

Working Paper 38

**Employment projections for London by sector  
and trend-based projections by borough**

By **Jonathan Hoffman, Justin Ram and Elizabeth Smart**



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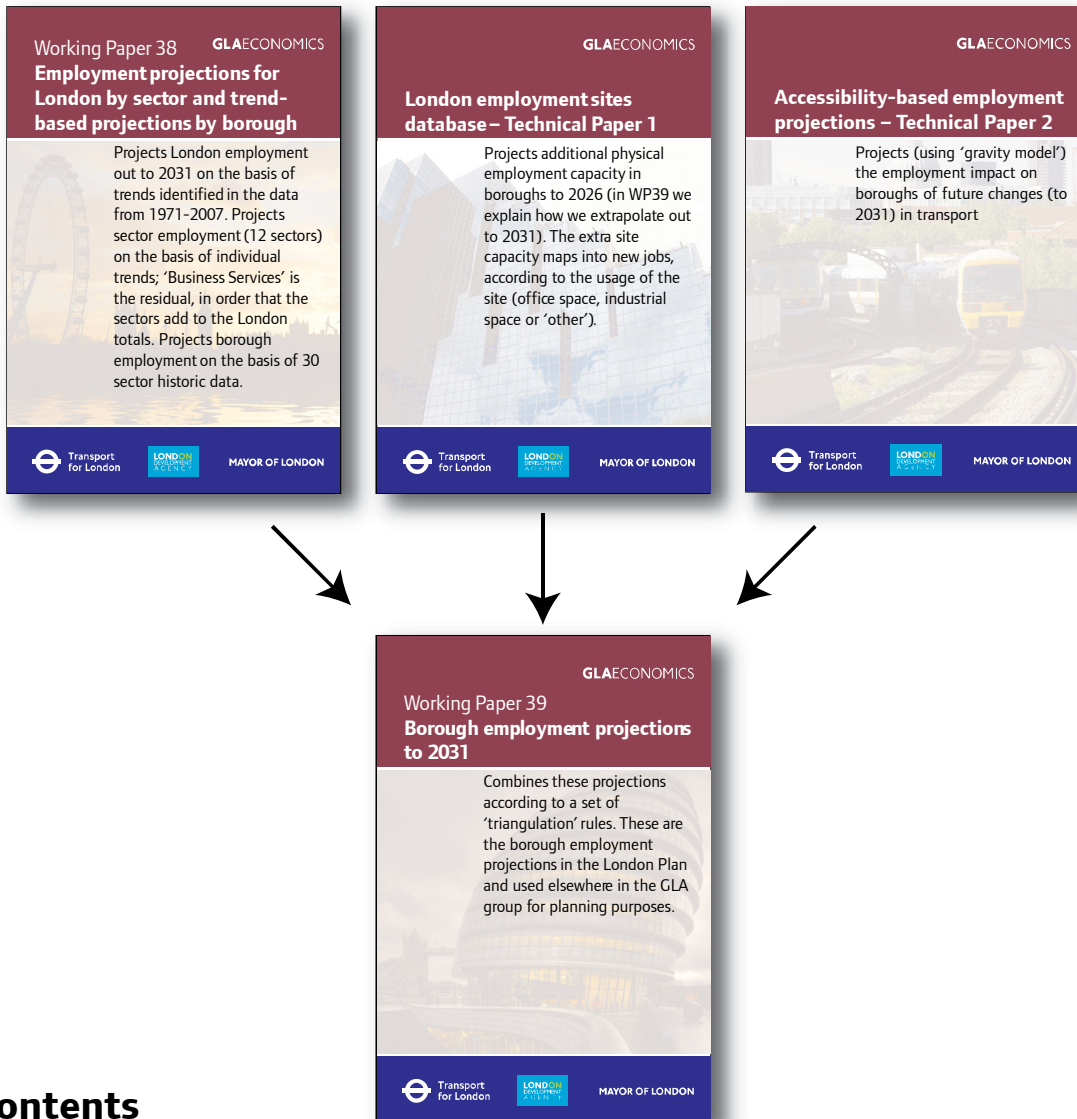
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**Working Papers and Technical Papers explaining the calculation of the Greater London Authority’s employment projections running to 2031**



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# **1 Introduction**

This Working Paper presents the GLA's new medium term trend-based forecasts for employment in London, disaggregated by sector (at the 12-sector level) and by borough. These forecasts replace those published in Working Paper 20<sup>1</sup> (February 2007). It is important to note that these borough forecasts are not the ones cited in eg the London Plan and used elsewhere in the GLA group. This requires an additional step. The forecasts in this Working Paper are compared with forecasts for transport accessibility and for workplace capacity. This generates new employment projections, according to a set of (borough-specific) rules which identifies which of the three forecasts dominates (see Working Paper 18, October 2006, and Working Paper 39: Borough employment projections to 2031).

The forecasts in Working Paper 20 (henceforth WP20) were produced for the GLA by Volterra. The last year of data was 2004.

Now we have three more years of data from which to construct the forecasts: the last year of data is 2007.

The next section describes the data revisions since the previous forecasts in 2007. The third section sets out the London-wide forecasts. Sections 4 and 5 set out the sector and borough forecasts.

The economic theory that underpins the forecasts is set out in Appendix C of WP20. Essentially, it is based upon standard models of economic growth.

# **2 Data revisions**

Forecasts are only as good as the data on which they are based. The data have been revised compared to those used in WP20. (In turn, those data were revised compared with those used in the forecasts published in 2005 (in WP14)). Table 1 shows these revisions.

All historic data was supplied to the GLA by Experian Business Strategies (EBS). (The exceptions are the numbers in bold. These are the contemporaneous forecasts of years for which data subsequently became available. They are included to show the accuracy of the GLA forecasts).

We use a trend-based approach to forecasting; the exact methodology is described in Appendix C of WP20. This means that (by shifting the forecast line up or down) forecast errors change subsequent forecasts, even if the forecasting equation remains unchanged. But subsequent forecasts will change – since revisions to historic data and forecast errors both alter the trends on which the new forecasts are based. Appreciating data revisions and forecast errors is therefore of major importance in understanding the forecasts – and why they change.

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<sup>1</sup> GLA Economics, Working Paper 20, Employment projections for London by sector and borough, by Benny Spooner and Ellie Cooper, Volterra Consulting, February 2007

**Table 1: Total London Employment – previous and revised data<sup>a</sup>**

<b>Employment ('000s)</b>	Current EBS data (2009)	Previous EBS data (2006)	Previous EBS data (2005)	2009 revision	2006 revision	% difference (2006-9)
1971	4,566	4,566	4,721	-	-155	-
1972	4,534	4,534	4,712	-	-178	-
1973	4,517	4,517	4,681	-	-164	-
1974	4,427	4,427	4,580	-	-153	-
1975	4,360	4,360	4,479	-	-119	-
1976	4,269	4,269	4,369	-	-100	-
1977	4,220	4,220	4,295	-	-75	-
1978	4,267	4,260	4,348	7	-88	0.2%
1979	4,325	4,315	4,369	10	-54	0.2%
1980	4,301	4,291	4,293	10	-3	0.2%
1981	4,189	4,175	4,136	14	38	0.3%
1982	4,099	4,081	4,041	18	40	0.4%
1983	4,071	4,052	4,012	19	40	0.5%
1984	4,124	4,104	4,064	20	40	0.5%
1985	4,152	4,130	4,090	22	40	0.5%
1986	4,134	4,112	4,073	22	40	0.5%
1987	4,204	4,181	4,141	23	40	0.6%
1988	4,291	4,267	4,227	24	40	0.6%
1989	4,292	4,267	4,229	25	39	0.6%
1990	4,224	4,200	4,162	24	38	0.6%
1991	4,004	3,982	3,942	22	40	0.6%
1992	3,851	3,829	3,768	22	61	0.6%
1993	3,800	3,778	3,740	22	37	0.6%
1994	3,907	3,880	3,845	27	35	0.7%
1995	3,954	3,924	3,896	30	27	0.8%
1996	4,004	3,969	3,946	35	23	0.9%
1997	4,115	4,088	4,056	27	32	0.7%
1998	4,285	4,252	4,194	33	58	0.8%
1999	4,401	4,375	4,336	26	39	0.6%
2000	4,566	4,539	4,509	27	30	0.6%
2001	4,586	4,552	4,546	34	7	0.7%
2002	4,506	4,483	4,448	23	34	0.5%
2003	4,526	4,516	4,480	10	36	0.2%
2004	4,500	4,488	<b>4,521</b>	12	<b>-33</b>	0.3%
2005	4,588	<b>4,545</b>	<b>4,562</b>	<b>43</b>	<b>-17</b>	<b>0.9%</b>
2006	4,632	<b>4,587</b>	<b>4,603</b>	<b>45</b>	<b>-16</b>	<b>1.0%</b>
2007	4,676	<b>4,631</b>	<b>4,645</b>	<b>45</b>	<b>-14</b>	<b>1.0%</b>

*a Figures in bold denote GLA forecasts, or the accuracy of GLA forecasts*

Table 1 shows that data for years from 1971 to 1977 has not been revised. For later years there have been only small revisions, of less than 1 per cent, or a maximum of 35,000 (in 1996). For all but four years (1980, 1995, 1996 and 2001) these revisions are notably smaller than those in 2006. The latter reflected methodological changes (see WP20).

Table 2 sets out the growth rates obtained from the previous and revised data for London GVA, also supplied to the GLA by EBS. We tabulate growth rates (as opposed to levels) so that the numbers can be compared through time.

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Almost all revisions have the effect of boosting growth. The largest revisions are in more recent years (1997 onwards), in particular 1999, 2000 and 2003 (0.8, 1.0 and 1.3 percentage points respectively).

**Table 2: London GVA growth – previous and revised data**

<b>GVA (% change)</b>	On 2005 data	On 2006 data	On current data	Change (05-06) (% points)	Change (06-09) (% points)
1983	3.5	3.5	3.6	0	0.1
1984	0.2	0.2	0.4	0	0.2
1985	2.9	2.9	3.0	0	0.1
1986	4.4	4.3	4.4	-0.1	0.1
1987	4.1	4.1	4.1	0	0.0
1988	4.7	4.7	4.8	0	0.1
1989	0.8	0.7	0.9	-0.1	0.2
1990	-0.1	-0.2	-0.1	-0.1	0.1
1991	-3.4	-3.4	-3.4	0	0.0
1992	-1.3	-1.5	-1.5	-0.2	0.0
1993	2.3	2.3	2.3	0	0.0
1994	5.5	5.1	5.1	-0.4	0.0
1995	2.7	2.6	2.7	-0.1	0.1
1996	2.3	2.1	2.2	-0.2	0.1
1997	3.5	3.2	3.6	-0.3	0.4
1998	5.6	5.6	5.9	0	0.3
1999	4.6	5.3	6.1	0.7	0.8
2000	6.0	5.6	6.6	-0.4	1.0
2001	1.7	1.4	2.1	-0.3	0.7
2002	-0.8	-0.5	-0.7	0.3	-0.2
2003		1.4	2.7		1.3
2004		2.8	3.0		0.2
2005		2.8	3.3		0.5
2006			4.1		
2007			4.1		
Average GVA growth 1983-2007 (%):			2.8		

### Data used in forecasts

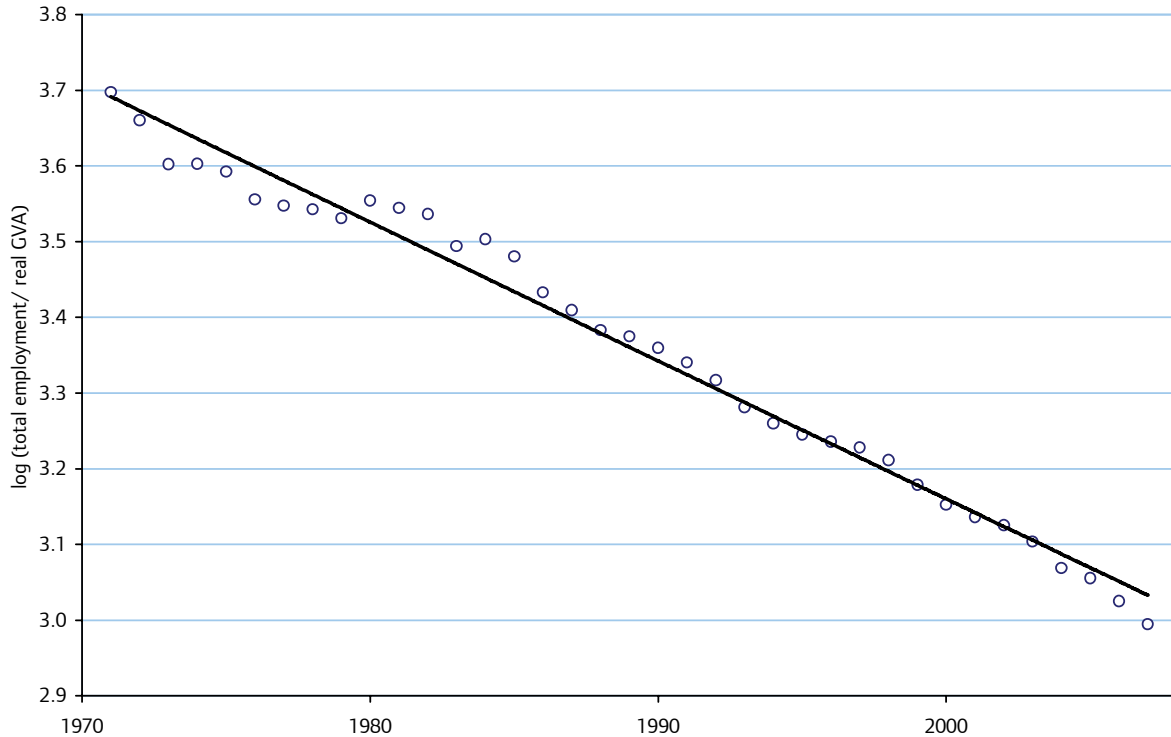
As the most recently supplied employment data covers the years 1971-2007 we use the entire data set to give us the maximum number of data points on which to base our forecasts. For GVA we take the most recently supplied numbers from 1983 onwards and the previous numbers from 1971-1982, adjusting them accordingly for the correct prices. The GVA data is available up until 2007. We use the actual 2007 reported value of GVA in our analysis.

## 3 Total London employment forecasts

We start by reviewing the overall London employment forecast. We began by looking at the ratio of employment to output – the inverse of productivity. This is shown in Figure 1 as a

logged ratio. On such a chart, the negative gradient is equal to output growth that would be required to maintain stable employment. That is to say, if the gradient is approximately  $-1.6$ , output growth of 1.6 per cent would be required to maintain stable employment.

**Figure 1: Log of total employment as a proportion of total output in London, 1971-2007**



Source: GLA Economics

Overlaid on the chart is a fitted local regression curve, highlighting the historic trend. The majority of the points, particularly those since 1985 appear close to the trend. However, the strong growth in productivity that London has experienced in recent years can be seen from the chart as the last four data points move below the trend line. Productivity growth in London was 3.6 per cent in 2004, and following a dip to 1.3 per cent in 2005, it rose back to 3.1 per cent in both 2006 and 2007.

The message from the chart is in the slope of the line, which shows the rate of decrease of the number of employees needed to produce a unit of output (the inverse of the rate of productivity increase). It suggests an annual rate of 1.8 per cent of productivity gain. Another way of saying this is that London's GVA has to increase by 1.8 per cent annually to keep employment constant. If the growth rate falls below this, employment will fall; if it rises above 1.8 per cent, employment will rise.

In WP20, the forecast was constructed by dividing the future into the 'medium term' and the 'long term' and using the medium term historic trend to forecast the former and the long term historic trend to forecast the latter. This generated a medium term productivity forecast of an increase of 1.56 per cent per year and a long term productivity forecast of 1.62 per

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cent per year. This time we took the view that the historic medium and long term trends were so similar that we would use the long term trend throughout the forecast.

In addition (see Figure 1) productivity growth has been unusually strong since 2005. Because we were not convinced that this marked a change in trend, we 'de-emphasised' it as much as possible by using the long term trend for forecasting. Otherwise we would have risked greatly reducing the employment forecasts versus WP20. The productivity forecast is therefore 1.8 per cent per annum. Our projected output growth rate is 2.5 per cent. The implied growth rate of employment is 0.7 per cent per annum.

The employment growth between 2007-2016 and 2007-2026 is 277,000 and 604,000 respectively compared to previously forecast rises in WP20 of 407,000 and 868,000. The reason for the difference is the strength of growth in GVA in 2004 to 2007, which feeds into a higher productivity forecast and therefore lower employment forecast.

Total employment for London for the years 2004, 2005, 2006 and 2007 is now recorded at 4.5 million, 4.58 million, 4.63 million and 4.67 million. There is an argument for taking an average of several of the most recent years as the start point for employment growth since the most recently recorded year seems to be a peak. If we took an average of total employment between 2004 and 2007, we would have a theoretical start employment level of 4.59 million, which is 77,000 less than the 2007 recorded figure. We have decided to keep 2007 as the start point for the forecasts since this is the most recent data point. If we did otherwise, we would have a bigger gap between the current forecasts and those in WP20.

## **4 London sector employment forecasts**

Again, the historic data used for the forecasts is supplied to the GLA by Experian Business Strategies and based on ONS data.

Taking each of the sectors in turn, we identify breaks in the historic trend of employment per unit of output (in fact we look at the log of employment per unit of output). Charts showing the data are in Appendix A. Depending on the characteristics of the historic trend, we identify a year from which we feel the trend up until 2007 best represents the likely future trend. In several cases we take the average of two trends, where it is felt that this might provide better forecasts.

The only sector for which we do not use this method to forecast is business services. Since 1971 the log of sectoral employment in business services per unit of London output has grown on average by 1.1 per cent annually. If we extrapolated this growth then by 2031, we would be looking at some 40 per cent of total London employment in this sector – clearly implausible. Therefore as in WP20, employment in business services is forecast as the residual between the sum of employment in all other sectors and the total for London forecast as above.



**Table 3: Summary of trends used for sector based forecasts**

Sector	Trend for forecast to 2031	Output growth required for stable employment	Long-term employment growth with output growth at 2.5% PA
Primary and Utilities	from 1971 to 2007	6.1%	-2.4%
Manufacturing	from 1971 to 2007	6.3%	-2.5%
Construction	from 1989 to 2007	3.7%	-1.1%
Wholesale	½ trend from 1971 to 2007	3.0%	-0.5%
	½ trend from 1992 to 2007		
Retail	½ trend from 1984 to 2007	2.1%	0.4%
	½ trend from 1991 to 2007		
Hotels & Restaurants	from 1971 to 2007	0.1%	3.2%
Transport & Comms	from 1971 to 2007	3.0%	-0.5%
Financial services	from 1988 to 2007	2.4%	0.1%
Business services	NA (residual of total employment)	-1.1%	1.4%
Public administration	½ trend from 1971 to 2007	3.6%	-1.0%
	½ trend from 1991 to 2007		
Health & Education	½ trend from 1982 to 2007	2.2%	0.3%
	½ trend from 1991 to 2007		
Other services	½ trend from 1975 to 2007	-0.2%	3.7%
	½ trend from 1991 to 2007		
Total employment	From 1971 to 2007	1.8%	0.7%

Table 3 shows which trends have been identified for use in forecasting each of the 12 sectors up to 2031, along with the associated growth forecasts. Assuming long-term output growth at 2.5 per cent, 'other services' is set to remain the fastest growing sector with growth of 3.7 per cent (versus 3.3 per cent in WP20). Next comes hotels and restaurants employment, at 3.2 per cent, and business services at 1.4 per cent. The only two sectors that do not need positive overall output growth in order for their employment to grow are business services and other services (both have negatives in the third column in Table 3).

The sectors where employment is set to decline most rapidly are again primary and utilities and manufacturing, down an annual 2.4 per cent and 2.5 per cent respectively.

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With these growth rates calculated, we can produce the revised sectoral employment forecasts, as presented in Table 4. The growth in employment is somewhat less than those presented in WP20, primarily due to reasons outlined above.

Employment in Primary and Utilities is set to fall by 14,000 for the period 2007 to 2026, compared to a decline of 8,000 for the same period in WP20.

The projected fall in manufacturing employment – which has been on a downward trend – is little different now at 117,000. Previously it was down 115,000.

The decline in Construction employment is lower at 51,000 instead of down 58,000. This reflects small downward revisions in the historical data for the construction sector.

Employment in the wholesale sector is seen as falling by 19,000 through the forecast period, versus up 14,000 in WP20. This reflects a fall in wholesale employment in the recent history which produces a stronger downward trend.

Employment in retail is expected to increase by 27,000 compared to an increase of 64,000 in WP20.

Employment in Hotels and Restaurants is projected to grow by 175,000 compared to projected growth of 204,000 in WP20. The downward shift in expected growth again reflects a downturn in employment in recent years which produces a flatter trend.

Employment in the transport and communications sector is forecast to fall by 32,000 from 2007 to 2026, a broadly similar employment fall to the –26,000 forecast in WP20.

Financial Services sees a rise of 3,000 instead of the 43,000 predicted in WP20. This is closely linked to the strong overall productivity growth in most recent years (see section 3). Higher growth in GVA in the years 2004 to 2007 implies an increase in productivity, and fewer jobs per unit of output.

Public Administration is set to see a decline of 46,000 in the forecast period, as employment in the public sector continues to be constrained. This is little different from the 42,000 decline projected in WP20.

Health and Education is set to see a stronger rise – of 42,000 – than the 30,000 envisaged last time. This is due to upward revisions of the historic data and a greater initial starting value.

Other Services is also set to see a higher increase – of 265,000 – than the 237,000 seen last time.

Finally, the growth in Business Services employment decreases from 526,000 (from the last forecast) to 372,000 (in this forecast). As Business Services is a residual, this change has occurred as a result of changes in the projections of the other sectors.

