

The public sector workforce: past, present and future

IFS Briefing Note BN145

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Institute for Fiscal Studies

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ISBN: 978-1-909463-36-3

¹ The authors gratefully acknowledge funding from the Joseph Rowntree Foundation and the Economic and Social Research Council for providing support through the Centre for the Microeconomic Analysis of Public Policy at IFS (RES-544-28-0001). The authors would also like to thank Rowena Crawford, Carl Emmerson, Ellen Greaves, Paul Johnson and members of the JRF advisory group for providing useful comments, David Lawrence for excellent research assistance with the Labour Force Survey and Keith Povey for copyediting.

This work was based on data from the Annual Survey of Hours and Earnings and the New Earnings Survey Panel Dataset, produced by the Office for National Statistics (ONS) and supplied by the Secure Data Service at the UK Data Archive. The Labour Force Survey data were supplied through the UK Data Archive. The data are Crown Copyright and reproduced with the permission of the controller of HMSO and Queen's Printer for Scotland. The use of the data in this work does not imply the endorsement of ONS or the Secure Data Service at the UK Data Archive in relation to the interpretation or analysis of the data. This work uses research datasets which may not exactly reproduce National Statistics aggregates.

Executive summary

- The public sector workforce stood at around 5.7 million in mid-2013, and made up just under 20% of total employment, lower than at any point in at least the last 40 years. The Office for Budget Responsibility (OBR) forecasts further cuts in general government employment, reaching 1.1 million by 2018–19 compared with 2010–11. This would take the share of the workforce working in general government to just 14.8%, compared with 19–20% during the late 1990s and 2000s. It is thus clear that the nature of the UK labour market will have changed dramatically as a result.
- These reductions would dwarf the reduction in general government employment of 350,000 that occurred in the 1990s. Public sector employment also fell sharply in the 1980s, but this was largely driven by the privatisation of state owned industries.
- The NHS and public education workforces have grown steadily over the last 50 years, both in size and as a proportion of the public sector workforce. This reflects a combination of sustained growth during times of buoyant growth in public spending levels and the fact that they were relatively protected from workforce cuts while other areas were making cuts (e.g. in the early 1990s). Together, these two functions made up 23% of the public sector workforce in 1961, 42% in 1991 and around 57% in 2013.
- With schools and the NHS protected from spending cuts in the 2010 and 2013 Spending Reviews, this trend of NHS and education dominating the public workforce is set to continue. At the extreme, if there were no reductions to the education and NHS workforces between mid-2013 and 2018–19 the OBR's forecasts could only be borne out if the rest of general government shrank by 40%. Even if education and NHS were cut by 200,000 from mid-2013 to 2018–19, the cuts to the rest of general government would still need to be about 30%
- The proportion of public sector workers who are female has increased steadily over time to reach two thirds in 2012–13. Since women are disproportionately likely to work in health and education, and men more likely to work in public administration and Defence, the changing structure of the public sector means that the proportion of the public sector workforce made up by women is likely to increase over time.
- The percentage of the workforce in the public sector varies across regions, from almost 28% in Wales to under 21% in London. Private sector employment has risen in each region by more than public employment has fallen between 2010Q1 and 2013Q2. However, regions with the largest falls in public employment are not seeing the strongest growth in private sector employment.

- There have been big increases in private sector employees delivering services historically dominated by the public sector. Much of the expansion in nursery care has been driven by the private sector. In the mid 1990s, private sector nursery nurses and assistants accounted for around 40% of the nursery workforce, but increased to more than 70% by 2010. For personal care, a similar story can be told. The number of care sector workers in the public sector has been largely flat since the mid 1990s, whilst numbers in the private sector have more than doubled since the mid 1990s and accounted for around three quarters of care sector workers by 2010.

1. Introduction

As in all advanced economies, the public sector is a sizeable employer in the UK. At its most recent high-point in 2010, the public sector employed about 6.1 million workers, or 20% of all UK workers. The public sector pay bill also makes up a large element of public spending, accounting for well over half of current or day-to-day spending at the latest count. With the government in the process of making significant cuts in departmental spending as part of a fiscal consolidation aimed at helping to bring the public finances back on to a sustainable path, cuts to the total pay bill and workforce are essentially unavoidable. Indeed, the OBR forecast is that the level of general government employment will fall by 1.1 million as a result of expected cuts to public spending between 2010–11 and 2018–19. With schools and NHS spending relatively protected from spending cuts, these workforce cuts are likely to be focused on other areas of spending, changing the shape of both public spending and the public workforce.

In order to appreciate the full implications of such changes, it is important to be clear on how the size and structure of the public workforce has changed over the long run. For instance, how large are these cuts compared with previous workforce cuts, how large is the public sector workforce in historical terms, what sorts of people work in the public sector, how has this changed over time and will the workforce cuts radically alter the structure of the public workforce? We are not aware of any such description of how the size and structure of the public workforce has changed over the long run. Furthermore, available data on these issues is often difficult to interpret due to frequent definitional and classification changes. In this briefing note, we have thus sought to combine various data sources to provide for the first time a consistent picture on how the size and composition has changed over the past 50 years. This initial descriptive piece forms part of a larger project that will provide further detailed analysis of the differences in the remuneration packages of public and private sector workers, as well as the mobility of workers between sectors and different areas of the country.

We begin by setting out how the overall size of the workforce has changed and compare the current set of workforce cuts with those that have been delivered previously. This shows that, if delivered, the size of these workforce cuts would be unprecedented in at least the last 50 years. We also set out how the make-up of the public workforce has changed across areas of spending and industries. This shows that the NHS and education workforces have been an ever-increasing share of the public workforce. Ring-fencing the NHS and schools from spending cuts in the Spending Review 2010 and Spending Round 2013 is likely to further this long-run shift.

