

ARTICLE

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Regional analysis of public sector employment

SUMMARY

This article presents updated analyses of public sector employment by region. Estimates are presented for 1999 to 2008, based on figures supplied by public sector organisations for Scotland, Northern Ireland and the UK as a whole. Labour Force Survey figures are used to estimate the breakdown for the English regions and Wales. This article includes commentary on the results as well as an explanation of the calculation method and the limitations of these estimates.

This article is the latest in a series of articles providing analyses of public sector employment (PSE) by region. Regional PSE estimates have been produced by the Office for National Statistics (ONS) since 2005, using the Labour Force Survey (LFS), in conjunction with PSE estimates based on returns from public sector organisations. This article presents estimates for 2008 and updates the estimates from 1999 to 2007 produced by Barnard (2008), which featured in the July 2008 edition of the *Economic and Labour Market Review*. Further information about the method used to produce the regional estimates of PSE is discussed in Millard (2007) and described in **Box 1**.

This article uses the most up-to-date UK public sector employment estimates, which include employees in Royal Bank of Scotland Group and Lloyds Banking Group from Q4 2008. The classification of these employees to the public sector increased employment for Q4 2008 by 230,000 (not seasonally adjusted). Employees of these institutions responding to the LFS for Q4 2008 would not have known to identify themselves as public sector employees, as a decision to reclassify them to the Public Sector was not made until February 2009. Therefore, while the UK total includes the banks' employees, they will be distributed to regions in proportion to the distribution of PSE excluding the banking staff.

As in previous articles, the estimates are based on four-quarter rolling averages to

reduce the effect of sampling variability of the LFS results. Presenting the estimates in this manner dampens the effect of sudden changes in employment. For example, the increased PSE employment caused by including the banking employees in Q4 2008 is spread over the four quarters between Q1 and Q4 2008.

Key findings

- In the year to Q4 2008, all regions have seen levels of PSE rise, except the North West, West Midlands and London. The largest percentage rise was in the East Midlands (4.5 per cent)
- Northern Ireland has the highest proportion of their workforce within the public sector in the 12 months to Q4 2008 (28.8 per cent), followed by Wales (23.9 per cent), North East and Scotland (both at 23.0 per cent)
- For the same time period, the regions with the smallest proportion of their workforce working in the public sector were the South East (17.0 per cent), East Midlands and East (both 17.6 per cent) and London (17.8 per cent)
- Public sector employment levels for all regions of the UK were higher in Q4 2008 than in Q4 1999 (11.7 per cent).
- The region showing the largest increase in levels of PSE between Q4 1999 and Q4 2008 is the South West (16.6 per cent). For the same period, the region that has the smallest increase in the proportion of their workforce working in the public sector is London (5.5 per cent)

Box 1

Method for producing regional estimates of public sector employment using labour force survey outputs

- The regional estimates are presented on a seasonally adjusted basis to align with the UK Public Sector Employment (PSE) series. The estimates are four-quarter rolling averages (which means they will differ from the public sector employment estimates for the UK produced on a quarterly basis by ONS), to minimise any effects related to sampling variations of the Labour Force Survey (LFS) results.
- Figures for Scotland and Northern Ireland are four-quarterly averages taken from published PSE estimates produced by the Scottish Government (SG) and the Department of Enterprise, Trade and Investment Northern Ireland (DETI). These are not seasonally adjusted, but the four-quarter rolling averages are reasonably comparable with the corresponding figures derived from the total UK PSE seasonally adjusted series. The figures quoted in this article will therefore differ from the estimates published by SG and DETI.
- Estimates of rates of PSE published by DETI are typically expressed relative to the total number of employee jobs (these rates differ to rates of employment because it is possible for an individual to have more than one job at an organisation, however it is impossible for them to be 'employed' twice). The LFS-based estimate used in this article is of total employment (which has a wider definition because

it also includes the self-employed, unpaid family workers and those on government schemes).

- Corresponding PSE totals for each four-quarter period back to 1999 for England and Wales combined are derived by subtracting the figures for Scotland and Northern Ireland from the corresponding UK totals.
- The LFS estimates are adjusted to bring the coverage of the estimates as close as possible to the National Accounts definition of the public sector. The adjustments are to exclude employees of universities and grant-funded educational establishments, and temporary agency workers, because they belong to the private sector.
- GPs and their practice staff, who are allocated to the public sector in the LFS, cannot be reclassified to the private sector as they cannot be distinguished from others who are part of the public sector, such as doctors and dentists working in hospitals. Therefore they remain in the LFS estimates used in this article.
- The England and Wales combined total for PSE is split into the English regions and Wales according to the regional breakdown of the adjusted LFS estimates of PSE.
- The regional PSE employment rates are an expression of the levels of PSE as a proportion of total employment within each region.

