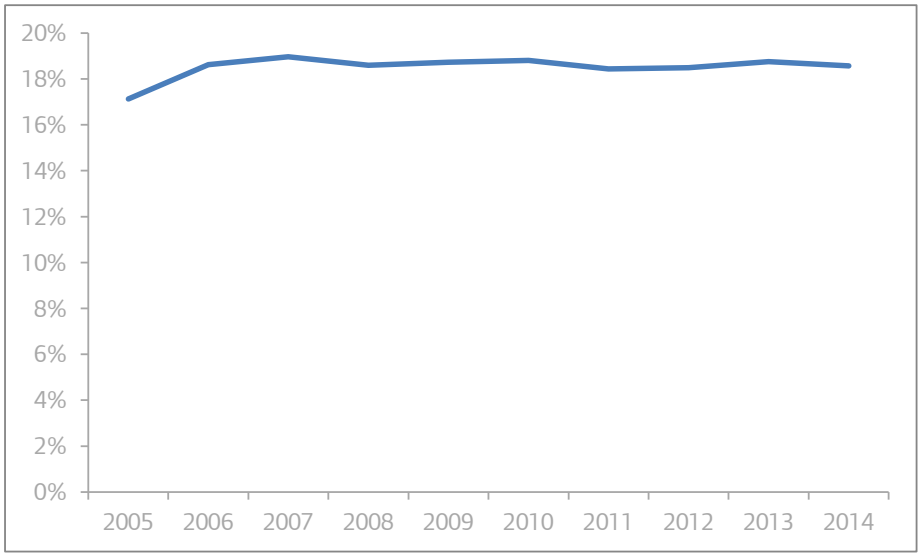
[21] Although this slight change, in itself, should be treated with caution as it may simply be due to sampling variability.

Figure C1: Jobs not in London filled by working age Londoners as a proportion of all working age people employed in London



Source: APS, January-December, ONS

Figure C2: Share of jobs in London filled by working age non-Londoners in-commuting



Source: APS, January-December, ONS

In other words, employment in London on a workplace basis can be estimated by estimating employment in London on a residence basis. The latter itself can be estimated by applying a projected employment rate to projections of London's population. For this, the working age employment rate is assumed constant at the 2014 rate. This is then applied to the working age population projection from the GLA 2014 round of demographic projections (trend-based population projections, long-term migration scenario)[22]**.** Since the employment estimate has been confined to the working age population alone the results from this methodology may be considered a cautious alternative.

[22] Available at: https://londondatastore-upload.s3.amazonaws.com/dataset/2014-round-population-projections/borough_trend_long_term_2014rnd.xlsx

Appendix D: Historic sectoral employment charts

Figure D1: Log of primary and utilities employment as a proportion of total output in London, 1984-2014

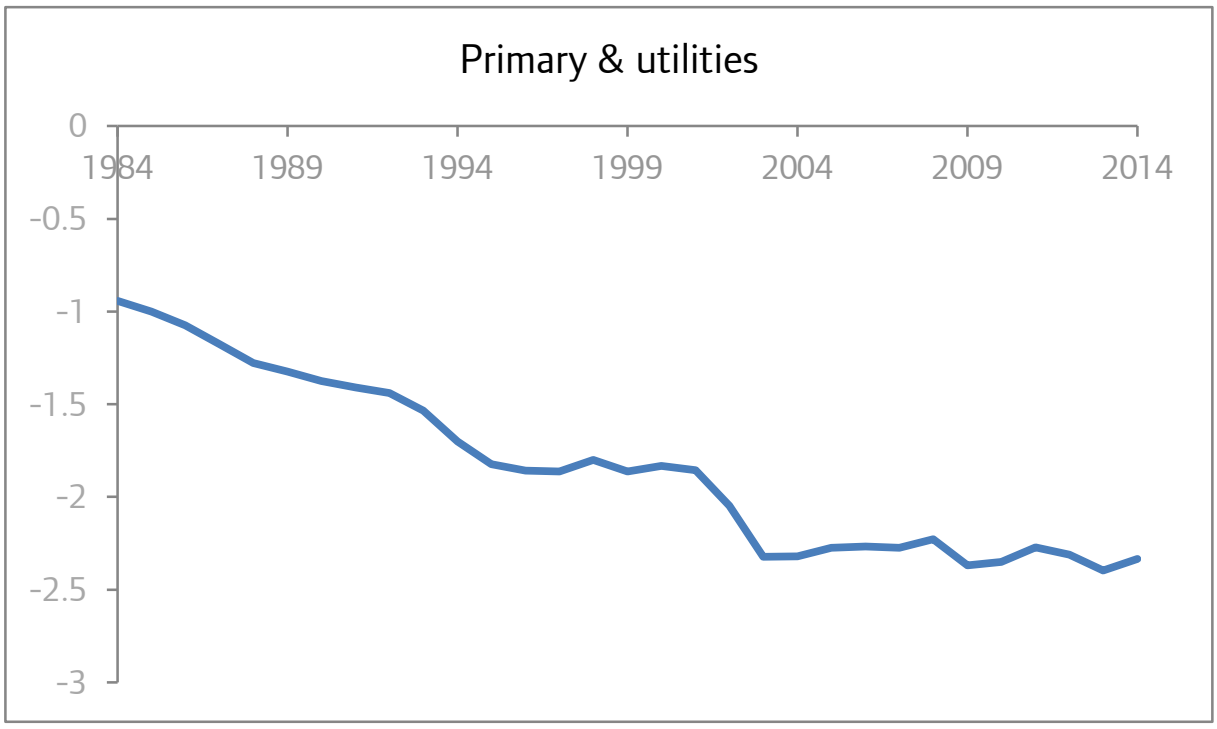


Figure D2: Log of manufacturing employment as a proportion of total output in London, 1984-2014

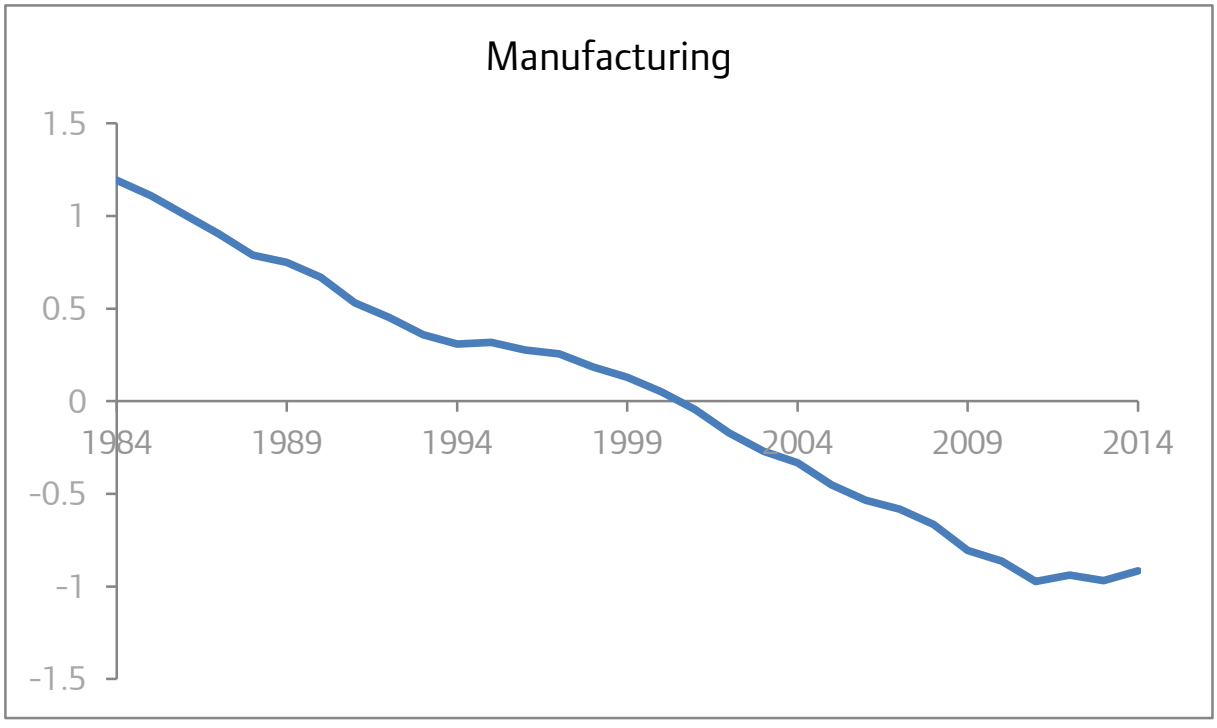


Figure D3: Log of construction employment as a proportion of total output in London, 1984-2014

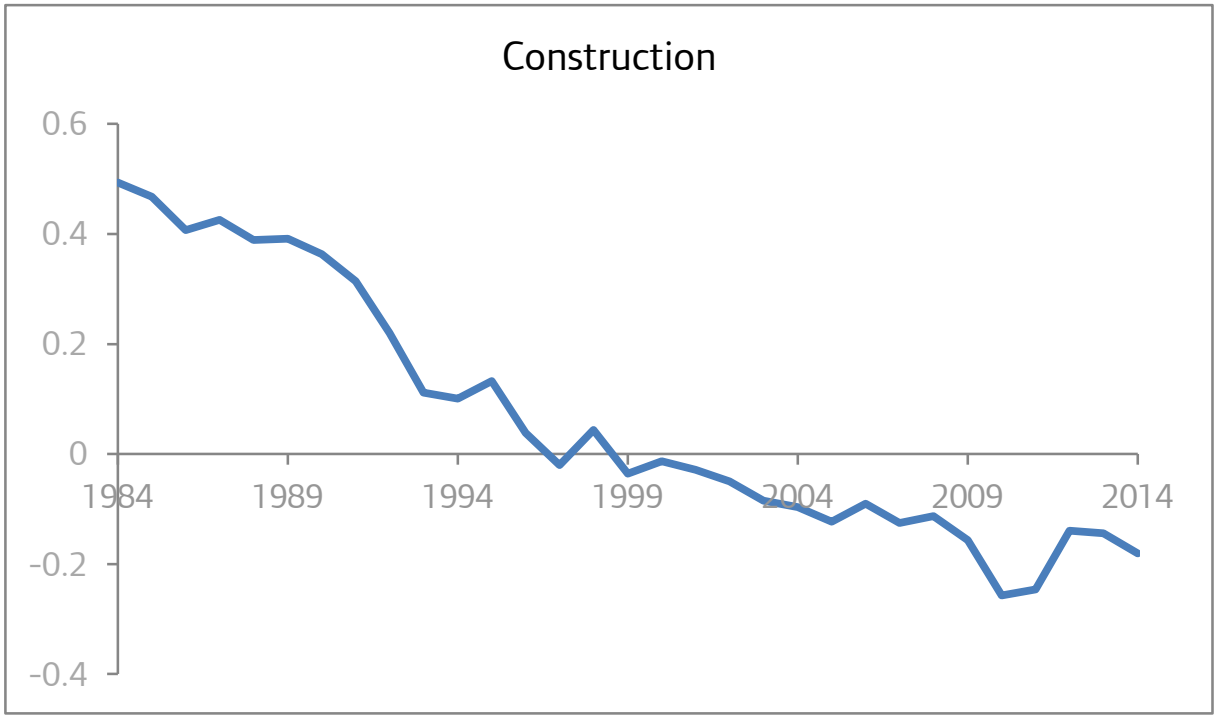


Figure D4: Log of wholesale employment as a proportion of total output in London, 1984-2014

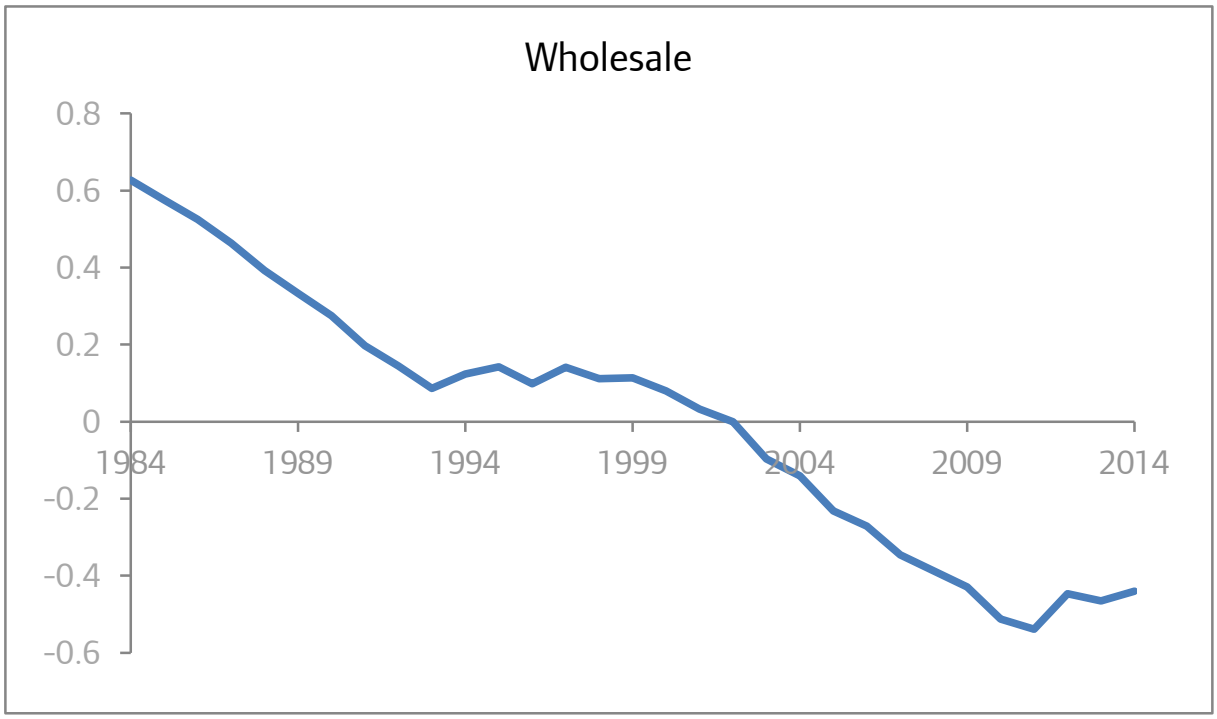


Figure D5: Log of retail employment as a proportion of total output in London, 1984-2014

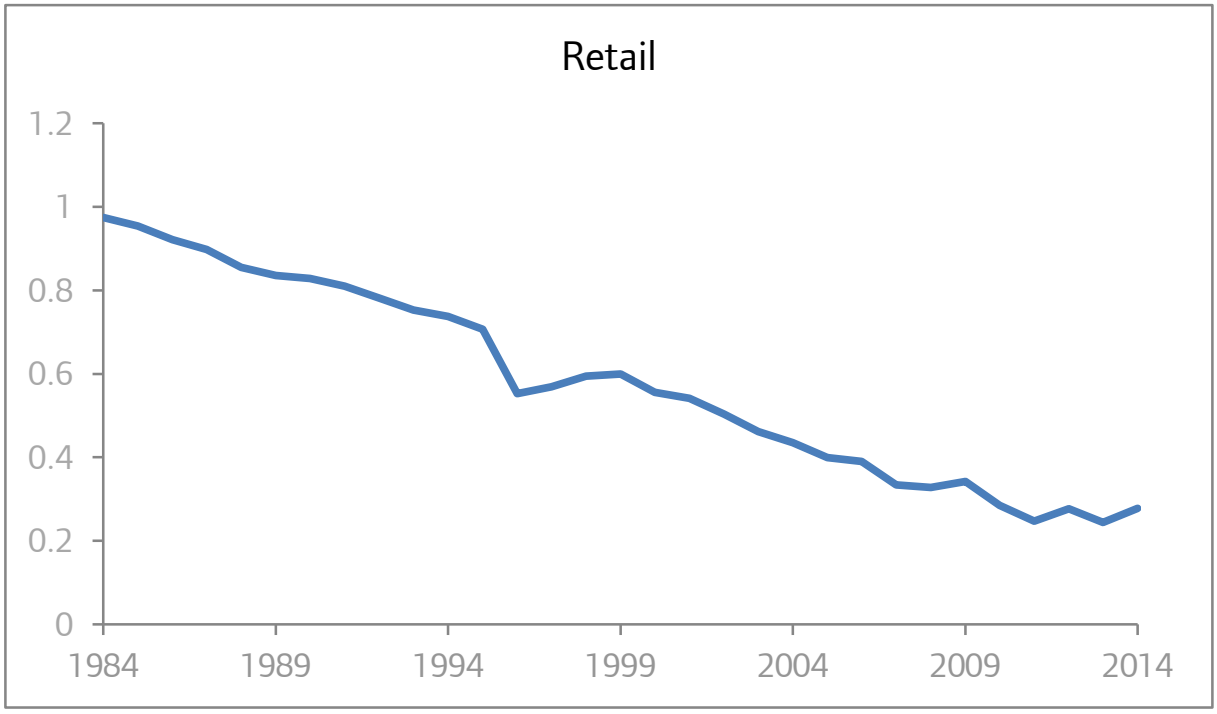


Figure D6: Log of transport and storage employment as a proportion of total output in London, 1984-2014

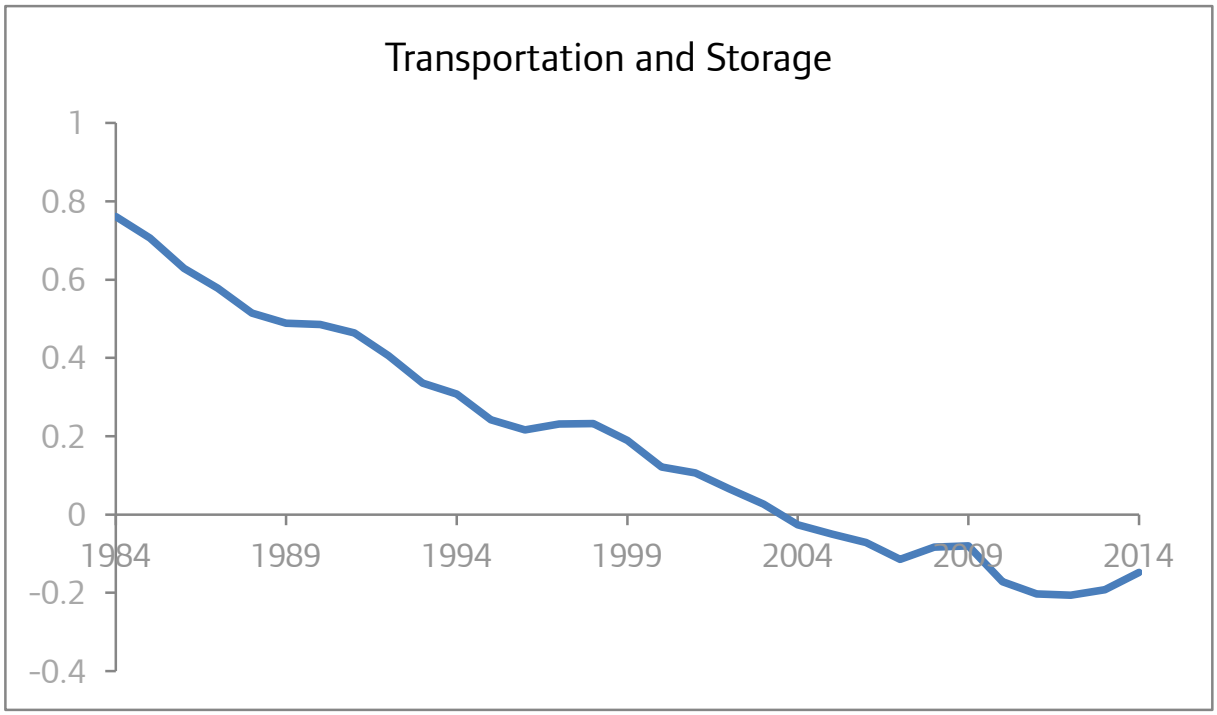


Figure D7: Log of accommodation and food service activities employment as a proportion of total output in London, 1984-2014

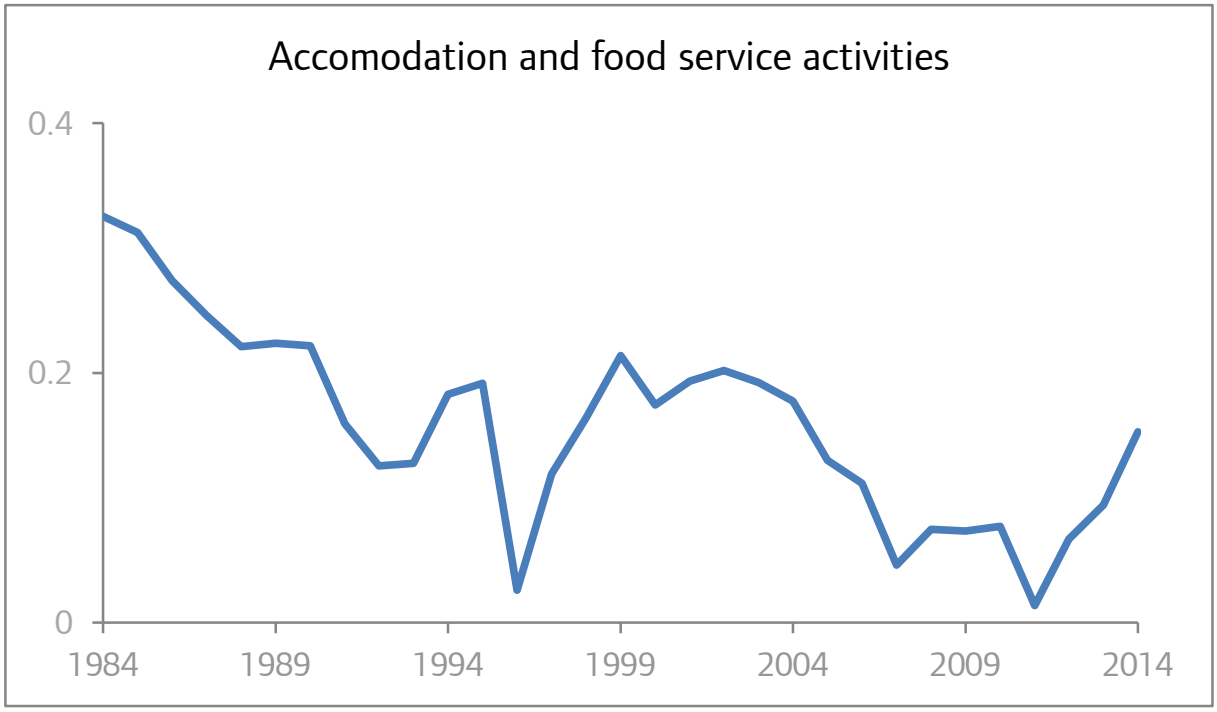


Figure D8: Log of information and communication employment as a proportion of total output in London, 1984-2014