**Table 4: London sectoral employment: history 2005-2007; forecasts 2008-2031, assuming output growth of 2.5 per cent per annum**

GVA Growth = 2.5% pa (000s)	Sectoral Employment												Total
	Primary & utilities	Manufacturing	Construction	Wholesale	Retail	Hotels & restaurants	Transport & comms	Financial services	Business services	Public admin	Health & Education	Other services	
2005	20	240	218	226	405	314	353	326	1,142	248	727	369	4,588
2006	24	234	227	220	410	312	346	323	1,182	240	724	390	4,632
2007	29	224	242	215	402	305	342	334	1,222	229	731	400	4,676
2008	28	215	239	214	403	313	341	334	1,249	226	733	411	4,706
2009	27	207	236	213	404	320	339	334	1,274	224	735	422	4,736
2010	26	199	233	212	406	328	337	335	1,299	221	737	434	4,767
2011	25	192	230	211	407	336	335	335	1,323	218	740	446	4,797
2012	24	184	227	210	409	344	334	335	1,346	216	742	458	4,828
2013	23	178	225	209	410	352	332	335	1,368	213	744	470	4,859
2014	23	171	222	208	412	361	330	335	1,390	211	746	483	4,890
2015	22	164	219	207	413	369	328	335	1,411	208	748	496	4,922
2016	21	158	216	206	415	378	327	336	1,431	206	751	509	4,953
2017	20	152	214	205	416	387	325	336	1,451	203	753	523	4,985
2018	20	146	211	204	418	397	323	336	1,470	201	755	537	5,017
2019	19	141	208	203	419	406	322	336	1,488	199	757	552	5,049
2020	18	135	206	202	420	416	320	336	1,505	196	760	567	5,082
2021	18	130	203	201	422	426	318	336	1,522	194	762	582	5,114
2022	17	125	201	200	423	436	317	337	1,538	192	764	598	5,147
2023	16	121	198	199	425	447	315	337	1,553	190	766	614	5,180
2024	16	116	196	198	426	457	313	337	1,567	187	769	631	5,213
2025	15	112	193	197	428	469	312	337	1,581	185	771	648	5,247
2026	15	107	191	196	429	480	310	337	1,594	183	773	665	5,280
2027	14	103	189	195	431	491	308	337	1,606	181	775	683	5,314
2028	14	99	186	194	433	503	307	338	1,617	179	778	702	5,348
2029	13	96	184	193	434	515	305	338	1,628	177	780	721	5,383
2030	13	92	182	192	436	528	304	338	1,637	175	782	740	5,417
2031	12	89	179	191	437	540	302	338	1,646	173	785	760	5,452

## 5 London borough employment forecasts

This section sets out our updated trend-based borough employment forecasts.

It is important to note that these borough forecasts are not the ones cited in eg, the London Plan and used elsewhere in the GLA group. This requires an additional step. These borough forecasts are compared with forecasts for transport accessibility and for workplace capacity. This process generates new employment projections, according to a set of (borough-specific) rules (see Working Paper 18, October 2006, and Working Paper 39: Borough employment projections to 2031).

We adopt the now familiar forecasting methodology. We look at the historic trends of employment in each sector in each borough, at the 30 sector level of aggregation, scaled by total London employment.

If we looked at every sector in every borough, we would be examining 990 ‘borough sectors’ (= 33 times 30), some of which employ less than 100 people. For *de minimis* reasons as well as those of analytical tractability, we therefore focus on those ‘borough sectors’ which have historically accounted for 10 per cent or more of employment in the relevant borough<sup>2</sup>.

Then we construct a series ‘Rest’ that aggregates all the remaining employment in the borough (in sectors which account for less than 10 per cent of the jobs).

For example, in Barnet, on average, 14 per cent of employment has been in Retailing, another 14 per cent of the employment has been in Business Services<sup>3</sup> and 13 per cent of the employment has been in the Health sector. We analyse the time series of these three sectors, as well as the remaining employment in Barnet. For example, between 1982 and 1999 the proportion of Barnet employment accounted for by the Business Services sector more than trebled, accounting in 1999 for 18.1 per cent of the borough’s employment. However the share then fell back, by 7 per cent by 2007. This contributed to a fall in the proportion of Barnet employment in the total for London, to 2.9 per cent by 2007 from a peak of 3.1 per cent in 1998.

To make the forecasts, we calculate a short, medium and long-term trend for each time-series examined. The short-term historic trend is the slope of a regression fitted to the period 2002–2007, multiplied by the average proportion that the sector accounted for over the same period. This adjusts the growth rate for the size of the sector and so the aggregate of the sectoral growth rates can be applied to the whole borough.

The ten-year (medium-term) trend is calculated similarly over the period 1997–2007 and the long-term trend over the period 1982–2007. So, the sum of the long-term growth rates will

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<sup>2</sup> In five boroughs this threshold was reduced to 9.5 per cent to bring in a sector that was very close to 10 per cent.

<sup>3</sup> Here we refer to the EBS 30 sector definition of Business Services. This sector, and the other Financial and Business Service Sector make up the 12 sector definition of Business Services.

give an annual growth rate for the proportion of total London employment that each borough accounted for, based on the long-term trend.

As previously mentioned we calculate trends over three time periods for each identified sector for each borough. We then use a combination (according to judgment) of these three trends to estimate a short-term and a long-term trend, aggregating over each borough. We use the short-term trend to project forwards to 2012 and the long-term trends to project on further to 2031.

At the borough level of disaggregation some sectors have been particularly volatile or have suffered significant upturns or downturns over the period for which we have data. We therefore take care that the judgements applied in determining the forecasts do not involve making unwarranted extrapolations from observed trends.

Finally, we calculate the actual forecast employment levels by rescaling each forecast year so that the proportions summed over the boroughs total one. We then multiply each borough's share by the forecast total London employment for these same two years in the future (2012 and 2031) to arrive at the forecast employment levels by borough. (This step constrains the sum of the borough forecasts to equal the total London forecasts described in Section 3).

We now describe in detail the construction of the short and long-term forecast growth of proportions within each borough. Plots of time-series referred to can be found in Appendix B. All references to employment growth refer to employment growth relative to the rest of London. Table 4 gives the trend based forecasts for each of the 33 boroughs.

**Barking:** Transport Equipment employment has seen little change in recent years and we assume this continues over the forecast horizon. For Wholesaling employment we use the short run trend of 0.22 per cent annual growth for the short term forecast, reverting to flat growth in the long term. For the 'Rest' sector, we note there was labour-shedding in the late 1990s. This seems to have been 'one-off' and therefore we use the short run trend throughout. This gives overall short term and long term forecasts for the borough of -0.34 per cent and -0.56 per cent respectively.

**Barnet:** Retailing, Business Services and Health are the largest sectors for employment in Barnet. For the Business Services sector we take the long run trend of 0.46 per cent per annum growth throughout. For the other sectors (Retailing, Health and the 'Rest') we assume zero growth in the short term and use the long run trend for the long term forecast. Overall for Barnet this yields growth of 0.46 per cent and 0.54 per cent annually in the short and long term respectively.

**Bexley:** Construction employment has been erratic throughout the period. Although there has been growth on the medium run trend, the short run and long run trends are negative. We forecast zero growth in both the short and the long term. Retail employment has been declining on the short and medium run trends, and we forecast zero growth in the short term and use the long run trend in the long term. Business Services has been the strongest growing sector with average annual growth of 0.3 per cent; we take the average of the short

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and medium run trends for the short term and the average of the medium and long run trends for the long term. The 'Rest' has seen declining growth over the long term and we therefore use the long run trend of  $-0.61$  per cent for both the short and long term projections. The resulting overall short term and long term forecasts for Bexley are  $-0.085$  per cent and  $-0.29$  per cent respectively.

**Brent:** Employment in Business Services has been flat/falling in recent years. We continue the flat trend for the short term forecast, reverting to the (modestly rising) long run trend for the long term forecast. For Health and Wholesale employment we averaged the short and medium term for the short term forecast and used the long run trend for the long term forecast. For the 'Rest' sector – employment in which has been broadly stable in recent years – we took the average of the short and medium run trends for the short term forecast. For the long term forecast, we took half of the long run trend because it seems highly implausible that downward trend will continue to be as strong (falling by  $0.92$  per cent a year in relation to total London employment). This gives us total short term and long term forecasts of  $-0.77$  per cent and  $-0.5$  per cent respectively.

**Bromley:** The most volatile employment pattern of the four identified sectors has been exhibited by Health. We forecast employment in this sector by using the long run trend of  $0.03$  per cent throughout. For Retailing the pattern has been smoother and we distinguish between the long term and the short term by taking the average of the short run and medium run trends for the short term forecast, and the average of the medium run and long run trends for the long term forecasts. Business Services employment has shown an upward trend, albeit erratic. To reflect this in the forecast we take the average of the short run and medium run trends for the short term forecast, and the long run trend for the long term forecast. Bromley is one of the nine Boroughs to have higher employment in this forecast as compared with WP20 (the others are Greenwich, Hammersmith, Hillingdon, Kingston, Newham, Richmond, Southwark and Waltham Forest). Bromley's short term and long term forecasts are judged to be  $0.04$  per cent and  $0.005$  per cent respectively.

**Camden:** Business Services has shown strong employment growth for most of the period with medium and long run trends of  $0.3$  per cent and  $0.4$  per cent respectively (unchanged from the trends identified in WP20). By 2007 it represented over 30 per cent of the borough's employment. For the short term forecast for employment in this sector we used the average of the short term and medium term trends. For the long term forecast we used the medium run trend of  $0.33$  per cent. Because Business Services is the only sector to account for more than 10 per cent of employment, the 'Rest' sector has shown the opposite trend. We assume stabilisation in the short term (that is, zero growth) but in the long term the resumption of the negative long run trend. This yields short term borough trends of  $0.53$  per cent and long term trends of  $0.29$  per cent.

**City:** WP20 noted that employment in the Banking and Insurance sector showed a flat long term trend. However this is no longer the case. Over the long term, the trend has been negative ( $-0.17$  per cent). We applied this trend to both the short term and the long term forecast. The 'Rest' sector saw rapid drops in employment in the 1980s – as the 'old' manufacturing sectors (such as cabinet making and garment manufacture) declined – but

since then has levelled out. So we maintain the 'flat' forecast of WP20. Business Services has been the growth sector. By 2007 it accounted for 37.5 per cent of employment, up from 30.7 per cent in 1997. As in WP20, we forecast short term growth to be an average of the short run and medium run trends. For the long term forecast, we use the long run trend of 0.56 per cent. In total, The City is forecast to have rising employment with a long run trend of 0.39 per cent, though this is below the WP20 long run trend forecast.

**Croydon:** Employment in Retailing and the 'Rest' sectors have both been contracting over the long, medium and short runs. For Retailing, we forecast short term growth to be an average of the short run and medium run trends and long term growth to be an average of the medium and long run trends. For the 'Rest' sector we take the medium run trend for the short term because we do not believe the recent accelerated decline will persist. For the long term, we take an average of the medium run and long run trends. Business Services has been the growth sector, accounting in 2007 for over 20 per cent of Borough employment. We forecast short term growth to be an average of the short and medium run trends, at 0.2 per cent, and long term growth – conservatively – to be in line with the medium run trend of 0.12 per cent. This gives us an overall short term trend of -0.81 per cent and a long term trend of -0.97 per cent.

**Ealing:** Retailing employment in Ealing has shown strong growth in the short and medium run. However over the long run there has been a declining trend (albeit very muted). We therefore forecast short term growth to be the average of the short and medium run trends (0.27 per cent), and the long run trend of (near flat) decline to continue in the long term. Business Services has seen growing employment over the short and long run. There has however been a decline over the medium run and we have recognised this by using the average of the short and medium run trends for the short term forecast, and the average of the medium and long run trends for the long term forecast. This gives positive growth of 0.05 per cent and 0.23 per cent annually for the short term and long term respectively. The 'Rest' sector has been in decline on all three trends and we believe this will continue. We have forecast the short term to be an average of the short and medium run trends and the long term to be an average of the medium and long run trends. The overall short term trend in Ealing is forecast to be -0.15 per cent and the long term -0.72 per cent.

**Enfield:** There has been strong growth in Business Services employment on all the trend lengths. In 2007 this sector accounted for 14.6 per cent of employment in this borough, a doubling in under 20 years. We forecast the short term using the short run trend of 0.31 per cent. The long term is projected using the average of the medium and long run trends, giving growth of 0.32 per cent. There has also been growth in the Health sector over the short and medium runs although the long run trend was fairly flat. We think that the short run trend will continue for the short term projection. For the long term projection we use an average of the medium and long term trends. The trend in Retail has been fairly flat, with moderate declines in the short and medium run trends. We forecast the short and long term trends using the long run trend. Employment in the 'Rest' sector has been in decline in Enfield for some time (though employment in Education, which accounted for about 17 per cent of the 'Rest' sector in 2007, has seen very strong growth, doubling its share in total borough employment since 1990). We therefore forecast both the short term and long term for the

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'Rest' sector according to the long run trend. This gives us an overall borough short term outlook of -0.17 per cent and a long term outlook of -0.24 per cent.

**Greenwich:** Employment in the Education sector has been in decline over the long run but has shown signs of a recovery on the medium and short run trends. We therefore forecast the short term to follow the short run trend and the long term projection to be flat. The Health sector has shown variability having been in decline over the long and medium run, but with a recovery in the short run. Therefore we forecast a flat trend in both the short and long terms. The 'Rest' sector, which accounts for on average 72 per cent of employment, has seen only slow growth though it has gathered strength over the short run. We believe that this growth will continue in the short term, we therefore forecast an average of the short and medium run trends for the short term, however we believe that the long run trend (of slow growth) will prevail in the long term. Greenwich is therefore forecast to grow by 0.66 per cent in the short term and 0.19 per cent in the long term.

**Hackney:** The only sector above the threshold of 10 per cent of employment is Business Services, which in 2007 accounted for 23.7 per cent of borough employment. There has been growth in the long and medium runs, although the short run trend is declining. However, due to Hackney's proximity to the City, we doubt that this short run trend will continue. We therefore forecast that in the short term Business Services employment will follow the medium run trend, and in the long term we project an average of the long and medium run trends. Employment in the 'Rest' sector has been in decline over the long run and we therefore forecast flat growth in the short and long terms. Overall this yields forecast annual growth of 0.64 and 0.24 per cent in the short and long term respectively for Hackney.

**Hammersmith and Fulham:** Business Services employment has shown strong growth. Its share of total borough employment in 2007 – at 25.3 per cent – has doubled since 1989 and almost quadrupled since 1982. The numbers employed in this sector have only fallen in three years since 1983 (1992, 2002 and 2004). We believe the short run trend will continue over the short term and forecast an average of the long and medium run trends for the long term. Employment in the Health sector has been growing over the short and medium runs although it has been in decline over the long run. We assume that the short term forecast will be an average of the short and medium run trends and the long term forecast will be an average of the medium and long run trends. We have also assumed the same forecast for employment in the 'Other Services' sector. The 'Rest' sector has grown over the medium term but declined in the short term. We have therefore taken an average of the short and medium run for the short term forecast and assumed that the long term forecast will be flat. This yields an overall borough short term trend of 1.49 per cent and long term trend of 1.34 per cent.

**Haringey:** Employment in the Retail sector in Haringey has been flat on all the trend measures. We therefore judged it correct to forecast this flat trend to continue, into both the short and long term. Employment in the Business Services sector has shown moderate growth over all trend terms, although this has slowed in the medium and short run. We therefore forecast that the short run trend will continue in the short term and the long term forecast follows the medium run trend. Employment in the Education sector has shown signs of growth in the short and medium runs although the long run trend has been negative, due



to a precipitous decline in the second half of the 1980s. We therefore forecast the short term projection to be the short run trend and the long term to be an average of the medium and long run trends. Employment in the 'Rest' sector has shown growth in the short and medium run trends, but has declined on the long run trend measure (there were almost continuous declines 1993-2001). We therefore forecast that employment in the 'Rest' sector will grow in the short term according to the medium run trend and will in the long term follow the long run trend. This gives Haringey a short term trend of 0.88 per cent and long term trend of – 0.16 per cent.

**Harrow:** The Retail and Education sectors have shown moderate to flat declines, we have therefore forecast the trends to be flat in both the short and long term. Business Services employment has shown a strong trend increase since 1982, more than doubling as a proportion of total borough employment to nearly one-fifth. We forecast both the short and long term trends to follow the medium run trend. The 'Rest' sector of employment has been in decline and we forecast that the short run trend of –0.3 per cent will remain in the short term, reverting to the long run trend of –0.22 per cent in the long term. This yields an overall net rise for Harrow of 0.2 per cent in the long term.

**Havering:** This is another borough where employment in the Business Services sector has increased very strongly. In fact by 2007 it accounted for 14.2 per cent of total employment, more than three times the 4.5 per cent of 1982. We forecast the short term Business Services trend as an average of the short and medium run trends (0.11 per cent) and the long term trend as an average of the medium and long run trends (0.31 per cent). The trend in Retailing has been flat for most of the historic data, we therefore forecast a flat trend for the short and long term. Health employment has shown moderate declines to flat trends. We have therefore forecast the short term to be flat and the long term forecast to be the long run trend. For employment in the 'Rest' sector, we have forecast the short term to follow the medium run trend and the long term to be flat. This gives a near flat overall short term trend of –0.08 per cent and a long term trend of 0.29 per cent.

**Hillingdon:** Heathrow airport is sited within Hillingdon and the Transport sector accounted for 32 per cent of the borough's employment in 2007 – the highest in any borough. Employment in this sector has grown steadily with strong growth in the short and long runs though more gentle growth in the medium run. We therefore take the average of the short and medium run trends as the short term forecast, and the average of the medium and long run trends for the long term forecast, giving 0.52 and 0.53 per cent respectively.

There has also been a strong upward trend in Business Services which accounted for 15.6 per cent of employment in 2007 versus 5.7 per cent in 1982. Our forecast trends for Business Services use the same assumptions as the transport forecasts. The 'Rest' sector has shown employment declines in the medium and long runs and gains in the short run. We do not think that the short run trend will continue so we therefore take an average of the short and medium run trends for the short term forecast. We forecast the long term trend to be flat. Overall this yields growth of 0.85 and 0.97 per cent per annum in the short and long term respectively.

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**Hounslow:** Employment in the two main sectors in Hounslow, Transport and Business Services, has been in decline over the short and medium runs (the fall in employment in Business Services contrasting with many other boroughs). With some uncertainty in the transport trends, we think that the medium run trend in transport will prevail in the short and long terms. Because of the sustained growth in employment in the Business Services sector from the mid-1980s to the mid-1990s, the long run trend is positive. We forecast the short term trend as an average of the short and long run trends (-0.11 per cent) and the long term trend as an average of the medium and long run trends (-0.02 per cent). Employment in the 'Rest' sector has been on a downward trend and we forecast the short term using the average of the short and medium run trends. In the long term we forecast flat growth. Overall this gives negative growth of -1.14 per cent in the short term, moderating to -0.35 per cent in the long term.

**Islington:** Employment in the Business Services sector has grown very robustly. Since 1982 there have only been four years when the proportion of the sector's employment in total borough employment has fallen (1996, 2002, 2005 and 2006). In 2007 it accounted for 31 per cent of borough employment, nearly tripling since 1982's 11.8 per cent. We forecast that in the short term, growth will be the average of the short and medium run trends (0.88 per cent) and that in the long term, the long run trend of around 1 per cent will prevail. This is similar to assumptions in WP20.

Such is the dominance of Business Services that there is no other sector which has accounted on average for more than 10 per cent of borough employment. (Two other Boroughs – Camden and Hackney – share this feature – they also have dominant Business Services sectors). Employment in the 'Rest' sector (which in this case is everyone outside Business Services) has continued to be somewhat erratic. Once again we forecast that the short term will be an average of the short and long run trends and that the long run trend of 0.06 per cent will dominate in the long term. Therefore we forecast total Islington employment growth to be 1.0 per cent and 1.07 per cent in the short term and long term respectively.

**Kensington and Chelsea:** Three sectors made up about 49 per cent of Kensington's employment in 2007. Retailing, Hotels & Catering and Business Services have all shown a long run employment growth trend, though the first two of these sectors have had negative medium and short run trends. Therefore for Retailing employment we use the medium run trend of -0.22 per cent for the short term projection and the long run trend of 0.21 per cent for the long term projection. Hotels and Catering employment has been forecast using the medium run trend for the short term and the long run trend for the long term forecast. In Business Services we take the average of the short and medium run trends as the short term forecast and the long run trend for the long term projection. The 'Rest' sector of employment has a positive long run growth trend but peaked in 2002 and therefore evidences medium and short run trend declines. We therefore assume that growth will be flat in the short term and that the long run trend will dominate in the long term. This gives us an overall short term forecast -0.21 per cent and long term forecast of 0.86 per cent.

**Kingston:** Three sectors accounted for on average 41 per cent of the employment in Kingston during the period 1982 to 2007. Retailing which accounts for 13 per cent of

employment had erratic but near flat trends; we therefore assume a flat trend in the short term and an average of the medium and long run trends for the long term projections. Employment in Business Services has been increasing during all trend periods; the short run trend has increased to 0.99 per cent per annum from 0.29 per cent in the medium term. We do not think this trend can continue, therefore we project that the short run trend will prevail in the short term. In the long term, we judge that the long run trend of 0.65 per cent growth will prevail. Health employment has been particularly erratic. We project flat growth in short term and a return to the long run trend in the long term. Employment in the 'Rest' sector has fallen over time, though the strength of the decline has moderated in the short run. We therefore forecast a flat trend in the short term and a return to the long run trend of -0.65 per cent in the long term. This yields an overall short term forecast of 0.29 per cent and long term forecast of 0.15 per cent.

**Lambeth:** Health employment fell sharply in the late 1990s, but has since more than recovered. Therefore for the short term forecast we project an average of short and medium run trends, yielding annual growth of 0.87 per cent. Long term growth is forecast as an average of the medium and (flat) long run trends, 0.29 per cent growth. On medium and long term assessments, employment in Business Services has been growing. Therefore we take an average of the short and medium run trends for the short term projection. This gives growth of 0.18 per cent. We assume that the long run trend will prevail in the long term. Employment in the 'Rest' sector has been in decline, but we do not think that the large trend declines on either the short run or the long run trends will continue. We therefore forecast the medium run of -0.74 per cent for both the short and long terms. This yields an overall trend for Lambeth of -0.60 per cent in the short term and -0.77 per cent in the long term.