Regional public sector employment estimates

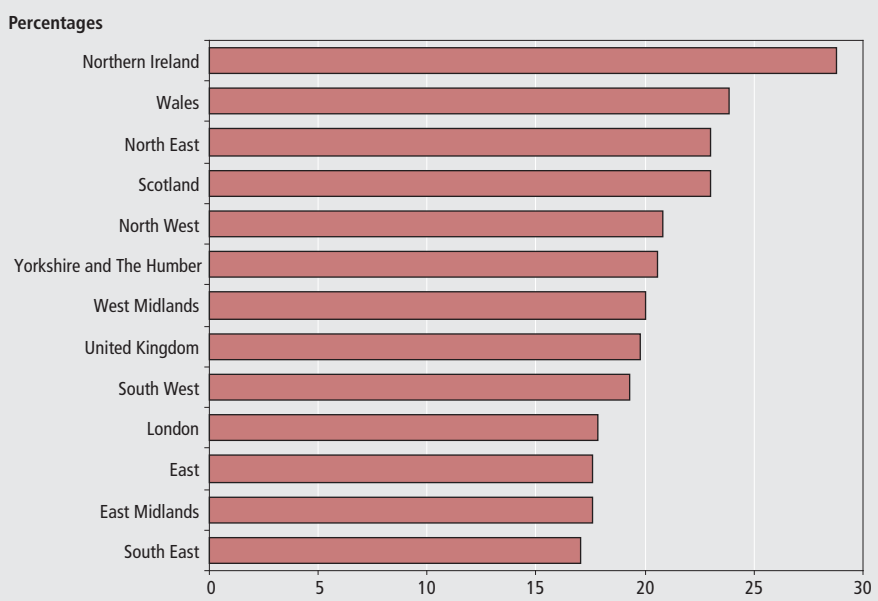
PSE estimates from data supplied directly by public sector organisations are available for Scotland and Northern Ireland and the UK as a whole. Separate PSE estimates for the English regions and Wales are not currently available from these sources and estimates have been provided in this article by combining the returns from public sector organisations with estimates from the LFS (see Box 1 for more details).

Updated estimates

Figure 1 shows public sector employment as a proportion of all employment by region and country of workplace. For the four quarters to Q4 2008, the regions that had the highest proportion of their workforce in the public sector continued to be Northern Ireland (28.8 per cent), Wales (23.9 per cent), the North East and Scotland (both 23.0 per cent). The regions with the lowest proportion of their workforce in the public sector were the South East (17.0 per cent), East Midlands and East (both 17.6 per cent) and London (17.8 per cent). This compares to total public sector as a proportion of all UK employment of 19.8 per cent for the four quarters to Q4 2008.

In the previous four quarters to Q4 2007, East Midlands had the lowest proportion of employment in the public sector (16.9 per cent) whereas in Q4 2008 the South East

Figure 1

Public sector employment as a proportion of all in employment: by region and country¹ of workplace, year to Q4 2008^{2,3}**Notes:**

- 1 Public sector statistics for Northern Ireland relate to the number of public sector jobs rather than the number of people working in the public sector. HM Forces figures are not included in Northern Ireland estimates.
- 2 Headcount, Four-quarterly averages are based on estimates over the quarters March (Q1), June (Q2), September (Q3) and December (Q4) 2008.
- 3 Q4 2008 PSE estimates include the classification of Royal Bank of Scotland Group and Lloyds Banking Group.

Source: Labour Force Survey; returns from public sector organisations (ONS, Scottish Government and Department of Enterprise, Trade and Investment for Northern Ireland)

(17.0 per cent) has the lowest proportion of PSE. This is shown in **Table 1**.

It is also possible to express PSE as a proportion of the resident population, illustrating the relationship between the size of the public sector and the size of the population it serves. Please note, mid-year population statistics are currently only available up to 2007 (**Figure 2**). Variation between regions is smaller – for the four quarters to Q4 2007, the range is between 7.8 per cent for the East and 12.5 per cent for Northern Ireland. The proportions are similar to those presented in Barnard (2008).

All regions had a higher number of public sector employees in 2008 compared with 1999 (see **Tables 1, 2 and 3**). Over the same period the region with the overall largest percentage increase in the number of people working in the public sector was the South West, which had a 16.6 per cent rise. London was the region with the smallest rise, an overall increase of 5.5 per cent.