We also document the characteristics of individuals working in the public sector compared with those in the private sector. This shows that the characteristics of the public and private

workforces are quite different at present, with the public workforce somewhat more educated and more female, on average. This provides an indication of the types of workers who might be most likely to be affected by the workforce cuts. However, the effect of these workforce cuts on individuals' welfare and the labour market will depend on the ease with which former public sector workers can move to the private sector, both in the country as a whole and within individual regions. The scale of the cuts and the fact that the characteristics of the two workforces are quite different at present makes this shift look quite challenging. Nevertheless, the actual effects will depend on the capacity of the private sector to take on and make use of there have also been important changes in the way particular public services are delivered skills of former public sector workers.

Finally, we also document how the importance of the public sector as an employer differs across regions and countries of the UK. This helps show the areas likely to be most affected by public workforce cuts. For the first time, we also use new administrative data to show how the size of the public workforce differs across smaller geographical areas, showing the extent to which particular towns and cities are dependent on the public sector as an employer.

2. What is a public sector worker?

Before going into how the public workforce has changed over time, it is important to be clear what we mean by a 'public sector worker'. Some workers are clearly in the public sector (for example, the Armed Forces or civil servants in central government departments), while some are clearly in the private sector (such as shop assistants in a supermarket or programmers in a high-tech start-up). In between, there are a range of jobs that are funded, controlled or owned by government to varying degrees, blurring the line between the public and private sectors.

For example, university lecturers are employed by universities, who are, in principle, not-for-profit institutions independent of government, but most fees for EU citizens are highly-regulated by government and most universities receive a high-level of public subsidy. School Academies and Foundation Hospitals are owned by charitable trusts, have certain freedoms to set their own pay and conditions, but receive almost all their funding from, and are highly-regulated by, central government.

In this briefing note, we largely follow the definitions set out by the Office for National Statistics (ONS) national accounts framework², which classifies organisations in the public or private sector.³ We use this definition partly for pragmatic reasons – it is the main definition used in the datasets available to us – and partly to avoid causing confusion with existing published statistics. This definition states that 'the difference between the public and private sector is determined by where control lies, rather than by ownership or whether or not the entity is publicly financed'.⁴ A number of indicators are considered to determine where control lies, including the ability to close down the body, who has the final say on sale or acquisition of fixed assets, the ability to

² Decisions on classification are decided by the Executive Director of ONS Directorate responsible for National Accounts, who is advised by the National Accounts Classification Committee (NACC).

³ An organisation must belong in either the public or the private sector; if an organisation is not in the public sector, it is by definition in the private sector. Private sector organisations, therefore, include not only profit-orientated firms, but also not-for-profit organisations that are not controlled by government.

⁴ For more details, see Office for National Statistics (2012).

change the constitution of a body, and to veto any takeover or acquisitions. It also takes into account the ability of the firm to set pay and dividends, and whether it is able to exert ‘financial control’ (not the same as funding) over the organisation. We do not list all the occupations that are classified as either public or private sector, though Table 1 sets out some of the definitions that are sometimes subject to confusion.

Adding to the confusion, some occupations have been reclassified. For example, in 2012Q2, workers in Further Education and Sixth Form Colleges in England were classified to the private sector after the passage of Education Act 2011 gave them greater freedom from

Table 1 Classification of selected jobs into public and private sectors

Public sector	Private sector
<p>Teachers in Academies. Despite autonomy from local authorities, academies are controlled by the central government and therefore part of the public sector.</p> <p>Doctors and nurses in foundation hospitals.</p>	<p>University lecturers and other employees of universities are classified as working for a Non-Profit Institution Serving Households (NPISH).</p> <p>GPs who work for the NHS are self-employed, and therefore private sector workers.</p> <p>Outsourced cleaners employed by private firms, even if they work purely in government buildings such as state schools or NHS hospitals.</p>

government⁵. After purchasing substantial shareholdings in Royal Bank of Scotland, Northern Rock and Lloyds Banking Group in 2008, these organisations were classified as public sector (financial) corporations. Our following analysis tries, wherever possible, to adjust for these classification changes, to provide as consistent a picture as possible of trends over time in the public sector. In particular, we treat the nationalised banks as private sector firms, as the nationalisations are expected to be temporary. We treat workers in Further Education and Sixth Form colleges as public sector workers in all years: because the reclassification of such workers is relatively recent, not to do so could give a misleading impression of recent public sector job losses.

Finally, there are also separate types of organisation *within* the public sector. Simply put, the public sector is made up of public sector corporations and general government. The difference is that a public sector corporation is a ‘market entity’⁶, while general government is not. General

⁵ Further Education colleges have been repeatedly reclassified between public and private sectors over time. Until 2010, they were originally classified as belonging to the private sector. In 2010, it was decided that they were, and had always been, part of the public sector, so they were retrospectively reclassified to the public sector from their creation in 1993. Following the passage of the Education Act 2011, Further Education colleges were then reclassified to the private sector, as they gained more freedom from the public sector.

⁶ To be classed as a market entity, an organisation must have more than 50% of production costs covered by sales of goods and services. This ‘market test’ is well-illustrated by the classification of the BBC.

government can be split into two parts, central government and local government, depending on whether central or local government has control over the entities.