**Lewisham:** During the period 1982 to 2007, four sectors on average have accounted for 49 per cent of the workforce in Lewisham: Retailing, Business Services, Education and Health. Retailing has had flat growth in the medium and long run but more of a decline in the short run. We therefore forecast that the short term will be an average of the short and medium runs to give -0.135 per cent, and that the long run trend of 0.01 per cent will reassert itself over the long term. Employment in the Business Services sector has increased on all three trend measures. We forecast the short run trend to continue in the short term projection and the long run trend to prevail in the long term. Education employment has been volatile; we forecast that the near flat medium run trend of 0.05 per cent per annum will continue into both the short and the long terms. Employment in the Health sector has also been volatile; we therefore forecast flat growth in both the short and long term projections. The 'Rest' of employment has shown undulating trends over the historic periods. To account for this we take half of the short run and half of the medium run trends for the short term projections. We also take half of the medium and long term projections for the long term projections. This yields growth of 0.07 and 0.11 per cent in the short and long term respectively. This yields an overall trend for Lewisham of 0.19 per cent in the short term and 0.63 per cent in the long term.

**Merton:** There have been moderate increases in employment in the Retailing sector on the medium and long run trend readings. However on the short run reading, the trend has been flat. We forecast that the short run flat trend will continue in the short term, though in the

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long term believe that the long run trend of 0.09 per cent will dominate. Employment in the Business Services sector is falling on the medium and short run trend measures even though on the long run measure it is still rising. We think that the decline will continue in the short term – we use an average of the short and medium run trends to predict this. For the long term projections we take the average of the medium and long run projections. Employment in the 'Rest' sector declined up until about 1999 but has since recovered slightly; we therefore project flat growth in the short term and an average of the medium and long run trends in the long term, yielding negative growth of 0.4 per cent. This yields growth of -0.34 per cent in the short term and -0.13 per cent in the long term.

**Newham:** Retail employment has shown limited growth despite volatility during the mid 1990s. We have used an average of the short and long run trends to forecast the short term and have judged that the long run trend will dominate in the long term. There has also been steady growth in employment in the Business Services sector. We have therefore taken the medium run trend (0.38 per cent) for the short term projections and the long run trend (0.32 per cent) for the long term projection. Employment in the 'Rest' sector has been in decline over the long and medium run trends but has recovered in the short run. For the short term forecast we use the average of the short run and the medium run trends and for the long term forecast, the average of the medium and long run trends. This gives Newham growth of 0.82 per cent in the short term and -0.16 per cent in the long term.

**Redbridge:** Three sectors during the period 1982 to 2007 accounted for on average about 40 per cent of employment in Redbridge. Growth in employment in the Retail sector has been nearly flat; we therefore project flat growth in the short term and an average of the long and medium run trends for the long term projection, giving very slight growth of 0.02 per cent. Employment in the Business Services sector has grown calculated on a long-run trend, but in recent years has been in decline. We take an average of the short and medium run trends to project short term growth of -0.53 per cent growth and an average of the medium and long run trends for the long term projection, giving long term growth of 0.24 per cent. The long run trend for Health has been flat; we assume that this trend will remain in the long term. While there has been some growth in the medium and short run, we therefore take an average of the short and medium run trends for the short term projection. The 'Rest' of employment has been in relative decline. Even so, we hold to a forecast of flat growth in the short term, though in the long term we return to the long run trend of -0.57 per cent per annum. This leads to overall negative forecasts of -0.19 per cent and -0.32 per cent in the short term and long term respectively.

**Richmond:** Employment in the Retailing sector has exhibited an almost flat trend on all trend measures. We therefore forecast that the trend in Retail will be flat in the short and long term. Employment in Business Services has been on a rising trend on all the measures. We have taken an average of the short and medium run trends to give us a short term projection of 0.46 per cent per annum. The long run trend (0.89 per cent) seemed implausibly high as a long term forecast, so we instead adopted the medium run trend of 0.37 per cent. There has been consistent growth in Other Services employment. We project that the short term will follow the medium run trend of 0.4 per cent and that there will be a return to the long run trend of growth of 0.32 per cent in the long term. The 'Rest' sector of

employment is falling on the long run trend comparison but on the medium and short run trends it has recovered to 0.61 and 0.62 per cent growth respectively. We therefore forecast the short term to follow the medium run trend and the long term to have flat growth. This gives overall employment growth for the borough of 1.46 per cent in short term, falling to 0.69 per cent in the long term.

**Southwark:** By 2007, the Business Services sector accounted for nearly one-third of employment. This share has doubled in less than 20 years. There has been especially strong growth in the short run (averaging an annual 2.38 per cent). We think the strong growth will continue but at the medium term trend's less torrid pace of 1.07 per cent, slowing to the long run trend of 0.82 per cent in the long term. Health has been in moderate decline in Southwark. For the short term projections we have taken the average of the short and medium run trends; we expect the long run trend to dominate in the long term projections. Employment in the 'Rest' sector has been in decline on the long run trend, but has shown signs of growth in the medium and short runs. Our forecast in the short term is an average of the short and medium run trends and for the long term we use an average of the medium and long run trends. This gives 0.57 and 0.08 per cent growth respectively and yields overall growth for the borough of 1.48 per cent per annum in the short term and 0.79 per cent in the long term.

**Sutton:** Four sectors in Sutton have accounted on average for about 52 per cent of employment during the period 1982 to 2007. Employment in the Construction sector has been flat in the medium and long term but with declines in the short term. We think there will be flat growth in the short term and a return to mild long term growth of 0.04 per cent. There have been declines in Retail employment in the short and medium run trends. We forecast the short term projection as the medium run trend and the long term projection as an average of the long and medium run trends. Employment in the Business Services sector has been increasing on all three trend measures. We use half of the short and medium run trends for the short term projections. We use half of the medium and long run trends for the long term projections. Health employment has been falling on the long run trend measure, but has nevertheless recovered somewhat since around 2001. We forecast the short term as an average of the short and medium run trends and the long term as flat. The 'Rest' sector of employment has had a similar level of decline throughout all of the trends. We therefore forecast that the long run trend of -0.19 per cent per annum will continue through both the short and the long term projections. The overall borough short and long term forecasts are therefore seen as 0.15 and 0.08 per cent respectively.

**Tower Hamlets:** The two employment growth sectors have been Banking and Insurance and Business Services, in 2007 accounting for 33.8 per cent and 17.6 per cent of the employed workforce respectively. However it would be wrong to extrapolate the strong growth of these sectors undiluted, since it in part represents the 'one-off' regeneration of the Docklands. We therefore construct the short term forecast for Banking/Insurance by taking three quarters of the medium run trend, giving growth of 1.39 per cent. We make the long term forecast by taking three quarters of the long run trend (0.89 per cent growth). Growth in Business Services employment has been less strong. We take the medium run trend of 0.61 per cent for the short term forecast and the average of the medium and long run trends for the long

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term forecast of 0.69 per cent. The 'Rest' sector by contrast has seen a very modest long run trend increase. In the short term we assume zero growth and use the long run trend to forecast the long term. Overall this gives Tower Hamlets healthy growth of 2.0 per cent annually in the short term and 1.84 per cent in the long term.

**Waltham Forest:** Construction employment was in decline but stabilised in the 1990s. We forecast that the short run trend of 0.68 per cent will continue in the short term and that there will be a return to the long run trend of -0.29 per cent in the long term. Retail employment has seen slight but steady growth during the historic periods. We forecast that the short run trend will continue in the short term projections and that there will be a return to the long run trend in the long term. Health was in moderate decline during the long and medium run trends though it stabilised in the short run trend. We think that the near flat growth of the short run will continue in the short term. However, we forecast that the declining long run trend of -0.16 per cent will return in the long term projection. The 'Rest' sector of employment – which accounts for 65 per cent of total employment – has been erratic. We forecast flat growth in the short run and use an average of the long and medium run trends (-0.31 per cent) for the long term forecast. This yields overall short term growth of 0.84 per cent and negative growth of -0.71 per cent in the long term.

**Wandsworth:** On average, between 1982 to 2007, three sectors have accounted for 40 per cent of employment. Business Services experienced steady growth until about 1997. There has since been a decline and near flat trend. We think that the short term projection will be flat. However, for the long term we take an average of the medium and long run trends giving annual growth of 0.37 per cent. Employment in the Education and the Health sectors has been erratic. Once more we project the short run to be flat. We also project the long run to return to long term trend of -0.21 and -0.03 per cent for Education and Health respectively. Employment in the 'Rest' sector has been similar on the long run and short run trends. We project the short run trend for the short term and the long run trend for the long term. This yields overall growth for the Borough of 0.14 per cent in the short term and 0.27 per cent in the long term.

**Westminster:** Since the mid-1990s employment in the Retail sector has shown signs of decline, with modest recovery since 2005. We therefore forecast flat trends for both the short and long term projections. Employment in the Business Services sector grew strongly on the long run trend measure. However, the short and medium run trends have been nearly flat. We therefore forecast short term growth of 0.04 per cent annually (the short run trend) and 0.26 per cent growth annually (the long run trend) in the long term. It is projected that the Public Administration and Defence sectors – as well as the 'Rest' sector – will have flat employment in both the short and long term projections. This yields overall growth in the short term of 0.04 per cent and in the long term of 0.26 per cent.

**Table 5: London borough employment forecasts: history 2005-2007; forecast 2008-2031**

GVA Growth = 2.5% pa (000s)																	
	Barking	Barnet	Bexley	Brent	Bromley	Camden	City	Croydon	Ealing	Enfield	Greenwich	Hackney	Hammersmith	Haringey	Harrow	Havering	Hillingdon
2005	53	133	78	113	124	279	337	152	135	114	77	94	128	77	84	92	201
2006	52	134	75	112	124	283	332	150	137	111	80	90	130	82	83	91	203
2007	51	134	75	110	131	290	339	150	139	110	80	92	132	85	82	85	203
2008	51	135	75	110	131	292	341	149	139	110	81	93	134	86	83	85	205
2009	51	136	75	109	132	295	342	148	139	110	82	94	136	87	83	85	208
2010	51	137	76	109	132	297	344	147	140	110	83	95	139	88	83	85	210
2011	51	138	76	108	133	300	345	147	140	110	84	96	141	89	84	86	213
2012	51	139	76	108	133	302	347	146	140	110	84	97	144	90	84	86	215
2013	51	140	76	108	134	304	350	145	139	110	85	97	146	90	84	86	218
2014	51	141	76	108	134	306	352	144	139	111	85	98	149	90	85	87	221
2015	51	142	76	107	135	308	355	143	138	111	86	98	151	90	85	87	224
2016	51	144	76	107	135	310	357	142	138	111	86	99	154	90	86	88	227
2017	50	145	76	107	135	312	360	141	137	111	87	99	156	91	86	89	230
2018	50	146	76	107	136	314	362	140	137	111	87	100	159	91	87	89	233
2019	50	147	76	107	136	316	365	140	136	111	88	100	162	91	87	90	236
2020	50	149	76	106	137	318	368	139	136	111	88	101	164	91	88	90	239
2021	50	150	76	106	137	319	370	138	135	111	88	102	167	91	88	91	242
2022	50	151	76	106	138	321	373	137	135	111	89	102	170	91	88	91	245
2023	50	153	76	106	138	323	375	136	134	111	89	103	172	91	89	92	248
2024	50	154	76	106	138	325	378	135	133	111	90	103	175	92	89	92	251
2025	49	155	76	105	139	327	381	134	133	111	90	104	178	92	90	93	254
2026	49	156	76	105	139	329	383	133	132	112	91	104	181	92	90	93	257
2027	49	158	76	105	140	331	386	132	132	112	91	105	184	92	91	94	261
2028	49	159	76	105	140	333	388	131	131	112	92	105	187	92	91	94	264
2029	49	160	76	105	141	335	391	130	131	112	92	106	190	92	92	95	267
2030	49	162	76	104	141	337	394	130	130	112	92	107	193	92	92	96	271
2031	49	163	76	104	141	338	396	129	129	112	93	107	196	92	92	96	274

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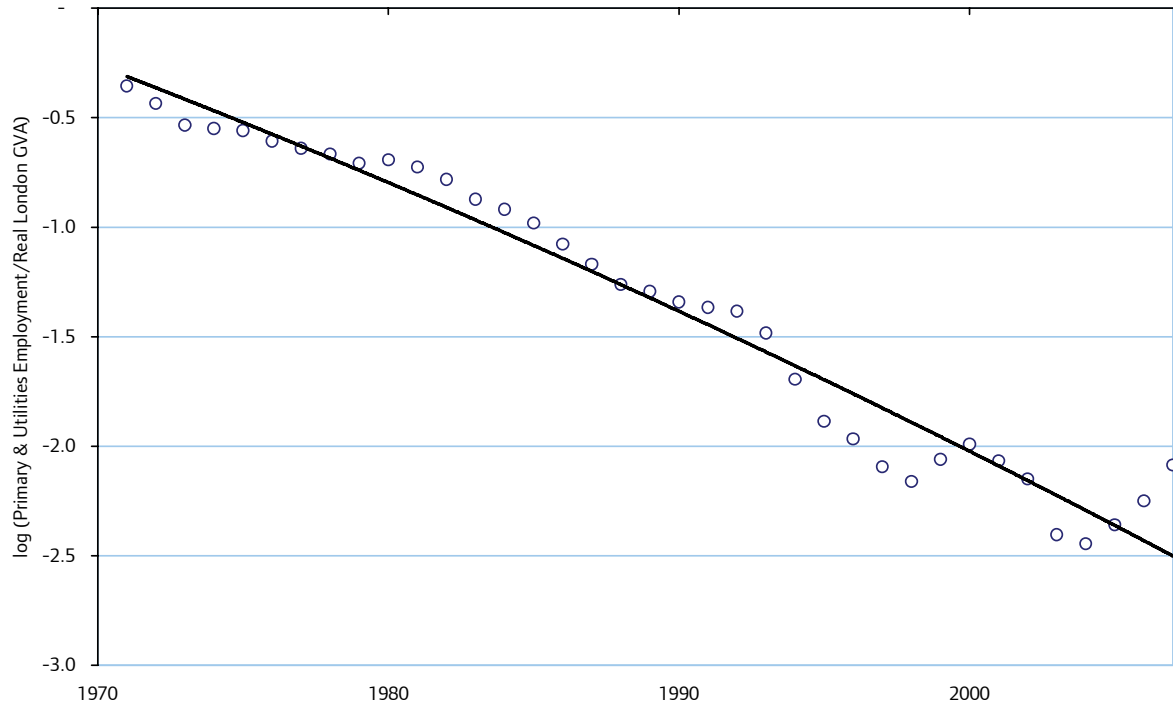
**Table 5 (cont.): London borough employment forecasts: history 2005-2007; forecast 2008-2031**

GVA Growth = 2.5% pa (000s)																	Total
	Hounslow	Islington	Kensington	Kingston	Lambeth	Lewisham	Merton	Newham	Redbridge	Richmond	Southwark	Sutton	Tower Hamlets	Waltham Forest	Wandsworth	Westminster	
2005	133	179	134	80	137	77	83	82	81	84	188	73	180	72	126	606	4,588
2006	132	182	130	86	137	76	80	85	75	92	202	73	202	73	127	609	4,632
2007	134	193	129	87	136	76	81	83	76	92	217	73	206	68	127	610	4,676
2008	133	195	129	87	136	77	81	83	76	94	221	73	210	69	128	612	4,706
2009	132	198	129	88	136	77	81	84	77	95	225	74	215	70	128	615	4,736
2010	131	200	129	89	135	77	81	85	77	97	229	74	220	71	129	617	4,767
2011	129	203	129	89	135	78	81	86	77	99	233	74	225	72	130	619	4,797
2012	128	206	129	90	134	78	81	87	77	101	237	75	230	73	130	621	4,828
2013	128	208	131	90	134	79	81	87	77	102	240	75	235	72	131	625	4,859
2014	128	211	132	90	133	80	82	88	77	103	243	75	241	72	132	628	4,890
2015	128	214	134	91	133	80	82	88	77	104	245	75	246	72	133	632	4,922
2016	128	217	136	91	132	81	82	88	77	105	248	76	251	71	133	636	4,953
2017	128	220	137	92	131	82	82	88	77	106	251	76	257	71	134	640	4,985
2018	128	224	139	92	131	83	82	88	77	107	254	76	262	71	135	643	5,017
2019	128	227	141	93	130	84	82	88	77	108	257	77	268	71	136	647	5,049
2020	128	230	142	93	130	84	83	89	77	109	259	77	274	70	137	651	5,082
2021	128	233	144	93	129	85	83	89	77	110	262	77	280	70	137	655	5,114
2022	128	236	146	94	129	86	83	89	77	111	265	78	286	70	138	658	5,147
2023	128	239	147	94	128	87	83	89	77	112	268	78	292	70	139	662	5,180
2024	128	243	149	95	127	88	83	89	77	114	271	78	298	69	140	666	5,213
2025	128	246	151	95	127	88	83	89	77	115	274	78	305	69	141	669	5,247
2026	128	249	152	96	126	89	83	89	77	116	277	79	311	69	141	673	5,280
2027	128	253	154	96	126	90	84	89	77	117	280	79	318	68	142	677	5,314
2028	128	256	156	96	125	91	84	89	77	118	283	79	324	68	143	681	5,348
2029	128	260	158	97	124	92	84	90	77	119	286	80	331	68	144	684	5,383
2030	127	263	160	97	124	92	84	90	77	120	289	80	338	67	144	688	5,417
2031	127	267	161	98	123	93	84	90	77	122	292	80	346	67	145	692	5,452