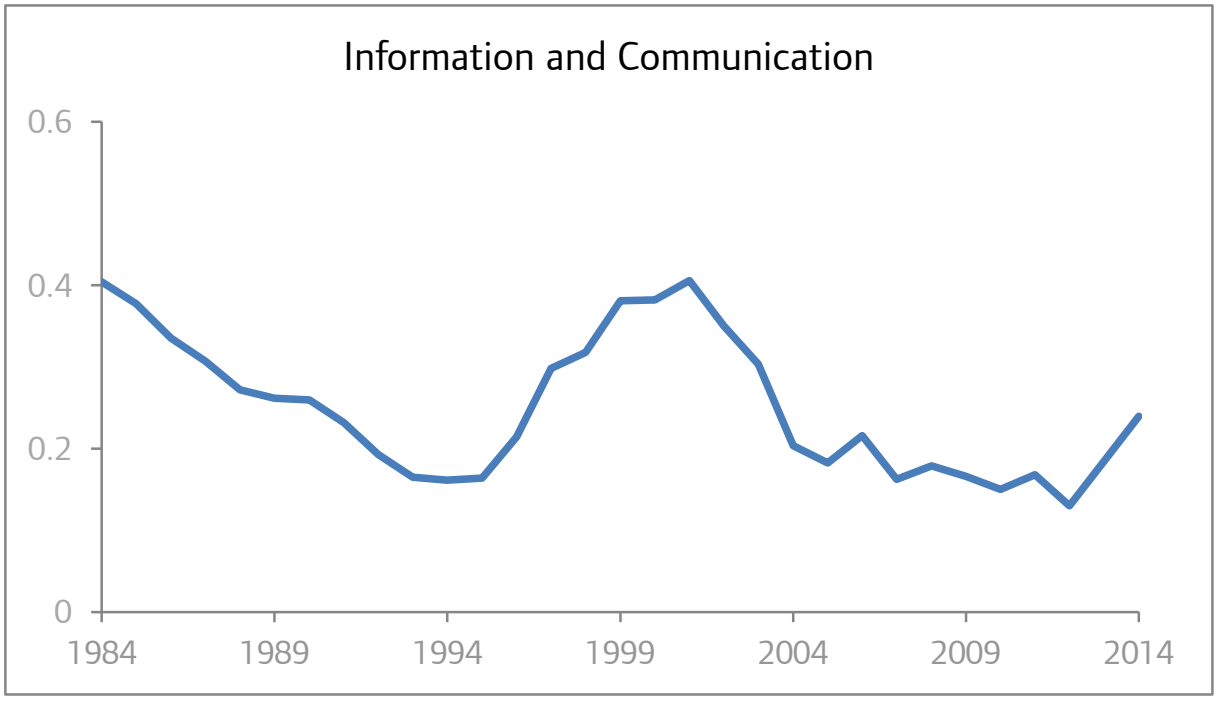


Figure D9: Log of financial and insurance activities employment as a proportion of total output in London, 1984-2014

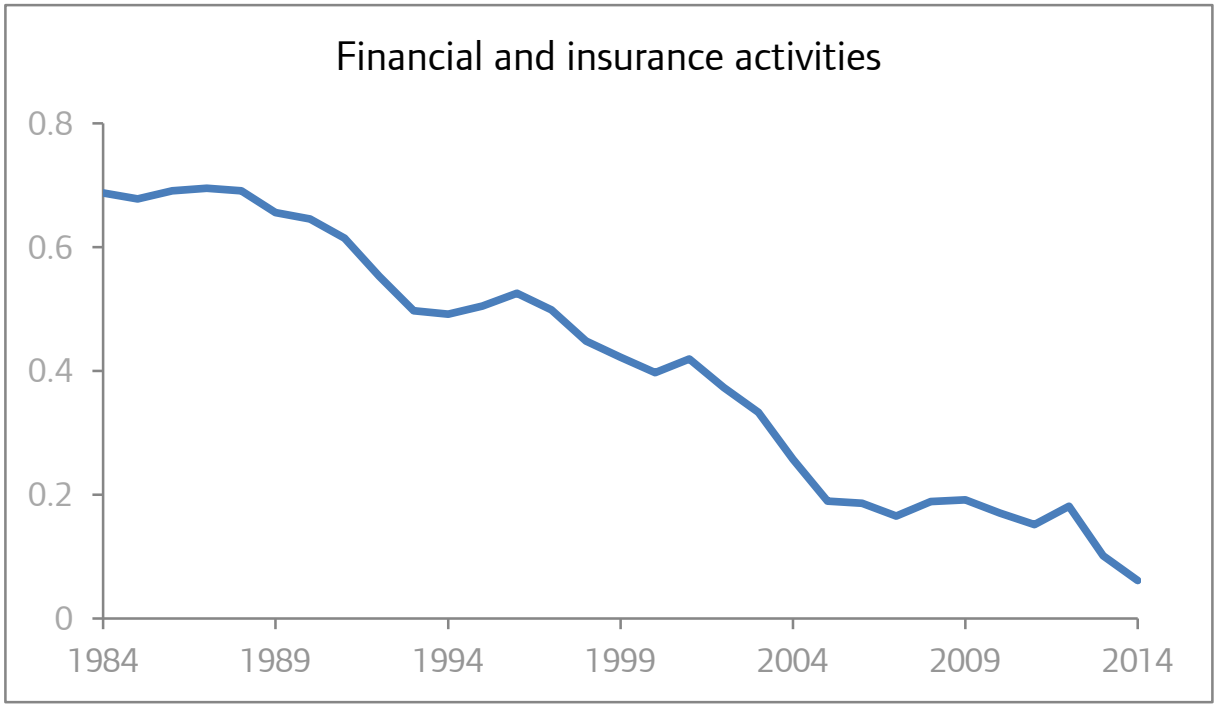


Figure D10: Log of professional, real estate, scientific and technical activities employment as a proportion of total output in London, 1984-2014

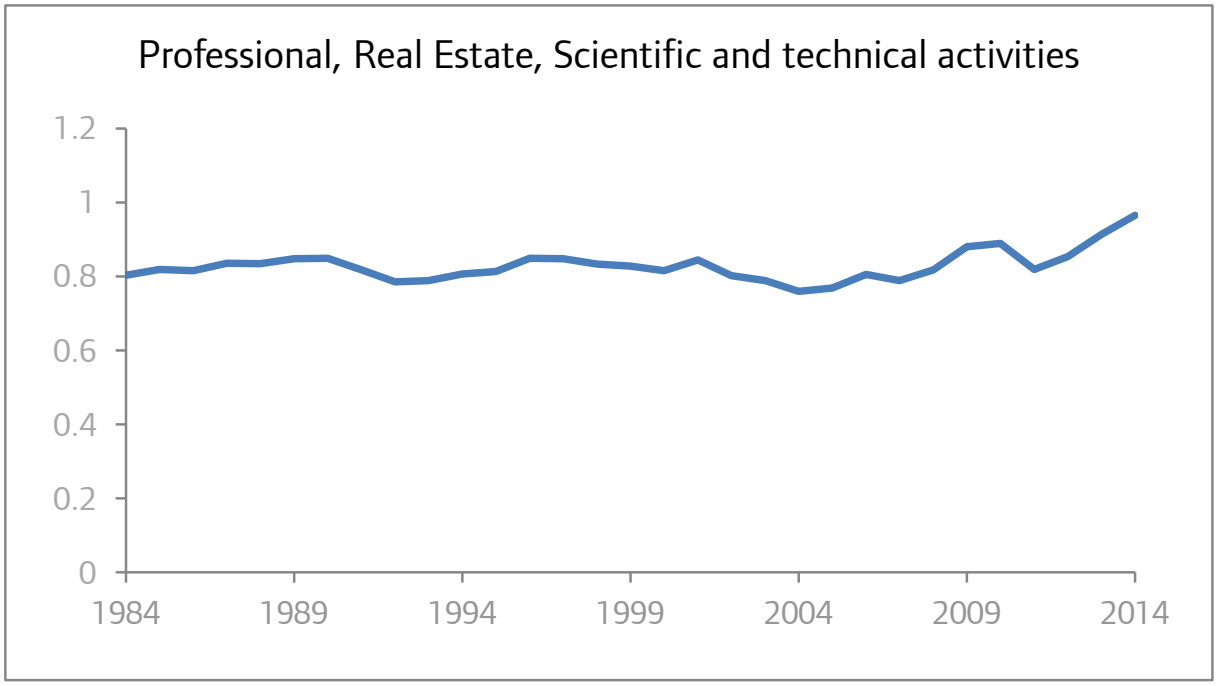


Figure D11: Log of administrative and support service activities employment as a proportion of total output in London, 1984-2014

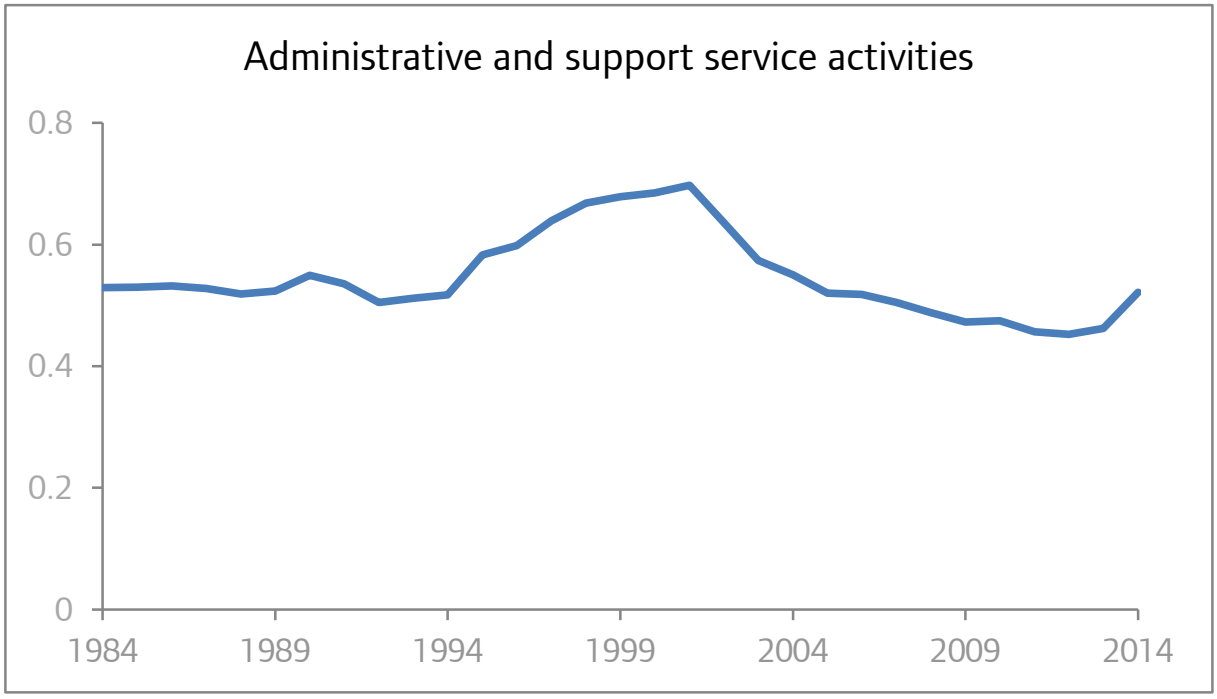


Figure D12: Log of public admin and defence employment as a proportion of total output in London, 1984-2014

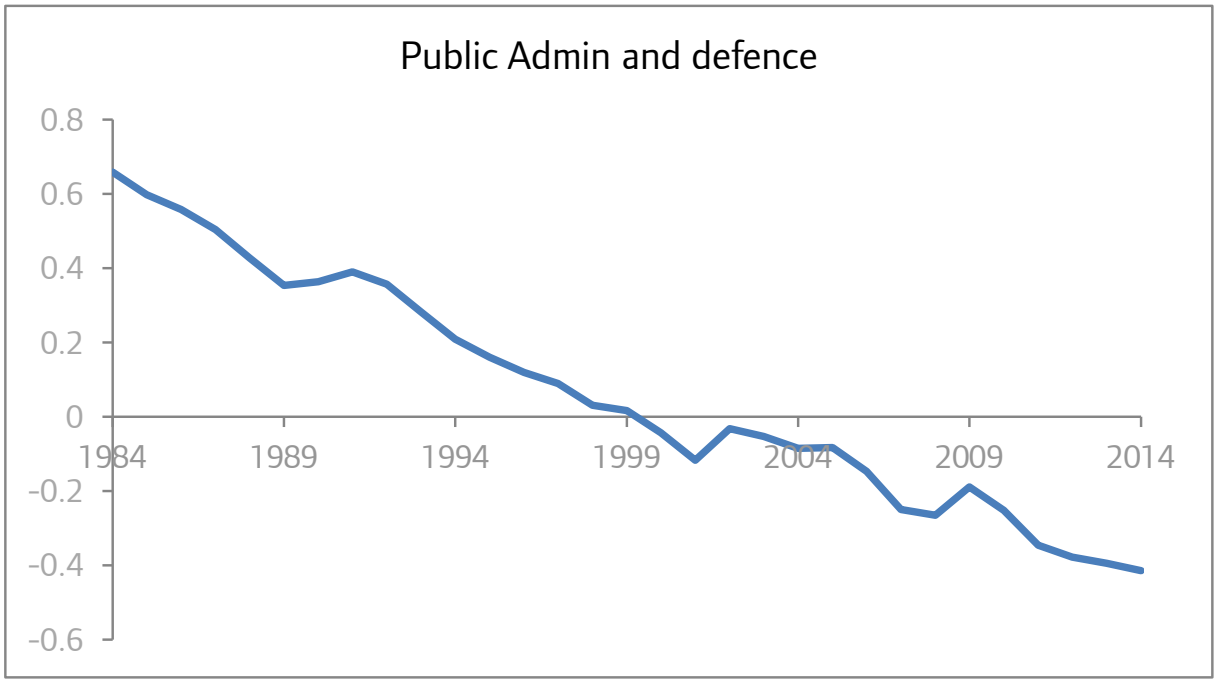


Figure D13: Log of education employment as a proportion of total output in London, 1984-2014

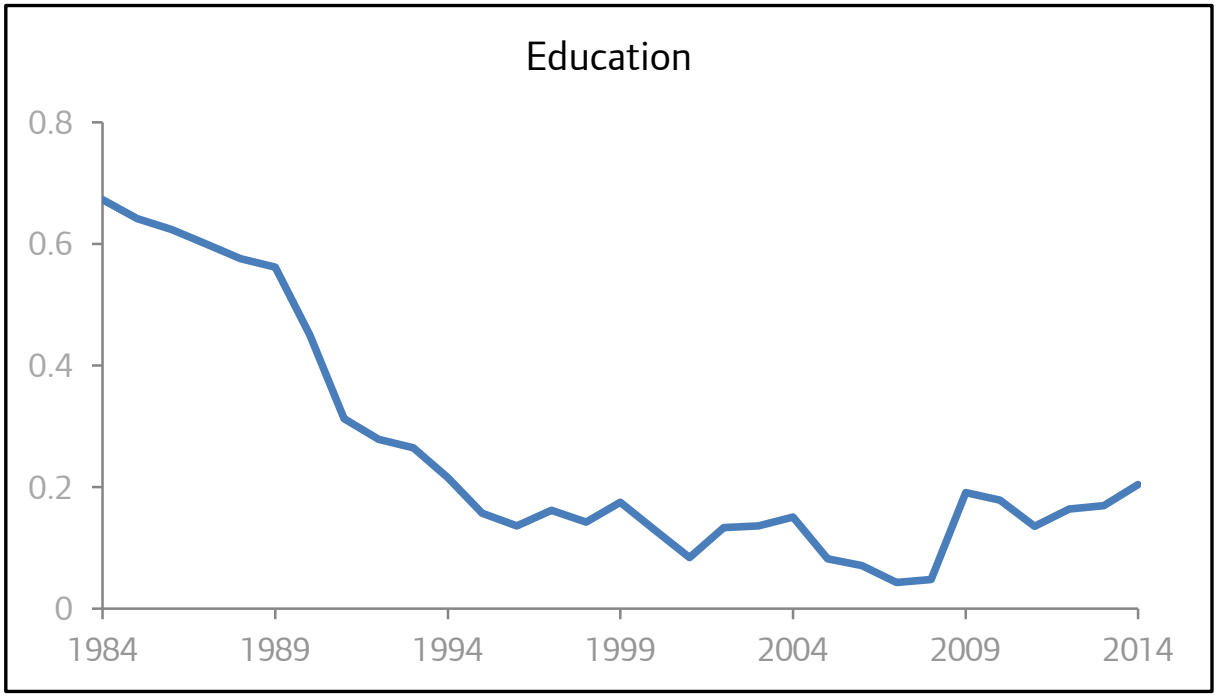


Figure D14: Log of health employment as a proportion of total output in London, 1984-2014

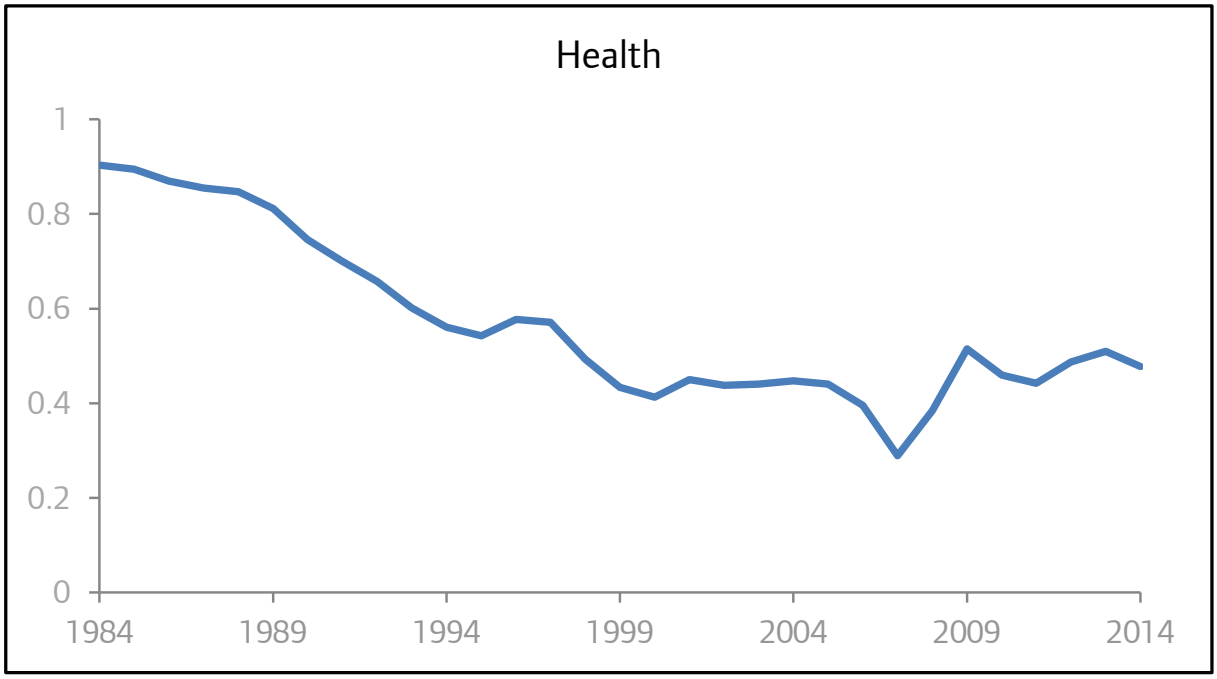


Figure D15: Log of arts, entertainment and recreation employment as a proportion of total output in London, 1984-2014

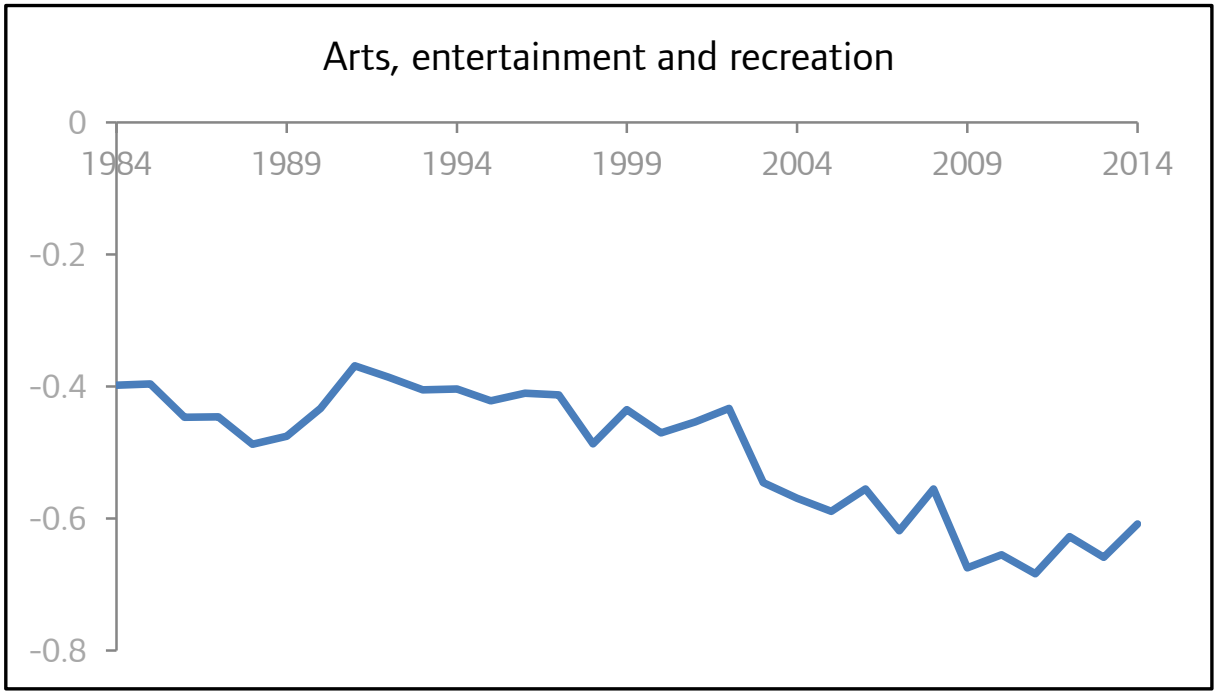
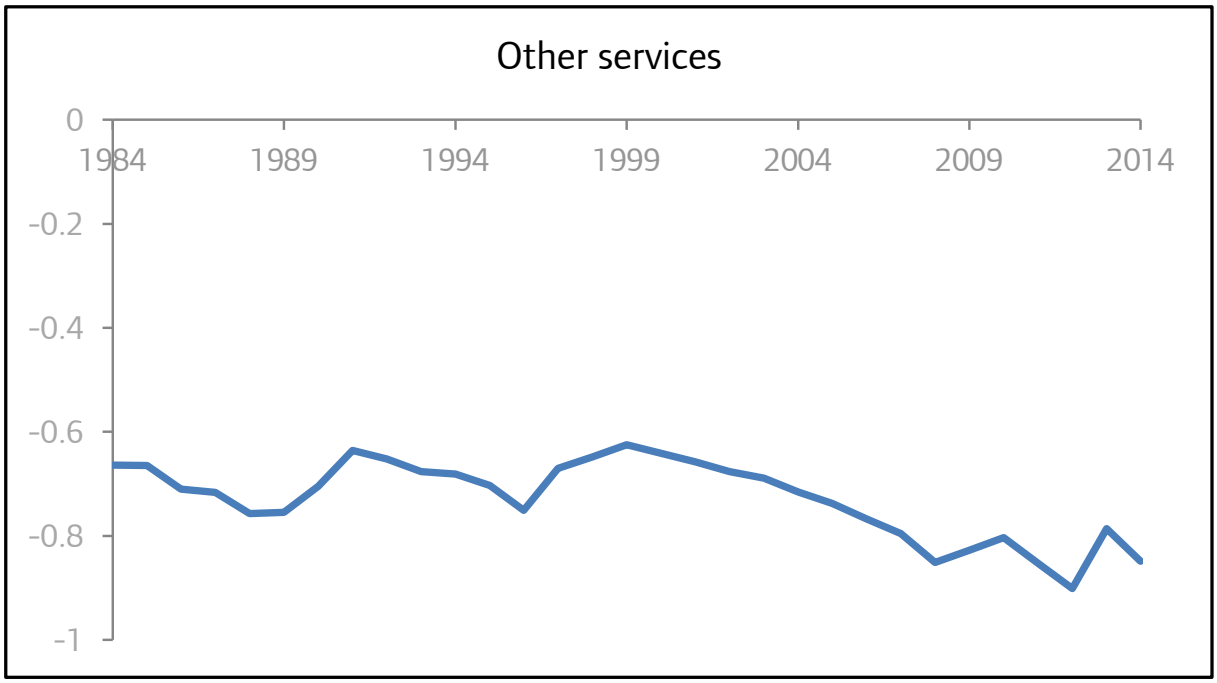