2. Size of the public workforce

At its most recent high-point in 2010, the public sector employed about 6.1 million workers, or 21% of all UK workers. This followed an increase of about 700,000 in the absolute size of the public workforce since 1998–99, though the share of workforce in the public sector only increased from 20% to 21%. Since the start of 2011, the public workforce has fallen by almost 300,000 as departmental spending cuts have begun to bite. Further large workforce cuts are to be expected as well. The public pay bill makes up a large fraction of total spending (around half of general government expenditure on goods and services in 2012) and departmental spending cuts are now expected to continue through to 2018–19 (without further policy action, the total cut to departmental spending between 2010–11 and 2017–18 could be as high as 20.5% after economy-wide inflation)⁷. Indeed, taking account of the government’s public spending plans and the announced squeeze on public sector pay, the OBR projects the level of general government employment will fall by 1.1 million between 2010–11 and 2018–19.⁸ In this section, we aim to set these changes in historical context by showing how the size of the public workforce has changed over the last 50 years.

Figures 1(a) and 1(b) show the level of employment for the public sector, general government and public corporations (which is the difference between public sector and general government) for 1961–91 and 1991–2013, respectively.⁹ As can be seen, during the 1960s and 1970s, public sector employment increased substantially, from 5.9 million in 1961 to 7.4 million in 1979. This was driven by year-on-year increases in general government employment. Employment in public sector corporations changed very little throughout the 1960s and 1970s, reflecting almost offsetting increases from nationalisations in the late 1960s and 1970s,¹⁰ and job losses within the nationalised industries.

During the 1980s, there were very different forces at work and public sector employment fell substantially. This was very much driven by a fall in the level of employment in public sector corporations, falling from 2 million workers in 1979 to 600,000 by 1991, reflecting the large

Since the BBC does not sell services in the market, it is part of general government. However, its commercial arm, BBC Worldwide, does sell services, and is therefore a public corporation. Other public corporations in 2014 include Channel 4, the London Underground and Manchester Airport.

⁷ See Emmerson (2013), for more details.

⁸ This is based on expected changes in government current expenditure and forecast growth of public sector pay. In particular, it takes 2011Q1 as a baseline (before the 2010 Spending Review period started in 2011–12) and projects general government employment in 2019Q1 based on expected changes in general government spending levels.

⁹ In 2005, the methodology for calculating the size of the public sector workforce was changed, and public sector employment statistics were retrospectively changed back to 1991. This means that there is a methodological discontinuity between the figures for 1961–91 and from 1991 to the latest data. See Office for National Statistics (2005), for more details.

¹⁰ The large nationalisations occurred in 1967 (British Steel) and 1975 (British Leyland).

number of privatisations of previously nationalised industries during the 1980s.¹¹ At the same time, there was barely any change in the level of general government employment during the 1980s.

By the early 1990s, there had been a very substantial shift away from public sector corporations as a result of privatisations during the 1980s. However, there was no sustained fall in general government employment at any point. This left the total level of public sector employment largely unchanged compared with the early 1960s, but very different in structure.

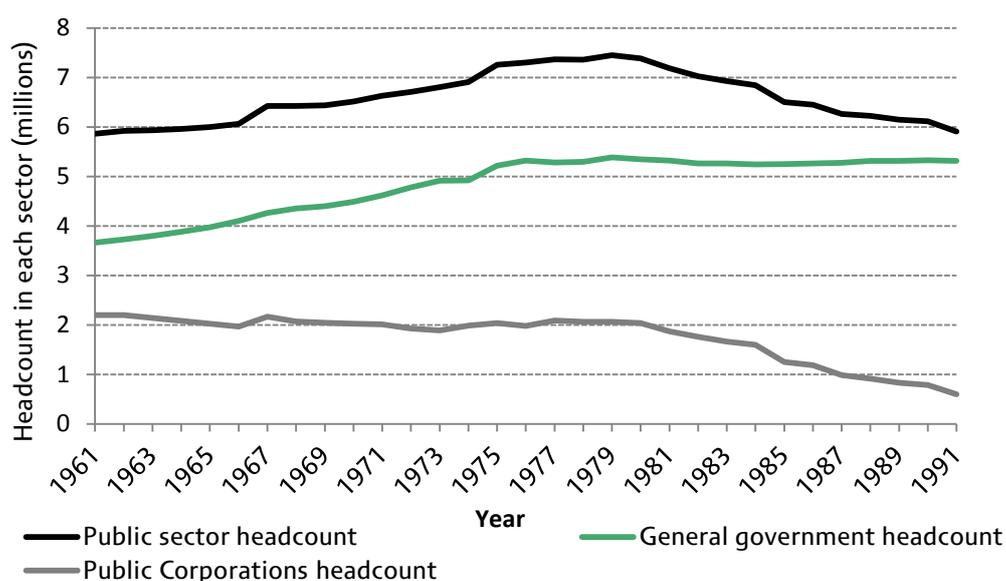
As a result of increase in the size of the labour force, by the early 1990s the *share* of total in employment in the public sector had fallen from a peak of almost 30% in 1977 to below 23% in 1991, as can be seen in Figure 1(c). As one would expect, the fall in the share of workers in the general government sector was lower, falling from a high-point of 22% at the start of 1980s to 20% in 1991. Similarly, by 1991, the fraction of the total population working in the public sector had fallen over 2 percentage points from its peak of 13% in 1979 to below 11% of the population, but the general government workforce remained at around 9–10% of the total population. This shows that as the population has increased – and also, presumably, the need for public services – the share of the population providing these public services (mainly in the general government sector) stayed roughly constant.

Figure 1(b) shows the same for 1991 through to 2013, as well as forecasts for general government employment in 2019 (noting that the levels are not completely consistent with those shown in Figure 1(a)). Between 1991 and 1998, general government employment fell by about 350,000, reflecting the fiscal restraint in operation at the time. Prior to the current round of workforce cuts, this represents the only sustained period of cuts to the general government workforce seen over the last 50 years.