In the year (Q4 2007 to Q4 2008) there has been a rise in PSE in the UK (0.9 per cent). The region with the largest rise in the level is the East Midlands (4.5 per cent), with increases in Yorkshire and Humberside (3.5 per cent), East (3.3 per cent), Wales (2.1 per cent), Scotland (1.7 per cent) and the South East (0.9 per cent). A rise in PSE in the year, however, is not evident across all regions, as there were declines in levels for the North West, West Midlands, London, Northern Ireland and North East.

Adjusting the Labour Force Survey estimates

The LFS is a survey of households that, among other things, collects information regarding the sector of employment and region of workplace for every employed household member aged 16 years of age and over. Using estimates collected from the LFS, it is therefore possible to produce regional estimates of PSE. However, as highlighted in Millard (2007) the LFS tends to overestimate PSE, relative to the PSE statistics based on returns from public sector organisations, for a number of reasons:

- The public/private and industry classifications rely on the respondent's view of the organisation they work for, whereas PSE estimates use information directly from public sector organisations. The respondent-based approach lends itself to reporting error. Analysis has highlighted that people sometimes associate their employer

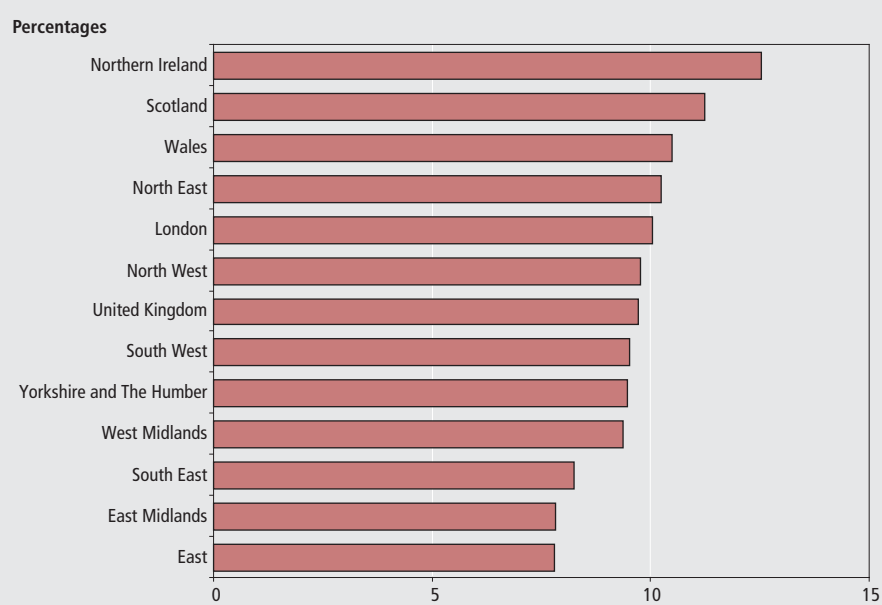
by their place of work, rather than the organisation that pays their wage. For example, a person working as a catering assistant in a school might state they work for a school (thus aligning themselves as being a public sector employee), even if their wage is paid by a private catering firm (making them a private sector employee)

- The LFS public/private variable (PUBLICR) does not fully match the National Accounts definition of public sector used to produce the PSE

estimates. In particular, university staff and GPs are classified under the private sector according to National Accounts definitions, whereas in the LFS they are both classified as belonging to the public sector

- The PSE method tends to lead to under-coverage of schools devolved from local government for example, foundation schools within PSE. These schools may have opted out of the local authority payroll and be missing from the PSE estimates

Figure 2
Public sector employment as a proportion of total resident population: by region and country¹, 2007^{2,3}

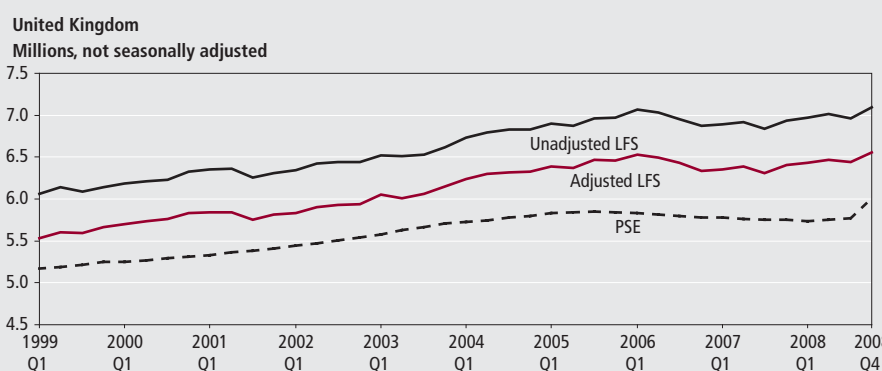


Notes:

- 1 Public sector statistics for Northern Ireland relate to the number of public sector jobs rather than the number of people working in the public sector. HM Forces figures are not included in Northern Ireland estimates.
- 2 Headcount, Four-quarterly averages are based on estimates over the quarters March (Q1), June (Q2), September (Q3) and December (Q4) 2007.
- 3 Public sector employment estimates are workplace-based estimates, that is, where people work rather than where they live. Mid-year population estimates measure resident population.