Figure D16: Log of other services employment as a proportion of total output in London, 1984-2014



Appendix E: Historic borough employment charts

Figure E1: Log of Barking & Dagenham employment as a proportion of total output in London, 1981-2014

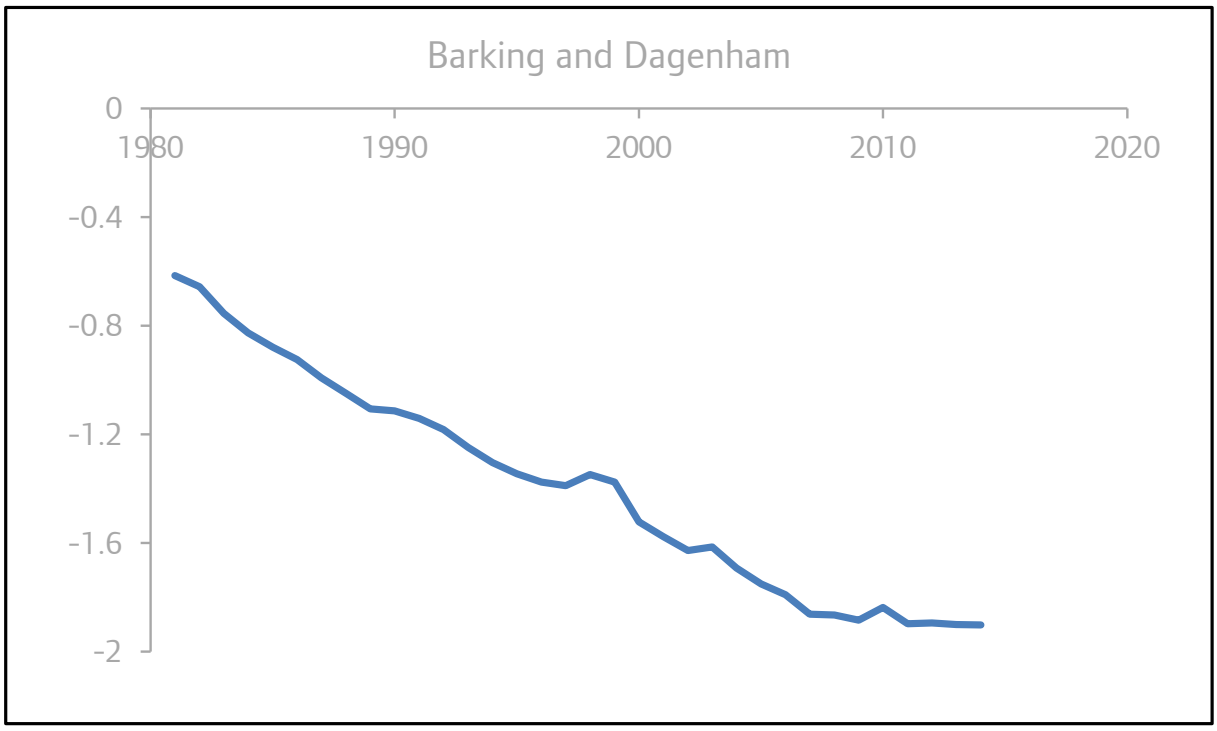


Figure E2: Log of Barnet employment as a proportion of total output in London, 1981-2014

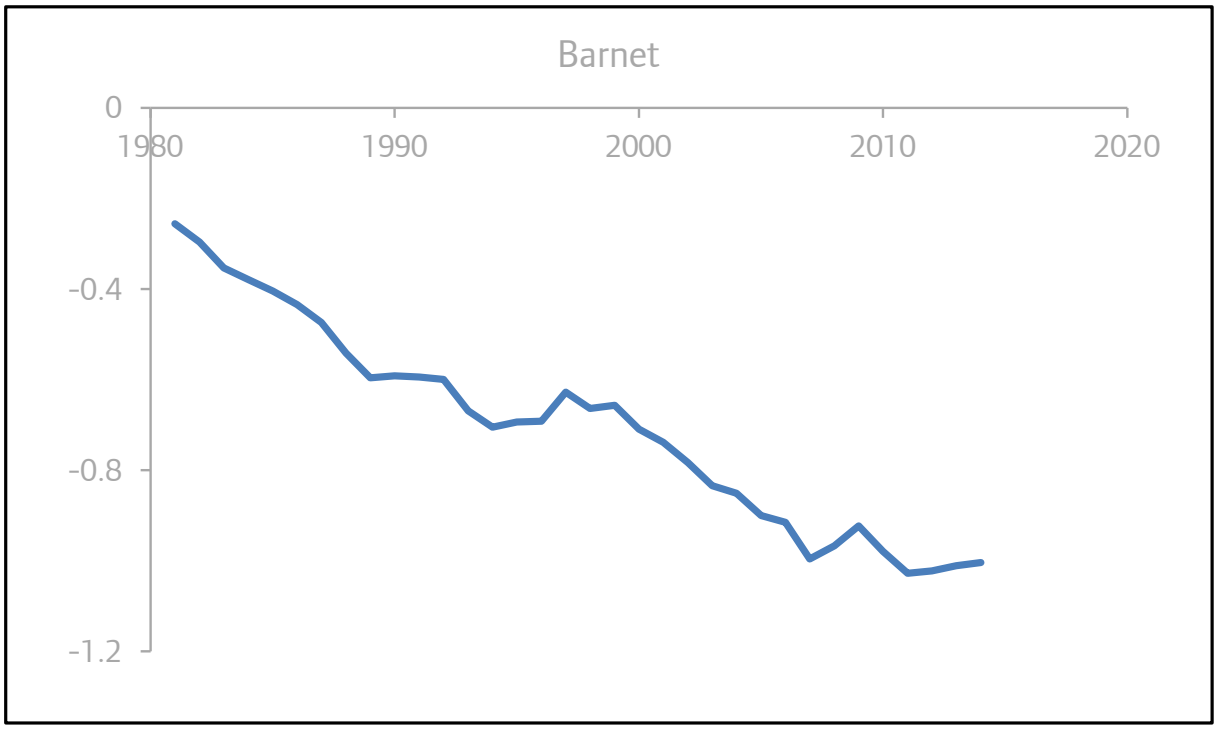


Figure E3: Log of Bexley employment as a proportion of total output in London, 1981-2014

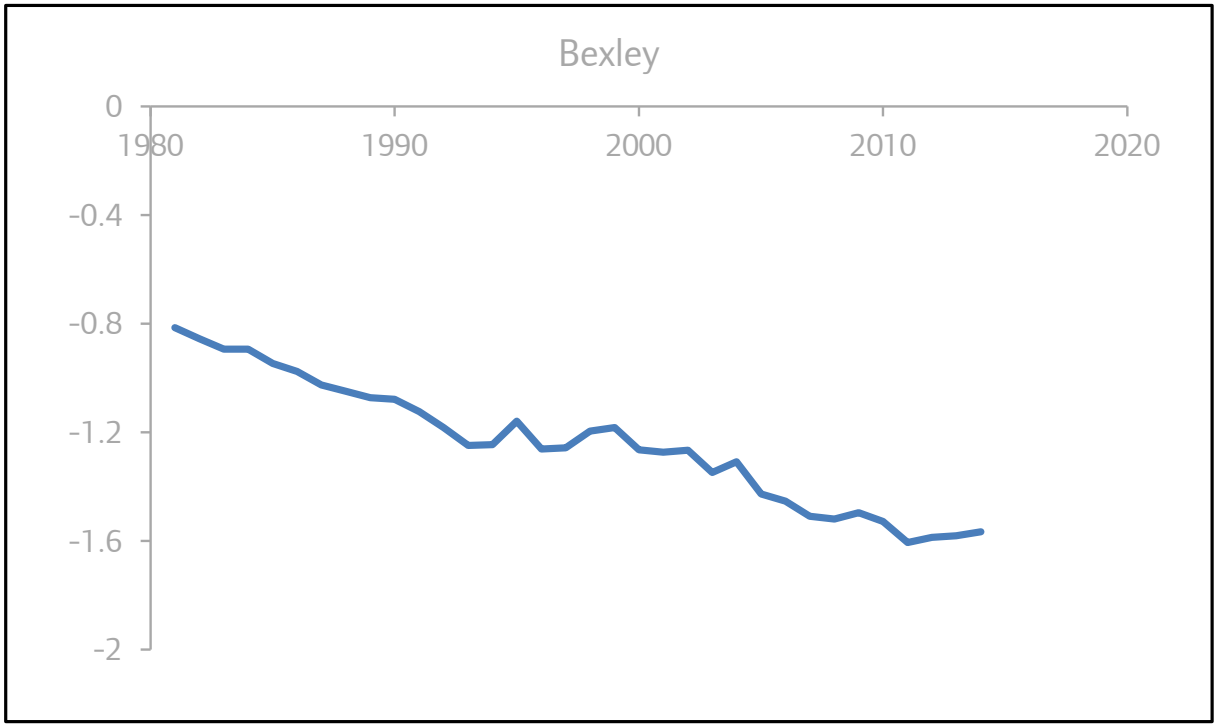


Figure E4: Log of Brent employment as a proportion of total output in London, 1981-2014

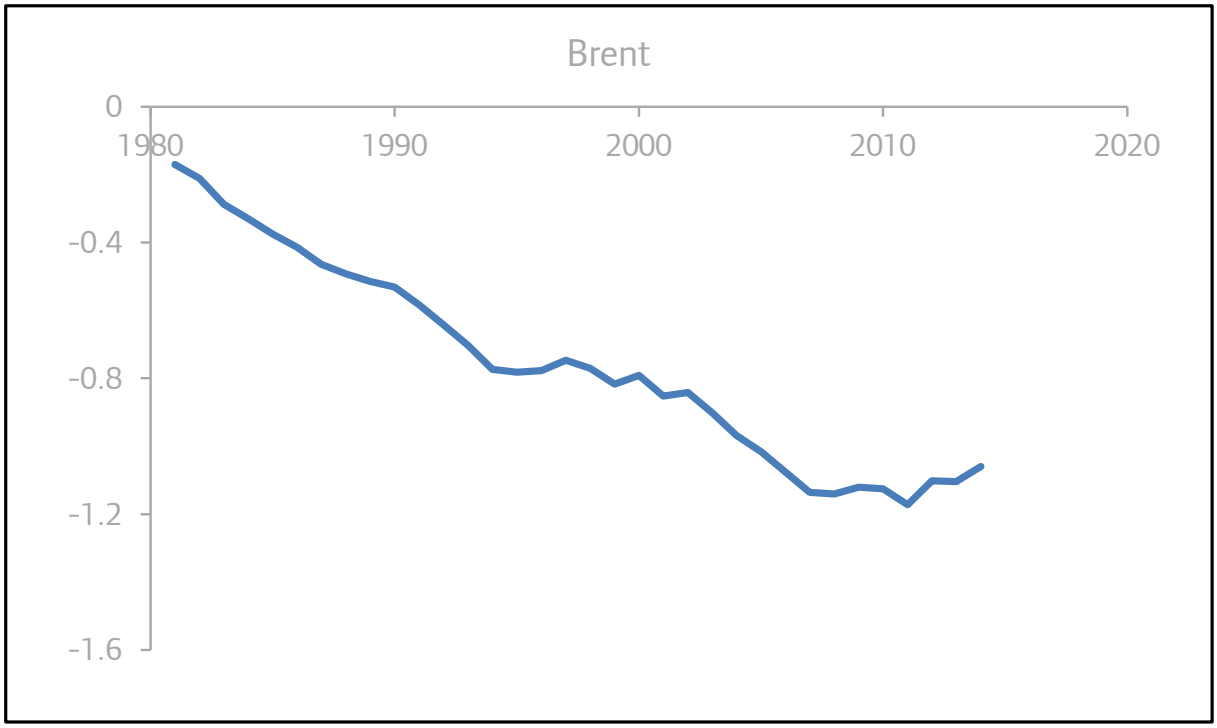


Figure E5: Log of Bromley employment as a proportion of total output in London, 1981-2014

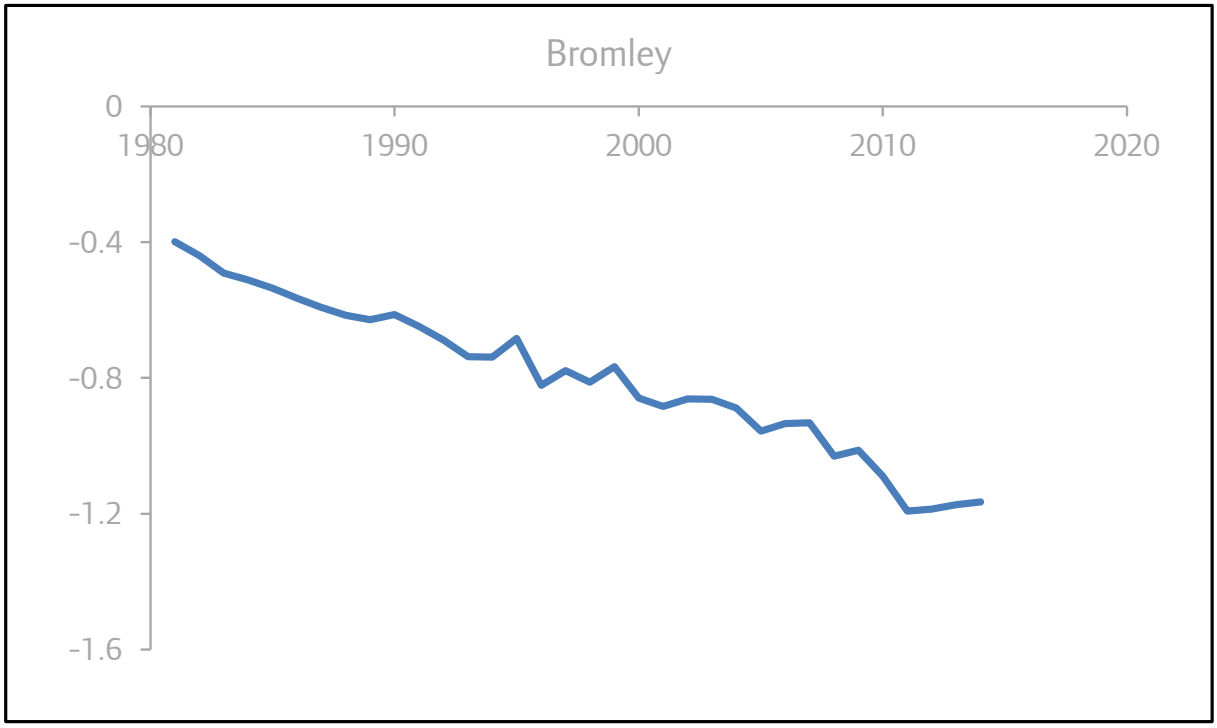


Figure E6: Log of Camden employment as a proportion of total output in London, 1981-2014

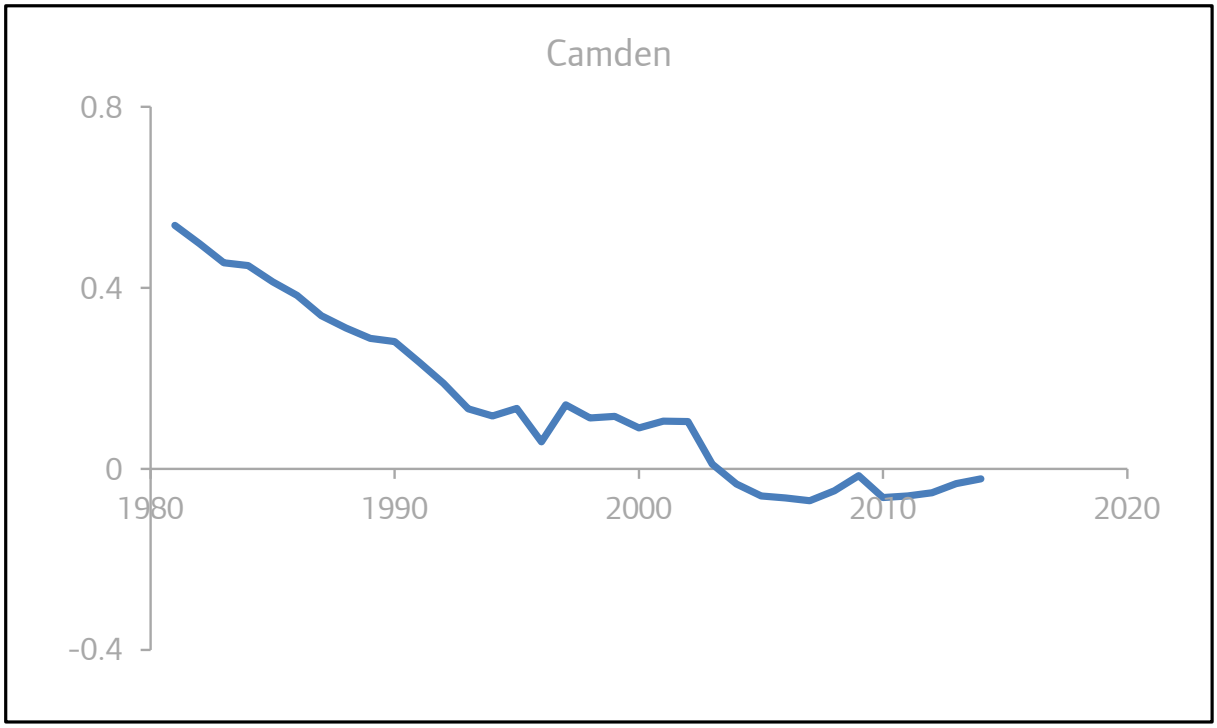


Figure E7: Log of City of London employment as a proportion of total output in London, 1981-2014

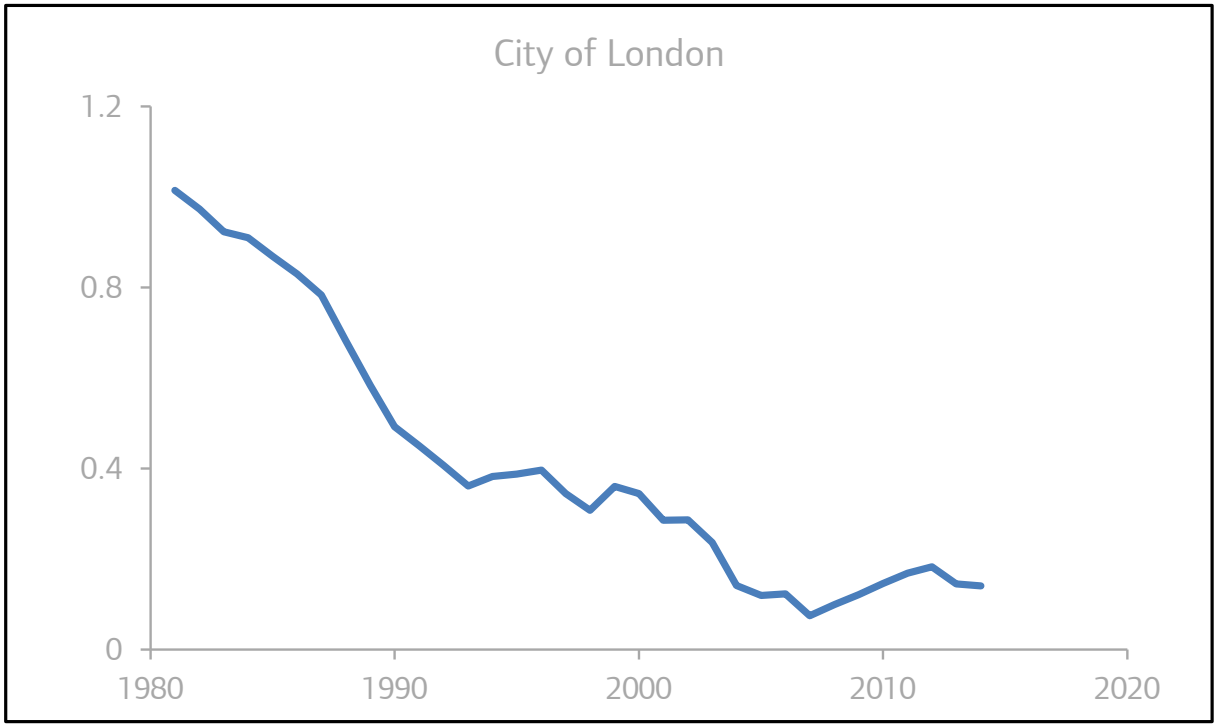


Figure E8: Log of Croydon employment as a proportion of total output in London, 1981-2014

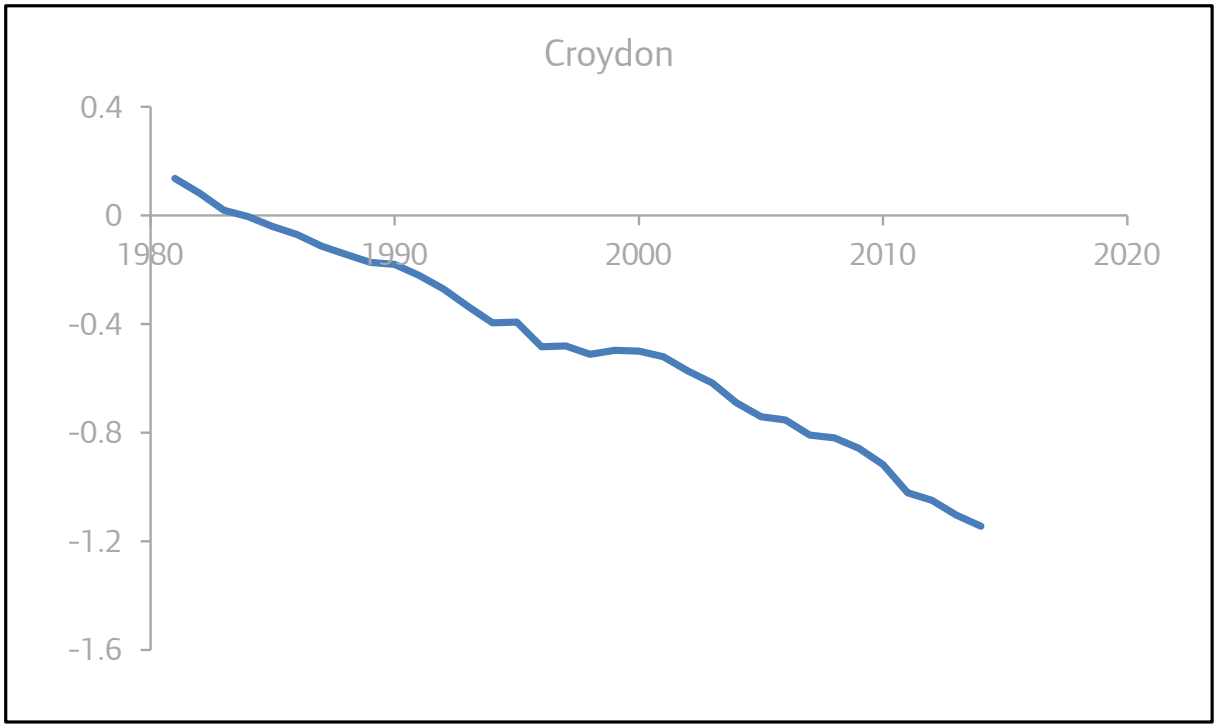


Figure E9: Log of Ealing employment as a proportion of total output in London, 1981-2014