From 1998 onwards, the general government workforce then expanded again as public spending also increased, rising by nearly 700,000 to reach a high-point of 5.8 million at the start of 2010. This represented the largest level of general government employment in at least the last 20 years (and probably longer, given the numbers shown in Figure 1(a)).

¹¹ As documented in Parker (2004), the major privatisations occurred between 1979 (British Petroleum) and 1990 (the National Grid). The number of workers moved to the private sector differs for each privatisation (Rose 2008). The largest privatisations in terms of number of workers included British Telecom (250,000) in 1984, British Gas (89,000) in 1986, and the Area Electricity Boards and National Grid (119,000) in 1990.

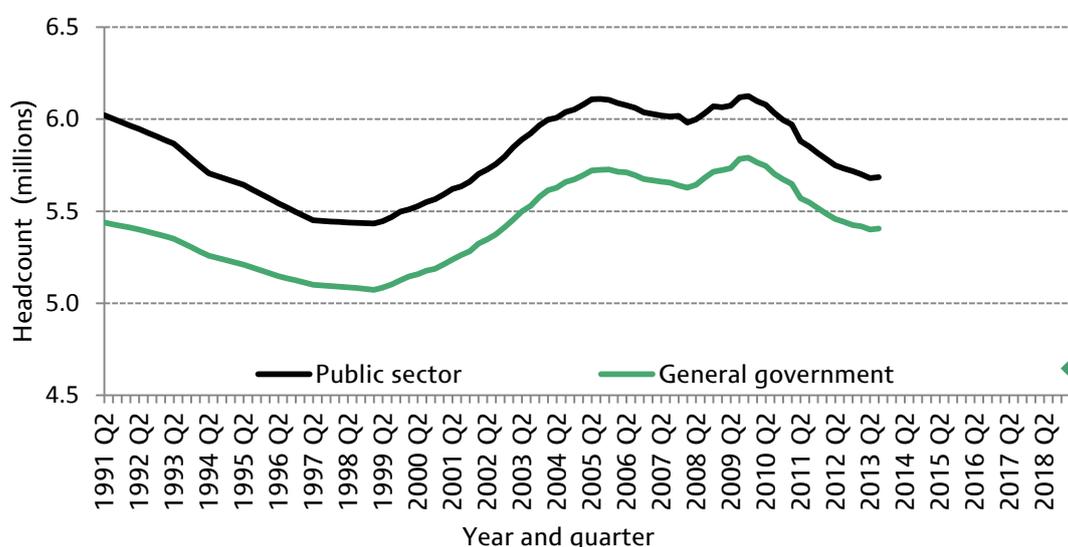
Figure 1(a) Size of the public sector workforce, 1961–91



Source: Authors' calculations using 'Economic Trends Annual Supplement 2004', table 3.9, Office for National Statistics.

Notes: Headcount is measured at mid-year. Community Programme employees, who were in the public sector from 1983 to 1988 before being transferred from general government to the private sector in 1988Q3, are excluded. Polytechnic staff were transferred out of general government into the private sector in 1988, but are included in general government from 1989 to 1991 to remove this discontinuity. Total employment measured using ONS series MGRZ.

Figure 1(b) Size of the public sector workforce, 1991Q2–2013Q2 and 2019Q1 (forecast)

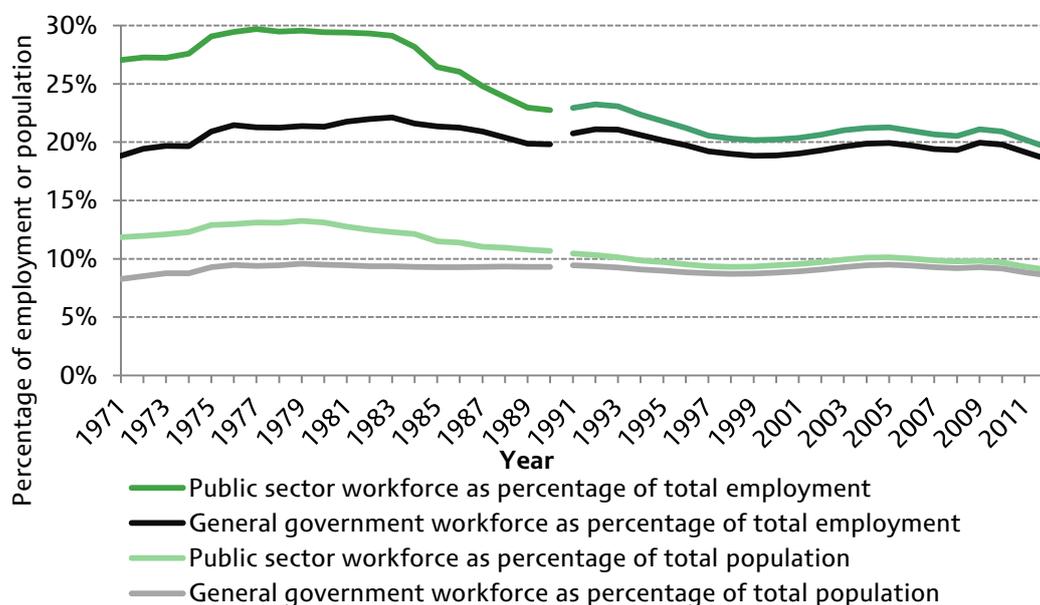


Source: Authors' calculations using ONS Public Sector Employment Statistics and Office for Budget Responsibility Economic and Fiscal Outlook, March 2013.

Notes: 1991Q2 to 1998Q4 are based on interpolations as public sector employment is only available in Q2 of each year. 1999Q1 to 2013Q2 are seasonally adjusted. Excludes reclassification of nationalised financial corporations in 2008, and of workers in Further Education and Sixth Form colleges in England to the

private sector in 2012Q2. Forecast for 2019Q1 from OBR is adjusted to keep college workers in the public sector.