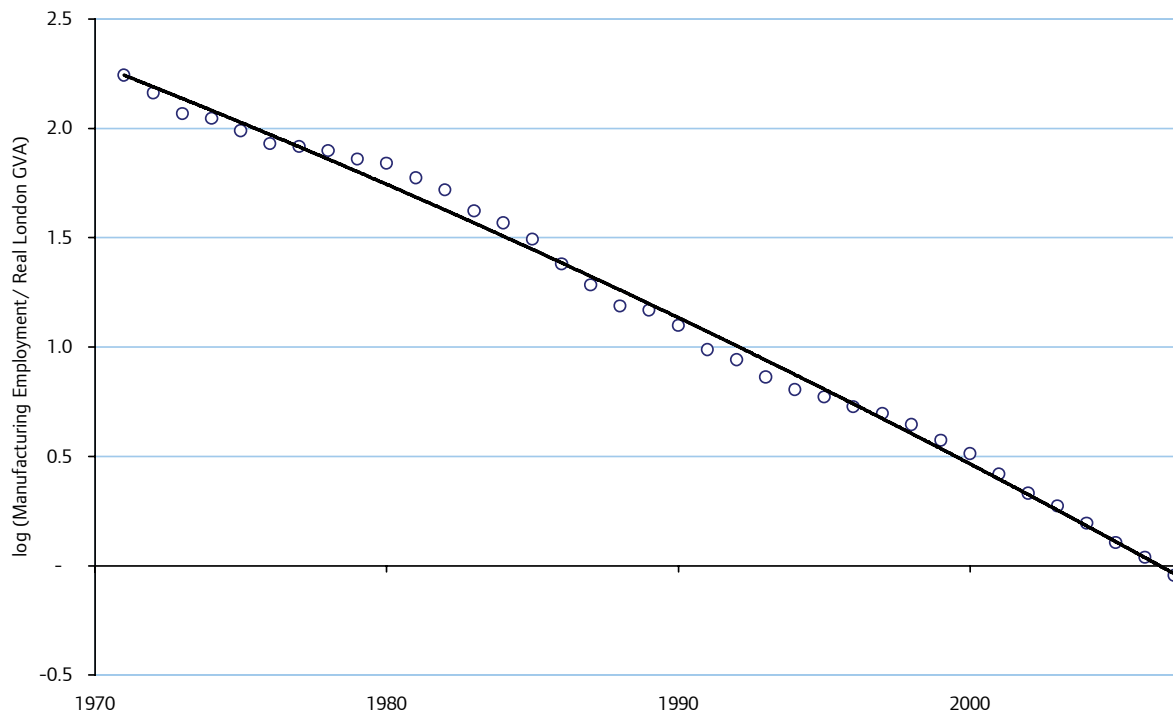


## 6 Appendix A: Historic sectoral employment charts

**Figure A1: Log of Primary and Utilities employment as a proportion of total output in London, 1971–2007**



**Figure A2: Log of Manufacturing employment as a proportion of total output in London, 1971–2007**



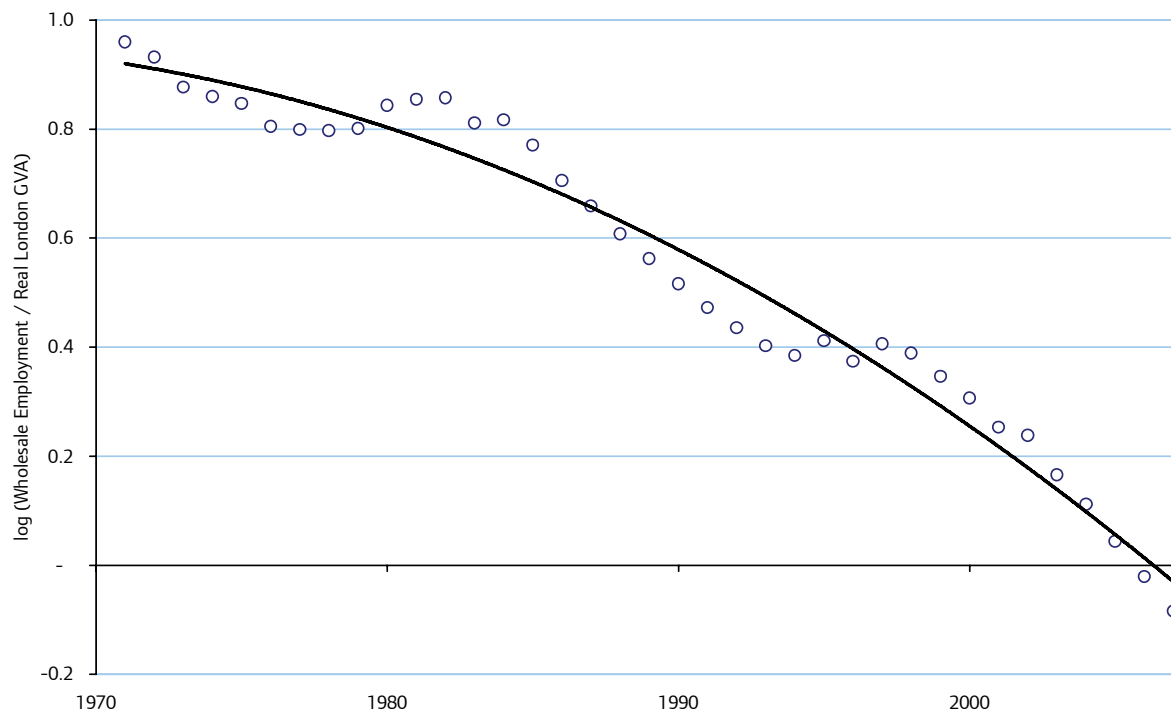
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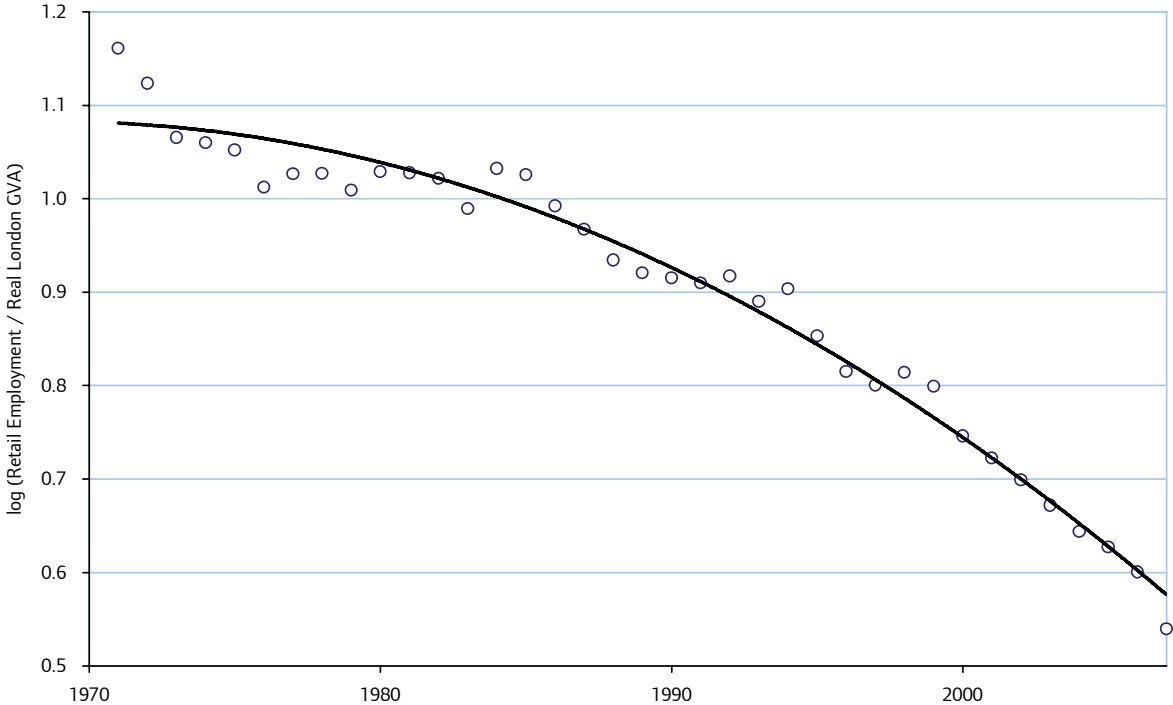
**Figure A3: Log of Construction employment as a proportion of total output in London, 1971–2007**



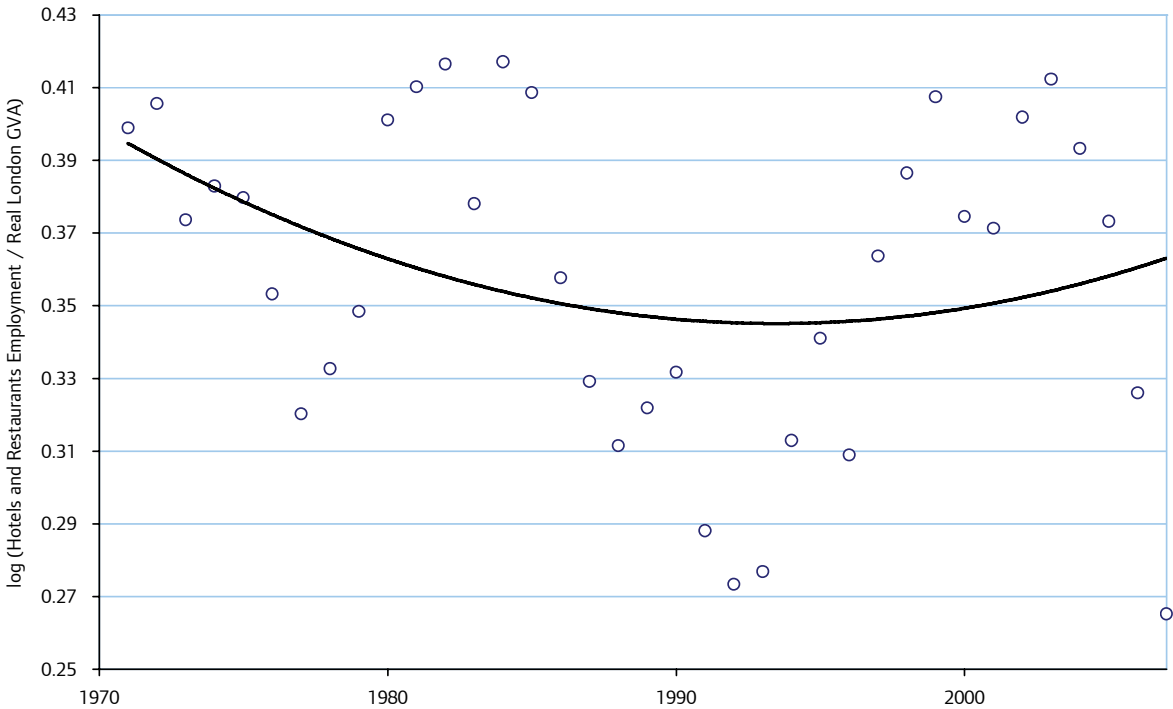
**Figure A4: Log of Wholesale employment as a proportion of total output in London, 1971–2007**



**Figure A5: Log of Retail employment as a proportion of total output in London, 1971– 2007**



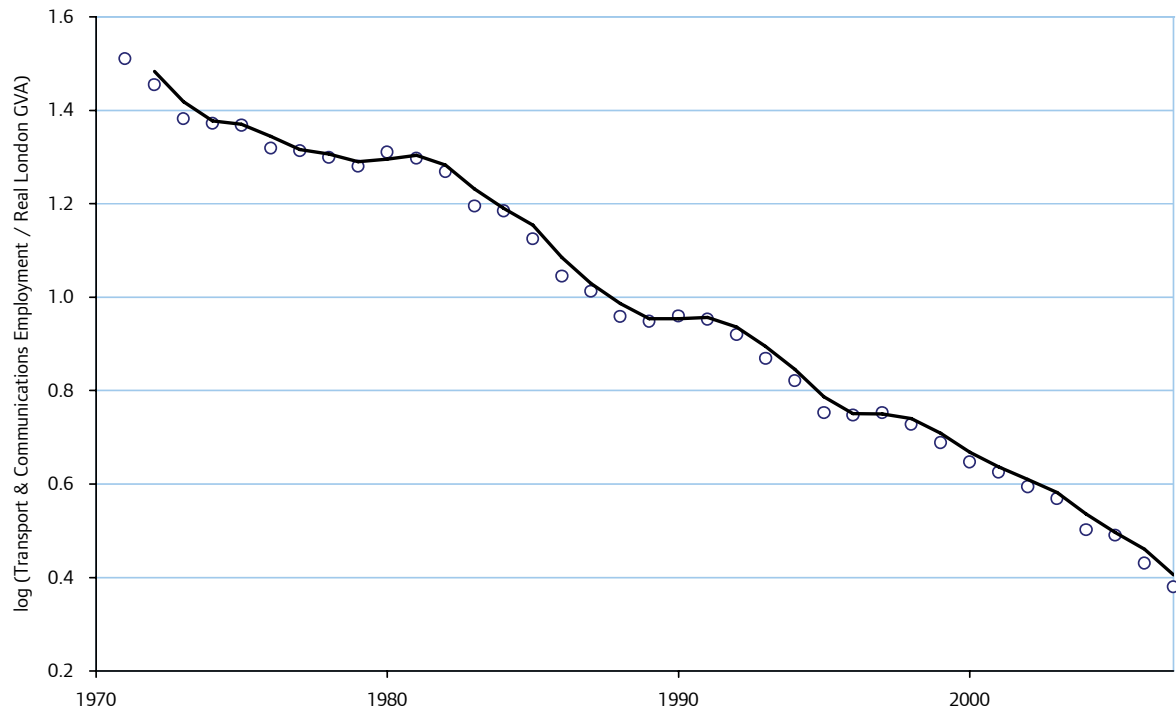
**Figure A6: Log of Hotels and Restaurant employment as a proportion of total output in London, 1971–2007**



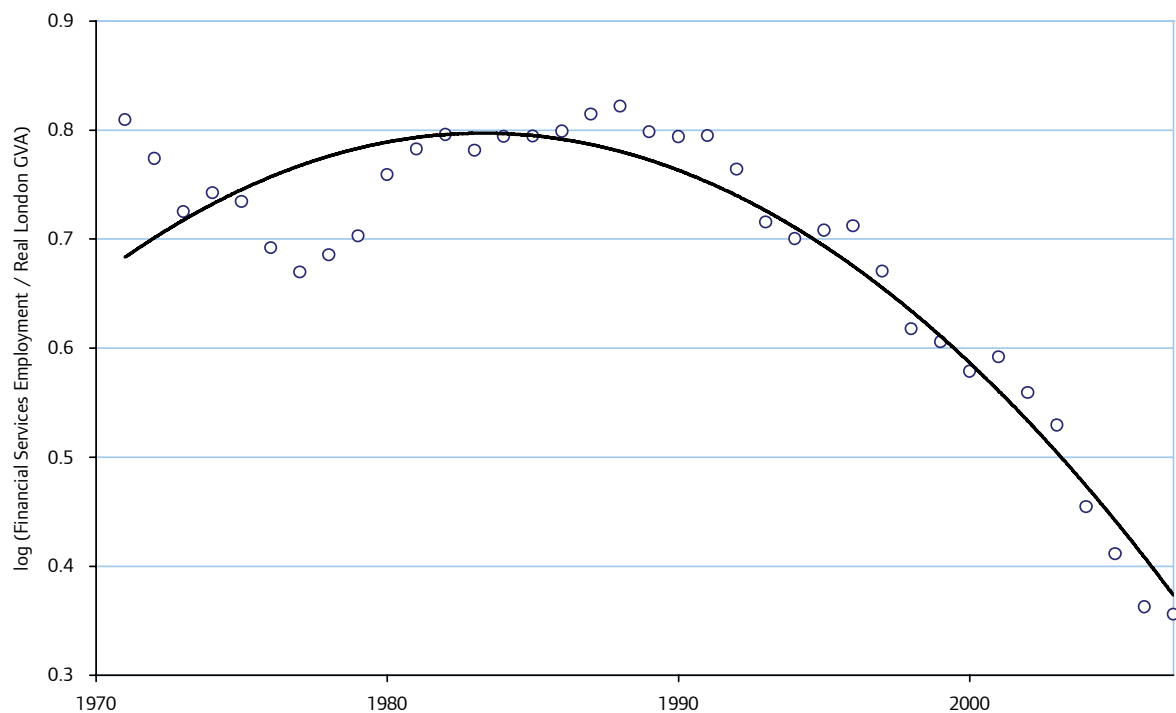
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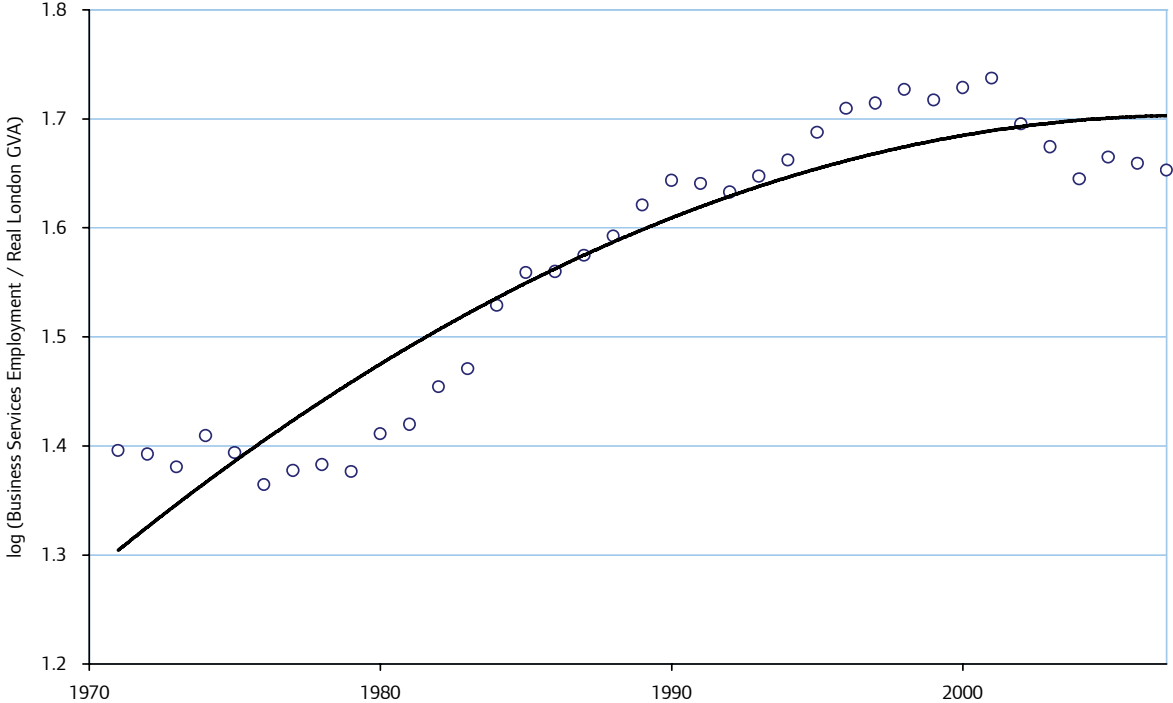
**Figure A7: Log of Transport and Communication employment as a proportion of total output in London, 1971–2007**



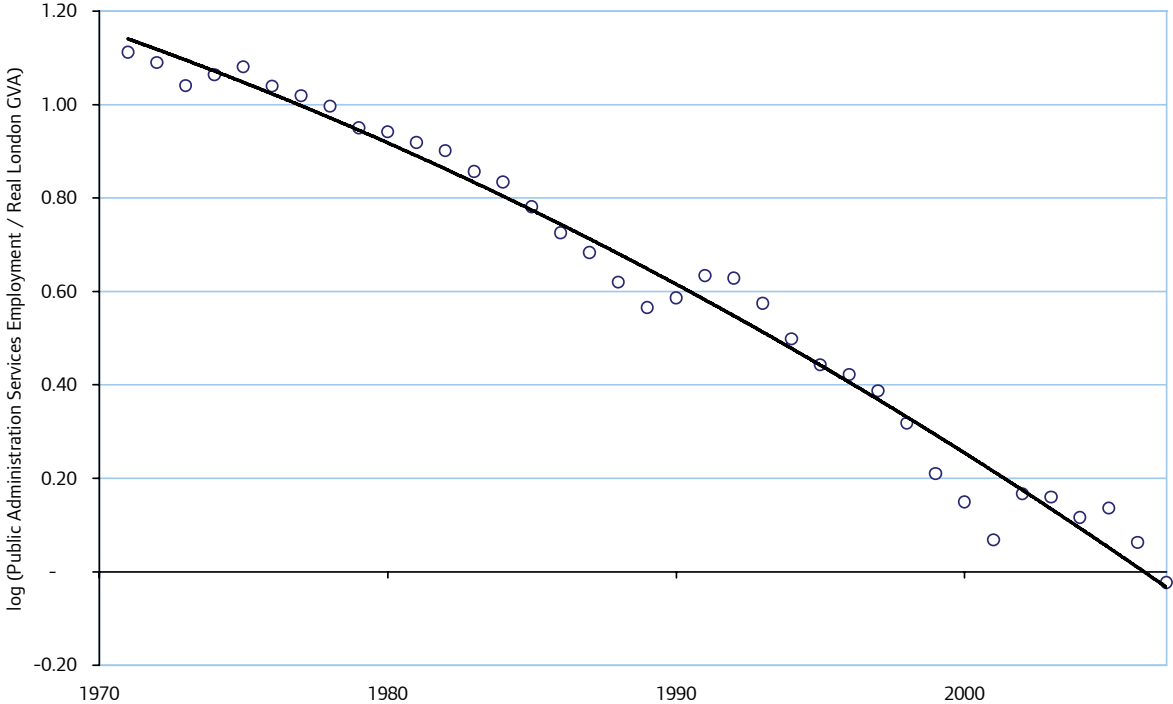
**Figure A8: Log of Financial Services employment as a proportion of total output in London, 1971–2007**



**Figure A9: Log of Business Services employment as a proportion of total output in London, 1971–2007**



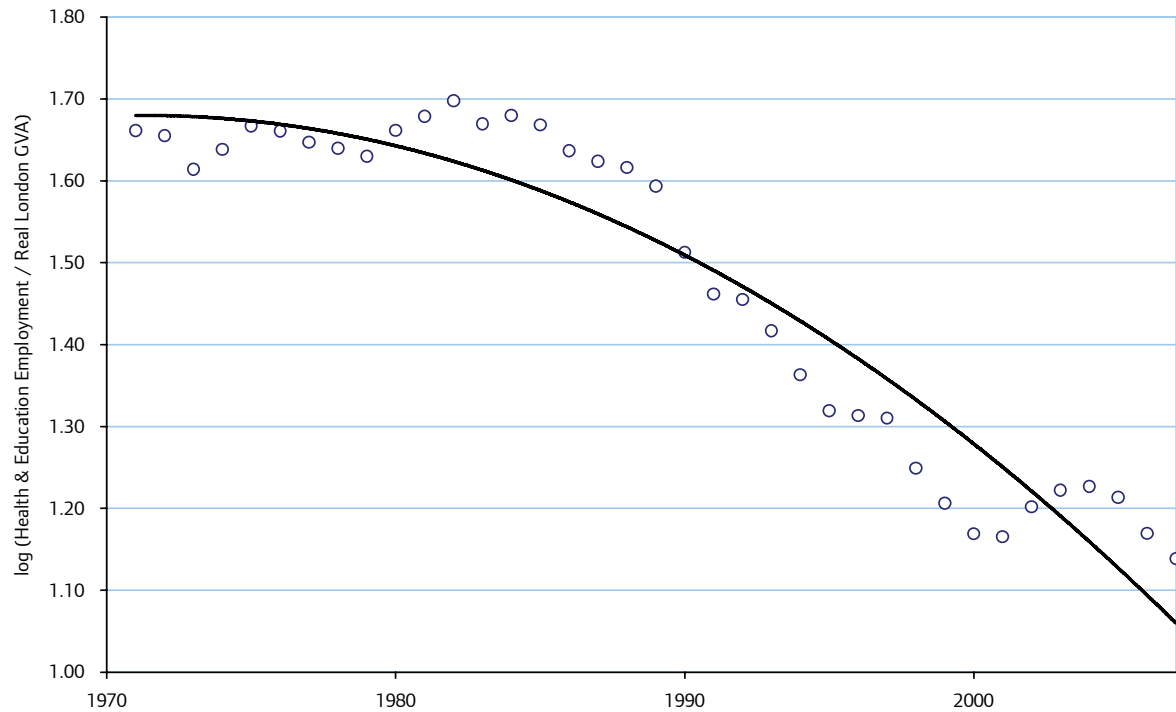
**Figure A10: Log of Public Administration employment as a proportion of total output in London, 1971–2004**



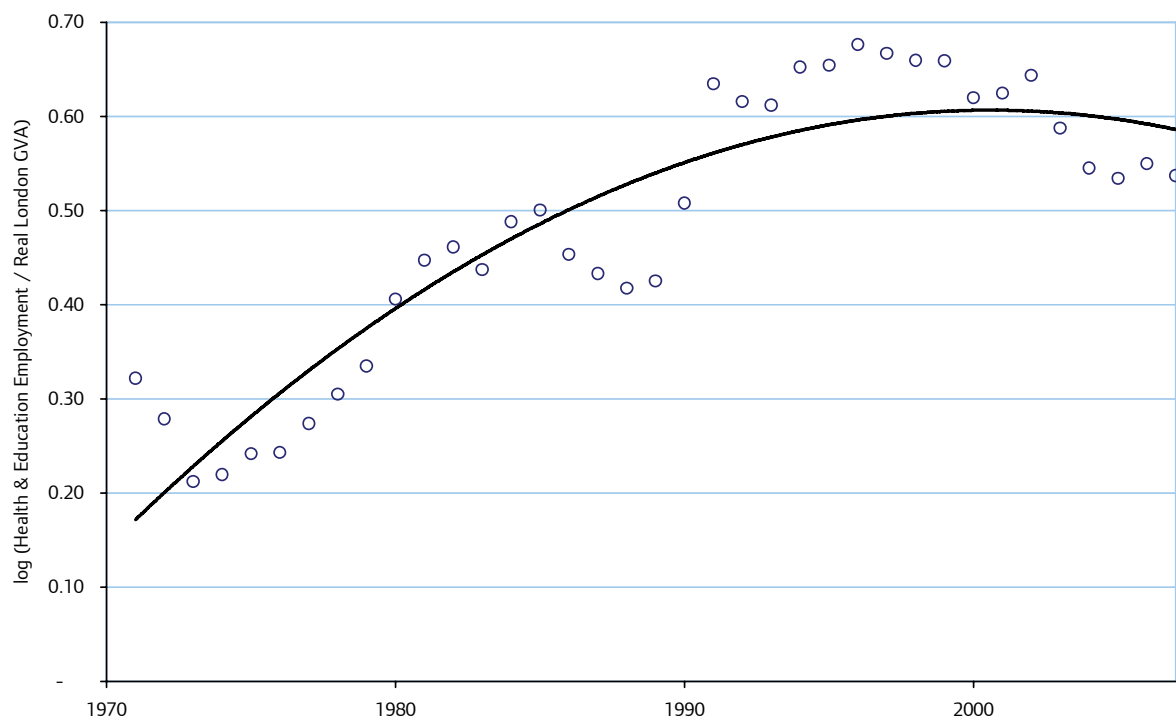
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**Figure A11: Log of Health and Education employment as a proportion of total output in London, 1971–2004**