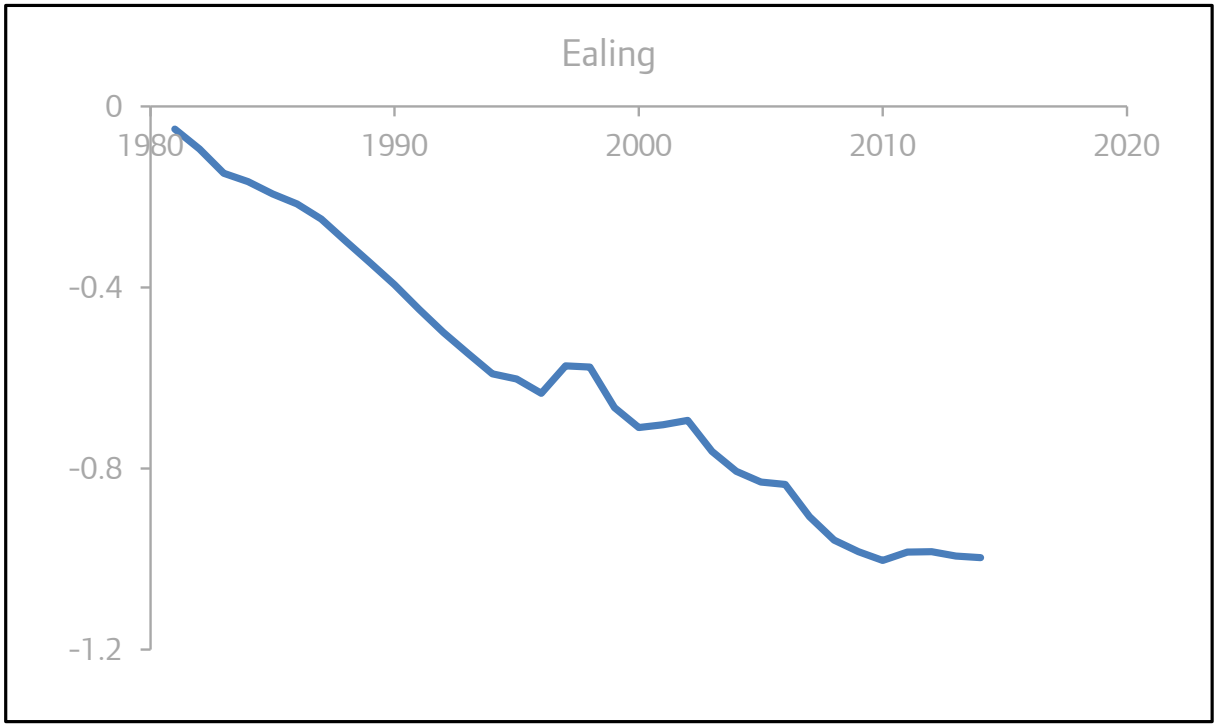


Figure E10: Log of Enfield employment as a proportion of total output in London, 1981-2014

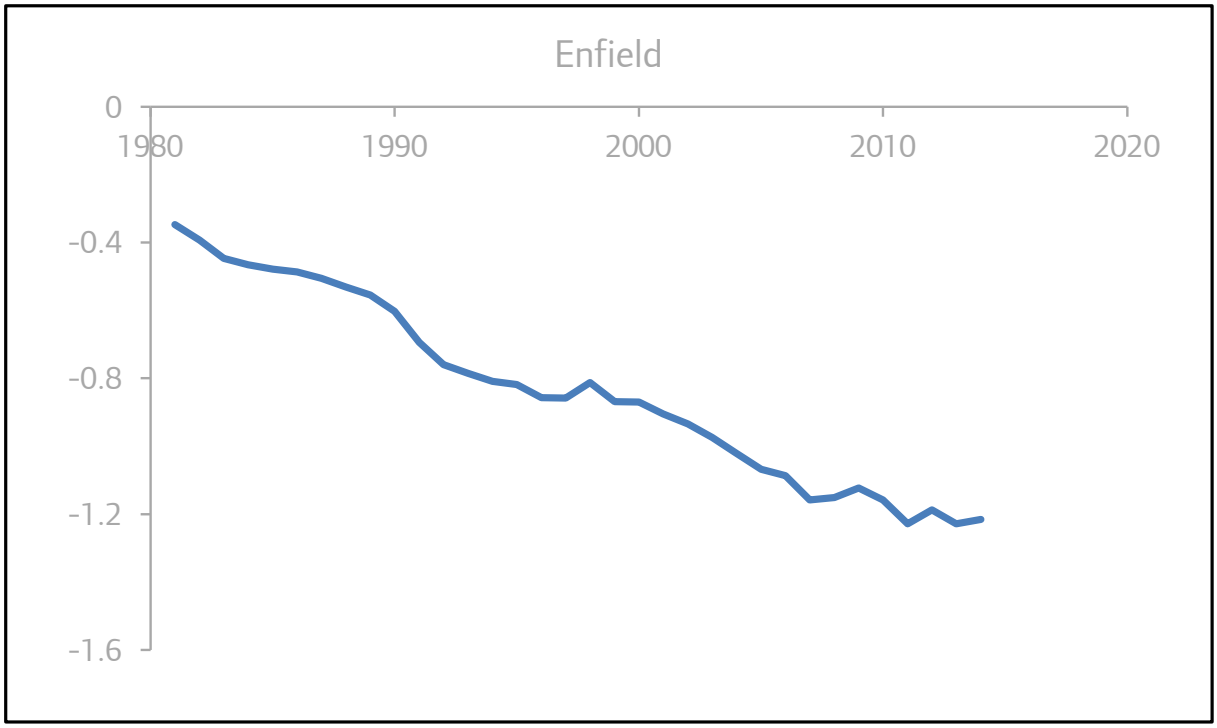


Figure E11: Log of Greenwich employment as a proportion of total output in London, 1981-2014

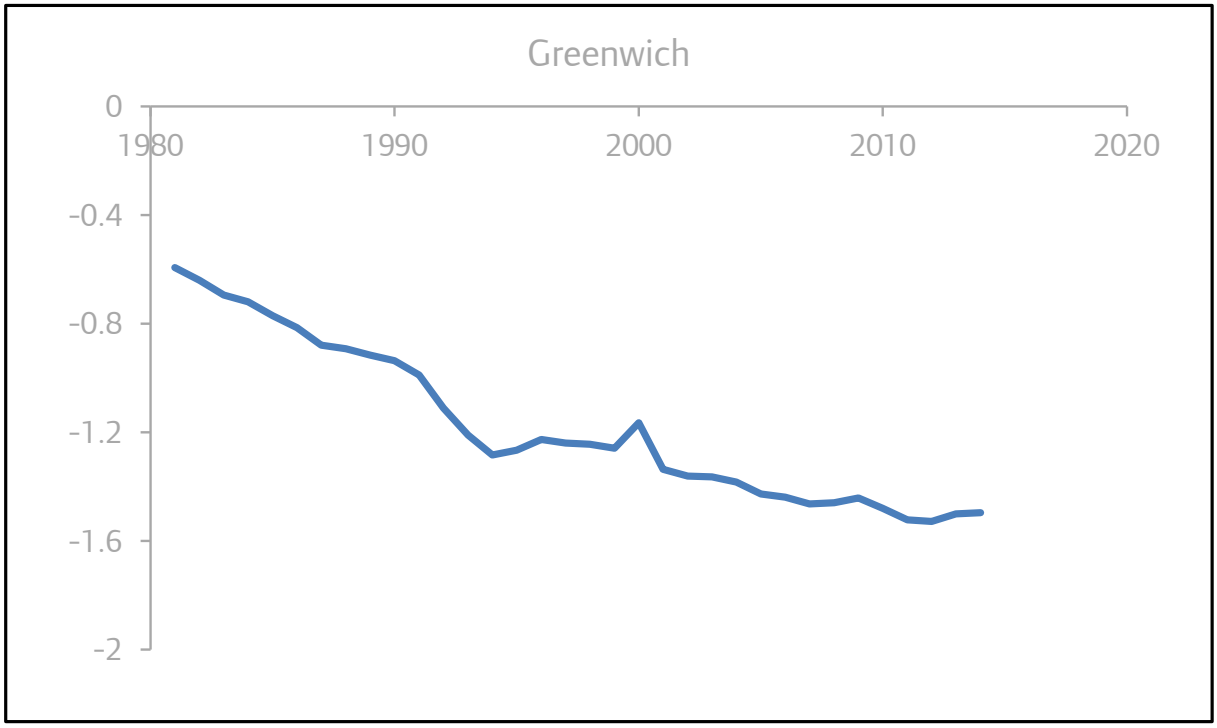


Figure E12: Log of Hackney employment as a proportion of total output in London, 1981-2014

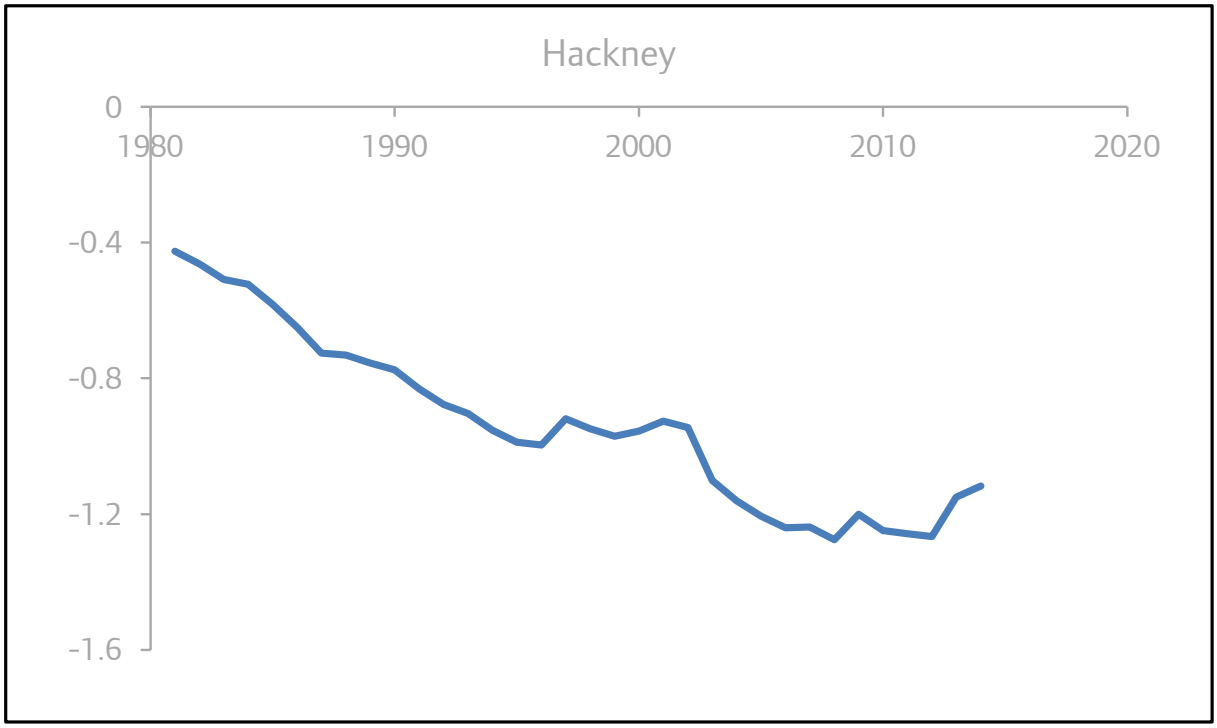


Figure E13: Log of Hammersmith & Fulham employment as a proportion of total output in London, 1981-2014

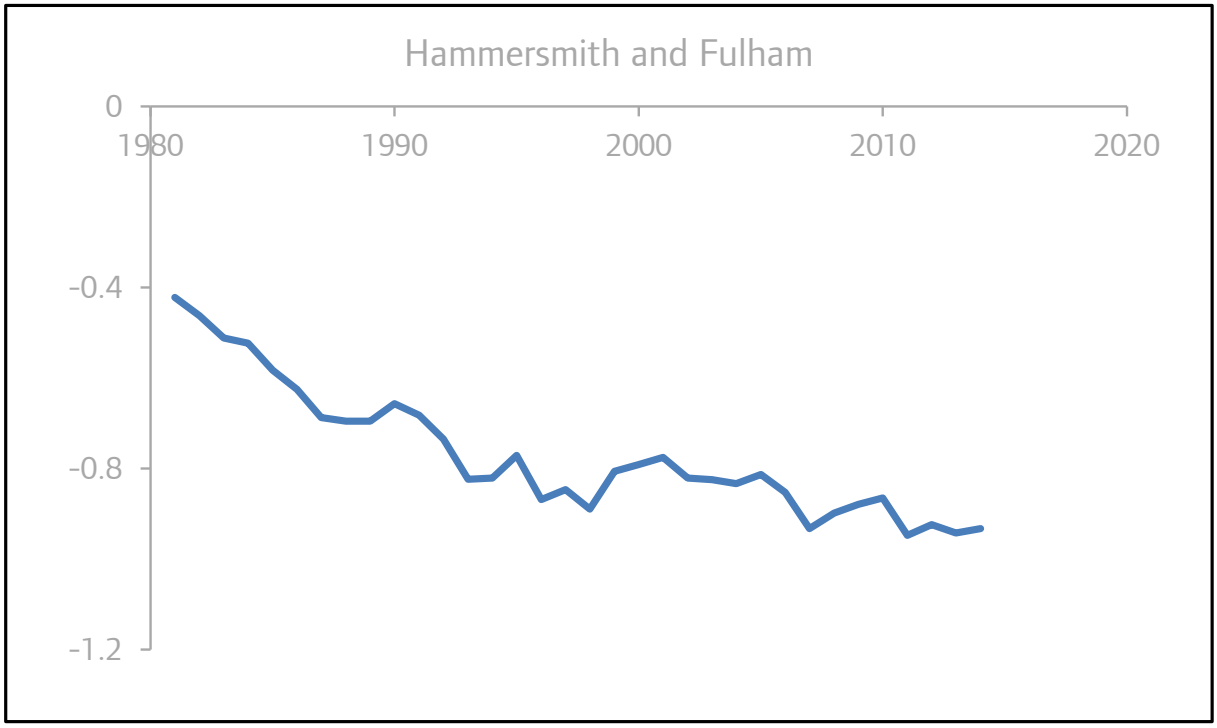


Figure E14: Log of Haringey employment as a proportion of total output in London, 1981-2014

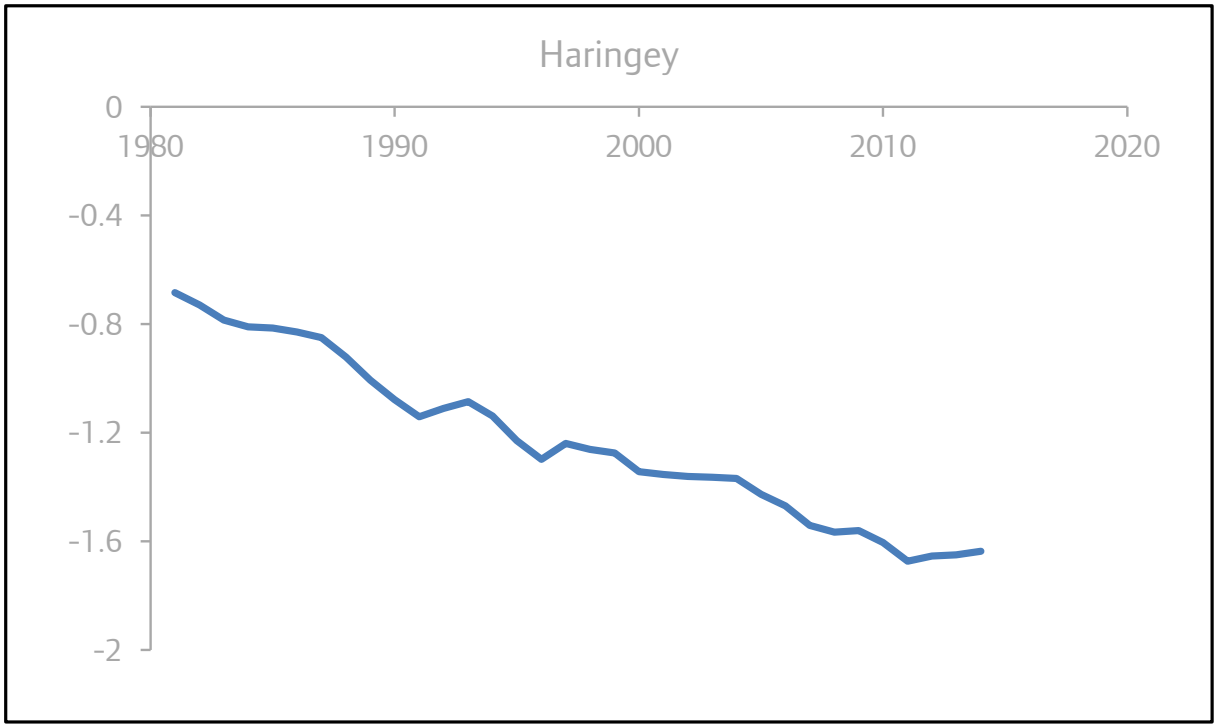


Figure E15: Log of Harrow employment as a proportion of total output in London, 1981-2014

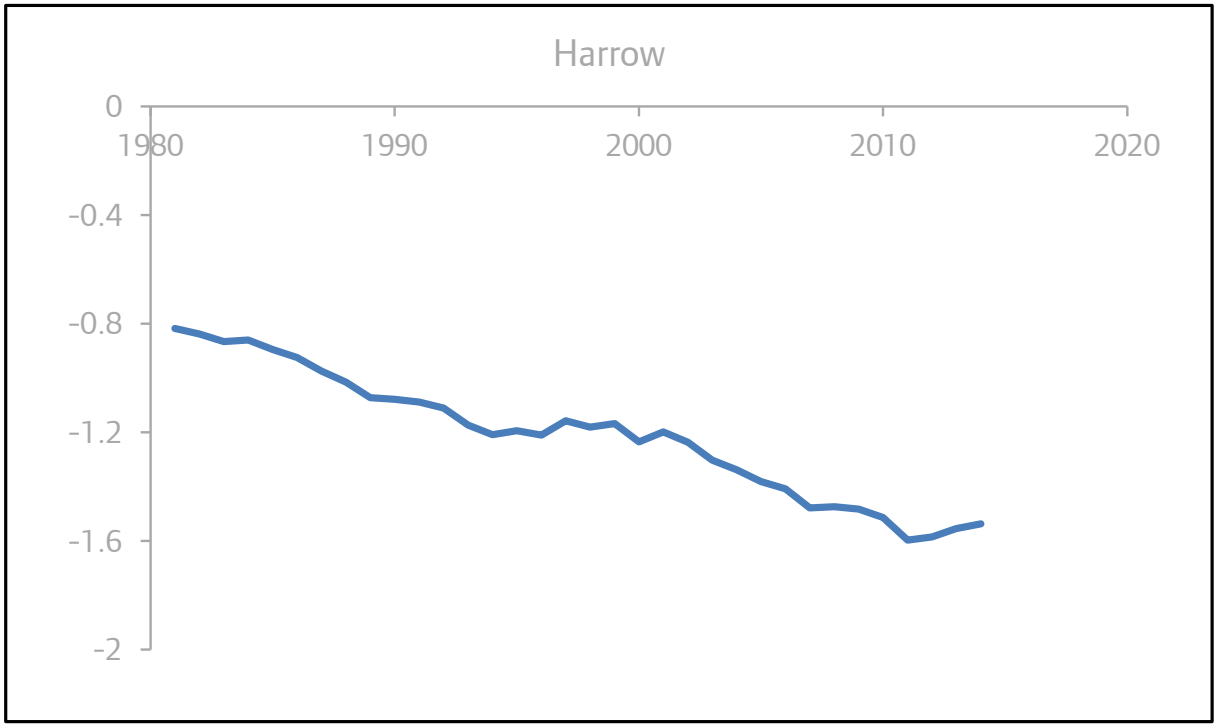


Figure E16: Log of Havering employment as a proportion of total output in London, 1981-2014

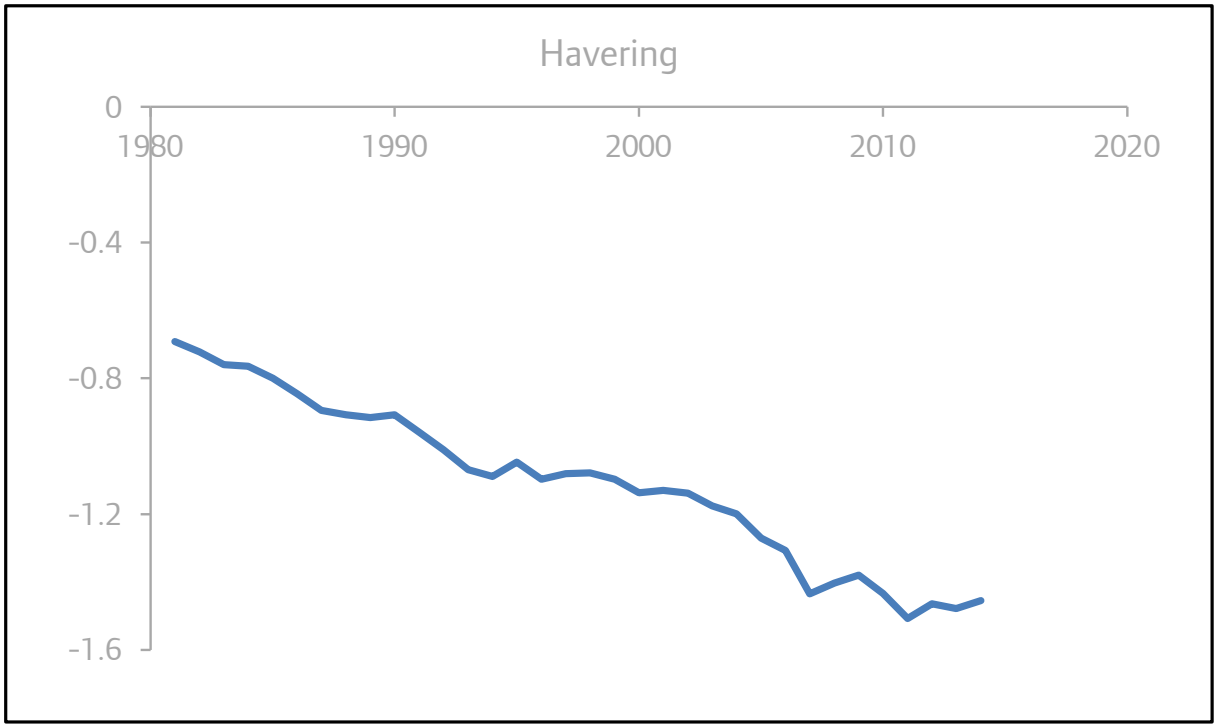


Figure E17: Log of Hillingdon employment as a proportion of total output in London, 1981-2014