Figure 1(c) Public sector and general government workforce relative to total employment and population, 1971–2012



Source: Authors’ calculations using ONS Public Sector Employment Statistics, ONS employment statistics (series MGRZ) and ONS mid-year population statistics.

Notes: The discontinuity in data at 1991 exists due to differences caused by the changed methodology for calculating public sector employment post 1991, which means the series are not fully consistent with each other.

Since the start of 2011, and as public spending cuts have begun to take effect, the size of the general government workforce has fallen by 240,000 by 2013 Q3. This means that nearly three years into public departmental spending cuts (with a total of eight years planned at the moment), less than one quarter of the predicted job reductions has been delivered so far. This fall comes on top of the fall of 140,000 between the recent peak in 2009Q4 and the start of 2011.¹² In 2012, the public sector represented less than 20% of total employment, already a lower percentage than at any point in the last 50 years. The proportion of the total population employed in the public sector has also reached the lowest proportion in the 40 years of data available, at 9%, meaning that public services are being provided by a lower share of the total population than at any point since the early 1970s.

¹² Although the first quarter of 2011 (the last quarter before the 2010 Spending Review Period started) is the basis for much analysis of cuts, general government employment fell by almost 150,000 between its peak and that point. As Chote and Emmerson (2010) show, the coalition announced cuts of £4.8 billion to spending by central government on public services and administration in 2010–11. It is unclear how quickly these cuts would have led to falls in employment, in particular since general government employment was falling prior to the 2010 election.

The workforce cuts from 2010 to 2013 are already almost as large as those seen over the entire seven years of public spending restraint in the 1990s, with more to come.¹³ However, they are still a long way from reversing the 700,000 increase seen in the period from 1998 to 2010. If OBR projections are confirmed, the 1.1 million cut in general government will be three times as large as that seen in the 1990s and would bring the level of general government employment to a level not seen at any point in at least the last 30 years. The population and employment is forecast to have grown by 2018–19, implying the share of the workforce working in general government will also continue to fall to about 15%.¹⁴ This is lower than the 19% of the workforce that worked in general government in 1971. We do not have workforce data going back that far but, according to the OBR, absent further welfare cuts, government spending on public services and administration will fall to its lowest share of national income since at least 1948, when National Accounts data began.¹⁵

There are reasons to think that the total workforce cuts might be either higher or lower than those forecast by the OBR. Previous IFS analysis (Crawford, Cribb and Sibietta 2013) has shown that central government departments are cutting their pay bills at a faster rate than other non-investment spending, which implies that general government employment might fall faster than predicted by the OBR. Updating this analysis for current forecasts of departmental non-investment spending, and the 1% public sector pay award for 2015–16 confirmed at the 2013 Spending Round, implies that the total fall in general government employment could be 1.3 million by 2018–19. If the trend of faster cuts to pay bills continues to 2018–19, the fall could be as large as 1.4 million.

Alternatively, workforce cuts could be lower if the government chose to reduce the deficit by cutting social security and welfare payments, raising taxes, or aimed for a less ambitious deficit reduction plan in the next parliament. Indeed, in January 2014 the Chancellor of the Exchequer signalled that he would cut £12 billion from the welfare budget in the next parliament. Since this was not announced before the Autumn Statement 2013, it was not accounted for in the latest OBR forecasts of general government employment. Assuming that these welfare cuts were accompanied by a £12 billion increase in current departmental spending by 2018–19 would imply that could mean around 150,000 fewer general government net job losses by 2018–19.¹⁶

Analysis of previous periods of spending cuts in the UK provides a useful comparison. Hood, Emmerson and Dixon (2009) analysed the spending cuts in two important historical cases: the ‘Geddes Axe’ cuts in the 1920s, and the period from 1975 to 1985. During the ‘Geddes Axe’ of the 1920s, government spending fell by 25%. This was achieved in particular by reducing the

¹³ Furthermore, while general government employment fell substantially throughout the 1990s, part of this can be explained by the ‘contracting out’ (also known as ‘outsourcing’) of some service jobs in the public sector to private sector contractors, such as for cleaning services.

¹⁴ This figure, as with all in this briefing note, keeps FE colleges as part of the public sector, despite reclassification in 2013. From 2013–14 to 2018–19, UK population is projected to rise by 2.2 million to 66.2 million by ONS and employment to rise by 1.3 million to 31.3 million (Office for Budget Responsibility 2013).

¹⁵ Office for Budget Responsibility (2013c) p.7

¹⁶ The assumption here that welfare savings were used to reduce cuts to current and not capital departmental spending is important. Reducing the cuts to capital expenditure, which is not generally relevant to the public sector pay bill, would not have the same effect of potentially reducing job losses.

number of temporary staff, in particular women, with total white collar civil service staff falling by about 600,000, or 35%, from 1920 to its low point in 1928. In the period 1975–85, most of the civil service jobs that were lost were blue collar industrial jobs, which fell by 43%.

Cuts to public sector employment have been delivered before. However, in the 1980s this was almost entirely driven by privatisations of public sector corporations, which itself represented a substantial change in the shape of the public sector workforce. The only sustained fall in general government employment in the last 50 years took place in the 1990s when employment fell by 350,000, though some of that is explained by the ‘contracting out’ of some service jobs in the public sector to private sector contractors.¹⁷ The looks likely to be dwarfed by the fall of more than 1 million in general government employment currently projected by the OBR.