**Figure A12: Log of Other Services employment as a proportion of total output in London, 1971–2007**

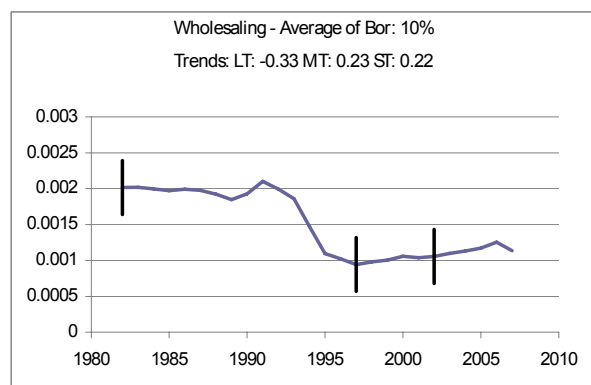
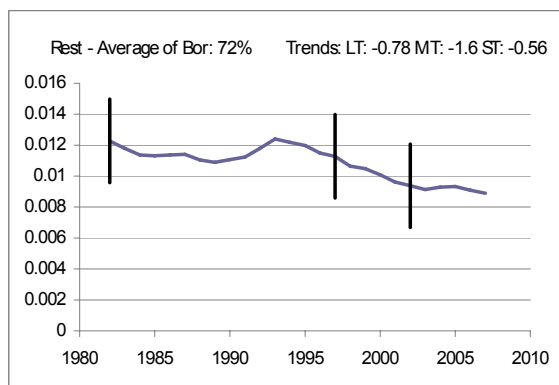
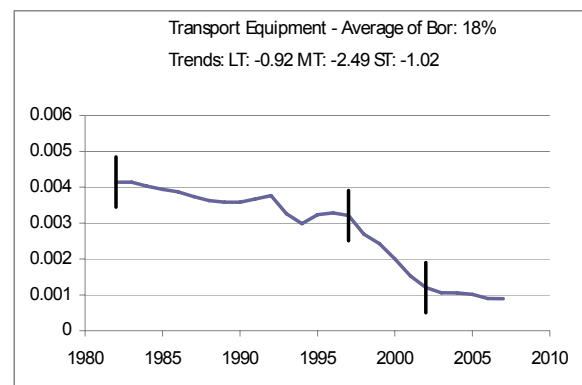


## 7 Appendix B: Historic employment trends by borough

The plots below show the historic proportions of total London employment for which key sectors within each of the boroughs account. Below each sector plot there is a percentage, showing the average historic proportion of employment for which the sector accounts within the borough, followed by the long, medium and short-term historic trends of the data (rescaled by the proportion of employment). The blue/grey lines show what we define to be the short, medium and long-terms. The short-term is from 2002-2007, the medium-term is 1997-2007 and the long-term is 1982-2007.

To calculate the overall employment trend, we can simply add the values of the rescaled trends. For example, in Barking, the short-term trend value for Transport Equipment was -1.02 per cent, for Wholesaling it was 0.22 per cent and for the rest of the sectors it was -0.56 per cent. The overall short-term trend was therefore -1.32 per cent.

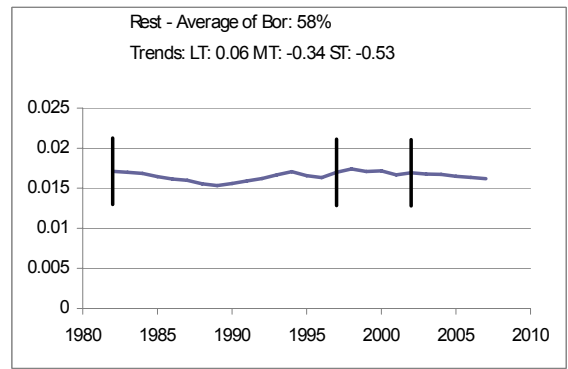
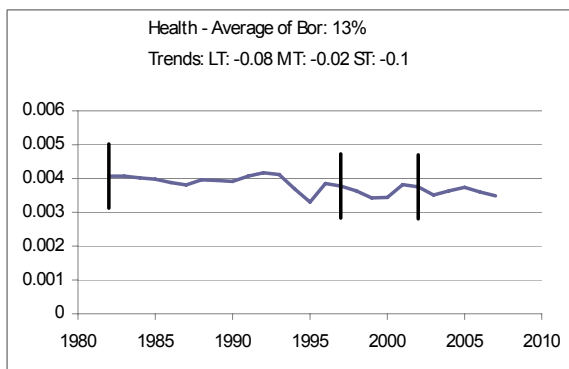
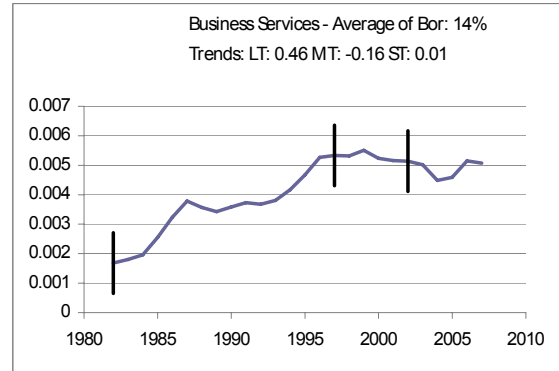
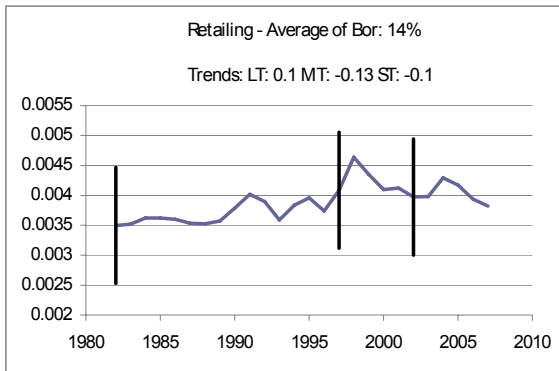
Barking and Dagenham



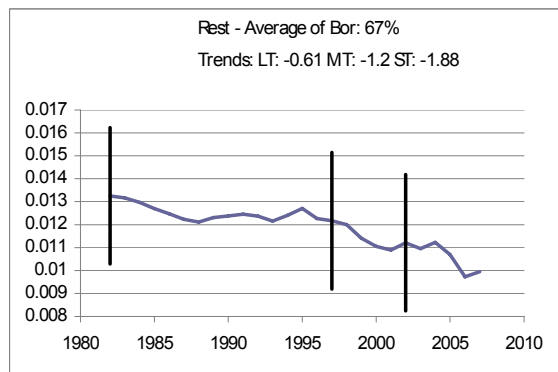
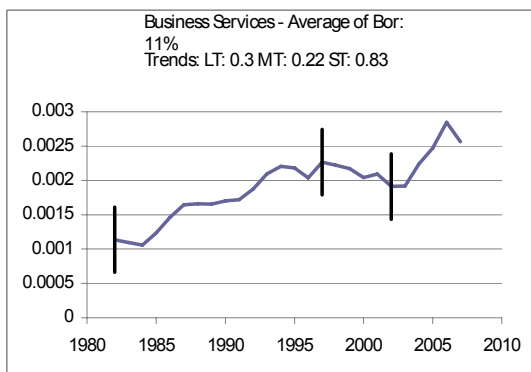
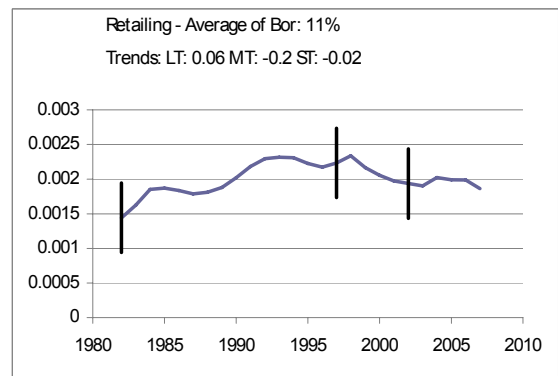
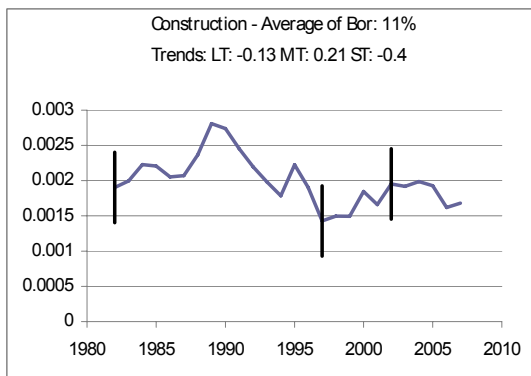
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Barnet

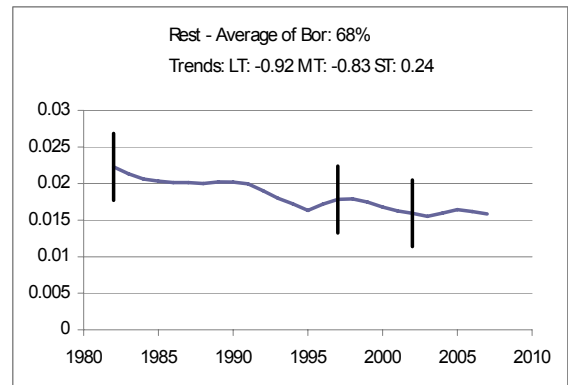
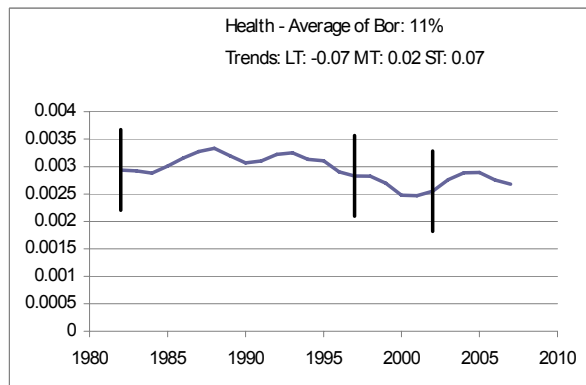
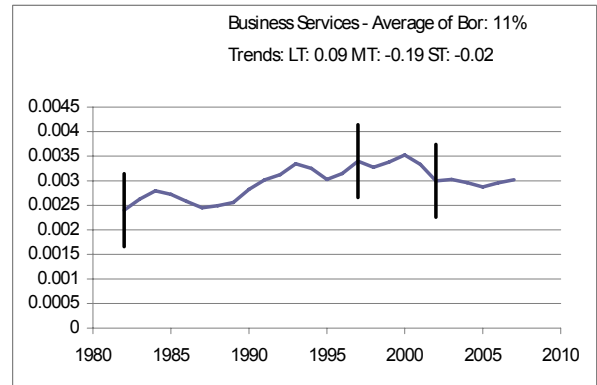
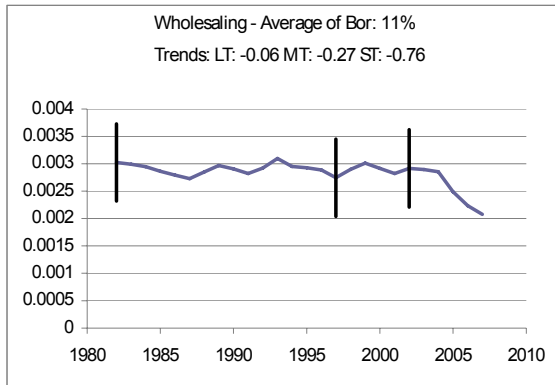


Bexley

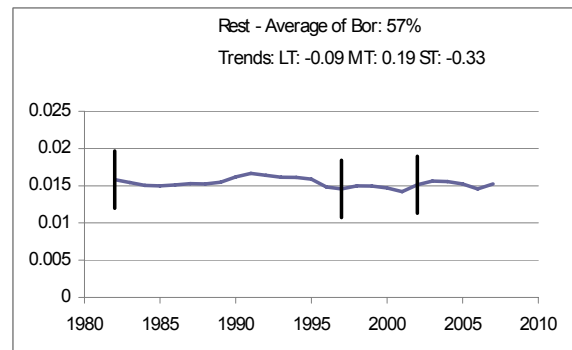
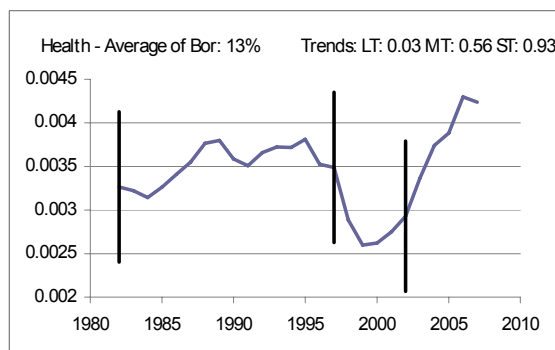
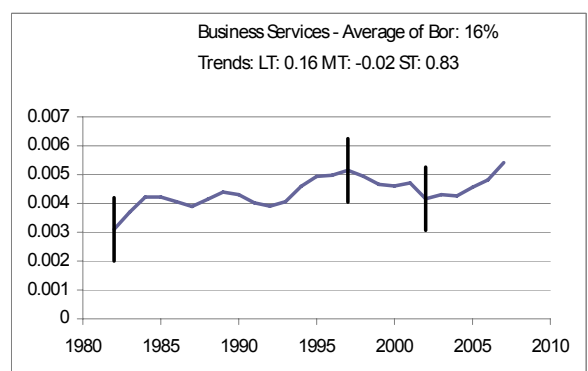
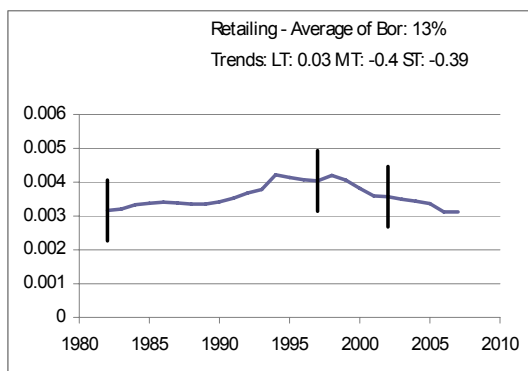




**Brent**



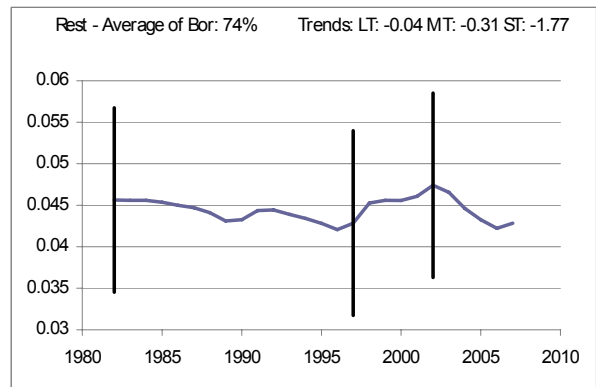
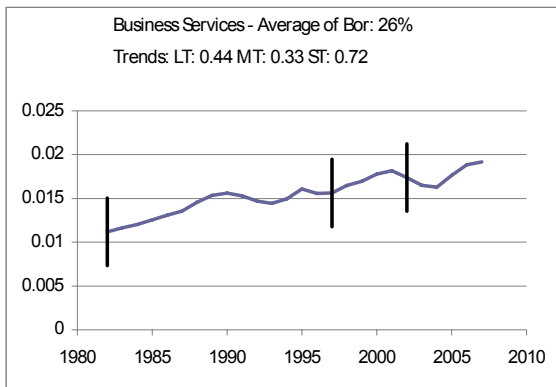
**Bromley**



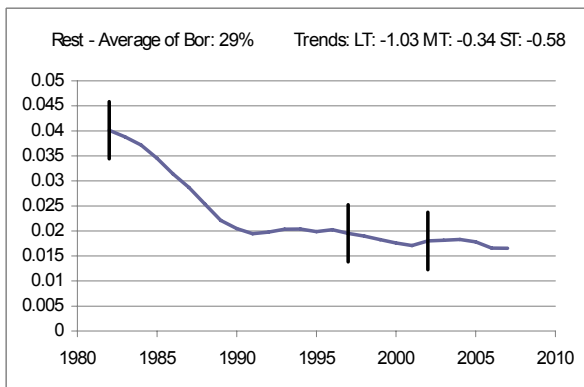
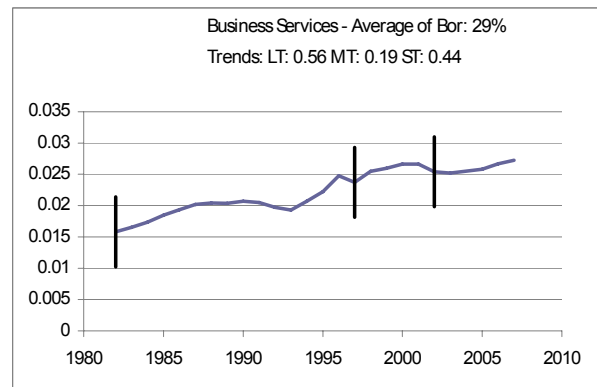
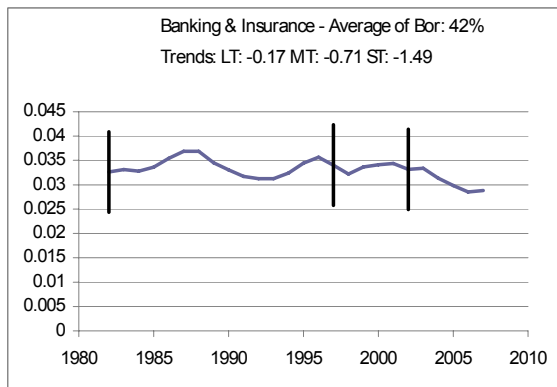
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Camden

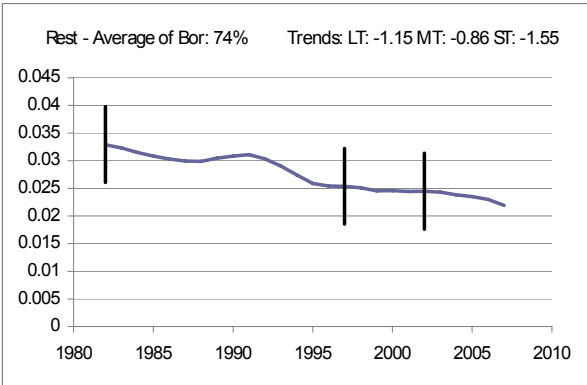
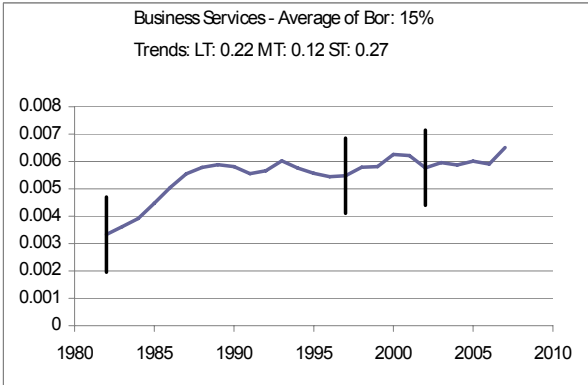
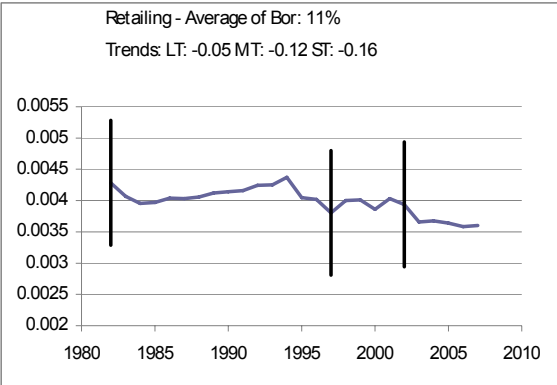


City of London

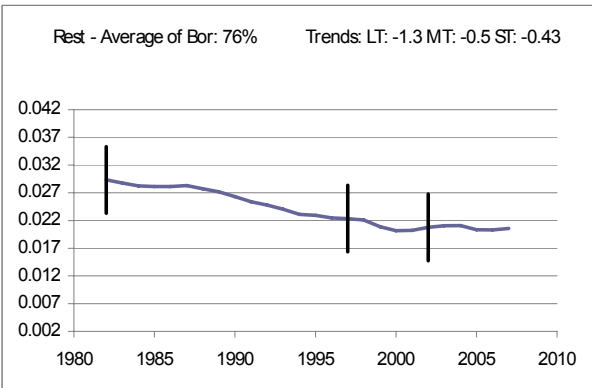
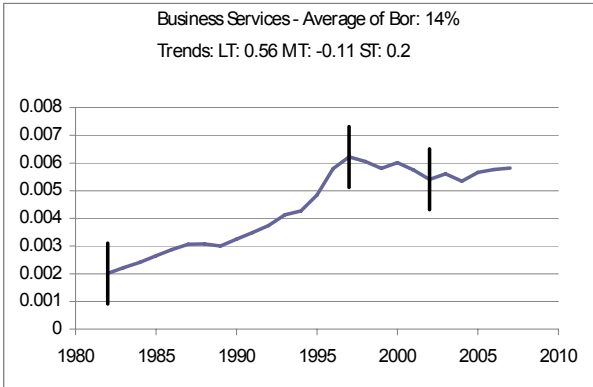
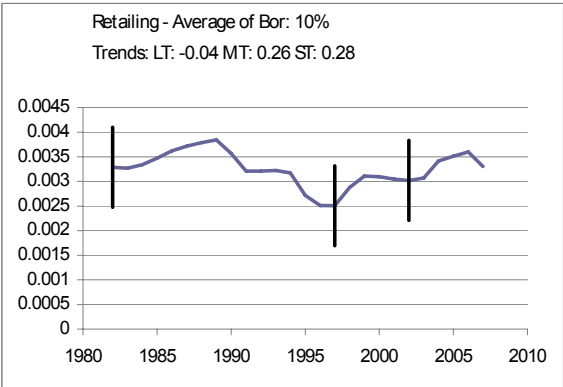