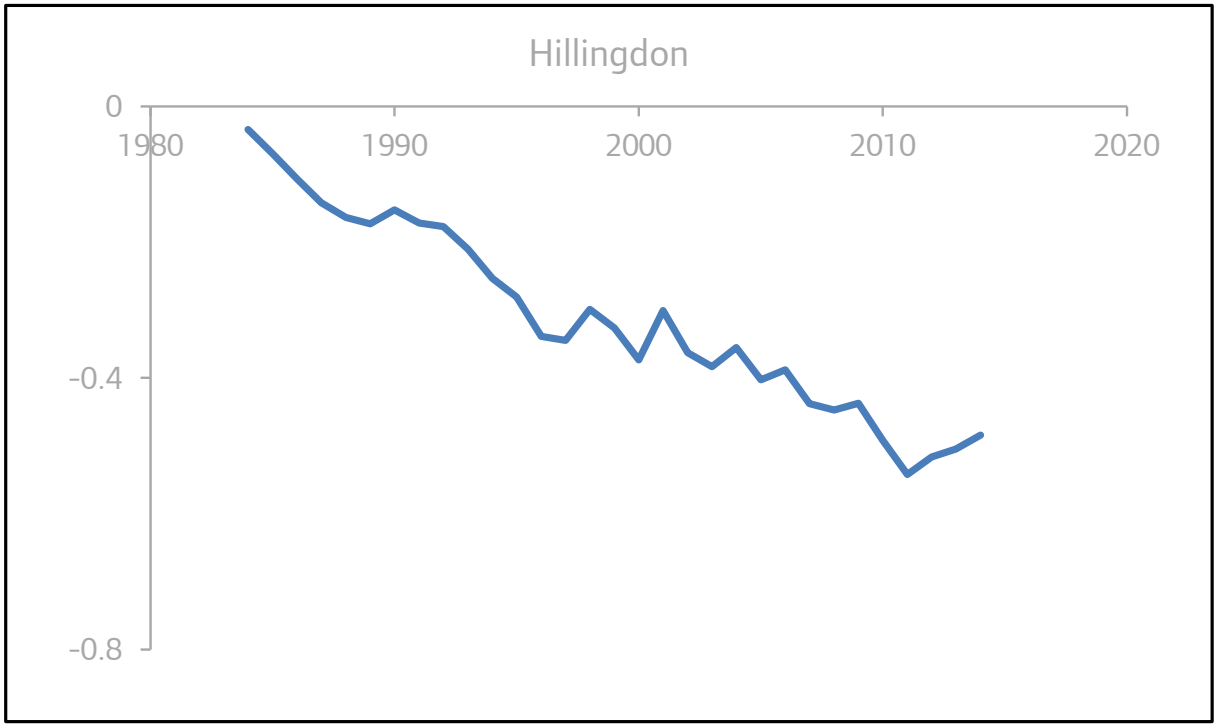


Figure E18: Log of Hounslow employment as a proportion of total output in London, 1981-2014

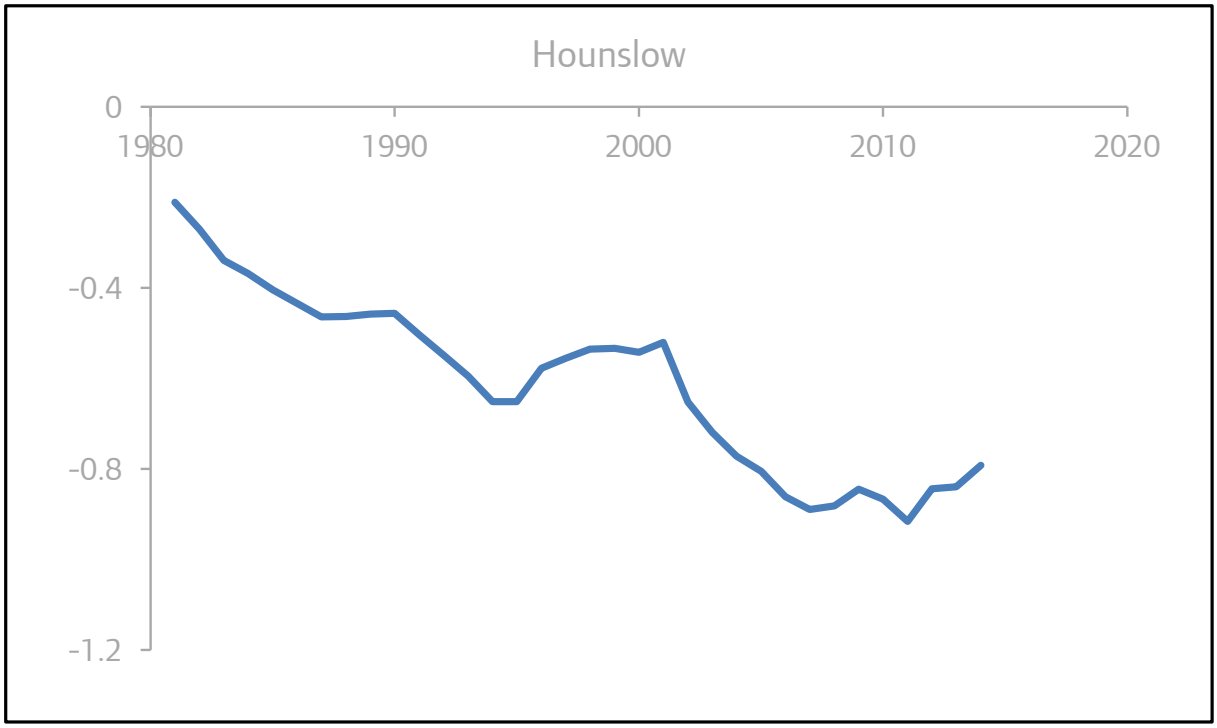


Figure E19: Log of Islington employment as a proportion of total output in London, 1981-2014

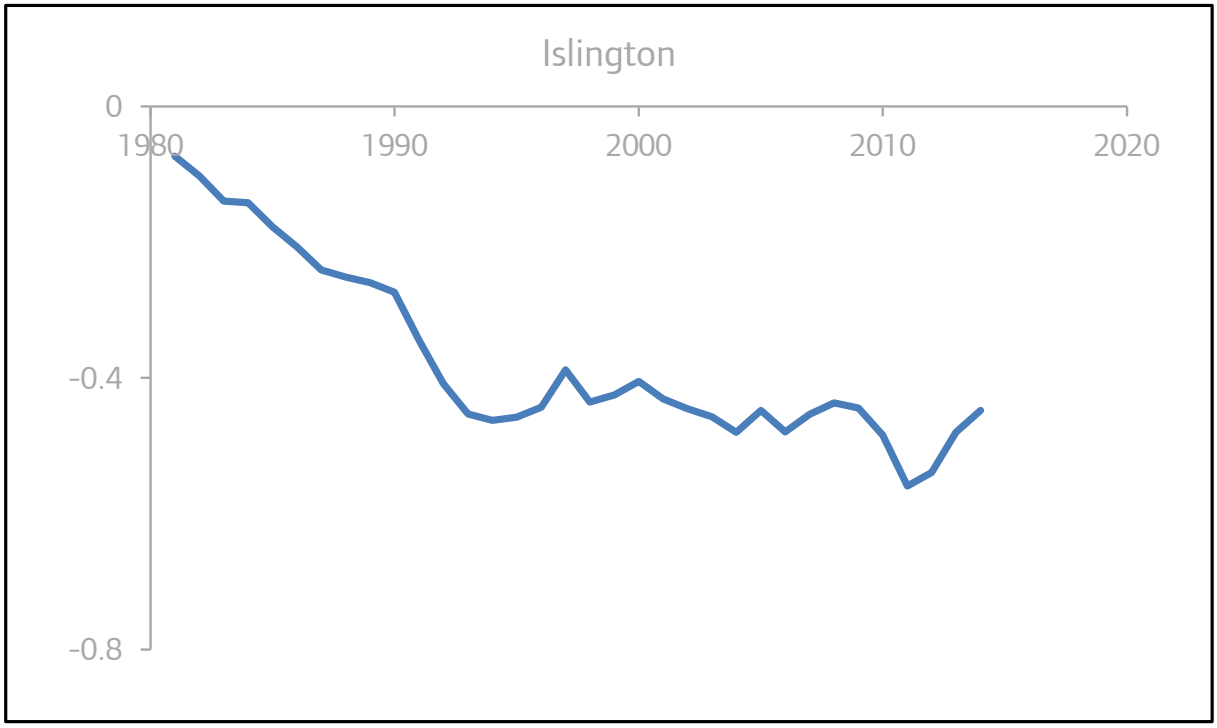


Figure E20: Log of Kensington & Chelsea employment as a proportion of total output in London, 1981-2014

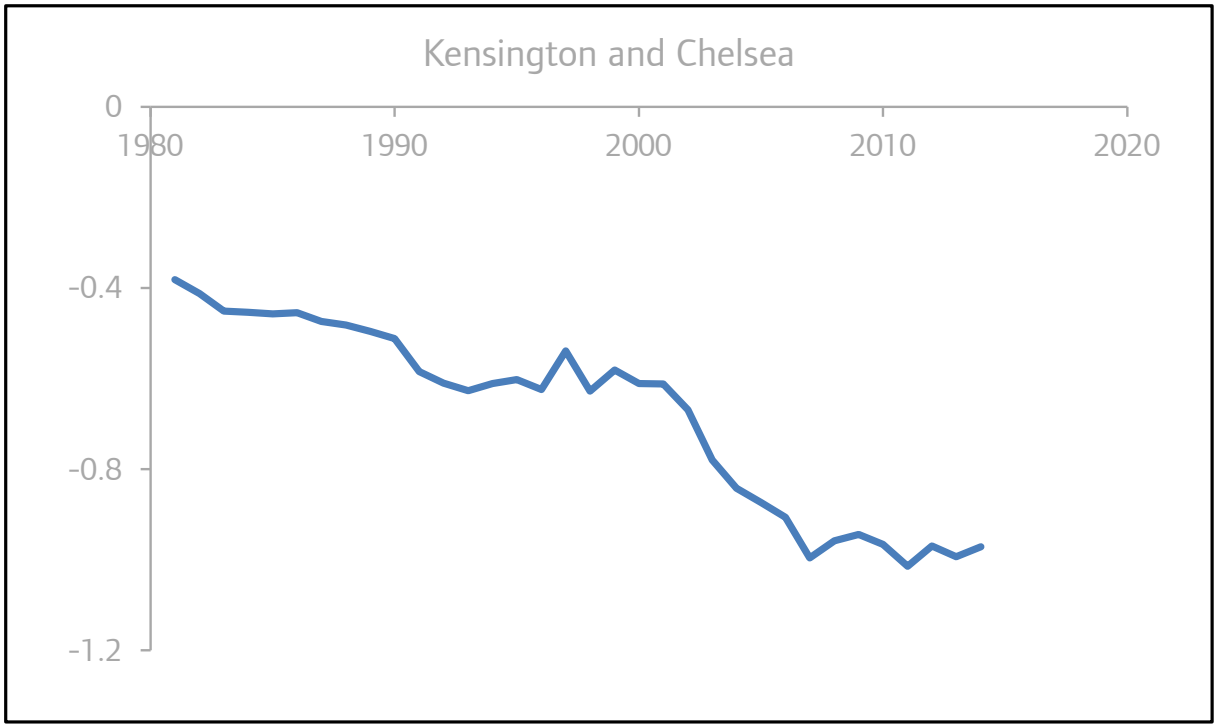


Figure E21: Log of Kingston upon Thames employment as a proportion of total output in London, 1981-2014

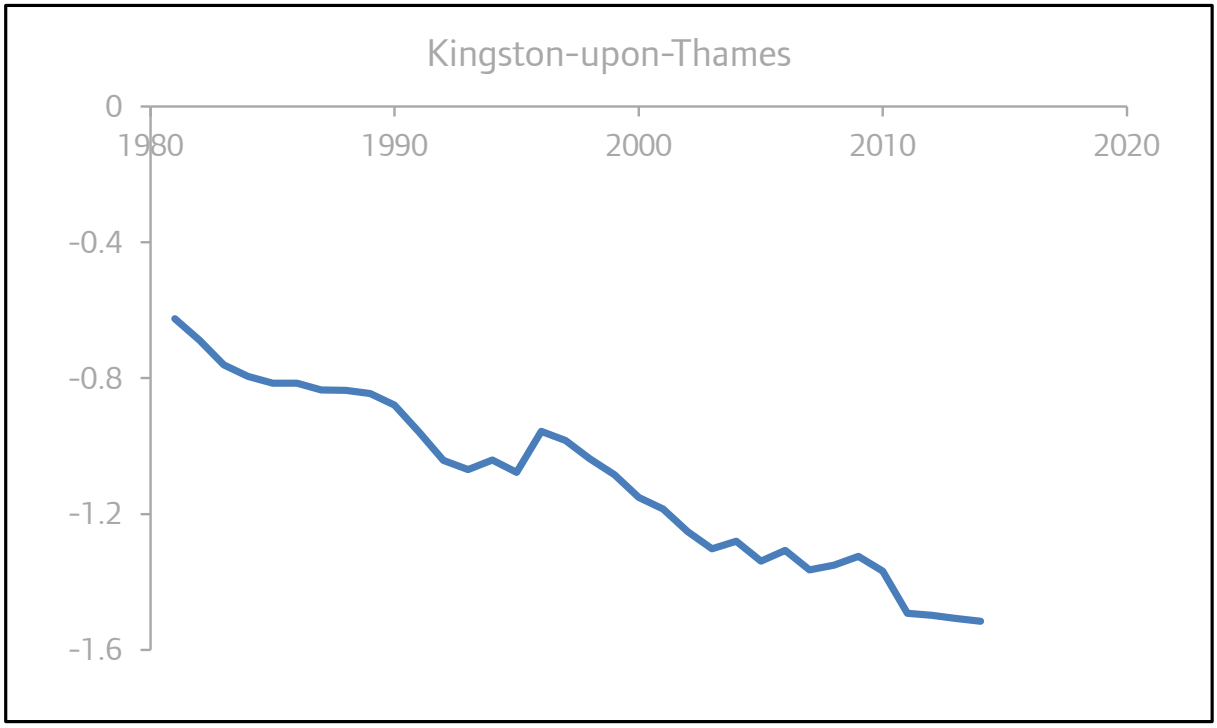


Figure E22: Log of Lambeth employment as a proportion of total output in London, 1981-2014

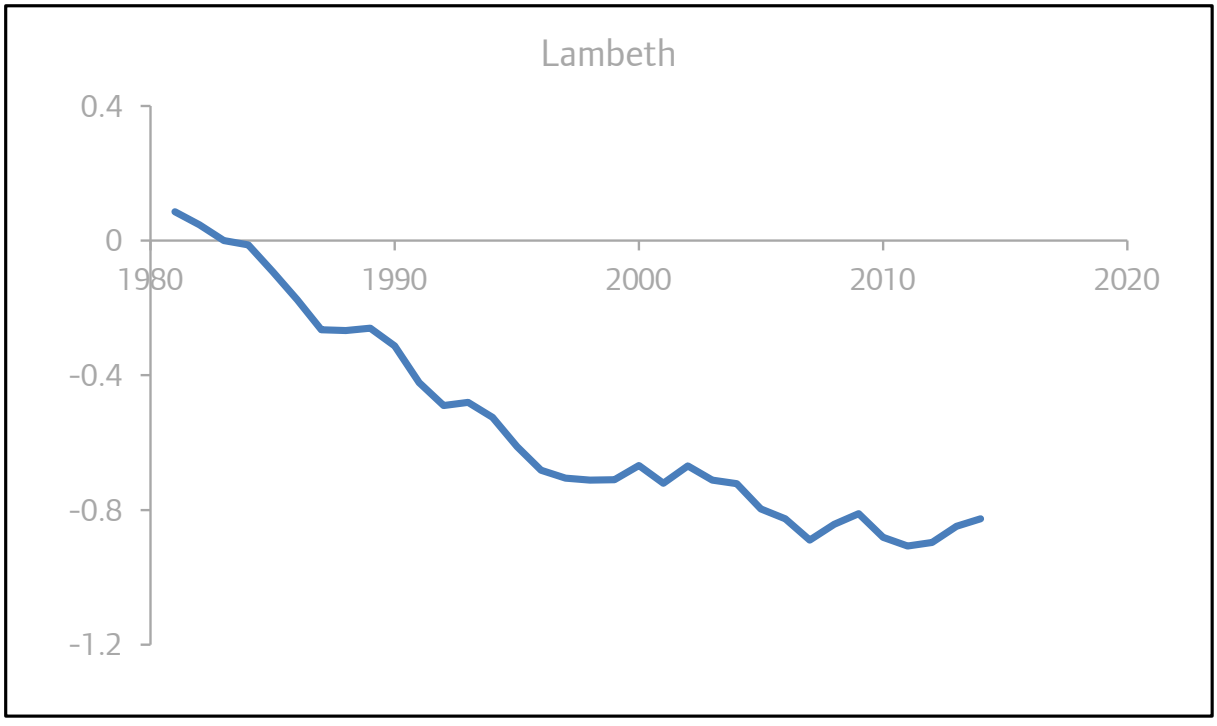


Figure E23: Log of Lewisham employment as a proportion of total output in London, 1981-2014

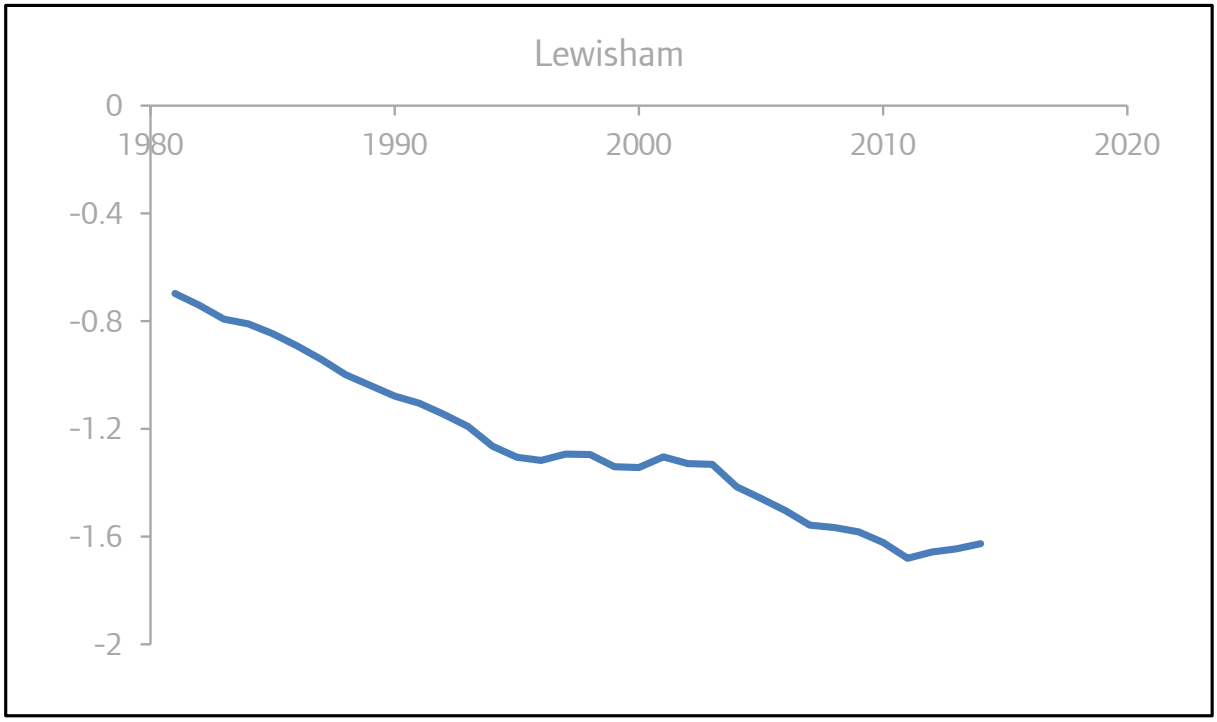


Figure E24: Log of Merton employment as a proportion of total output in London, 1981-2014

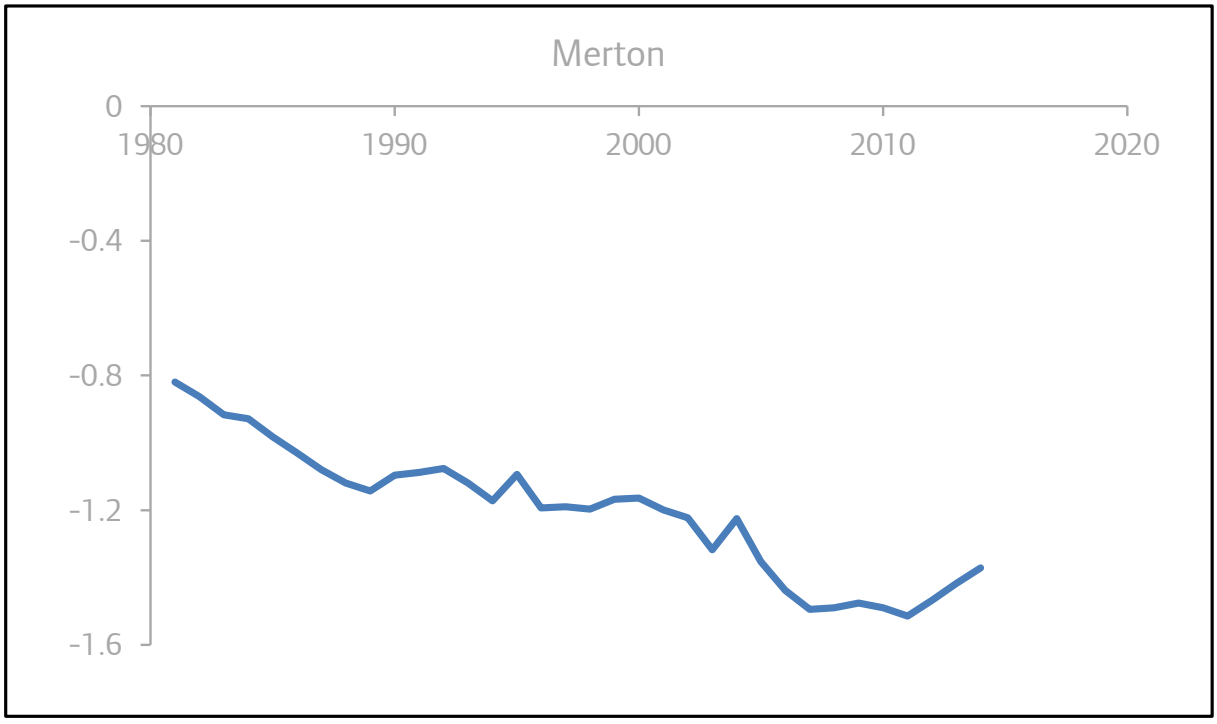


Figure E25: Log of Newham employment as a proportion of total output in London, 1981-2014