Source: Labour Force Survey; returns from public sector organisations (ONS, Scottish Government and Department of Enterprise, Trade and Investment for Northern Ireland); ONS mid-year 2007 population estimates

Figure 3
Comparison of PSE estimates from public sector organisations and LFS from Q1 1999 to Q4 2008



Source: Labour Force Survey; returns from public sector organisations (ONS, Scottish Government and Department of Enterprise, Trade and Investment for Northern Ireland)

Table 1

Public sector employment¹ as a proportion of all in employment: by region and country of workplace^{2,3,4}

Percentages, seasonally adjusted

Average four quarters to: ⁵	North	Yorkshire				East	West	East	London	South	South	England	Wales	Scotland	Great	Northern	United
	East	North West	and The Humber	Midlands	Midlands	East	London		East	West	Britain				Ireland	Kingdom	
PSE rate																	
1999Q4	23.3	19.5	19.7	16.8	17.7	17.1	18.4	16.5	18.2	18.2	24.2	23.2	18.9	28.8	19.2		
2000Q1	23.0	19.6	19.7	16.8	18.0	17.2	18.4	16.5	18.1	18.2	24.0	23.1	18.9	28.9	19.2		
2000Q2	22.5	19.8	19.9	16.8	18.2	17.2	18.3	16.4	18.2	18.3	23.8	23.0	18.9	29.0	19.2		
2000Q3	22.1	20.2	20.2	16.7	18.0	17.2	18.0	16.5	18.4	18.3	23.9	22.8	18.9	29.1	19.2		
2000Q4	21.9	20.6	20.3	16.5	17.8	17.2	17.8	16.5	18.7	18.3	24.1	22.6	18.9	29.0	19.2		
2001Q1	22.1	20.9	20.3	16.5	17.7	17.2	17.5	16.5	18.9	18.3	24.5	22.5	19.0	29.0	19.2		
2001Q2	22.5	21.0	20.3	16.6	17.8	17.2	17.5	16.5	18.9	18.4	24.8	22.5	19.0	28.9	19.3		
2001Q3	22.9	21.2	19.9	16.7	18.0	17.3	17.8	16.4	18.9	18.4	24.7	22.6	19.1	28.8	19.3		
2001Q4	23.5	21.4	19.7	16.8	18.2	17.3	17.9	16.4	18.8	18.5	24.6	22.7	19.1	29.0	19.4		
2002Q1	23.8	21.6	19.4	16.8	18.4	17.2	18.1	16.5	18.9	18.6	24.4	22.8	19.2	29.2	19.4		
2002Q2	23.9	21.6	19.2	17.0	18.5	17.1	18.2	16.6	19.0	18.6	24.4	22.9	19.3	29.2	19.5		
2002Q3	24.2	21.6	19.5	17.1	18.5	17.0	18.2	16.6	19.1	18.7	24.5	23.0	19.3	29.4	19.6		
2002Q4	24.2	21.5	19.7	17.1	18.6	17.2	18.4	16.7	19.2	18.8	24.5	23.1	19.4	29.2	19.6		