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Croydon



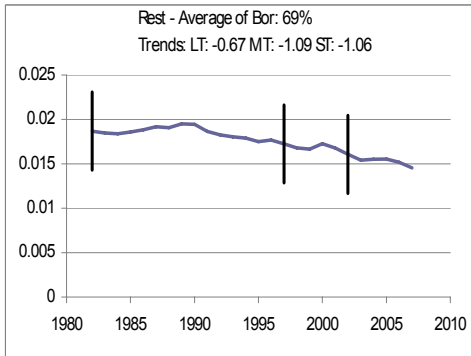
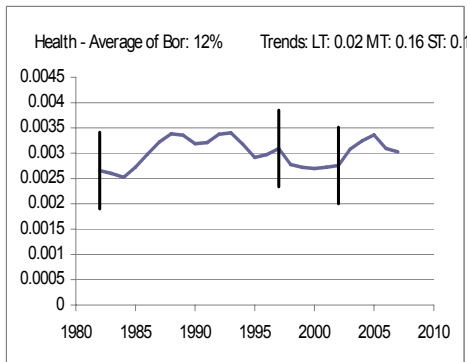
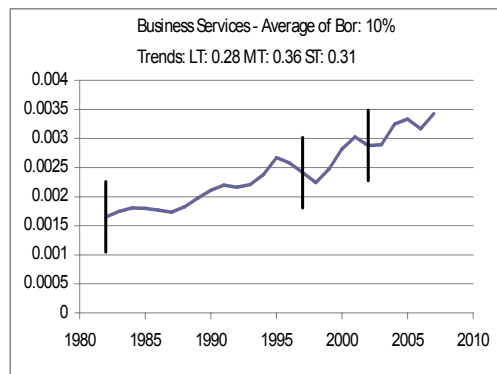
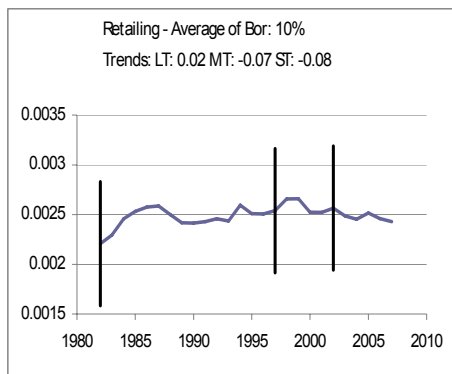
Ealing



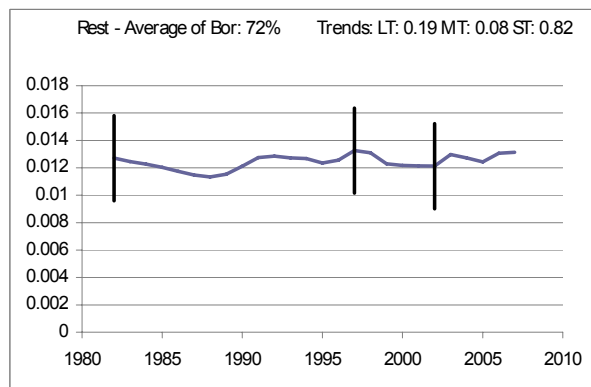
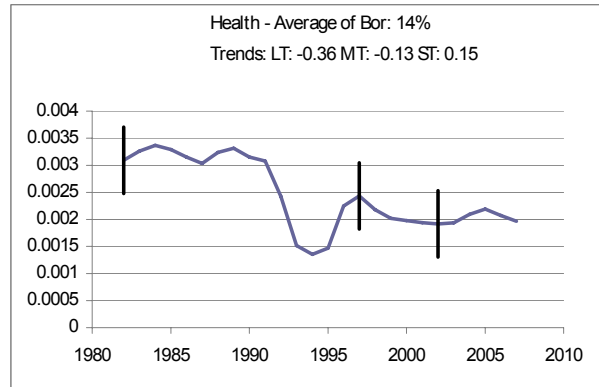
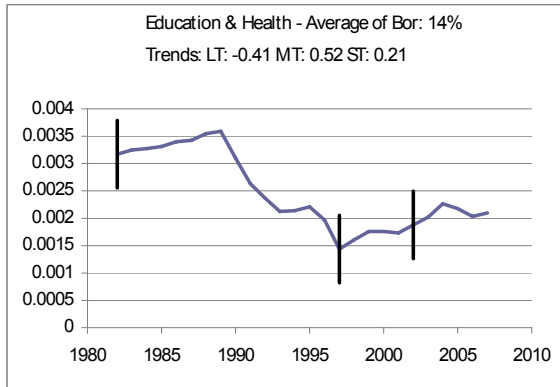
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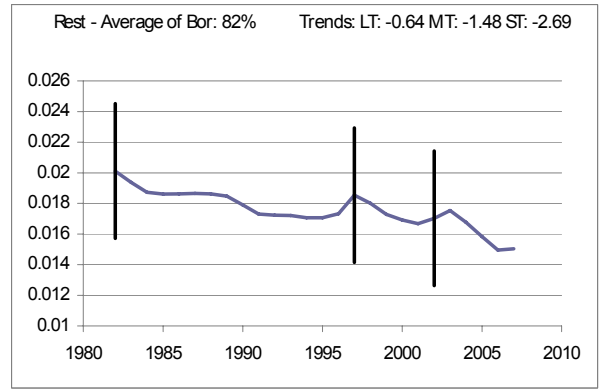
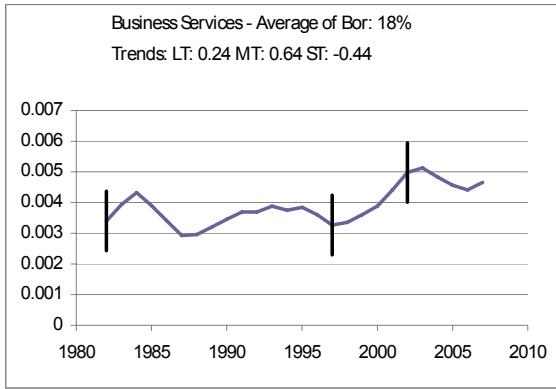
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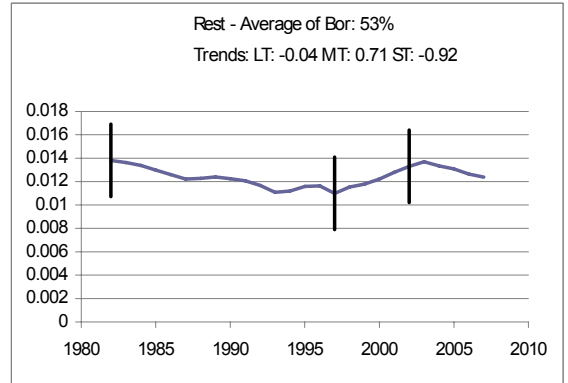
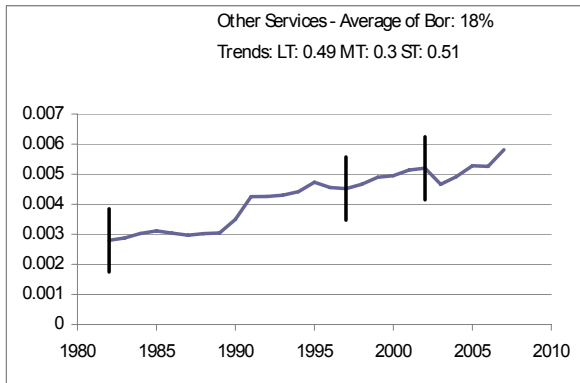
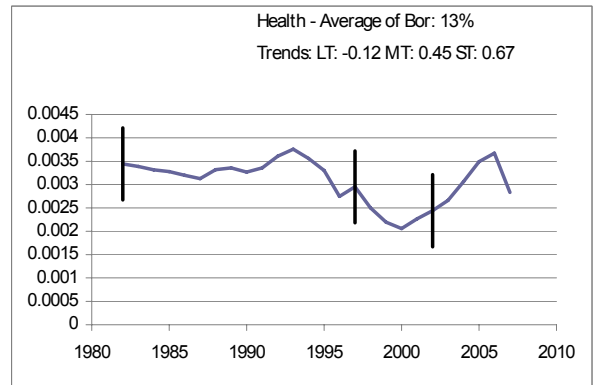
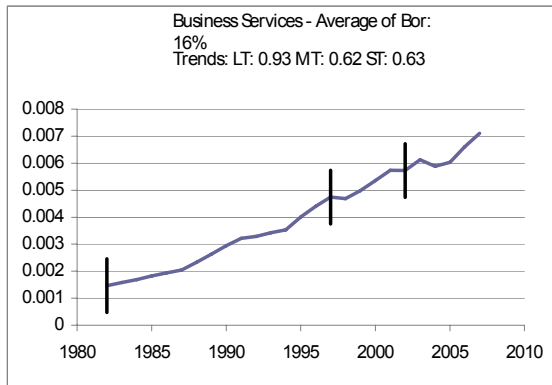
Greenwich



Hackney



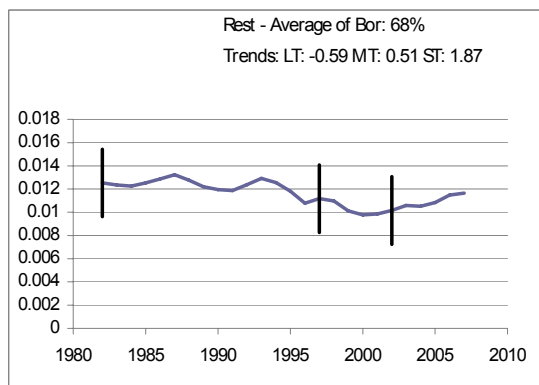
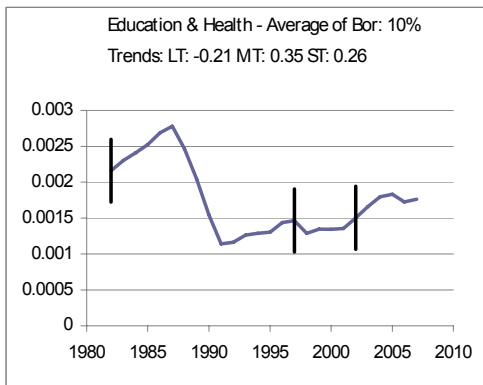
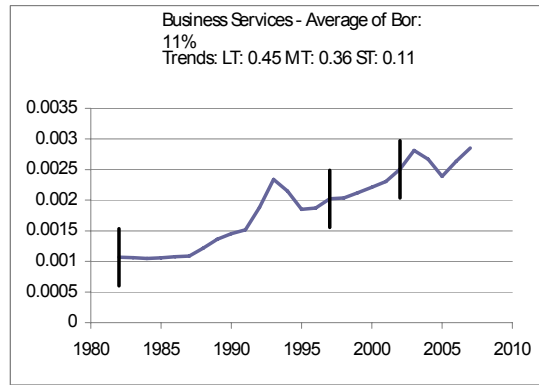
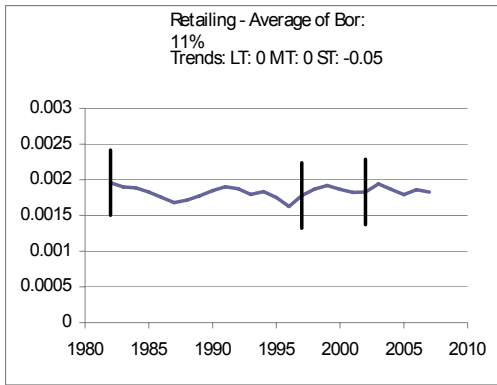
Hammersmith and Fulham



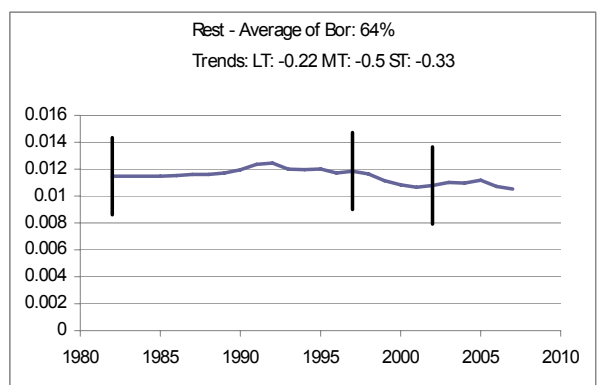
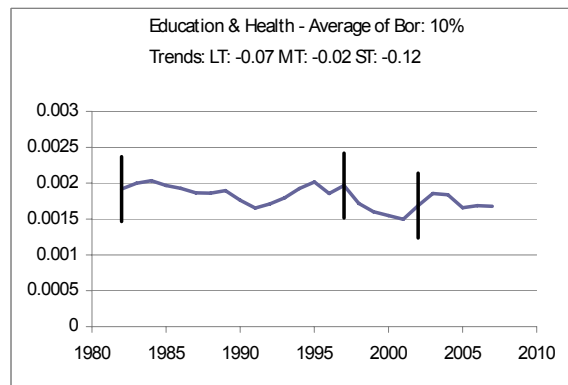
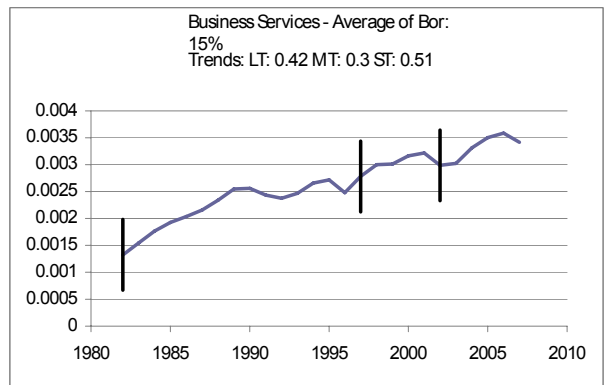
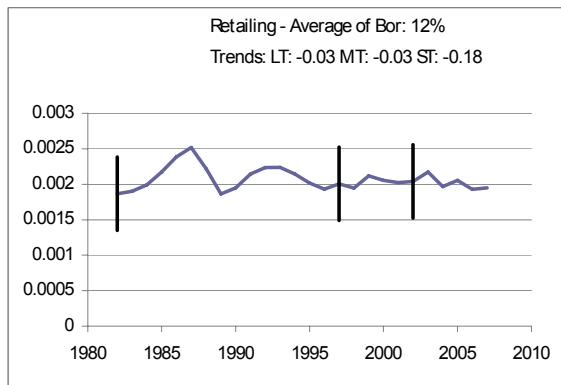
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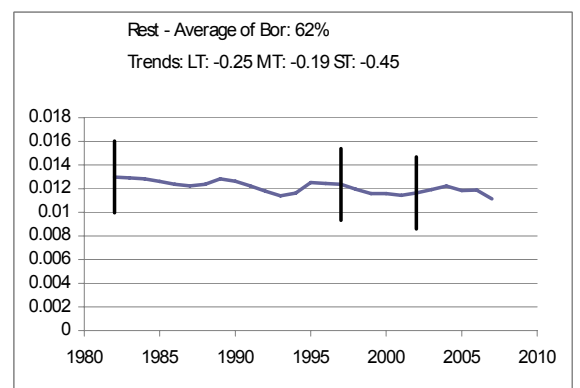
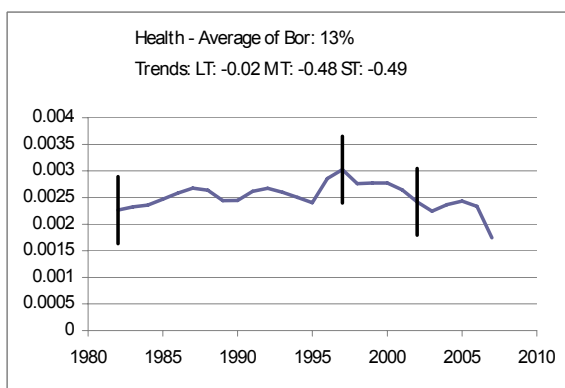
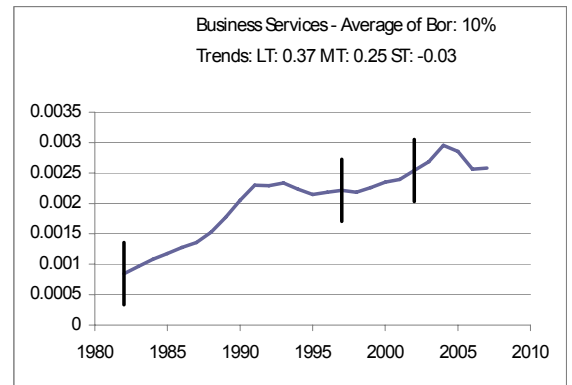
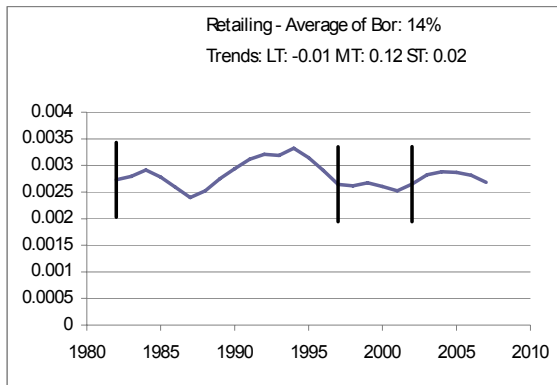
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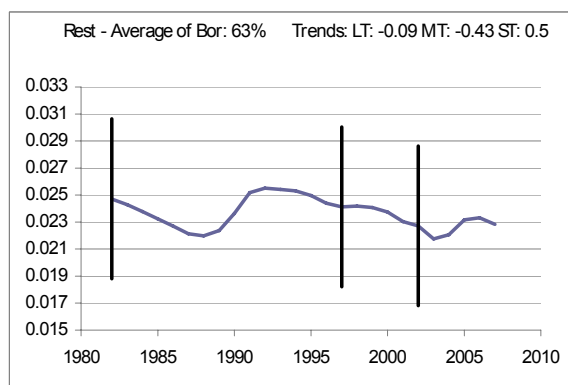
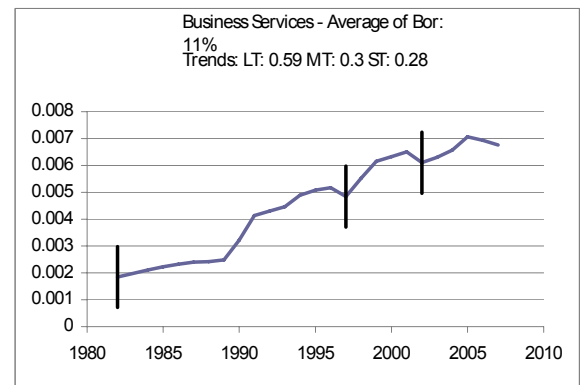
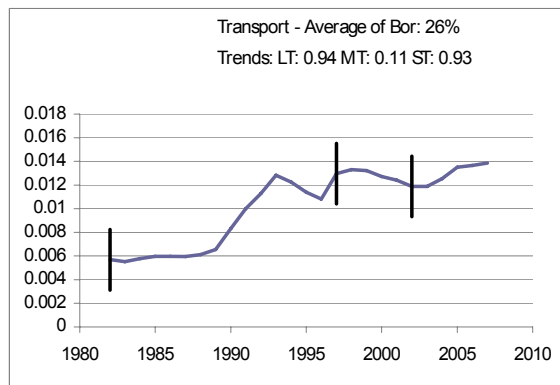
Harrow



Havering



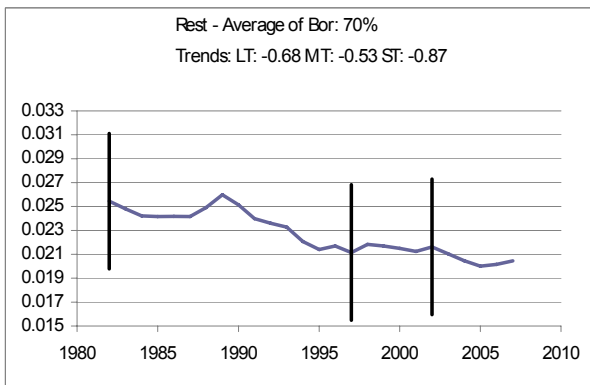
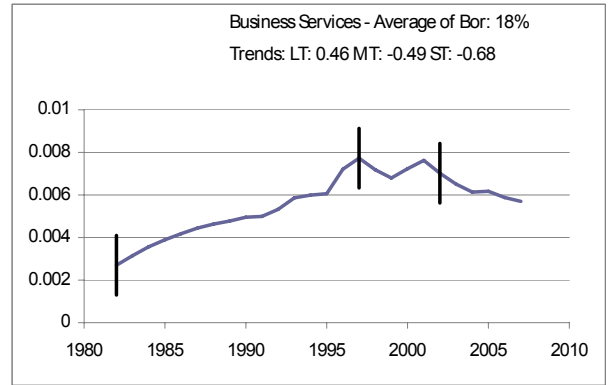
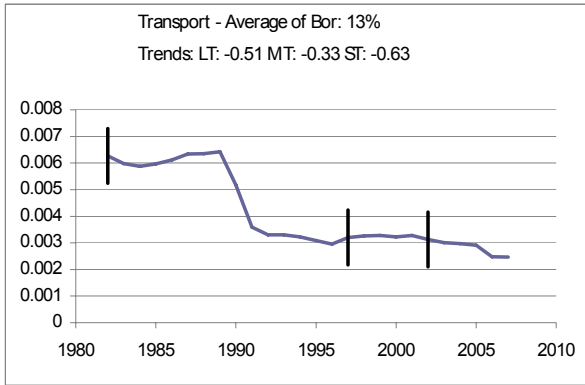
Hillingdon