3. Jobs in the public sector

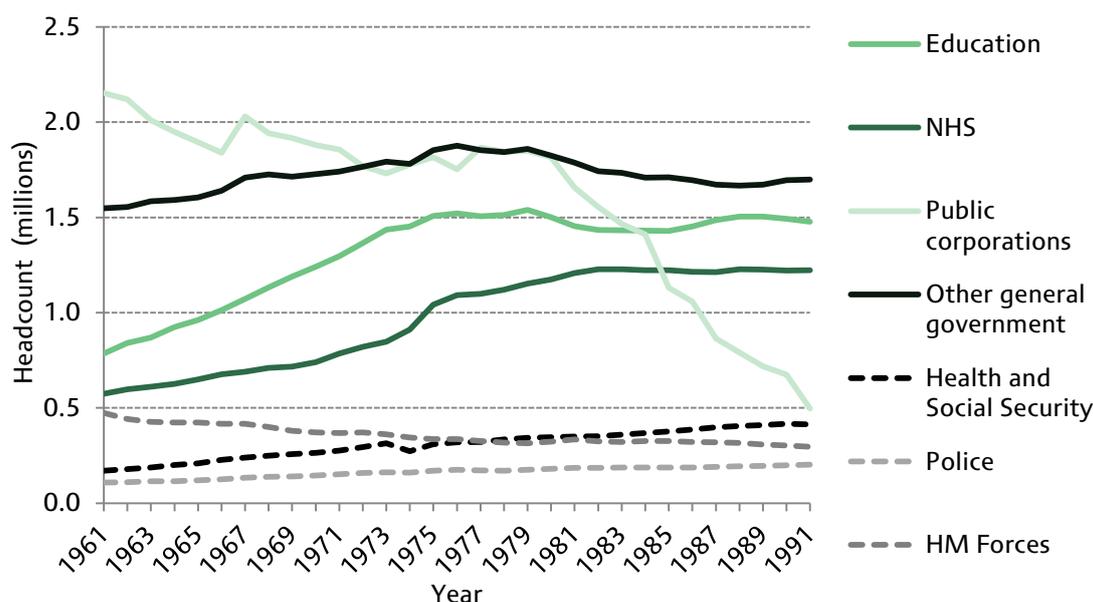
In the previous section, we discussed the changing size of the public sector workforce. The overall changes mask even larger compositional changes in the type of jobs performed in the public sector. With NHS and schools spending protected in real-terms in the current set of spending cuts, the falls in general government employment expected up to 2018–19 are likely to be concentrated in areas of unprotected spending (e.g. police, Defence and public administration). This is likely to further change the shape of the public sector workforce in terms of the industries and occupations represented. This section examines the changes in the workforce in different areas of the public sector.

Figure 2(a) shows that the increase in general government employment observed during the 1960s and 1970s was largely driven by increases in those working in education and the NHS. The education public workforce almost doubled from just below 800,000 in 1961 to over 1.5 million in the late 1970s, while the NHS workforce grew continuously, more than doubling from 600,000 to reach 1.2 million in 1981.¹⁸ This pattern is consistent with the fact that education spending increased from under 9.9% of total public spending in 1961–62 to 12.1% in 1978–79, while health spending increased from 8.4% in 1961–62 to 10.3% in 1981–82 (Crawford, Emmerson and Tetlow 2009).

¹⁷ See Syzmanski and Wilkins (1993), or Green and Haskel (2004), for further information.

¹⁸ The much smaller ‘Other Health and Social Security’ sector – part of local government compared with the NHS (part of central government) – also doubled over the same period.

Figure 2(a) Structure of the public sector workforce, 1961–91



Source: Authors' calculations using 'Economic Trends Annual Supplement 2004', table 3.9, Office for National Statistics.

Note: 'Other general government' includes public administration in Figure 2(a), but public administration is split out separately in Figure 2(b).

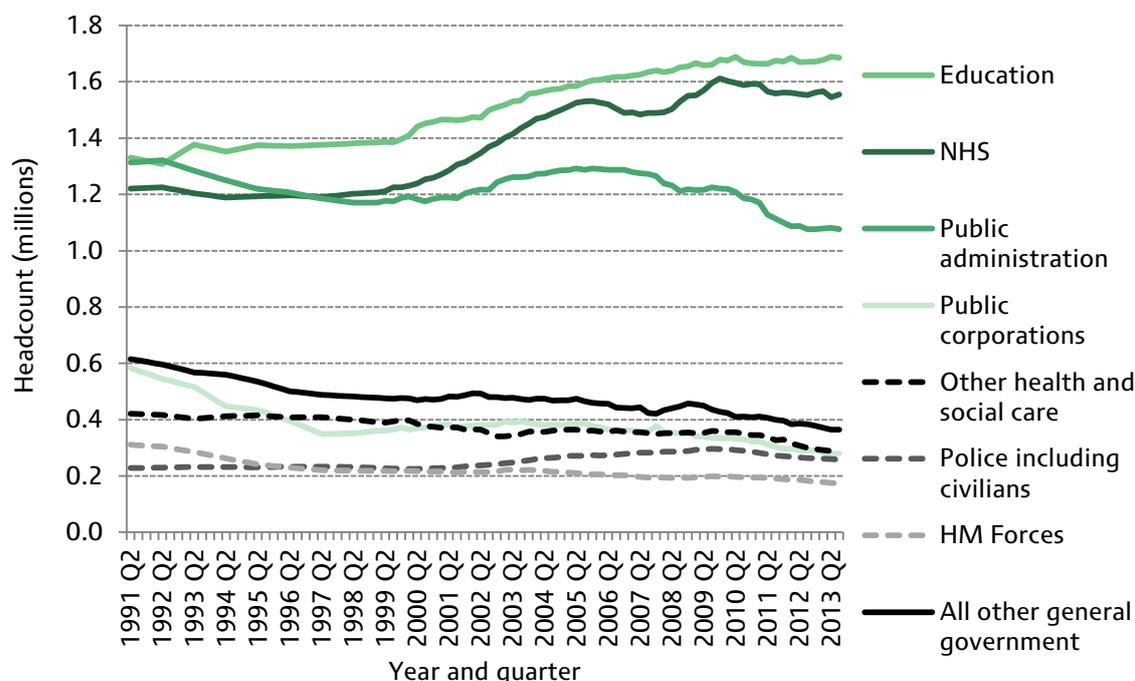
During the 1980s, different factors were at work. The most striking change was the privatisation of most public sector corporations, as previously discussed. However, growth in NHS and other health workforces slowed substantially. The education workforce was largely unchanged, though there was actually a reduction in pupil–staff ratios as the number of school pupils was declining over this period (Chowdry and Sibieta, 2011). Across other areas of the public sector, the number employed in HM Forces fell throughout the whole period. The police workforce continued to increase through the 1980s, albeit at a slower pace than before. Between 1961 and 1991, the police workforce (including civilian police staff) doubled in size from 100,000 to 200,000.