2003Q1	23.9	21.4	20.0	17.0	18.8	17.4	18.4	16.7	19.5	18.9	24.6	23.1	19.5	28.8	19.7		
2003Q2	24.0	21.5	20.3	16.9	18.9	17.6	18.4	16.6	19.6	18.9	24.7	23.0	19.6	28.9	19.8		
2003Q3	23.9	21.6	20.6	17.0	19.1	17.9	18.4	16.7	19.7	19.0	24.8	23.0	19.7	29.1	19.9		
2003Q4	23.3	21.5	20.9	17.2	19.1	18.2	18.4	16.9	19.7	19.1	24.7	23.1	19.7	29.4	20.0		
2004Q1	23.1	21.6	21.3	17.8	19.0	18.4	18.3	17.1	19.4	19.2	24.5	23.2	19.8	30.0	20.1		
2004Q2	23.1	21.4	21.6	18.2	18.9	18.6	18.4	17.4	19.3	19.3	23.9	23.2	19.9	30.3	20.1		
2004Q3	23.2	21.4	21.5	18.6	18.8	18.8	18.5	17.5	19.3	19.4	23.5	23.3	19.9	30.5	20.2		
2004Q4	23.6	21.3	21.4	18.8	18.9	18.8	18.6	17.5	19.3	19.4	23.3	23.3	20.0	30.4	20.2		
2005Q1	24.2	21.4	21.0	18.5	18.9	18.8	18.8	17.6	19.7	19.5	23.2	23.3	20.0	30.2	20.3		
2005Q2	24.1	21.5	20.5	18.1	19.2	18.7	18.8	17.6	20.0	19.5	23.3	23.4	20.0	30.1	20.3		
2005Q3	24.0	21.6	20.4	17.8	19.5	18.6	18.8	17.7	20.3	19.5	23.1	23.5	20.0	29.9	20.3		
2005Q4	23.8	21.5	20.4	17.7	19.6	18.5	18.9	17.7	20.5	19.5	23.0	23.6	20.0	29.9	20.3		
2006Q1	23.5	21.3	20.4	17.9	19.7	18.3	18.9	17.5	20.5	19.4	23.2	23.6	20.0	29.8	20.2		
2006Q2	23.4	21.1	20.3	18.2	19.7	18.1	19.0	17.3	20.2	19.4	23.2	23.6	19.9	29.5	20.2		
2006Q3	23.4	20.9	20.0	18.2	19.6	18.0	19.0	17.2	20.1	19.3	23.4	23.5	19.8	29.4	20.1		
2006Q4	23.5	21.0	19.8	18.0	19.5	17.7	18.9	17.0	20.0	19.2	23.7	23.4	19.7	29.1	20.0		
2007Q1	23.4	21.2	19.6	17.8	19.5	17.7	19.0	17.0	19.9	19.1	23.7	23.1	19.7	28.9	19.9		
2007Q2	23.2	21.3	19.5	17.4	19.7	17.5	18.9	17.0	19.7	19.1	23.8	22.8	19.6	28.8	19.9		
2007Q3	23.0	21.2	19.8	17.1	19.9	17.2	18.7	17.1	19.5	19.0	23.7	22.6	19.5	28.7	19.8		
2007Q4	22.8	20.9	20.1	16.9	20.1	17.0	18.4	17.2	19.3	18.9	23.5	22.5	19.4	28.6	19.7		
2008Q1	22.9	20.6	20.3	16.8	20.3	16.9	18.1	17.1	19.1	18.8	23.3	22.5	19.3	28.7	19.6		
2008Q2	23.0	20.4	20.6	16.8	20.1	17.1	17.7	16.9	19.1	18.7	23.2	22.5	19.3	28.7	19.5		
2008Q3	23.0	20.5	20.6	17.1	20.0	17.2	17.6	16.9	19.2	18.7	23.3	22.5	19.3	28.7	19.5		
2008Q4	23.0	20.8	20.6	17.6	20.0	17.6	17.8	17.0	19.3	18.9	23.9	23.0	19.5	28.8	19.8		