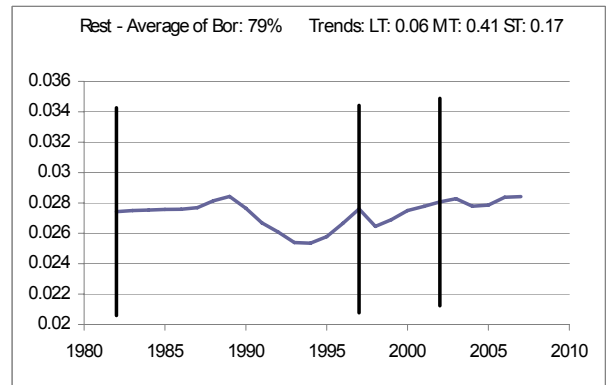
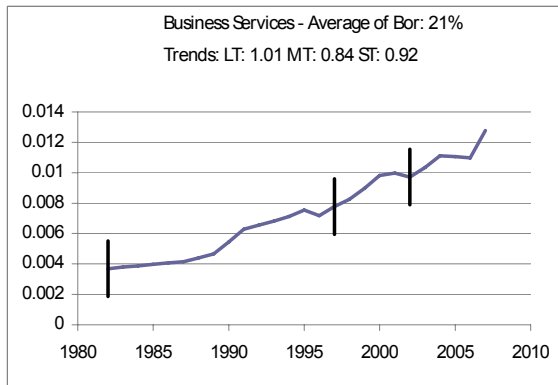
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Hounslow



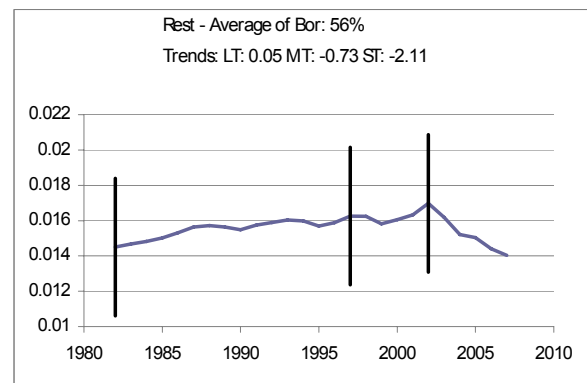
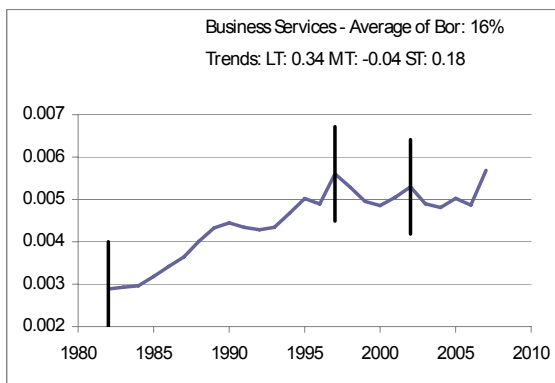
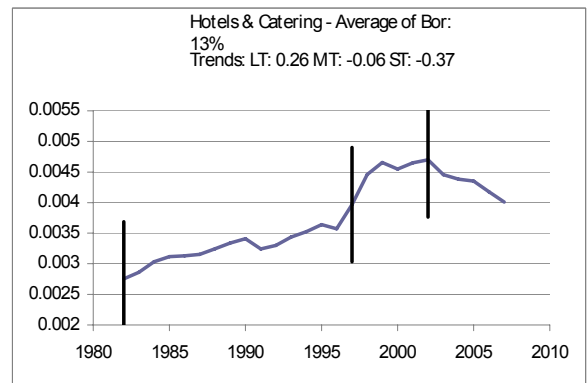
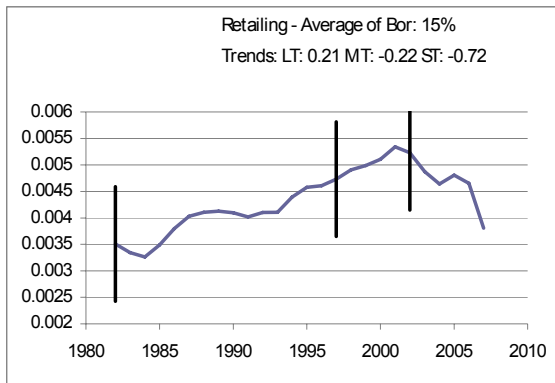
Islington



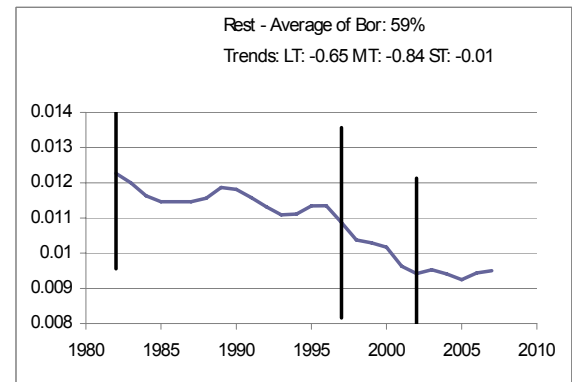
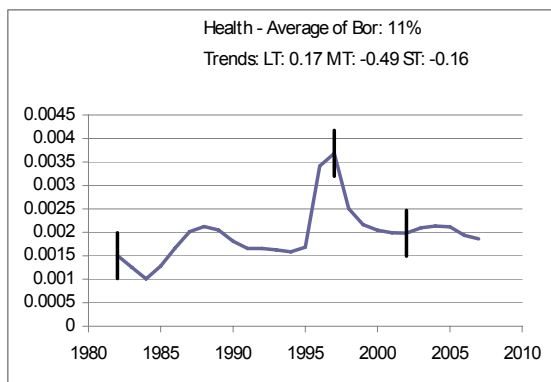
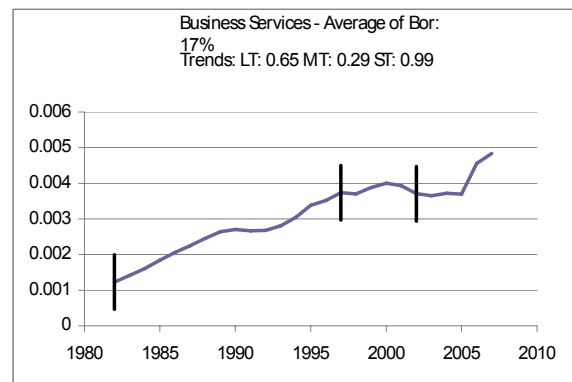
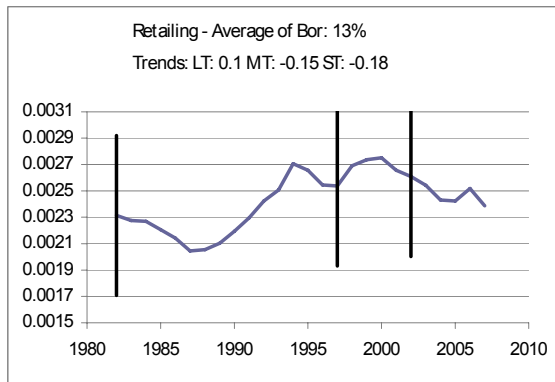


Employment projections for London by sector and trend-based projections by borough

Kensington and Chelsea



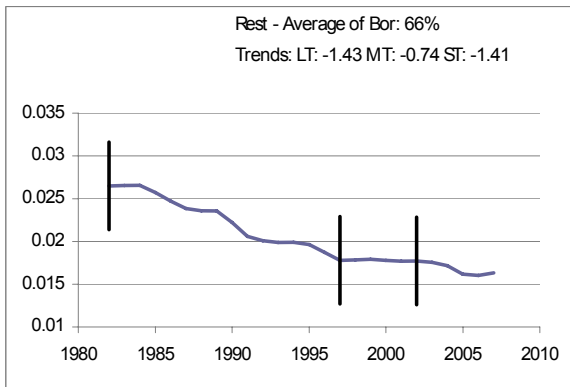
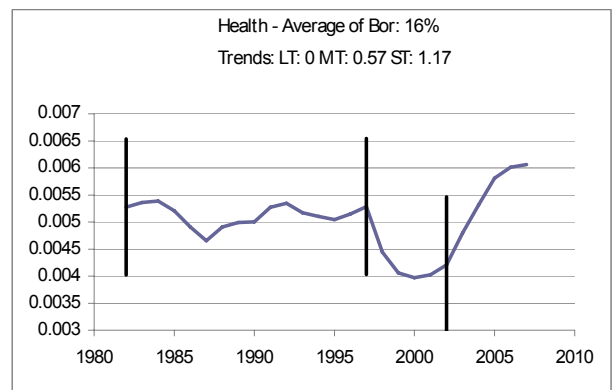
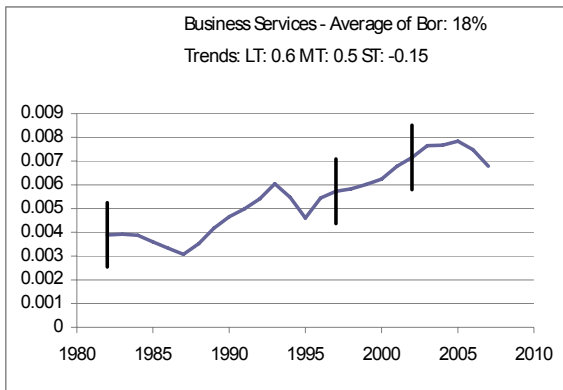
Kingston upon Thames



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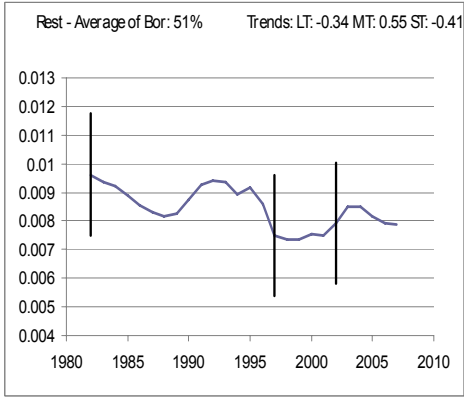
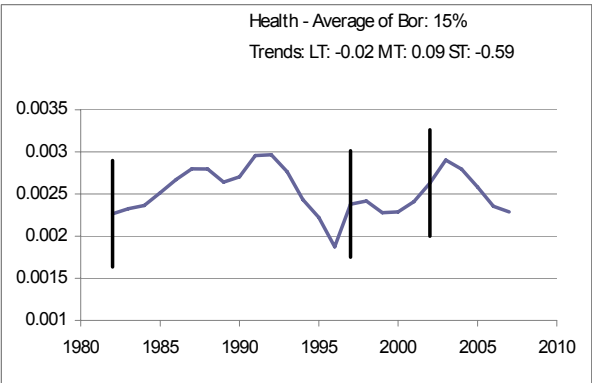
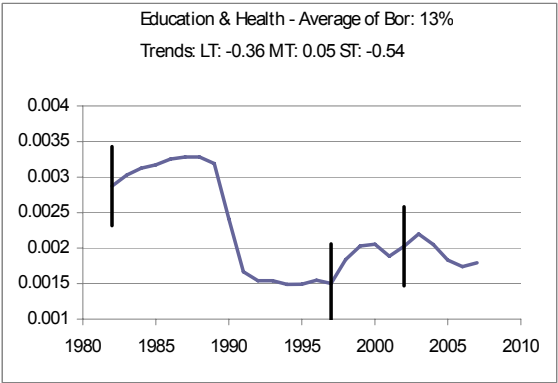
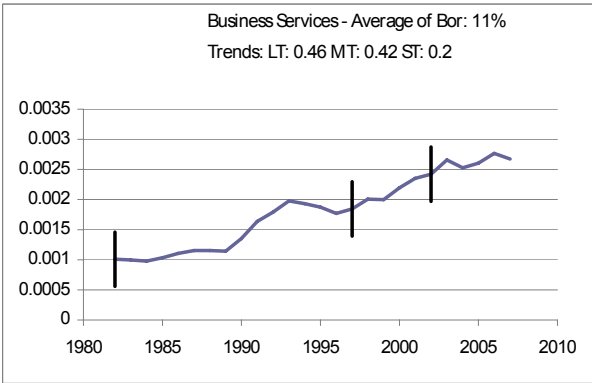
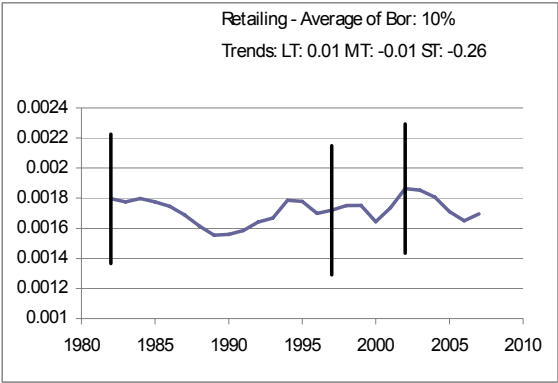
Employment projections for London by sector and trend-based projections by borough

Lambeth



Employment projections for London by sector and trend-based projections by borough

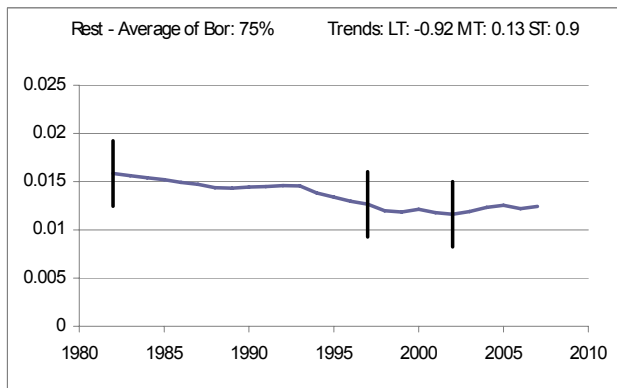
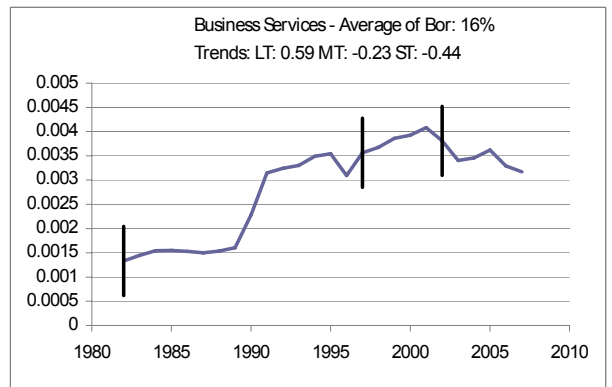
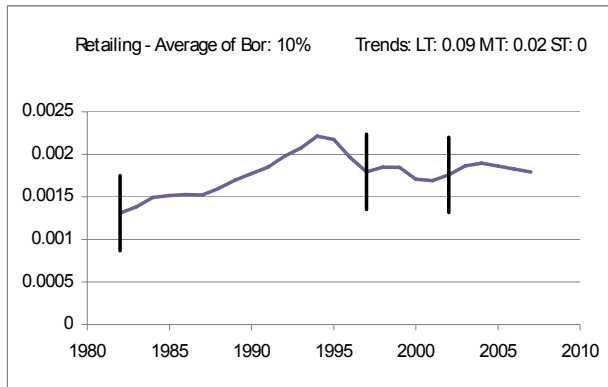
Lewisham



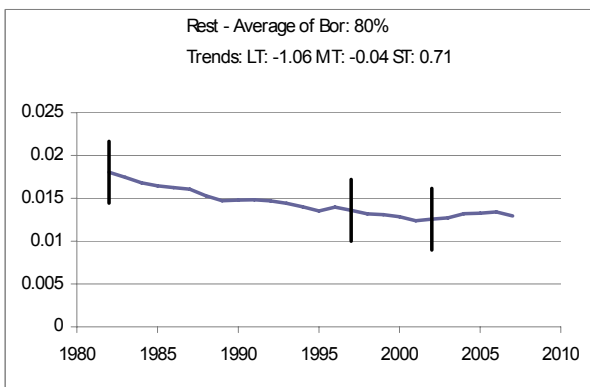
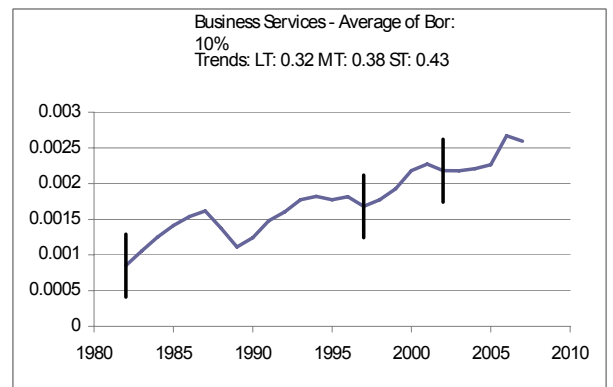
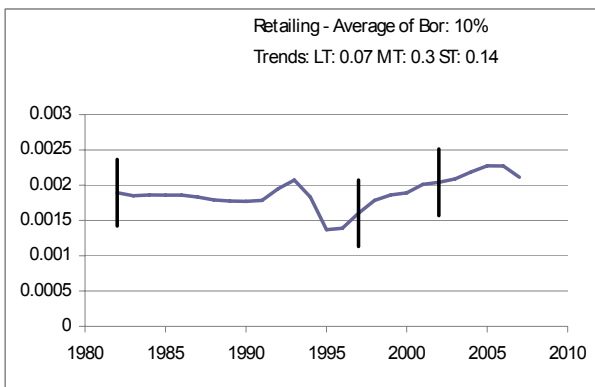
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Merton

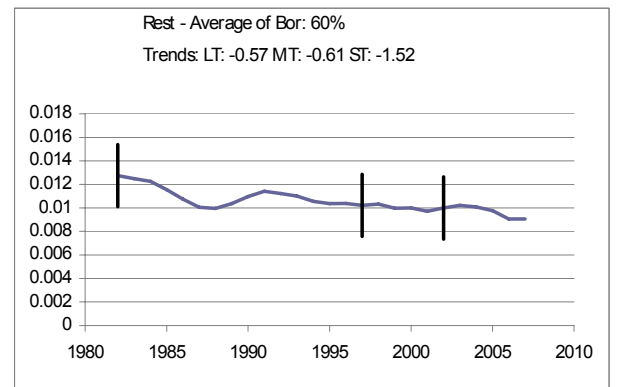
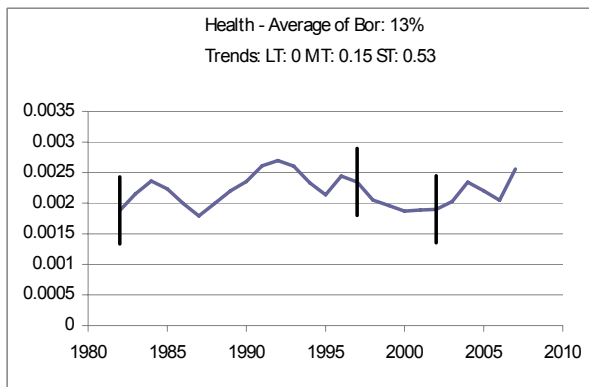
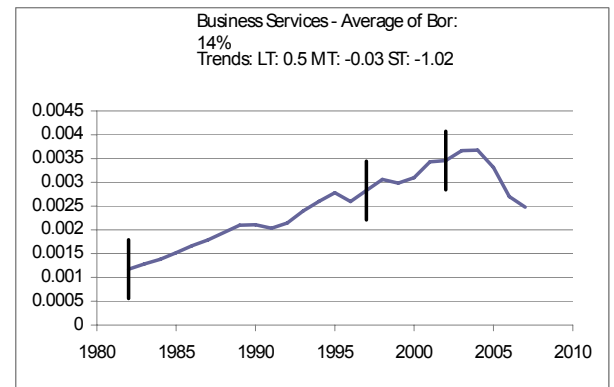
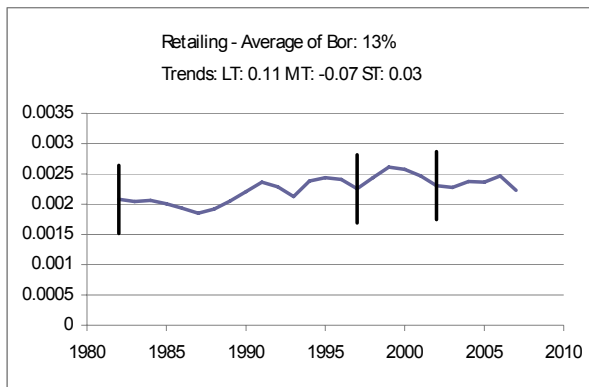