Figure 2(b) examines changes between 1991 and 2013, using slightly different definitions of the parts of the public sector. Here, we see that the cuts in general government employment in the 1990s were largely delivered as a result of employment cuts in public administration, HM Forces and other areas of general government. There were no cuts to the NHS or education workforces. Indeed, the NHS workforce was relatively constant in size throughout both the 1980s and 1990s, although some functions might well have been outsourced to the private sector during this time. With schools and NHS spending protected in the current round of spending cuts, there are thus some strong similarities between how previous cuts to general government employment were delivered during the 1990s and how they are likely to be delivered this time.

From the early 2000s onwards, total public spending then began to increase more quickly, growing by over 4% per year between 2000–01 and 2005–06. This extra public spending partly reflected not only increased generosity to lower-income families with children and to pensioners, but also a substantial increase in the funding of public services (Crawford, Emmerson and Tetlow 2010). Education and the NHS saw large increases relative to other areas of spending, with education spending growing by 77% in real terms and NHS spending almost doubling in real

terms between 1998–99 and 2010–11 (Crawford and Johnson 2011). Unsurprisingly, this translated into rapid workforce growth, with the education workforce growing from 1.4 million in 2000 to reach 1.7 million in 2010, and the NHS workforce growing from 1.2 to 1.6 million during the same period. There was less growth in the number of employees in public administration, which remained around 1.2 to 1.3 million during the 2000s.

Figure 2(b) Structure of the public sector workforce, 1991Q2–2013Q2



Source: Authors' calculations using ONS Public Sector Employment Statistics.

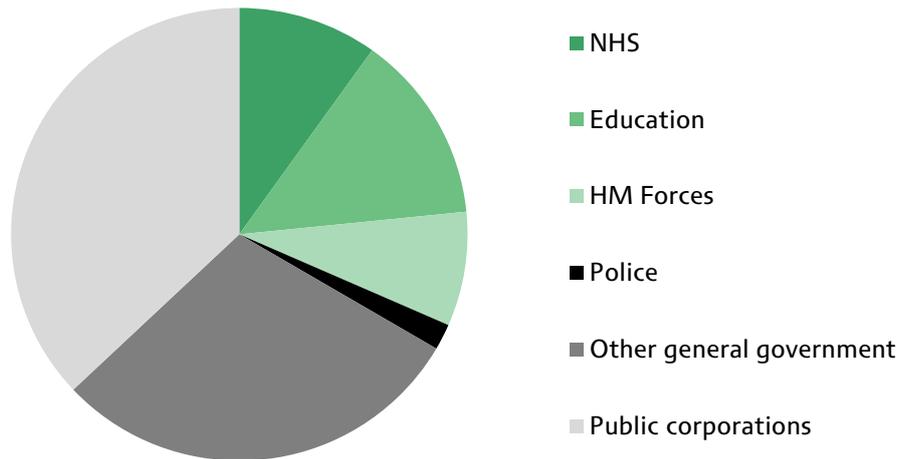
Notes: 1991Q2 to 1998Q4 are based on interpolations, as public sector employment is only available in Q2 of each year. 1999Q1 to 2013Q2 are seasonally adjusted. Excludes reclassification workers in Further Education and Sixth Form colleges in England to the private sector in 2012Q2 and of nationalised financial corporations to the public sector in 2008.

Continuing their long-run trends, we see that the police workforce began to grow again from 2000 onwards, reaching 300,000 by 2010, while HM Forces shrunk over the same period (particularly following the end of the cold war in the early 1990s).

Since spending and workforce cuts began to take effect from 2010 onwards, we see some marked differences between different parts of the public sector. Protected (or partially protected) areas of spending in the 2010 Spending Review have seen comparatively few workforce cuts, with education largely flat and a small fall in the NHS workforce (4%, or 57,000 from 2009Q4 to 2013Q3). Other areas of spending have therefore borne a larger burden of the workforce cuts. Although there have been only small falls in the NHS, the health and social care workforce that is not part of the NHS has shrunk by almost 21% (75,000). Many of such individuals might be part of the local government workforce. The public administration workforce has fallen by over 140,000 (12%), the police workforce by 37,000 (13%) and HM Forces by 24,000 (12%). The pattern of cuts to the public workforce since its peak in late 2009 therefore strongly reflects the spending priorities set out by the Coalition government in the 2010 Spending Review.