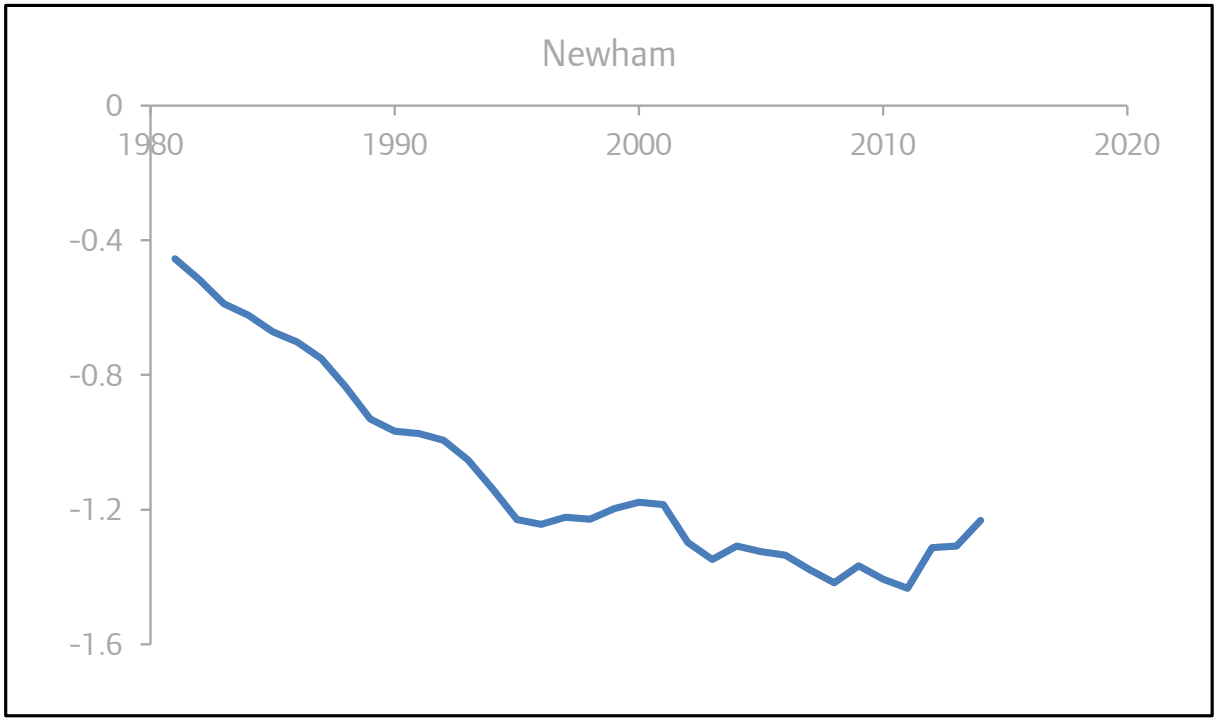


Figure E26 Log of Redbridge employment as a proportion of total output in London, 1981-2014

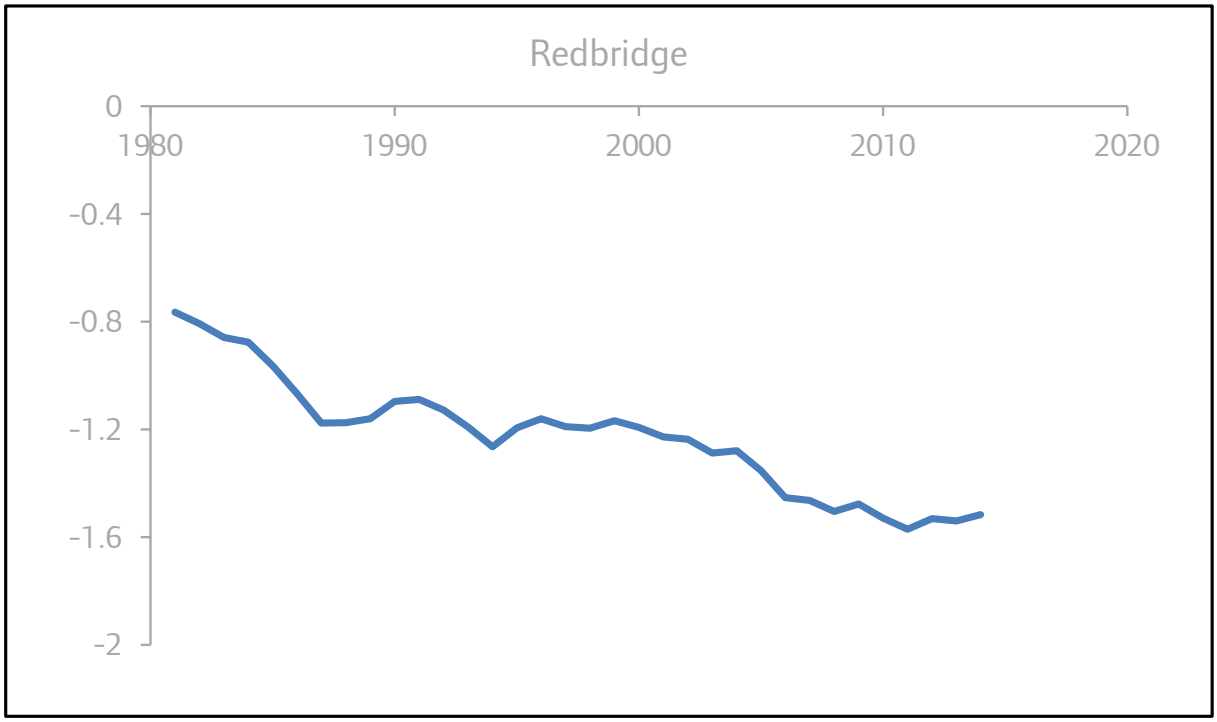


Figure E27: Log of Richmond upon Thames employment as a proportion of total output in London, 1981-2014

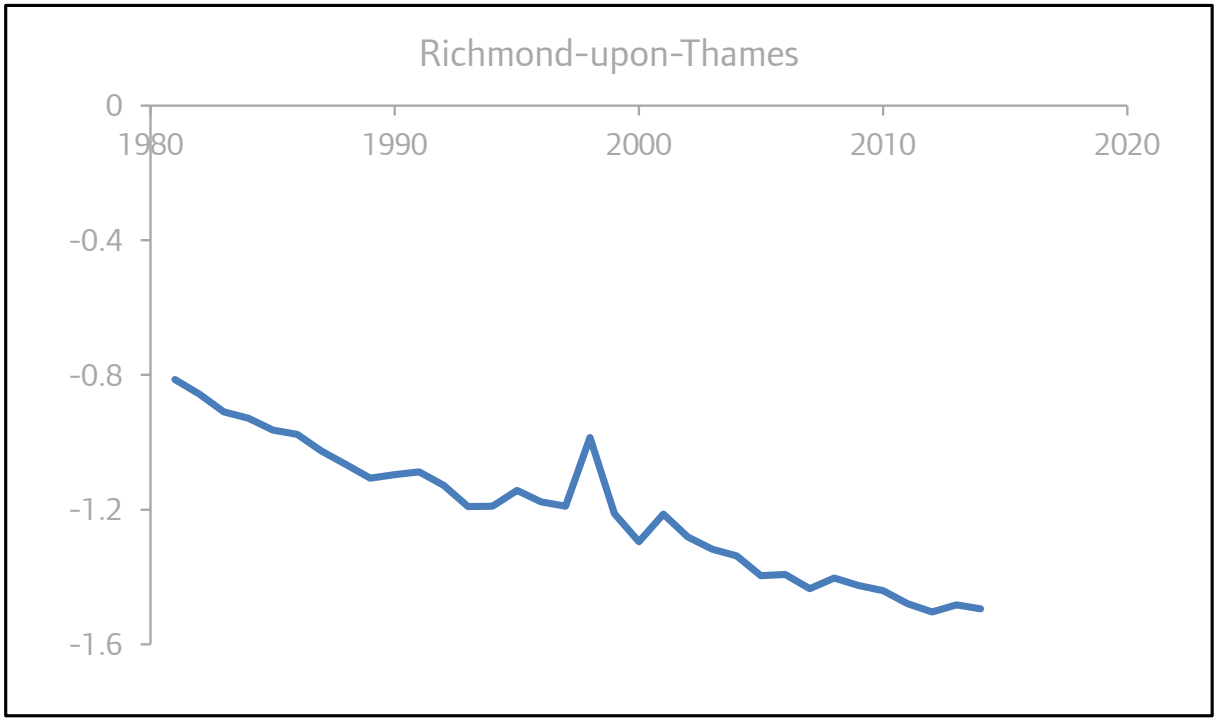


Figure E28: Log of Southwark employment as a proportion of total output in London, 1981-2014

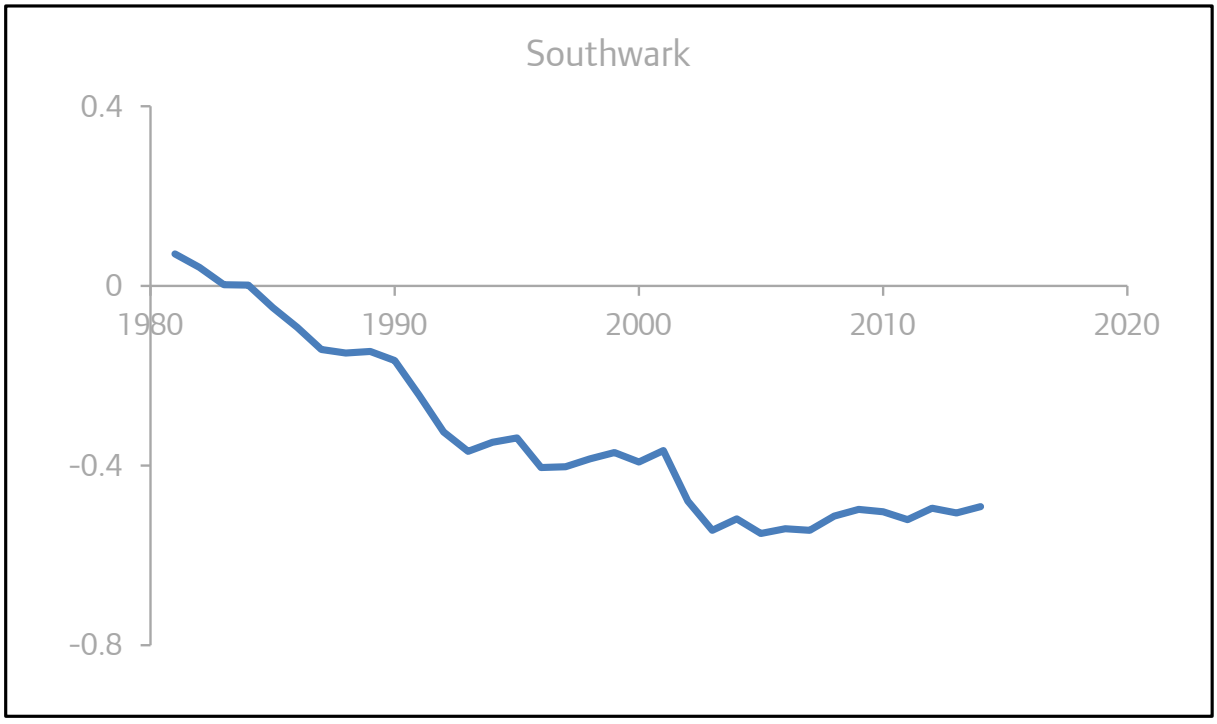


Figure E29 Log of Sutton employment as a proportion of total output in London, 1981-2014

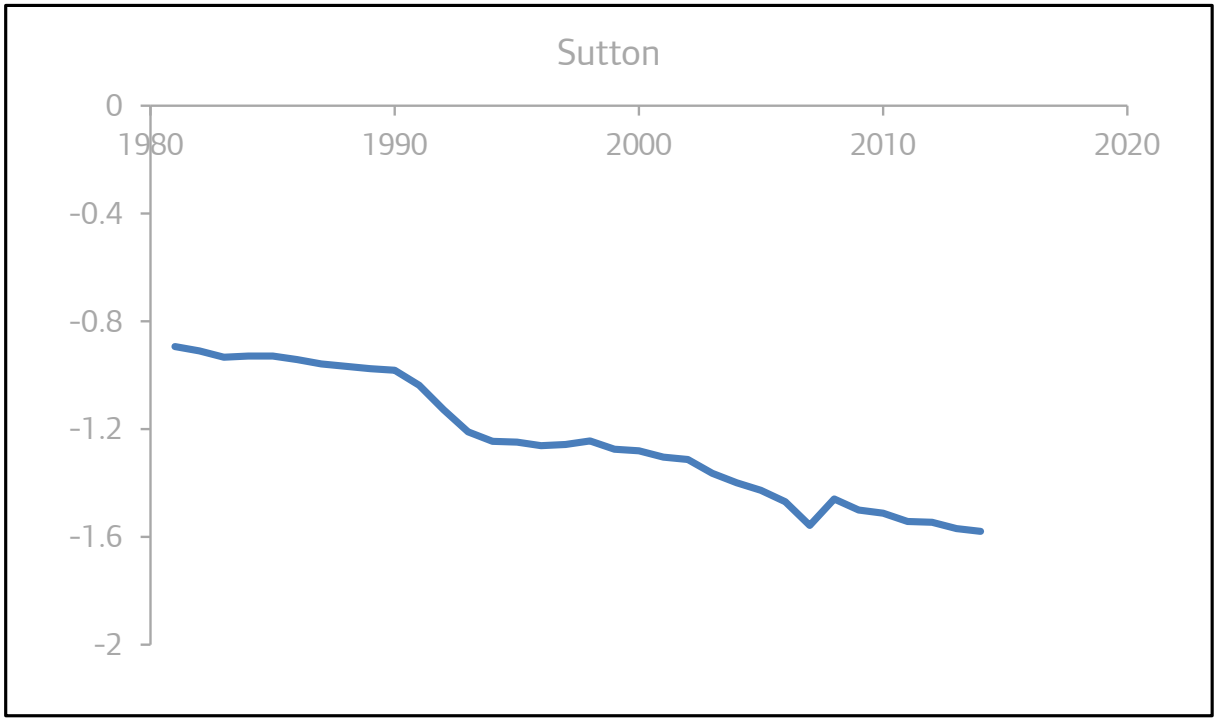


Figure E30: Log of Tower Hamlets employment as a proportion of total output in London, 1981-2014

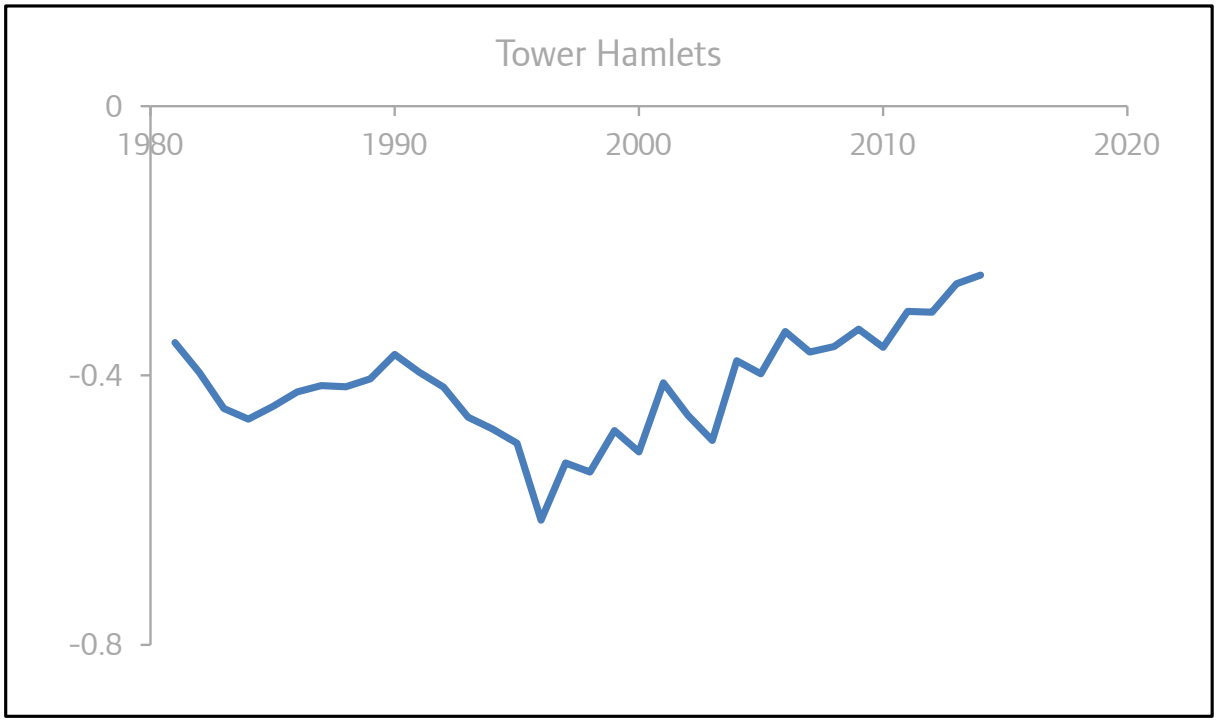


Figure E31: Log of Waltham Forest employment as a proportion of total output in London, 1981-2014

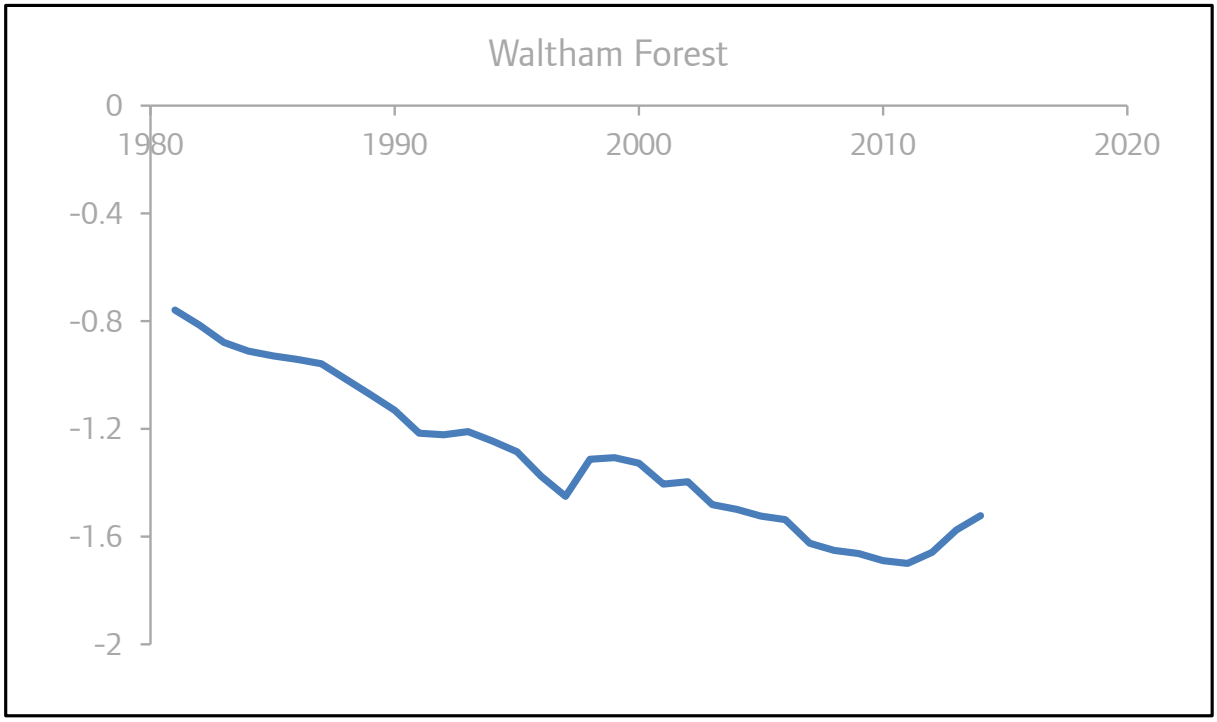


Figure E32: Log of Wandsworth employment as a proportion of total output in London, 1981-2014

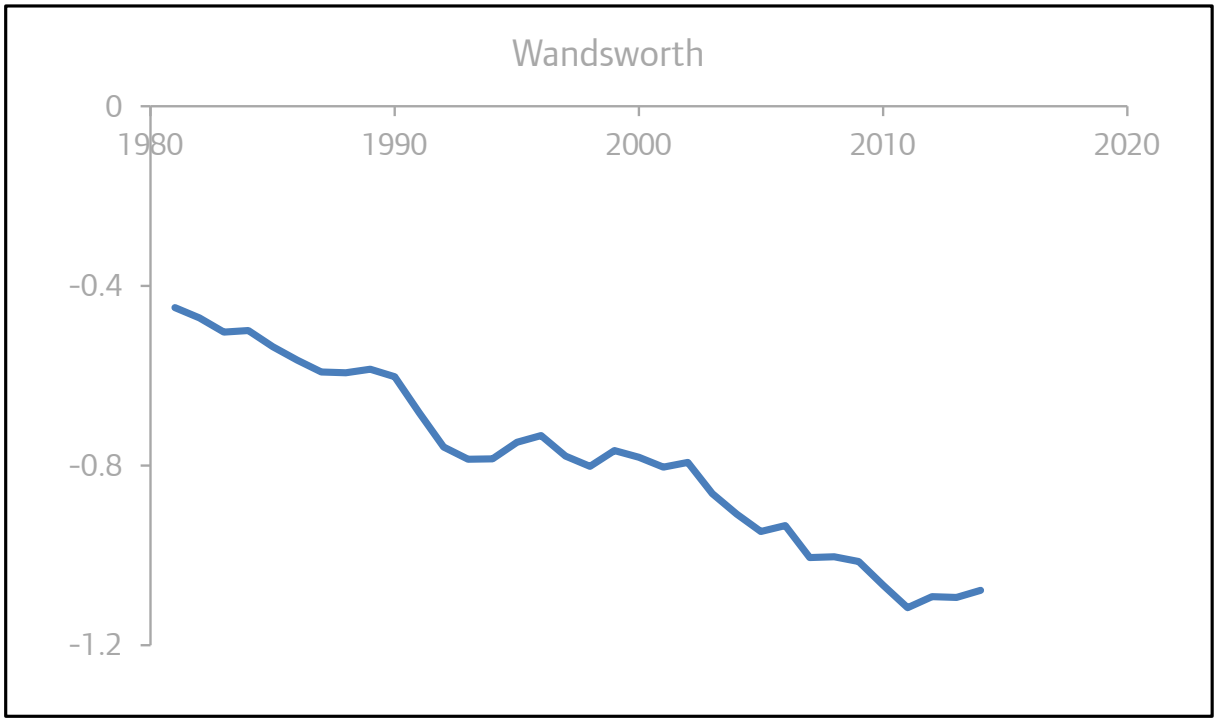
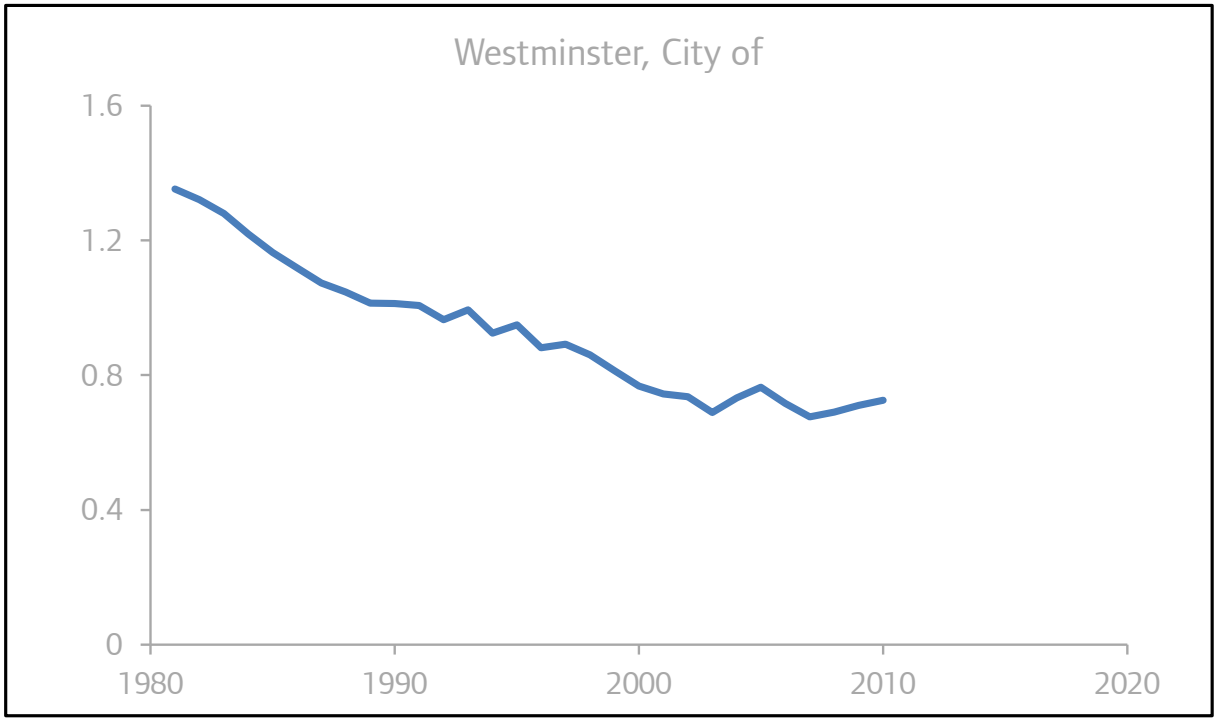