Notes:

- 1 Headcount; rolling four-quarter averages.
- 2 Q4 2008 PSE estimates include the classification of Royal Bank of Scotland Group and Lloyds Banking group.
- 3 Public sector employment estimates for Scotland are published by Scottish Executive (SE) on a quarterly basis back to Q1 1999 from administrative records and surveys of public sector organisations in Scotland.
- 4 Public sector statistics for Northern Ireland relate to the number of public sector jobs rather than the number of people working in the public sector. The percentages for Northern Ireland as a proportion of all employment will differ from DETINI estimates expressed as a proportion of all jobs. HM Forces figures for Northern Ireland are not included in Northern Ireland estimates.
- 5 Rolling four-quarterly averages are based on estimates over the quarters March (Q1), June (Q2), September (Q3) and December (Q4). For example the Q4 1999 estimate is an average taken for the quarters Q1 1999 to Q4 1999.

Source: Labour Force Survey; returns from public sector organisations (ONS, Scottish Government and Department of Enterprise, Trade and Investment for Northern Ireland)

Table 2

Public sector employment:¹ by region and country of workplace^{2,3,4}

Thousands, seasonally adjusted

Average of four quarters to: ⁵	North	North	Yorkshire	East	West	East	London	South	South	England	Wales	Scotland	Great Britain	Northern Ireland	United Kingdom
	East	West	and The Humber	Midlands	Midlands			East	West						
PSE level															
1999Q4	239	590	437	317	429	410	715	625	428	4,191	290	529	5,009	197	5,207
2000Q1	237	595	438	318	436	414	717	628	426	4,209	288	530	5,027	198	5,225
2000Q2	235	607	443	319	438	416	713	627	429	4,228	287	531	5,046	199	5,245
2000Q3	232	620	451	317	433	420	701	634	437	4,244	291	532	5,066	199	5,266
2000Q4	230	631	455	315	429	425	689	638	445	4,257	294	532	5,082	200	5,282
2001Q1	231	641	458	314	428	428	681	638	452	4,272	298	532	5,102	200	5,303
2001Q2	234	648	456	313	430	429	686	641	454	4,292	300	533	5,125	201	5,326
2001Q3	238	653	448	316	438	430	701	638	453	4,314	298	534	5,146	202	5,348
2001Q4	244	659	444	319	444	430	710	636	453	4,338	295	536	5,169	202	5,372
2002Q1	248	664	439	319	450	428	721	641	456	4,366	292	538	5,196	203	5,399
2002Q2	251	663	439	323	456	430	725	643	461	4,390	292	540	5,222	204	5,426
2002Q3	255	664	447	328	456	429	723	645	465	4,412	296	543	5,251	205	5,456
2002Q4	255	664	454	330	461	433	727	648	467	4,439	299	545	5,284	206	5,490
2003Q1	253	665	462	330	467	440	725	648	474	4,464	305	548	5,316	208	5,524
2003Q2	254	671	471	331	468	446	722	648	481	4,492	311	551	5,354	209	5,563
2003Q3	254	676	479	332	471	454	720	652	483	4,522	317	554	5,393	211	5,604
2003Q4	251	676	489	338	470	464	721	661	487	4,556	318	558	5,432	212	5,644
2004Q1	251	682	501	349	467	473	719	666	480	4,588	318	561	5,468	213	5,681
2004Q2	253	680	510	358	464	479	725	676	475	4,621	311	565	5,496	214	5,711
2004Q3	255	680	509	366	467	487	729	681	476	4,652	304	568	5,524	215	5,739
2004Q4	261	682	507	370	472	486	733	684	476	4,670	303	571	5,545	216	5,761
2005Q1	269	684	499	364	476	484	742	690	487	4,695	301	574	5,570	217	5,787
2005Q2	268	688	492	359	485	484	745	695	499	4,714	302	576	5,593	219	5,812
2005Q3	267	691	490	356	491	478	748	700	507	4,728	302	579	5,609	220	5,829
2005Q4	264	688	492	357	492	476	753	702	514	4,738	302	581	5,621	220	5,841
2006Q1	262	682	495	365	495	469	754	698	514	4,734	304	583	5,621	221	5,842
2006Q2	263	678	494	372	494	463	761	690	509	4,725	304	584	5,613	221	5,834
2006Q3	264	673	487	375	492	461	764	686	508	4,708	307	584	5,599	221	5,820
2006Q4	266	679	481	370	490	457	764	678	506	4,691	310	583	5,584	221	5,805
2007Q1	264	684	475	363	489	457	769	674	503	4,679	310	582	5,571	221	5,792
2007Q2	263	684	473	355	492	453	769	677	498	4,665	314	580	5,559	221	5,780
2007Q3	262	678	482	348	497	445	768	679	495	4,655	315	579	5,548	220	5,769
2007Q4	263	670	491	345	504	441	760	685	493	4,651	312	578	5,541	220	5,762
2008Q1	264	660	500	343	509	437	754	685	491	4,643	311	577	5,530	221	5,751
2008Q2	265	654	509	343	504	441	744	681	495	4,638	312	577	5,526	220	5,747
2008Q3	264	656	510	348	498	446	740	683	498	4,642	312	577	5,531	220	5,752
2008Q4	263	663	508	360	495	456	754	691	499	4,688	319	588	5,594	220	5,815

Notes:

- 1 Headcount; rolling-four quarter averages.
- 2 Public sector employment estimates for Scotland are published by Scottish Executive (SE) on a quarterly basis back to Q1 1999 from administrative records and surveys of public sector organisations in Scotland.
- 3 Public sector statistics for Northern Ireland relate to the number of public sector jobs rather than the number of people working in the public sector. The percentages for Northern Ireland as a proportion of all employment will differ from DETINI estimates expressed as a proportion of all jobs. HM Forces figures for Northern Ireland are not included in Northern Ireland estimates.
- 4 Q4 2008 PSE estimates include the classification of Royal Bank of Scotland Group and Lloyds Banking Group.
- 5 Rolling four-quarterly averages are based on estimates over the quarters March (Q1), June (Q2), September (Q3) and December (Q4). For example the Q4 1999 estimate is an average taken for the quarters Q1 1999 to Q4 1999.