Newham

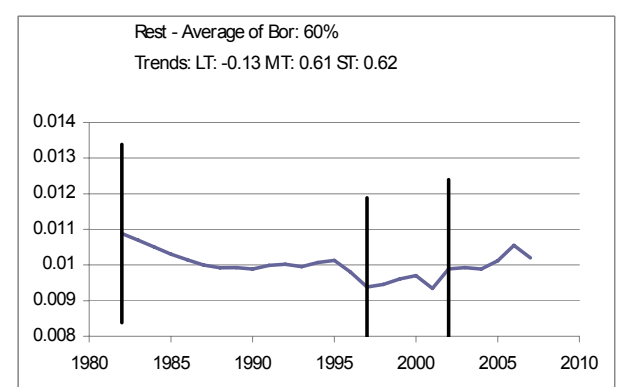
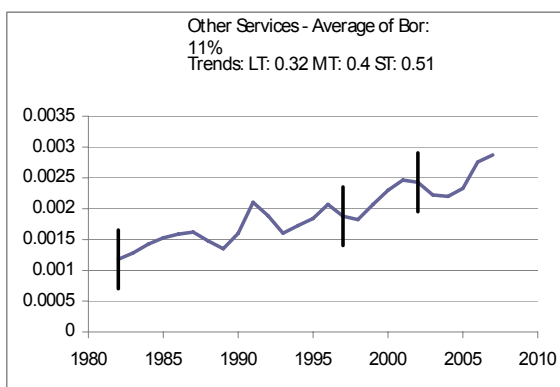
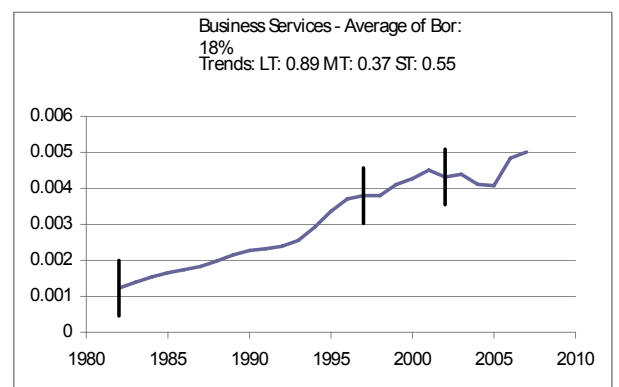
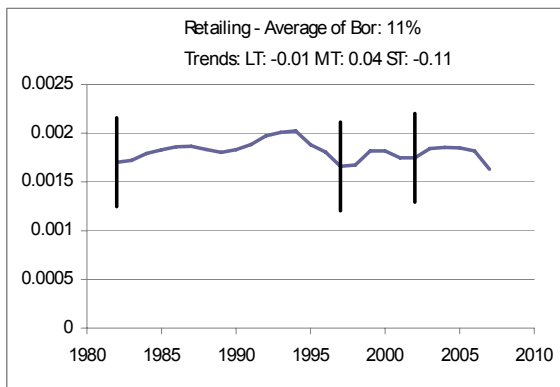


Employment projections for London by sector and trend-based projections by borough

Redbridge



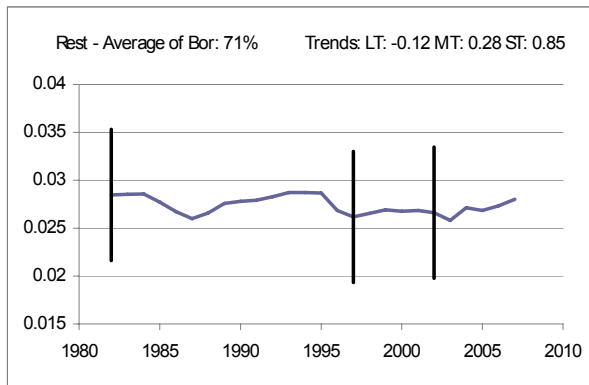
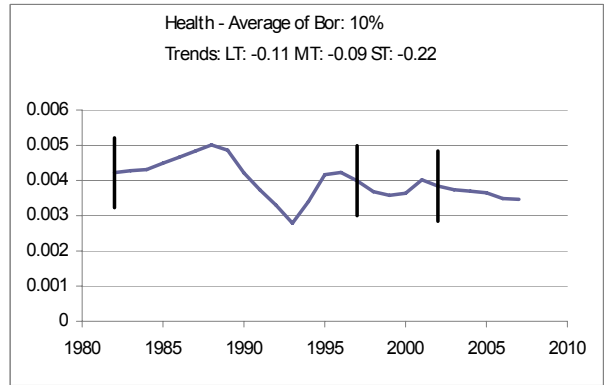
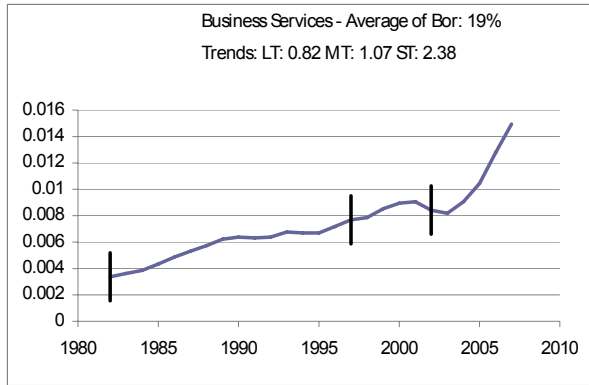
Richmond



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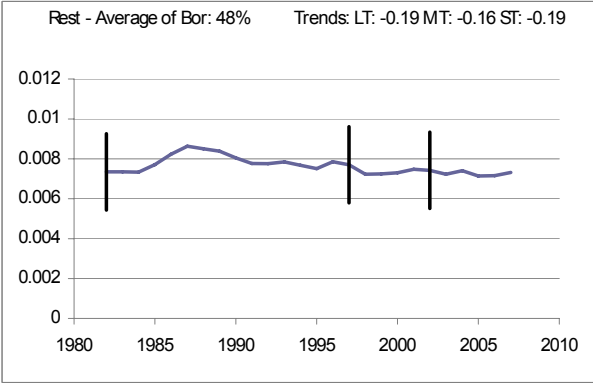
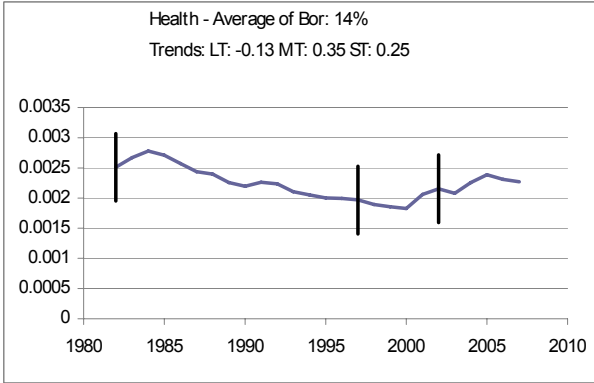
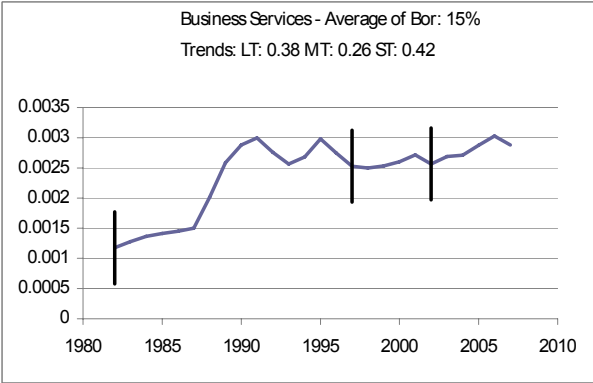
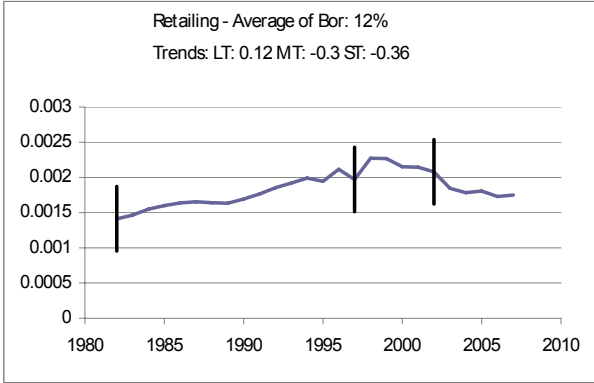
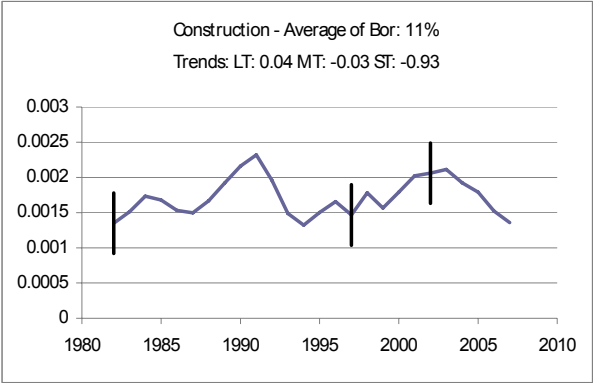
Employment projections for London by sector and trend-based projections by borough

Southwark



Employment projections for London by sector and trend-based projections by borough

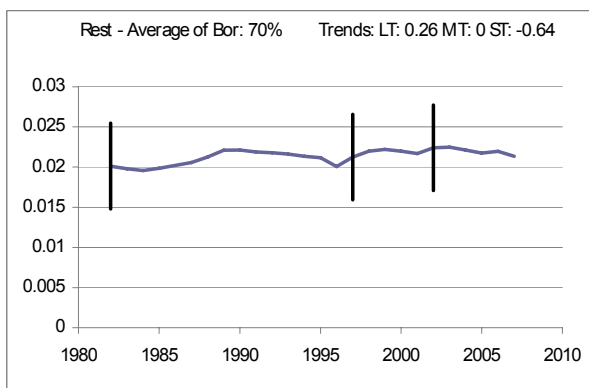
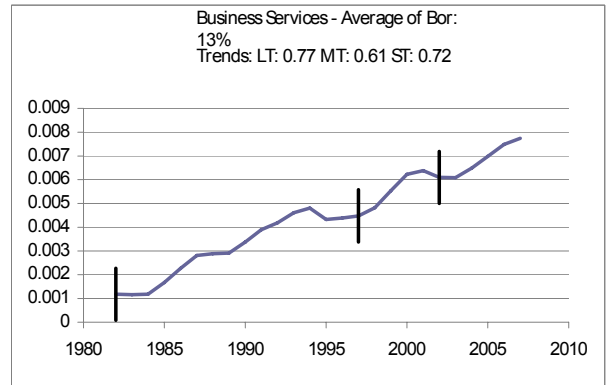
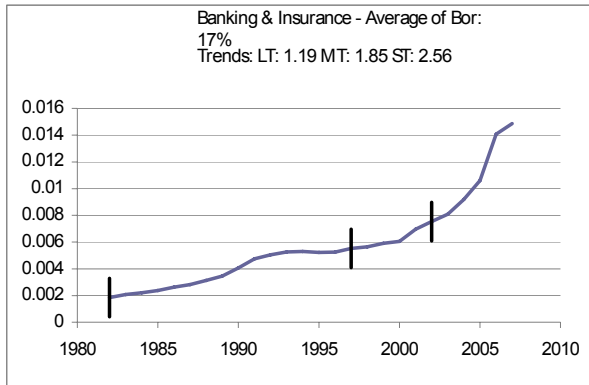
Sutton



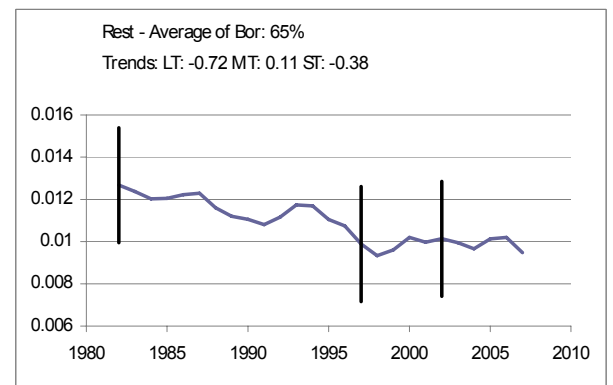
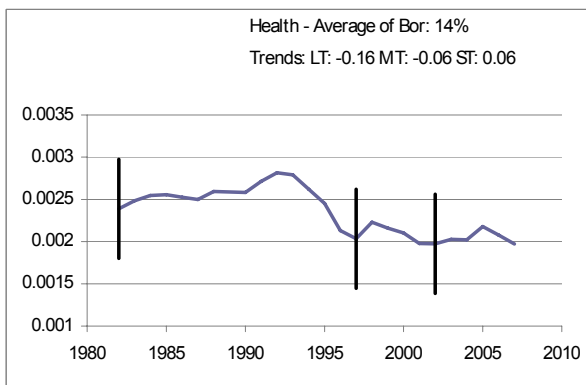
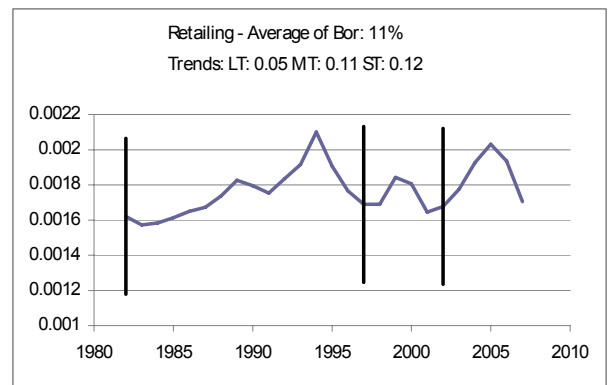
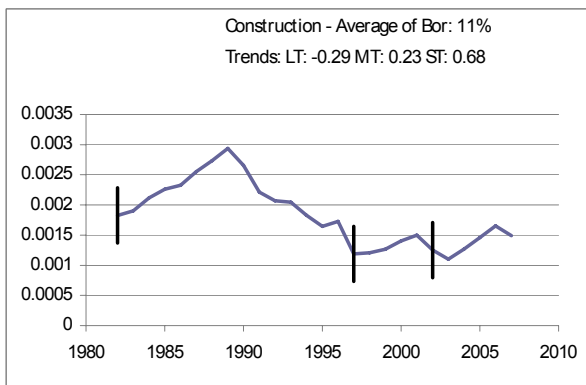
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Tower Hamlets



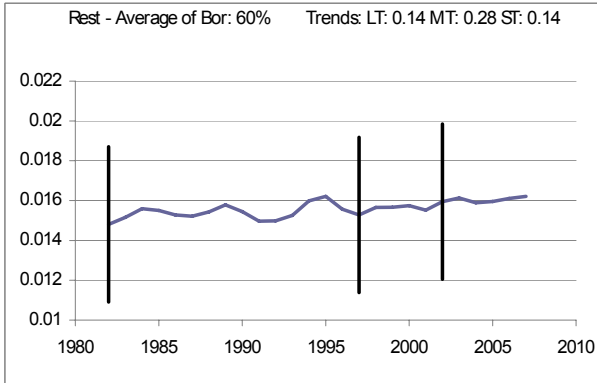
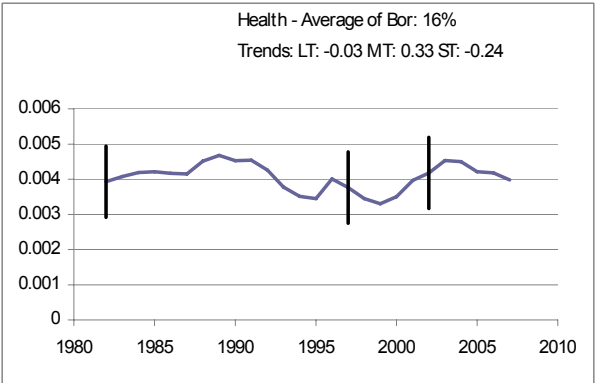
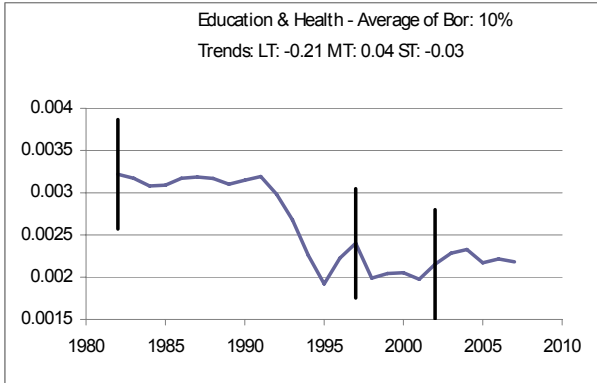
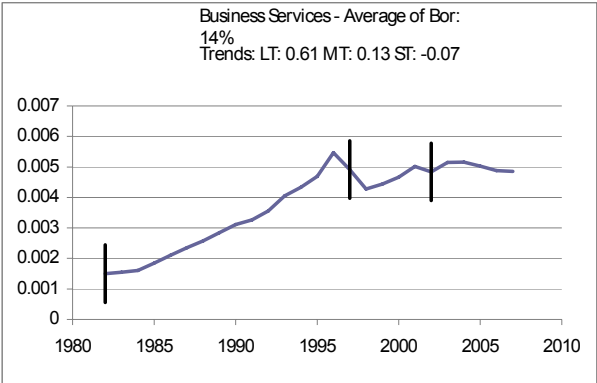
Waltham Forest



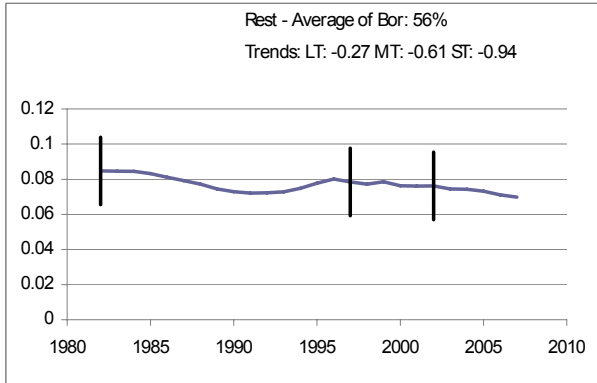
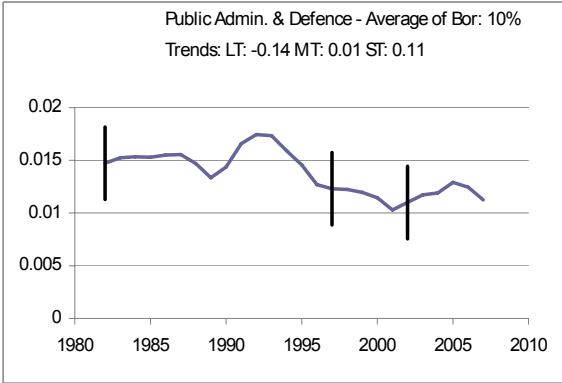
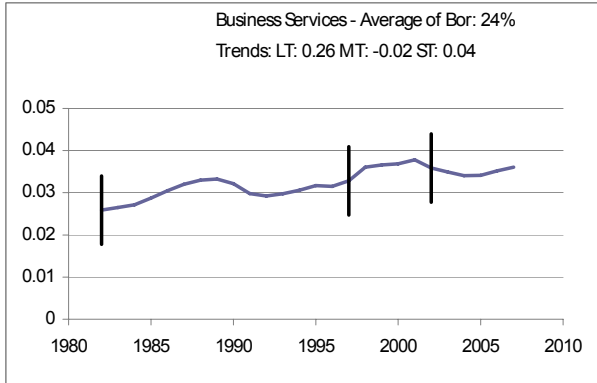
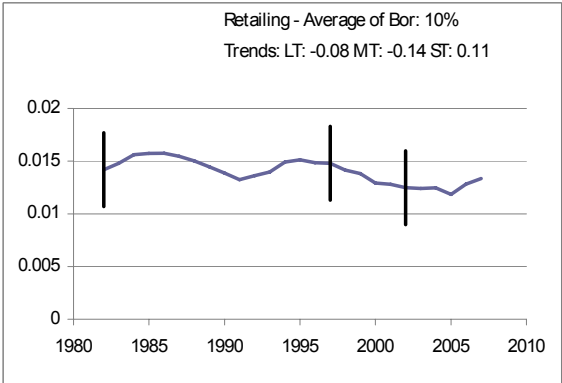


Employment projections for London by sector and trend-based projections by borough

Wandsworth



Westminster



# Other formats and languages

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## Chinese

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## Vietnamese

Nếu bạn muốn có bản tài liệu này bằng ngôn ngữ của mình, hãy liên hệ theo số điện thoại hoặc địa chỉ dưới đây.

## Greek

Αν θέλετε να αποκτήσετε αντίγραφο του παρόντος εγγράφου στη δική σας γλώσσα, παρακαλείστε να επικοινωνήσετε τηλεφωνικά στον αριθμό αυτό ή ταχυδρομικά στην παρακάτω διεύθυνση.

## Turkish

Bu belgenin kendi dilinizde hazırlanmış bir nüshasını edinmek için, lütfen aşağıdaki telefon numarasını arayınız veya adrese başvurunuz.

## Punjabi

ਜੇ ਤੁਹਾਨੂੰ ਇਸ ਦਸਤਾਵੇਜ਼ ਦੀ ਕਾਪੀ ਤੁਹਾਡੀ ਆਪਣੀ ਭਾਸ਼ਾ ਵਿਚ ਚਾਹੀਦੀ ਹੈ, ਤਾਂ ਹੇਠ ਲਿਖੇ ਨੰਬਰ 'ਤੇ ਫ਼ੋਨ ਕਰੋ ਜਾਂ ਹੇਠ ਲਿਖੇ ਪਤੇ 'ਤੇ ਰਾਬਤਾ ਕਰੋ:

## Hindi

यदि आप इस दस्तावेज की प्रति अपनी भाषा में चाहते हैं, तो कृपया निम्नलिखित नंबर पर फोन करें अथवा नीचे दिये गये पते पर संपर्क करें

## Bengali

আপনি যদি আপনার ভাষায় এই দলিলের প্রতিলিপি (কপি) চান, তা হলে নীচের ফোন নম্বরে বা ঠিকানায় অনুগ্রহ করে যোগাযোগ করুন।

## Urdu

اگر آپ اس دستاویز کی نقل اپنی زبان میں چاہتے ہیں، تو براہ کرم نیچے دئے گئے نمبر پر فون کریں یا دیئے گئے پتے پر رابطہ کریں

## Arabic

إذا أردت نسخة من هذه الوثيقة بلغتك، يرجى الاتصال برقم الهاتف أو مراسلة العنوان أدناه

## Gujarati

જો તમને આ દસ્તાવેજની નકલ તમારી ભાષામાં જોઈતી હોય તો, કૃપા કરી આપેલ નંબર ઉપર ફોન કરો અથવા નીચેના સરનામે સંપર્ક સાધો.

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