Figure E33: Log of Westminster employment as a proportion of total output in London, 1981-2014



Appendix F: Historic and projected borough employee and self-employed jobs

Table F1: Summary of borough employee jobs results

	Employee growth per annum with London output growth of 2.5% per annum	Annual average growth in employee jobs with London output growth of 2.5% per annum
Barking and Dagenham	-1.13%	-500
Barnet	0.16%	200
Bexley	0.14%	100
Brent	-0.01%	-20
Bromley	0.28%	300
Camden	0.48%	1,660
City of London	0.47%	1,910
Croydon	-1.34%	-1,250
Ealing	-0.03%	-40
Enfield	0.04%	40
Greenwich	0.17%	130
Hackney	0.16%	180
Hammersmith and Fulham	1.10%	1,630
Haringey	-0.30%	-190
Harrow	0.16%	120
Havering	0.11%	80
Hillingdon	0.72%	1,600
Hounslow	0.39%	610
Islington	1.11%	2,680
Kensington and Chelsea	0.58%	780
Kingston-upon-Thames	-0.06%	-40
Lambeth	0.48%	740
Lewisham	-0.22%	-140
Merton	0.42%	380
Newham	0.88%	950
Redbridge	0.30%	230
Richmond-upon-Thames	0.46%	360
Southwark	1.60%	3,890
Sutton	-0.04%	-20
Tower Hamlets	2.66%	9,270
Waltham Forest	0.33%	250
Wandsworth	0.48%	580
Westminster, City of	0.43%	3,110

Table F2: Historic and projected trend-based employee jobs by borough (000s)

	Barking and Dagenham	Barnet	Bexley	Brent	Bromley	Camden	City of London	Croydon	Ealing	Enfield	Greenwich	Hackney	Hammersmith and Fulham	Haringey	Harrow	Havering	Hillingdon
1981	72	103	59	112	89	228	367	152	127	94	73	87	87	67	59	67	147
1982	71	101	58	110	88	224	361	148	124	92	72	86	86	66	59	66	143
1983	67	100	58	106	87	224	357	145	122	91	71	85	85	65	60	66	140
1984	63	99	59	104	87	226	359	144	122	91	70	86	86	64	61	67	140
1985	62	100	58	103	88	227	357	144	124	93	69	84	84	66	61	67	140
1986	61	100	58	102	88	227	354	144	125	95	68	81	83	67	61	66	139
1987	60	101	58	102	90	228	356	145	127	98	67	79	82	70	61	66	141
1988	60	100	60	105	93	235	341	149	128	101	71	83	86	69	62	70	146
1989	58	97	61	106	94	236	317	149	125	102	71	83	88	65	61	71	149
1990	58	98	61	105	96	236	291	149	120	97	70	82	92	61	61	72	153
1991	56	98	57	99	92	224	277	142	113	88	66	77	89	56	60	68	149
1992	54	98	54	93	89	215	267	136	108	83	59	74	85	59	59	65	149
1993	52	93	52	90	87	208	262	130	106	83	54	74	80	62	56	63	148
1994	51	94	54	87	90	213	278	127	105	84	52	73	83	61	57	64	147
1995	50	97	61	88	98	221	285	131	106	85	55	72	89	57	59	68	146
1996	50	99	56	91	87	211	295	122	105	84	58	73	83	54	59	66	142
1997	51	108	58	96	93	234	286	125	114	86	59	81	87	59	64	69	144
1998	56	111	65	99	95	240	292	129	121	95	62	83	88	61	66	73	159
1999	57	116	69	99	104	252	321	136	115	94	64	85	100	63	70	75	162
2000	52	117	67	108	101	261	337	145	117	100	75	92	108	62	69	77	164
2001	50	115	68	103	100	268	321	143	119	98	63	96	111	62	73	78	179
2002	48	112	69	105	103	271	326	138	122	96	63	95	107	63	71	78	170
2003	51	111	66	104	108	258	323	138	119	96	65	85	112	65	69	79	174
2004	48	112	71	100	108	254	302	132	117	95	66	82	114	67	69	79	184
2005	48	113	67	100	106	261	312	132	121	95	67	83	123	67	70	78	185
2006	47	113	66	96	111	265	319	133	122	95	67	82	120	65	69	76	191
2007	46	111	66	96	118	279	322	133	121	94	69	87	118	64	68	71	193
2008	47	116	66	97	108	289	335	134	117	96	71	85	124	63	70	75	194

	Barking and Dagenham	Barnet	Bexley	Brent	Bromley	Camden	City of London	Croydon	Ealing	Enfield	Greenwich	Hackney	Hammersmith and Fulham	Haringey	Harrow	Havering	Hillingdon
2009	44	116	65	95	106	287	329	124	109	95	69	88	121	61	66	73	188
2010	48	112	65	97	101	281	346	120	110	94	68	86	126	60	66	71	183
2011	47	113	63	98	96	297	373	113	118	92	69	90	122	59	64	70	183
2012	48	115	65	106	98	304	384	112	120	98	69	90	127	61	66	74	191
2013	49	119	67	108	101	317	378	109	121	96	73	104	127	63	69	75	197
2014	50	123	70	116	105	329	386	107	124	100	75	110	132	65	72	78	207
2015	*50*	*123*	*70*	*116*	*105*	*330*	*388*	*106*	*124*	*100*	*75*	*110*	*134*	*65*	*72*	*79*	*209*
2016	*49*	*124*	*70*	*117*	*105*	*332*	*390*	*104*	*124*	*100*	*76*	*110*	*135*	*65*	*73*	*79*	*210*
2017	*49*	*124*	*70*	*117*	*106*	*334*	*392*	*103*	*124*	*100*	*76*	*111*	*137*	*65*	*73*	*79*	*212*
2018	*48*	*124*	*71*	*117*	*106*	*336*	*394*	*101*	*124*	*100*	*76*	*111*	*138*	*65*	*73*	*79*	*213*
2019	*47*	*124*	*71*	*117*	*106*	*337*	*396*	*100*	*124*	*100*	*76*	*111*	*140*	*65*	*73*	*79*	*215*
2020	*47*	*125*	*71*	*117*	*107*	*339*	*398*	*99*	*124*	*100*	*76*	*111*	*141*	*64*	*73*	*79*	*217*
2021	*46*	*125*	*71*	*117*	*107*	*341*	*400*	*98*	*124*	*100*	*76*	*111*	*143*	*64*	*73*	*79*	*218*
2022	*46*	*125*	*71*	*117*	*107*	*342*	*402*	*96*	*124*	*100*	*77*	*112*	*145*	*64*	*73*	*79*	*220*
2023	*45*	*125*	*71*	*117*	*108*	*344*	*404*	*95*	*124*	*100*	*77*	*112*	*146*	*64*	*74*	*79*	*221*
2024	*45*	*125*	*71*	*117*	*108*	*346*	*406*	*94*	*124*	*100*	*77*	*112*	*148*	*64*	*74*	*80*	*223*
2025	*44*	*126*	*71*	*117*	*108*	*348*	*408*	*92*	*124*	*100*	*77*	*112*	*149*	*63*	*74*	*80*	*225*
2026	*44*	*126*	*72*	*117*	*109*	*349*	*410*	*91*	*124*	*100*	*77*	*112*	*151*	*63*	*74*	*80*	*226*
2027	*43*	*126*	*72*	*117*	*109*	*351*	*412*	*90*	*124*	*101*	*77*	*113*	*153*	*63*	*74*	*80*	*228*
2028	*43*	*126*	*72*	*117*	*109*	*352*	*414*	*89*	*124*	*101*	*77*	*113*	*154*	*63*	*74*	*80*	*229*
2029	*42*	*126*	*72*	*117*	*110*	*354*	*416*	*88*	*124*	*101*	*77*	*113*	*156*	*63*	*74*	*80*	*231*
2030	*42*	*127*	*72*	*117*	*110*	*356*	*418*	*86*	*124*	*101*	*78*	*113*	*158*	*62*	*74*	*80*	*233*
2031	*41*	*127*	*72*	*116*	*110*	*357*	*419*	*85*	*124*	*101*	*78*	*113*	*159*	*62*	*74*	*80*	*234*
2032	*41*	*127*	*72*	*116*	*110*	*359*	*421*	*84*	*124*	*101*	*78*	*113*	*161*	*62*	*75*	*80*	*236*
2033	*40*	*127*	*72*	*116*	*111*	*360*	*423*	*83*	*123*	*101*	*78*	*113*	*163*	*62*	*75*	*80*	*237*
2034	*40*	*127*	*72*	*116*	*111*	*362*	*425*	*82*	*123*	*101*	*78*	*114*	*164*	*62*	*75*	*80*	*239*
2035	*40*	*127*	*72*	*116*	*111*	*364*	*427*	*81*	*123*	*101*	*78*	*114*	*166*	*61*	*75*	*80*	*241*
2036	*39*	*127*	*72*	*116*	*111*	*365*	*428*	*79*	*123*	*101*	*78*	*114*	*168*	*61*	*75*	*80*	*242*

	Hounslow	Islington	Kensington and Chelsea	Kingston-upon-Thames	Lambeth	Lewisham	Merton	Newham	Redbridge	Richmond-upon-Thames	Southwark	Sutton	Tower Hamlets	Waltham Forest	Wandsworth	Westminster, City of	Total London employee jobs
1981	108	124	91	71	145	66	59	84	62	59	143	54	94	62	85	566	3,869
1982	104	123	90	69	143	65	57	81	61	58	142	55	92	60	85	564	3,804
1983	101	123	90	66	142	64	57	79	60	57	142	56	91	59	86	567	3,769
1984	100	125	92	65	143	64	57	77	60	57	145	57	91	58	88	577	3,784
1985	100	126	95	66	137	64	56	77	57	57	143	59	96	59	88	580	3,789
1986	100	126	98	68	130	63	55	77	53	58	141	60	101	60	88	579	3,775
1987	102	128	101	71	125	63	55	77	50	58	141	62	107	62	90	585	3,810
1988	108	134	106	75	132	63	56	75	53	59	148	65	114	62	95	583	3,892
1989	112	136	108	76	136	63	56	70	55	58	153	67	118	61	98	566	3,865
1990	113	135	107	74	130	61	60	68	60	60	151	67	123	57	97	545	3,808
1991	107	125	99	68	116	59	60	67	60	60	139	63	119	52	89	517	3,608
1992	103	118	97	63	109	56	61	66	57	57	128	57	117	52	83	506	3,477
1993	101	116	98	63	113	55	60	64	55	55	126	54	115	54	83	503	3,419
1994	99	119	103	67	112	53	59	61	53	58	134	54	117	54	86	521	3,471
1995	101	122	106	66	105	52	65	57	59	62	138	56	117	53	92	530	3,546
1996	111	127	106	76	100	53	60	57	62	61	132	56	107	50	95	521	3,517
1997	116	138	118	76	100	56	62	60	62	62	136	58	119	48	93	548	3,664
1998	126	139	115	76	105	59	65	63	65	80	146	62	125	58	96	542	3,816
1999	131	147	125	76	110	59	70	68	70	67	155	63	138	61	104	579	4,001
2000	139	159	130	76	123	62	75	74	72	65	161	66	143	63	109	577	4,149
2001	143	157	131	74	117	65	73	74	71	72	167	65	160	59	108	589	4,172
2002	127	157	125	70	125	65	72	67	71	68	151	66	154	61	111	578	4,104
2003	124	162	117	69	125	67	68	66	70	68	148	65	155	58	108	576	4,074
2004	121	162	113	73	127	64	77	71	73	69	156	65	180	59	106	565	4,079
2005	124	177	116	73	125	64	72	74	72	69	160	67	186	60	107	583	4,154
2006	119	175	114	76	123	63	67	74	66	70	164	65	202	61	111	589	4,178
2007	123	190	111	76	123	63	67	75	69	71	174	63	208	59	109	596	4,234
2008	126	196	117	79	131	63	69	74	68	75	182	71	213	58	111	632	4,351

	Hounslow	Islington	Kensington and Chelsea	Kingston-upon-Thames	Lambeth	Lewisham	Merton	Newham	Redbridge	Richmond-upon-Thames	Southwark	Sutton	Tower Hamlets	Waltham Forest	Wandsworth	Westminster, City of	Total London employee jobs
2009	125	187	113	77	129	60	67	74	66	70	177	65	209	55	106	625	4,239
2010	126	184	114	76	124	59	67	73	65	71	181	66	209	55	103	612	4,220
2011	126	180	114	71	127	59	69	75	65	72	187	67	232	57	103	619	4,289
2012	138	187	121	72	131	61	74	86	69	71	195	68	236	61	107	639	4,445
2013	141	202	121	72	140	63	79	88	70	74	197	68	251	68	110	665	4,583
2014	152	215	127	74	147	66	85	98	74	75	205	69	261	73	114	694	4,779
2015	*153*	*217*	*128*	*74*	*148*	*66*	*86*	*99*	*74*	*76*	*209*	*69*	*268*	*73*	*115*	*697*	*4,807*
2016	*153*	*220*	*129*	*74*	*149*	*66*	*86*	*100*	*74*	*76*	*212*	*69*	*276*	*74*	*115*	*700*	*4,835*
2017	*154*	*222*	*129*	*74*	*149*	*66*	*86*	*101*	*74*	*77*	*216*	*69*	*283*	*74*	*116*	*704*	*4,864*
2018	*155*	*225*	*130*	*74*	*150*	*66*	*87*	*102*	*75*	*77*	*219*	*69*	*291*	*74*	*117*	*707*	*4,892*
2019	*155*	*227*	*131*	*74*	*151*	*65*	*87*	*103*	*75*	*77*	*223*	*69*	*299*	*75*	*117*	*710*	*4,921*
2020	*156*	*230*	*132*	*74*	*152*	*65*	*88*	*104*	*75*	*78*	*226*	*69*	*307*	*75*	*118*	*714*	*4,950*
2021	*157*	*232*	*133*	*74*	*152*	*65*	*88*	*104*	*75*	*78*	*230*	*69*	*315*	*75*	*119*	*717*	*4,979*
2022	*157*	*235*	*134*	*74*	*153*	*65*	*88*	*105*	*76*	*78*	*234*	*69*	*323*	*75*	*119*	*720*	*5,008*
2023	*158*	*238*	*134*	*74*	*154*	*65*	*89*	*106*	*76*	*79*	*238*	*69*	*332*	*76*	*120*	*723*	*5,037*
2024	*159*	*240*	*135*	*74*	*155*	*65*	*89*	*107*	*76*	*79*	*241*	*69*	*341*	*76*	*120*	*727*	*5,067*
2025	*159*	*243*	*136*	*74*	*155*	*65*	*90*	*108*	*76*	*80*	*245*	*69*	*350*	*76*	*121*	*730*	*5,096*
2026	*160*	*246*	*137*	*73*	*156*	*65*	*90*	*109*	*77*	*80*	*249*	*69*	*359*	*76*	*121*	*733*	*5,126*
2027	*160*	*248*	*137*	*73*	*157*	*64*	*90*	*110*	*77*	*80*	*253*	*69*	*369*	*77*	*122*	*736*	*5,155*
2028	*161*	*251*	*138*	*73*	*158*	*64*	*91*	*111*	*77*	*81*	*257*	*69*	*379*	*77*	*123*	*739*	*5,185*
2029	*162*	*254*	*139*	*73*	*158*	*64*	*91*	*112*	*77*	*81*	*261*	*69*	*389*	*77*	*123*	*742*	*5,215*
2030	*162*	*257*	*140*	*73*	*159*	*64*	*91*	*113*	*77*	*81*	*265*	*69*	*399*	*77*	*124*	*745*	*5,246*
2031	*163*	*259*	*141*	*73*	*160*	*64*	*92*	*114*	*78*	*82*	*269*	*69*	*409*	*78*	*124*	*748*	*5,276*
2032	*163*	*262*	*141*	*73*	*160*	*64*	*92*	*115*	*78*	*82*	*274*	*69*	*420*	*78*	*125*	*751*	*5,307*
2033	*164*	*265*	*142*	*73*	*161*	*63*	*92*	*116*	*78*	*82*	*278*	*69*	*431*	*78*	*125*	*754*	*5,337*
2034	*165*	*268*	*143*	*73*	*162*	*63*	*93*	*117*	*78*	*83*	*282*	*69*	*442*	*78*	*126*	*756*	*5,368*
2035	*165*	*271*	*144*	*73*	*163*	*63*	*93*	*118*	*78*	*83*	*287*	*69*	*454*	*78*	*127*	*759*	*5,399*
2036	*166*	*273*	*144*	*73*	*163*	*63*	*93*	*119*	*79*	*83*	*291*	*69*	*465*	*79*	*127*	*762*	*5,430*

Table F3: Historic and projected trend-based self-employed jobs by borough (000s)

	Barking and Dagenham	Barnet	Bexley	Brent	Bromley	Camden	City of London	Croydon	Ealing	Enfield	Greenwich	Hackney	Hammersmith and Fulham	Haringey	Harrow	Havering	Hillingdon
2004	4.4	18.9	12.1	16.9	16.0	22.8	30.0	18.9	16.9	14.5	9.2	12.1	12.1	9.7	10.7	11.6	12.1
2005	4.6	19.4	12.8	15.3	16.8	29.1	30.1	15.3	15.8	17.9	12.2	10.7	11.7	15.3	10.7	10.2	12.8
2006	5.4	23.2	10.3	17.8	16.2	24.3	28.6	20.5	21.1	13.0	13.0	9.2	13.5	19.4	10.8	13.5	11.9
2007	5.9	24.2	8.6	15.6	18.8	24.2	34.3	19.3	17.7	13.4	12.9	12.3	19.3	16.6	14.5	10.7	12.3
2008	6.7	28.1	7.9	13.5	20.2	26.4	31.5	14.0	16.3	15.7	12.4	14.0	15.2	16.3	9.0	13.5	14.0
2009	3.4	26.8	8.0	18.8	15.4	26.8	37.1	12.0	21.1	13.1	10.3	17.7	15.4	13.7	13.1	6.8	15.4
2010	3.5	28.1	11.7	20.5	19.3	27.5	42.7	19.9	18.7	17.6	13.5	17.6	17.0	14.0	14.0	10.5	11.1
2011	4.1	27.0	11.8	14.1	20.0	25.9	50.6	18.8	23.5	14.7	10.6	18.8	15.9	14.1	10.6	10.0	14.1
2012	5.1	30.8	9.6	17.3	19.9	30.1	55.2	23.7	23.7	16.7	9.0	18.6	15.4	16.0	11.5	7.7	16.7
2013	4.7	34.1	10.7	14.0	25.4	31.4	73.5	18.0	26.1	17.4	10.0	18.0	12.0	19.4	8.0	12.7	13.4
2014	7.4	36.4	10.4	17.8	20.0	32.7	81.6	21.5	25.2	24.5	17.1	25.2	17.1	19.3	14.1	11.1	15.6
2015	*7.5*	*36.9*	*10.6*	*18.0*	*20.5*	*33.2*	*82.5*	*21.9*	*25.7*	*24.7*	*17.1*	*25.4*	*17.3*	*19.6*	*14.2*	*11.3*	*15.8*
2016	*7.5*	*37.4*	*10.7*	*18.3*	*20.9*	*33.7*	*83.3*	*22.2*	*26.1*	*24.8*	*17.1*	*25.6*	*17.4*	*19.9*	*14.3*	*11.5*	*16.1*
2017	*7.5*	*37.9*	*10.9*	*18.5*	*21.4*	*34.2*	*84.1*	*22.6*	*26.5*	*25.0*	*17.2*	*25.8*	*17.6*	*20.1*	*14.4*	*11.6*	*16.4*
2018	*7.6*	*38.4*	*11.1*	*18.8*	*21.8*	*34.7*	*84.9*	*23.0*	*27.0*	*25.1*	*17.2*	*26.0*	*17.8*	*20.4*	*14.5*	*11.8*	*16.6*
2019	*7.6*	*38.9*	*11.3*	*19.0*	*22.3*	*35.2*	*85.7*	*23.3*	*27.4*	*25.3*	*17.2*	*26.2*	*18.0*	*20.7*	*14.6*	*11.9*	*16.9*
2020	*7.7*	*39.4*	*11.5*	*19.3*	*22.8*	*35.8*	*86.6*	*23.7*	*27.9*	*25.5*	*17.2*	*26.4*	*18.2*	*21.0*	*14.7*	*12.1*	*17.2*
2021	*7.7*	*39.9*	*11.6*	*19.5*	*23.3*	*36.3*	*87.4*	*24.1*	*28.3*	*25.6*	*17.2*	*26.6*	*18.4*	*21.3*	*14.8*	*12.3*	*17.4*
2022	*7.7*	*40.5*	*11.8*	*19.8*	*23.8*	*36.9*	*88.3*	*24.5*	*28.8*	*25.8*	*17.3*	*26.8*	*18.6*	*21.6*	*14.9*	*12.5*	*17.7*
2023	*7.8*	*41.0*	*12.0*	*20.0*	*24.3*	*37.4*	*89.1*	*24.9*	*29.3*	*26.0*	*17.3*	*27.0*	*18.7*	*21.9*	*15.0*	*12.6*	*18.0*
2024	*7.8*	*41.6*	*12.2*	*20.3*	*24.8*	*38.0*	*90.0*	*25.3*	*29.8*	*26.1*	*17.3*	*27.2*	*18.9*	*22.3*	*15.0*	*12.8*	*18.3*
2025	*7.9*	*42.1*	*12.4*	*20.6*	*25.3*	*38.6*	*90.9*	*25.7*	*30.3*	*26.3*	*17.3*	*27.4*	*19.1*	*22.6*	*15.1*	*13.0*	*18.6*
2026	*7.9*	*42.7*	*12.6*	*20.8*	*25.8*	*39.2*	*91.7*	*26.1*	*30.8*	*26.4*	*17.3*	*27.6*	*19.3*	*22.9*	*15.2*	*13.2*	*18.9*
2027	*7.9*	*43.3*	*12.8*	*21.1*	*26.4*	*39.7*	*92.6*	*26.5*	*31.3*	*26.6*	*17.3*	*27.8*	*19.5*	*23.2*	*15.3*	*13.4*	*19.2*
2028	*8.0*	*43.9*	*13.0*	*21.4*	*26.9*	*40.3*	*93.5*	*27.0*	*31.8*	*26.8*	*17.3*	*28.0*	*19.7*	*23.6*	*15.4*	*13.6*	*19.5*
2029	*8.0*	*44.5*	*13.3*	*21.7*	*27.5*	*41.0*	*94.4*	*27.4*	*32.3*	*26.9*	*17.3*	*28.2*	*19.9*	*23.9*	*15.5*	*13.8*	*19.8*
2030	*8.0*	*45.0*	*13.5*	*22.0*	*28.0*	*41.6*	*95.3*	*27.9*	*32.9*	*27.1*	*17.3*	*28.4*	*20.2*	*24.2*	*15.6*	*13.9*	*20.1*