Source: Labour Force Survey; returns from public sector organisations (ONS, Scottish Government and Department of Enterprise, Trade and Investment for Northern Ireland)

Table 3
Public sector employment:¹ by region and country of workplace^{2,3,4}

Thousands, seasonally adjusted

Average of four quarters to: ⁵	North		Yorkshire and The Humber	East Midlands	West Midlands	East of England	London	South East	South West	England	Wales	Scotland	Great Britain	Northern Ireland	United Kingdom
	East	West													
Change on year															
2000Q4	-9	41	18	-3	-1	15	-26	14	17	66	4	3	73	2	75
2001Q1	-6	46	20	-4	-8	14	-36	11	26	63	10	2	75	2	77
2001Q2	-1	41	13	-6	-8	13	-28	14	26	64	12	2	78	2	81
2001Q3	6	33	-3	-1	4	10	0	4	16	70	7	2	79	3	82
2001Q4	14	28	-11	4	15	5	21	-2	7	82	1	4	87	3	90
2002Q1	17	23	-19	5	22	0	40	2	4	94	-6	6	94	3	96
2002Q2	17	15	-18	10	26	0	39	2	6	97	-7	8	97	3	100
2002Q3	18	11	0	12	18	-2	21	7	12	98	-2	9	105	3	109
2002Q4	11	5	10	11	17	4	17	12	14	101	4	9	114	4	119
2003Q1	5	0	23	11	17	12	4	7	18	98	13	10	121	5	126
2003Q2	4	8	33	8	12	16	-3	6	20	102	19	11	132	6	138
2003Q3	-1	13	32	4	15	25	-2	6	18	109	21	11	142	6	148
2003Q4	-4	12	35	7	9	31	-5	13	20	117	19	13	148	6	154
2004Q1	-2	17	38	18	-1	33	-6	19	6	124	13	14	151	6	157
2004Q2	-2	9	39	27	-3	34	3	28	-5	129	0	14	143	5	147
2004Q3	1	4	30	34	-5	33	9	29	-7	130	-13	14	131	4	136
2004Q4	10	6	18	32	2	21	12	24	-11	114	-15	14	113	4	117
2005Q1	18	2	-2	15	9	11	23	24	7	107	-17	13	102	4	106
2005Q2	15	8	-18	1	21	4	21	19	23	93	-9	12	97	5	102
2005Q3	11	11	-20	-11	24	-9	19	19	31	76	-2	11	85	4	90
2005Q4	3	6	-15	-12	20	-10	20	17	38	68	-1	9	76	4	80
2006Q1	-6	-2	-4	1	19	-15	12	8	26	39	3	9	52	3	55
2006Q2	-5	-9	2	14	8	-21	16	-5	11	10	2	8	20	2	22
2006Q3	-2	-18	-3	19	1	-18	15	-14	1	-20	5	5	-10	1	-9
2006Q4	2	-9	-10	13	-2	-19	11	-24	-8	-47	8	2	-37	0	-37
2007Q1	2	2	-20	-2	-6	-13	15	-23	-11	-55	6	-1	-50	0	-51
2007Q2	1	6	-21	-17	-2	-10	8	-13	-11	-59	10	-4	-53	0	-53
2007Q3	-2	5	-5	-27	6	-15	5	-6	-13	-53	7	-5	-51	0	-52
2007Q4	-3	-9	9	-25	14	-15	-4	7	-13	-40	3	-5	-42	0	-43
2008Q1	-1	-24	24	-20	21	-20	-16	11	-12	-36	1	-5	-41	0	-41
2008Q2	2	-30	36	-12	12	-12	-25	4	-3	-27	-2	-4	-33	-1	-34
2008Q3	2	-22	29	0	0	1	-28	3	3	-12	-2	-2	-17	0	-17
2008Q4	0	-7	17	15	-10	14	-6	6	6	36	7	10	53	0	53

Notes:

- 1 Headcount; rolling four-quarter averages.
- 2 Public sector employment estimates for Scotland are published by Scottish Executive (SE) on a quarterly basis back to Q1 1999 from administrative records and surveys of public sector organisations in Scotland.
- 3 Public sector statistics for Northern Ireland relate to the number of public sector jobs rather than the number of people working in the public sector. The percentages for Northern Ireland as a proportion of all employment will differ from DETINI estimates expressed as a proportion of all jobs. HM Forces figures for Northern Ireland are not included in Northern Ireland estimates.
- 4 Q4 2008 PSE estimates include the classification of Royal Bank of Scotland Group and Lloyds Banking Group.
- 5 Rolling four-quarterly averages are based on estimates over the quarters March (Q1), June (Q2), September (Q3) and December (Q4). For example the Q4 1999 estimate is an average taken for the quarters Q1 1999 to Q4 1999.