	Barking and Dagenham	Barnet	Bexley	Brent	Bromley	Camden	City of London	Croydon	Ealing	Enfield	Greenwich	Hackney	Hammersmith and Fulham	Haringey	Harrow	Havering	Hillingdon
2031	*8.1*	*45.7*	*13.7*	*22.2*	*28.6*	*42.2*	*96.2*	*28.3*	*33.4*	*27.2*	*17.3*	*28.6*	*20.4*	*24.6*	*15.7*	*14.1*	*20.4*
2032	*8.1*	*46.3*	*13.9*	*22.5*	*29.2*	*42.8*	*97.1*	*28.8*	*34.0*	*27.4*	*17.2*	*28.9*	*20.6*	*24.9*	*15.8*	*14.3*	*20.7*
2033	*8.1*	*46.9*	*14.1*	*22.8*	*29.8*	*43.5*	*98.1*	*29.2*	*34.5*	*27.6*	*17.2*	*29.1*	*20.8*	*25.3*	*15.9*	*14.5*	*21.1*
2034	*8.2*	*47.5*	*14.4*	*23.1*	*30.4*	*44.1*	*99.0*	*29.7*	*35.1*	*27.7*	*17.2*	*29.3*	*21.0*	*25.6*	*16.0*	*14.7*	*21.4*
2035	*8.2*	*48.1*	*14.6*	*23.4*	*31.0*	*44.8*	*99.9*	*30.2*	*35.7*	*27.9*	*17.2*	*29.5*	*21.2*	*26.0*	*16.1*	*15.0*	*21.7*
2036	*8.2*	*48.8*	*14.8*	*23.7*	*31.6*	*45.5*	*100.9*	*30.6*	*36.3*	*28.0*	*17.1*	*29.7*	*21.4*	*26.4*	*16.2*	*15.2*	*22.1*

	Hounslow	Islington	Kensington and Chelsea	Kingston upon Thames	Lambeth	Lewisham	Merton	Newham	Redbridge	Richmond upon Thames	Southwark	Sutton	Tower Hamlets	Waltham Forest	Wandsworth	Westminster	Total London self-employed jobs
2004	8.7	15.0	17.4	10.7	14.0	12.6	11.1	9.2	10.7	11.6	33.4	7.3	12.6	9.7	17.9	33.9	484.8
2005	13.8	14.3	18.4	9.2	14.3	13.3	12.2	9.2	10.2	16.8	38.8	5.1	10.7	13.8	14.8	35.2	510.8
2006	16.2	12.4	18.9	10.8	14.0	13.5	15.7	10.8	13.0	16.2	40.5	8.6	8.6	12.4	18.4	37.8	539.3
2007	13.4	14.0	17.2	9.7	16.6	11.8	11.3	6.4	11.3	16.6	47.2	9.1	10.2	9.1	19.9	32.7	537.3
2008	14.0	16.9	17.4	9.6	11.2	14.6	11.8	7.9	11.8	16.3	65.2	10.1	15.2	10.7	18.5	35.4	561.3
2009	16.0	22.3	17.1	8.6	22.3	15.4	12.0	6.8	13.1	14.3	55.3	8.0	14.3	14.8	20.0	34.8	570.0
2010	17.0	15.2	17.6	8.8	26.3	11.1	10.5	7.0	13.5	14.6	46.2	7.6	14.6	11.7	15.8	39.8	584.5
2011	18.2	16.5	17.6	7.1	18.8	12.9	12.3	12.3	8.8	18.8	48.8	8.2	14.7	12.3	18.2	37.6	588.0
2012	17.3	18.0	17.3	7.7	18.0	14.8	11.5	11.5	14.8	18.0	60.3	8.3	14.8	14.1	26.3	43.0	642.8
2013	22.1	15.4	18.0	8.0	25.4	16.7	15.4	13.4	12.0	18.7	54.1	7.4	16.0	12.7	20.7	42.1	667.0
2014	20.8	19.3	17.8	10.4	30.4	20.8	14.8	14.1	13.4	16.3	62.3	8.2	19.3	11.1	17.8	46.8	740.8
2015	*21.1*	*19.5*	*18.1*	*10.5*	*30.7*	*21.0*	*15.1*	*14.3*	*13.6*	*16.7*	*63.2*	*8.3*	*19.5*	*11.4*	*18.3*	*47.4*	*750.6*
2016	*21.4*	*19.8*	*18.4*	*10.6*	*30.9*	*21.2*	*15.3*	*14.5*	*13.8*	*17.0*	*64.2*	*8.4*	*19.7*	*11.7*	*18.8*	*48.1*	*760.5*
2017	*21.8*	*20.0*	*18.7*	*10.7*	*31.1*	*21.3*	*15.5*	*14.7*	*14.1*	*17.4*	*65.1*	*8.6*	*19.9*	*12.0*	*19.4*	*48.8*	*770.6*
2018	*22.1*	*20.3*	*19.1*	*10.8*	*31.3*	*21.5*	*15.7*	*14.9*	*14.3*	*17.8*	*66.0*	*8.7*	*20.1*	*12.3*	*19.9*	*49.5*	*780.8*
2019	*22.4*	*20.5*	*19.4*	*10.9*	*31.5*	*21.7*	*15.9*	*15.1*	*14.6*	*18.2*	*67.0*	*8.8*	*20.3*	*12.5*	*20.5*	*50.2*	*791.1*

	Hounslow	Islington	Kensington and Chelsea	Kingston upon Thames	Lambeth	Lewisham	Merton	Newham	Redbridge	Richmond upon Thames	Southwark	Sutton	Tower Hamlets	Waltham Forest	Wandsworth	Westminster	Total London self-employed jobs
2020	*22.8*	*20.8*	*19.7*	*10.9*	*31.8*	*21.9*	*16.1*	*15.3*	*14.8*	*18.5*	*68.0*	*9.0*	*20.5*	*12.8*	*21.0*	*50.9*	*801.6*
2021	*23.1*	*21.1*	*20.0*	*11.0*	*32.0*	*22.1*	*16.4*	*15.5*	*15.1*	*18.9*	*68.9*	*9.1*	*20.7*	*13.1*	*21.6*	*51.6*	*812.2*
2022	*23.5*	*21.3*	*20.4*	*11.1*	*32.2*	*22.3*	*16.6*	*15.7*	*15.3*	*19.3*	*69.9*	*9.3*	*20.9*	*13.5*	*22.2*	*52.3*	*822.9*
2023	*23.8*	*21.6*	*20.7*	*11.2*	*32.4*	*22.5*	*16.8*	*15.9*	*15.6*	*19.7*	*70.9*	*9.4*	*21.1*	*13.8*	*22.8*	*53.1*	*833.8*
2024	*24.2*	*21.9*	*21.1*	*11.3*	*32.6*	*22.7*	*17.0*	*16.1*	*15.9*	*20.1*	*72.0*	*9.6*	*21.4*	*14.1*	*23.4*	*53.8*	*844.8*
2025	*24.6*	*22.1*	*21.4*	*11.4*	*32.9*	*22.9*	*17.3*	*16.3*	*16.1*	*20.6*	*73.0*	*9.7*	*21.6*	*14.4*	*24.0*	*54.6*	*855.9*
2026	*24.9*	*22.4*	*21.8*	*11.5*	*33.1*	*23.1*	*17.5*	*16.5*	*16.4*	*21.0*	*74.0*	*9.9*	*21.8*	*14.8*	*24.6*	*55.3*	*867.2*
2027	*25.3*	*22.7*	*22.2*	*11.6*	*33.3*	*23.2*	*17.8*	*16.7*	*16.7*	*21.4*	*75.1*	*10.0*	*22.0*	*15.1*	*25.3*	*56.1*	*878.7*
2028	*25.7*	*23.0*	*22.5*	*11.7*	*33.5*	*23.4*	*18.0*	*16.9*	*17.0*	*21.9*	*76.2*	*10.2*	*22.2*	*15.4*	*25.9*	*56.9*	*890.2*
2029	*26.1*	*23.3*	*22.9*	*11.8*	*33.7*	*23.6*	*18.3*	*17.2*	*17.3*	*22.3*	*77.3*	*10.3*	*22.5*	*15.8*	*26.6*	*57.7*	*901.9*
2030	*26.5*	*23.6*	*23.3*	*11.9*	*34.0*	*23.8*	*18.5*	*17.4*	*17.6*	*22.8*	*78.4*	*10.5*	*22.7*	*16.2*	*27.3*	*58.5*	*913.8*
2031	*26.9*	*23.9*	*23.7*	*12.0*	*34.2*	*24.0*	*18.8*	*17.6*	*17.9*	*23.2*	*79.5*	*10.7*	*22.9*	*16.5*	*28.0*	*59.3*	*925.8*
2032	*27.3*	*24.2*	*24.1*	*12.1*	*34.4*	*24.2*	*19.0*	*17.8*	*18.2*	*23.7*	*80.6*	*10.8*	*23.1*	*16.9*	*28.7*	*60.2*	*938.0*
2033	*27.7*	*24.5*	*24.5*	*12.2*	*34.6*	*24.4*	*19.3*	*18.1*	*18.5*	*24.2*	*81.8*	*11.0*	*23.4*	*17.3*	*29.4*	*61.0*	*950.3*
2034	*28.2*	*24.8*	*24.9*	*12.3*	*34.8*	*24.6*	*19.6*	*18.3*	*18.8*	*24.7*	*83.0*	*11.2*	*23.6*	*17.7*	*30.1*	*61.9*	*962.8*
2035	*28.6*	*25.1*	*25.3*	*12.4*	*35.1*	*24.9*	*19.8*	*18.5*	*19.1*	*25.2*	*84.2*	*11.4*	*23.8*	*18.1*	*30.9*	*62.7*	*975.5*
2036	*29.0*	*25.4*	*25.7*	*12.5*	*35.3*	*25.1*	*20.1*	*18.8*	*19.4*	*25.7*	*85.4*	*11.5*	*24.1*	*18.5*	*31.6*	*63.6*	*988.2*

Appendix G: Historic and projected borough employment

Table G1: Summary of borough self-employed projections

	Self-employment growth per annum with London output growth of 2.5% per annum	Annual average growth in self-employed jobs with London output growth of 2.5% per annum
Barking and Dagenham	0.48%	40
Barnet	1.34%	560
Bexley	1.63%	200
Brent	1.31%	270
Bromley	2.10%	530
Camden	1.52%	580
City of London	0.97%	870
Croydon	1.62%	410
Ealing	1.66%	500
Enfield	0.61%	160
Greenwich	0.02%	0
Hackney	0.74%	200
Hammersmith and Fulham	1.04%	200
Haringey	1.43%	320
Harrow	0.62%	90
Havering	1.42%	180
Hillingdon	1.60%	300
Hounslow	1.53%	370
Islington	1.25%	280
Kensington and Chelsea	1.68%	360
Kingston-upon-Thames	0.85%	100
Lambeth	0.67%	220
Lewisham	0.85%	190
Merton	1.39%	240
Newham	1.31%	210
Redbridge	1.72%	280
Richmond-upon-Thames	2.08%	430
Southwark	1.44%	1,050
Sutton	1.58%	150
Tower Hamlets	1.01%	220
Waltham Forest	2.32%	330
Wandsworth	2.64%	630
Westminster, City of	1.41%	770

Note: percentages have been rounded to the nearest 2 decimal places, number to the nearest 10.

Table G2: Borough trend-based employment (employee and self-employed) projections (000s)

	Barking and Dagenham	Barnet	Bexley	Brent	Bromley	Camden	City of London	Croydon	Ealing	Enfield	Greenwich	Hackney	Hammersmith and Fulham	Haringey	Harrow	Havering	Hillingdon
2004	53	131	83	117	124	277	332	150	134	109	75	94	126	76	79	91	196
2005	53	132	79	116	123	290	342	147	137	113	79	94	135	82	80	88	198
2006	52	136	76	114	127	289	348	153	143	108	80	91	134	84	80	90	203
2007	52	135	75	112	137	303	357	153	139	107	82	99	137	81	83	82	206
2008	54	144	74	111	129	316	367	148	133	112	83	99	139	80	79	88	208
2009	48	142	73	114	121	314	366	136	130	108	79	105	136	75	79	80	203
2010	51	141	77	118	120	308	389	139	128	111	82	103	143	74	80	82	194
2011	51	140	75	112	116	323	423	132	141	107	79	108	138	73	74	80	197
2012	53	146	75	124	118	334	439	136	143	114	78	109	142	77	77	82	208
2013	54	153	78	122	127	348	452	127	147	113	83	122	139	82	77	87	211
2014	58	159	80	134	125	361	468	128	149	124	92	135	149	85	86	90	223
2015	*57*	*160*	*81*	*135*	*126*	*363*	*471*	*127*	*150*	*124*	*93*	*136*	*151*	*85*	*87*	*90*	*224*
2016	*57*	*161*	*81*	*135*	*126*	*366*	*474*	*126*	*150*	*125*	*93*	*136*	*153*	*85*	*87*	*90*	*226*
2017	*56*	*162*	*81*	*135*	*127*	*368*	*477*	*125*	*150*	*125*	*93*	*136*	*154*	*85*	*87*	*90*	*228*
2018	*56*	*162*	*82*	*135*	*128*	*370*	*479*	*124*	*151*	*125*	*93*	*137*	*156*	*85*	*87*	*91*	*230*
2019	*55*	*163*	*82*	*136*	*129*	*373*	*482*	*124*	*151*	*125*	*93*	*137*	*158*	*85*	*88*	*91*	*232*
2020	*55*	*164*	*82*	*136*	*130*	*375*	*485*	*123*	*152*	*126*	*93*	*138*	*160*	*85*	*88*	*91*	*234*
2021	*54*	*165*	*83*	*136*	*130*	*377*	*488*	*122*	*152*	*126*	*94*	*138*	*161*	*85*	*88*	*92*	*236*
2022	*54*	*165*	*83*	*136*	*131*	*379*	*491*	*121*	*153*	*126*	*94*	*138*	*163*	*86*	*88*	*92*	*238*
2023	*53*	*166*	*83*	*137*	*132*	*382*	*494*	*120*	*153*	*126*	*94*	*139*	*165*	*86*	*88*	*92*	*239*
2024	*53*	*167*	*84*	*137*	*133*	*384*	*496*	*119*	*154*	*127*	*94*	*139*	*167*	*86*	*89*	*92*	*241*
2025	*52*	*168*	*84*	*137*	*134*	*386*	*499*	*118*	*154*	*127*	*94*	*140*	*169*	*86*	*89*	*93*	*243*
2026	*52*	*169*	*84*	*138*	*134*	*388*	*502*	*117*	*155*	*127*	*94*	*140*	*170*	*86*	*89*	*93*	*245*
2027	*51*	*169*	*84*	*138*	*135*	*391*	*505*	*117*	*155*	*127*	*95*	*140*	*172*	*86*	*89*	*93*	*247*
2028	*51*	*170*	*85*	*138*	*136*	*393*	*507*	*116*	*156*	*127*	*95*	*141*	*174*	*86*	*90*	*93*	*249*
2029	*50*	*171*	*85*	*138*	*137*	*395*	*510*	*115*	*156*	*128*	*95*	*141*	*176*	*87*	*90*	*94*	*251*

	Barking and Dagenham	Barnet	Bexley	Brent	Bromley	Camden	City of London	Croydon	Ealing	Enfield	Greenwich	Hackney	Hammersmith and Fulham	Haringey	Harrow	Havering	Hillingdon
2030	*50*	*172*	*85*	*138*	*138*	*397*	*513*	*114*	*157*	*128*	*95*	*142*	*178*	*87*	*90*	*94*	*253*
2031	*50*	*172*	*86*	*139*	*139*	*400*	*516*	*113*	*157*	*128*	*95*	*142*	*180*	*87*	*90*	*94*	*255*
2032	*49*	*173*	*86*	*139*	*140*	*402*	*518*	*113*	*157*	*128*	*95*	*142*	*182*	*87*	*90*	*94*	*257*
2033	*49*	*174*	*86*	*139*	*140*	*404*	*521*	*112*	*158*	*128*	*95*	*143*	*184*	*87*	*91*	*95*	*259*
2034	*48*	*175*	*87*	*139*	*141*	*406*	*524*	*111*	*158*	*128*	*95*	*143*	*185*	*87*	*91*	*95*	*260*
2035	*48*	*175*	*87*	*140*	*142*	*408*	*527*	*111*	*159*	*128*	*95*	*143*	*187*	*87*	*91*	*95*	*262*
2036	*47*	*176*	*87*	*140*	*143*	*411*	*529*	*110*	*159*	*129*	*95*	*144*	*189*	*88*	*91*	*95*	*264*

	Hounslow	Islington	Kensington and Chelsea	Kingston upon Thames	Lambeth	Lewisham	Merton	Newham	Redbridge	Richmond upon Thames	Southwark	Sutton	Tower Hamlets	Waltham Forest	Wandsworth	Westminster	Total London self-employed jobs
2004	130	177	130	84	141	76	88	80	84	80	190	72	192	68	124	599	4,564
2005	138	191	134	82	139	78	84	83	82	85	198	72	197	74	122	619	4,665
2006	135	187	133	87	137	76	83	85	79	86	205	74	211	73	129	627	4,717
2007	136	204	128	86	140	75	78	82	80	88	221	72	218	68	129	629	4,771
2008	140	213	134	88	142	78	80	82	79	91	247	81	228	69	130	667	4,912
2009	141	209	130	86	152	75	79	81	80	84	232	73	223	70	126	660	4,809
2010	143	200	131	85	150	70	78	80	78	85	227	74	224	67	119	652	4,804
2011	144	197	132	78	146	72	82	87	74	91	236	75	247	70	121	657	4,877
2012	155	205	139	79	149	76	85	98	84	89	256	77	251	75	134	682	5,087
2013	163	218	139	80	165	80	95	102	82	93	251	75	267	80	130	707	5,250
2014	173	234	145	84	177	87	100	112	87	92	268	77	281	84	132	740	5,520
2015	*174*	*237*	*146*	*84*	*178*	*87*	*101*	*113*	*87*	*92*	*272*	*77*	*288*	*85*	*133*	*745*	*5,558*
2016	*175*	*239*	*147*	*84*	*179*	*87*	*101*	*114*	*88*	*93*	*276*	*78*	*295*	*85*	*134*	*749*	*5,596*
2017	*176*	*242*	*148*	*84*	*180*	*87*	*102*	*115*	*88*	*94*	*281*	*78*	*303*	*86*	*135*	*753*	*5,634*
2018	*177*	*245*	*149*	*84*	*181*	*87*	*103*	*117*	*89*	*95*	*285*	*78*	*311*	*87*	*137*	*757*	*5,673*

	Hounslow	Islington	Kensington and Chelsea	Kingston upon Thames	Lambeth	Lewisham	Merton	Newham	Redbridge	Richmond upon Thames	Southwark	Sutton	Tower Hamlets	Waltham Forest	Wandsworth	Westminster	Total London self-employed jobs
2019	*178*	*248*	*150*	*85*	*182*	*87*	*103*	*118*	*89*	*95*	*290*	*78*	*319*	*87*	*138*	*761*	*5,712*
2020	*179*	*251*	*152*	*85*	*183*	*87*	*104*	*119*	*90*	*96*	*294*	*78*	*327*	*88*	*139*	*765*	*5,751*
2021	*180*	*254*	*153*	*85*	*184*	*87*	*104*	*120*	*91*	*97*	*299*	*78*	*336*	*88*	*140*	*769*	*5,791*
2022	*181*	*256*	*154*	*85*	*185*	*87*	*105*	*121*	*91*	*98*	*304*	*78*	*344*	*89*	*141*	*773*	*5,831*
2023	*182*	*259*	*155*	*85*	*186*	*87*	*106*	*122*	*92*	*99*	*309*	*79*	*353*	*89*	*143*	*776*	*5,871*
2024	*183*	*262*	*156*	*85*	*187*	*87*	*106*	*123*	*92*	*99*	*313*	*79*	*362*	*90*	*144*	*780*	*5,911*
2025	*184*	*265*	*157*	*85*	*188*	*88*	*107*	*125*	*93*	*100*	*318*	*79*	*372*	*91*	*145*	*784*	*5,952*
2026	*185*	*268*	*158*	*85*	*189*	*88*	*107*	*126*	*93*	*101*	*323*	*79*	*381*	*91*	*146*	*788*	*5,993*
2027	*186*	*271*	*160*	*85*	*190*	*88*	*108*	*127*	*94*	*102*	*328*	*79*	*391*	*92*	*147*	*792*	*6,034*
2028	*187*	*274*	*161*	*85*	*191*	*88*	*109*	*128*	*94*	*103*	*333*	*79*	*401*	*92*	*149*	*796*	*6,076*
2029	*188*	*277*	*162*	*85*	*192*	*88*	*109*	*129*	*95*	*103*	*338*	*79*	*411*	*93*	*150*	*800*	*6,117*
2030	*189*	*280*	*163*	*85*	*193*	*88*	*110*	*130*	*95*	*104*	*344*	*79*	*421*	*94*	*151*	*803*	*6,160*
2031	*190*	*283*	*164*	*85*	*194*	*88*	*111*	*132*	*96*	*105*	*349*	*80*	*432*	*94*	*152*	*807*	*6,202*
2032	*191*	*286*	*165*	*85*	*195*	*88*	*111*	*133*	*96*	*106*	*354*	*80*	*443*	*95*	*154*	*811*	*6,245*
2033	*192*	*289*	*167*	*85*	*196*	*88*	*112*	*134*	*97*	*107*	*360*	*80*	*454*	*95*	*155*	*815*	*6,287*
2034	*193*	*293*	*168*	*85*	*197*	*88*	*112*	*135*	*97*	*107*	*365*	*80*	*466*	*96*	*156*	*818*	*6,331*
2035	*194*	*296*	*169*	*85*	*198*	*88*	*113*	*136*	*98*	*108*	*371*	*80*	*477*	*96*	*157*	*822*	*6,374*
2036	*195*	*299*	*170*	*85*	*198*	*88*	*114*	*138*	*98*	*109*	*376*	*80*	*489*	*97*	*159*	*826*	*6,418*

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