Source: Labour Force Survey; returns from public sector organisations (ONS, Scottish Government and Department of Enterprise, Trade and Investment for Northern Ireland)

The LFS is adjusted to bring the public sector variable closer to the National Accounts definition by taking account of some of the differences listed above.

Figure 3 compares the PSE series based on returns from public sector organisations with the LFS and 'adjusted' LFS figure and illustrates the size of the LFS overestimation. After making the adjustments, the difference between the LFS and PSE estimates is approximately halved. It is not possible to fully adjust the LFS to the National Accounts definition because we cannot adjust for every eventuality, for example it is not possible to separate numbers of GPs from hospital doctors.

Assessing the accuracy of ONS regional estimates of PSE

The analysis presented in this article uses the best method currently available to produce regional estimates of public sector employment. A comparison can be made using Scottish estimates to give an indication of the accuracy of the estimates for the English Regions and Wales.

Estimates from published PSE estimates for Scotland are compared with figures produced for Scotland based on LFS methodology. A comparison of the two estimates is shown in **Table 4**. Over the period Q4 1999 to Q3 2008, the percentage differences between the two estimates vary

from plus 3.1 per cent (2003 Q3) to minus 2.1 per cent (1999 Q4). These differences might be expected due to LFS sampling variability and respondent error.

For 2008 Q4 the difference is minus 8.4 per cent, due to Royal Bank of Scotland Group and Lloyds Banking Group being included in the PSE figures from the Scottish Government but not yet reflected in the LFS estimates used for this article. Individuals working for these groups would not have classified themselves as public sector employees during the collection of the LFS for 2008 Q4, as the announcement by ONS to classify the banking groups to the public sector was made on 19 February

Table 4
Comparison between Scottish Government^{1,2} and ONS PSE estimates

Scotland	Difference: ONS minus SG estimates of PSE		
	Average of four quarters to: ³	PSE levels (thousands)	PSE levels (percentage difference)
1999Q4		-11	-2.1
2000Q1		-7	-1.4
2000Q2		-1	-0.3
2000Q3		2	0.5
2000Q4		-1	-0.2
2001Q1		-1	-0.2
2001Q2		-1	-0.1
2001Q3		0	0.0
2001Q4		1	0.3
2002Q1		7	1.3
2002Q2		5	0.9
2002Q3		8	1.5
2002Q4		9	1.6
2003Q1		10	1.8
2003Q2		10	1.9
2003Q3		17	3.1
2003Q4		10	1.8
2004Q1		7	1.3
2004Q2		5	0.9
2004Q3		7	1.3
2004Q4		5	0.9
2005Q1		11	1.9
2005Q2		10	1.8
2005Q3		5	0.9
2005Q4		1	0.1
2006Q1		-4	-0.7
2006Q2		-7	-1.2
2006Q3		-5	-0.8
2006Q4		-5	-0.9
2007Q1		-1	-0.1
2007Q2		6	1.0
2007Q3		11	1.9
2007Q4		7	1.2
2008Q1		6	1.0
2008Q2		-1	-0.2
2008Q3		-8	-1.4
2008Q4		-52	-8.4

Notes:

- Public sector employment estimates for Scotland are published by the Scottish Government on a quarterly basis back to Q1 1999 from administrative records and surveys of individual public sector organisations in Scotland.
- PSE Estimates from Scottish Government include the classification of the Royal Bank of Scotland Group, Lloyds Banking Group.
- Rolling four quarterly averages are based on estimates over the quarters March (Q1), June (Q2), September (Q3) and December (Q4). For example the Q4 1999 estimate is an average taken for the quarters Q1 1999 to Q4 1999.

Source: *Labour Force Survey; returns from public sector organisations (ONS, Scottish Government)*

2009 (decision backdated to 13 October 2008). So, while the UK total includes the bank employees they will be distributed to regions in proportion to the distribution of PSE excluding the banking staff.

PSE development programme

ONS is currently working with other government departments to develop regional PSE statistics directly from existing sources, covering Northern Ireland, Scotland, Wales and England (including English regional composition). If successful, future PSE estimates will be produced using estimates from public sector organisations for all regions.

Further information

This article presents regional analyses of public sector employment. Additional tables showing regional analyses of private sector employment are contained within Regional Public Sector Employment tables available at: www.statistics.gov.uk/StatBase/Product.asp?vlnk=13615&Pos=&ColRank=1&Rank=422

This article presents the best available estimates of regional public sector employment. The best estimates of UK PSE employment are published as part of the quarterly *Public Sector Employment Statistical Bulletin* which can be found at: www.statistics.gov.uk/CCI/nugget.asp?ID=407&Pos=5&ColRank=2&Rank=224

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