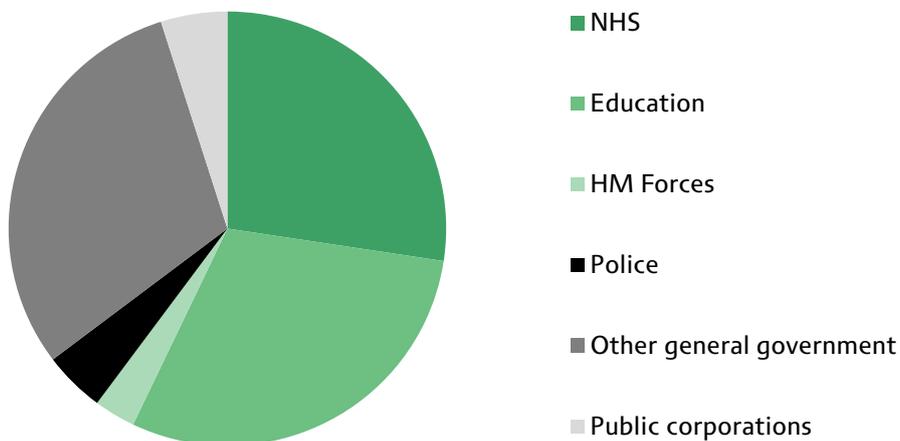
Figures 3(a) and 3(b) summarise the large changes in the structure of the public sector workforce over the last 50 years. These underline how the NHS and education workforces have become the largest parts of the public workforce, growing from 10% and 14% in 1961 to 27% and 30% in 2013, respectively. Conversely, the privatisations of the 1980s and 1990s reduced the proportion working in public corporations from 37% in 1961 to only 5% of the public sector workforce, while the proportion in HM Forces also fell. ‘Other general government’, which in particular includes public administration, stayed roughly constant at 30% over the period.

Figure 3(a) Proportion of public sector workforce in each area, 1961



Source: Authors' calculations using Economic Trends Annual Supplement, 2005.

Figure 3(b) Proportion of public sector workforce in each area, 2013



Source: Authors' calculations using ONS Public Employment Statistics, 2013.

Therefore, the most important long-run trend seems to be the increasing dominance of the education and NHS workforces. Together, these two functions made up 23% of the public sector workforce in 1961, 42% in 1991 and around 57% in 2013.¹⁹ As a proportion of general

¹⁹ Note that, as with everything else in this paper, this includes the workers at Further Education and sixth form colleges as part of the public sector despite reclassification to the private sector in 2012.

government employment, the NHS and education made up 37% in 1961, 47% in 1991 and 60% in 2013. This reflects a combination of sustained growth during times of buoyant growth in public spending levels (such as the 1960s, early 1970s and 2000s) and the fact that they were seemingly protected from workforce cuts while other areas of government were making workforce cuts (the 1990s and the present round of cuts).

The OBR forecasts that the total general government workforce will have shrunk by 1.1 million by 2018–19 compared with 2010–11. With funding for schools and the NHS ring-fenced it is likely that they will experience relatively small workforce reductions. At the extreme, if education and the NHS avoided any workforce cuts between mid-2013 and 2018–19, the OBR's forecast could only be borne out if the rest of the general government workforce shrank from 2.2 million to 1.3 million between mid-2013 and 2018–19, or a reduction of 40%. The proportion of the public sector working in the NHS or education could then reach over 70% by 2018 if they were protected from future workforce cuts. But even if the NHS and education workforces were to fall by 200,000 over the next five years, that would still imply workforce reductions of 30% elsewhere.

Looking further ahead, the OBR Fiscal Sustainability Report (2013) and Amior, Crawford and Tetlow (2013) note that an ageing population over the next few decades is likely to put upward pressure on health spending. This could lead to further increases in the NHS workforce, as well as the health and social care workforces in both the public and private sectors.

4. Structure and characteristics of public and private sector workforces

We have discussed in detail both the size of the public sector workforce and what parts of the public sector workforce have grown or shrunk over time. However, the structure of the labour force has also changed over time, with changing employment rates for men and women, different age groups and with the expansion of higher education since the late 1980s. In this section, we analyse how the individual characteristics of public and private sector workers have changed over time. The extent to which the public sector employs experienced and educated workers will be important not only in the provision of public services, but also with regard to the overall pay bill, as these workers might have more attractive outside options in the private sector. We also compare the industrial structure of the public and private sector workforces, and compare the types of public sector jobs undertaken by men and women. Finally, we focus on trends in specific occupations within health and education, as these dominant parts of the public sector change who they employ in the production of public services.

Individual characteristics

To understand changes in the individual characteristics of public and private sector workers, we make use of data from the New Earnings Survey (NES) to look at long-run changes back to the 1970s and data from the Labour Force Survey (LFS) to examine more recent changes since the 1990s.²⁰

²⁰ While the LFS is a large and regular sample, and allows more in-depth analysis of workers and industries, public sector workers are self-defined. Some will misreport their sector; in particular, a significant minority incorrectly classify themselves as part of the public sector (Office for National Statistics 2005). However, as long as misreporting is relatively infrequent and does not change substantially over time, the LFS still allows us to undertake useful analysis.

The NES is a 1% sample of all employees in Great Britain going back to 1975. It has the advantage of allowing us to look at long-run changes and sector of work is likely to be reliable as it is reported by employers. We can also follow individual workers over their employment trajectories. The main drawbacks are that there is no data on educational qualifications and it is likely to over-state the size of the public sector workforce as large public sector employees are more likely to respond to the survey (we thus do not use the NES to look at the size of public workforce). The LFS is a large ongoing survey of individuals in households in the UK, with over 100,000 people surveyed each quarter. This does allow us to examine educational qualifications, though sector of work is self-reported and so might be subject to a reporting bias.

With these qualifications in mind, Table 2 shows the composition of the public and private sector workforces in terms of their age and sex for 1979 and 1997 as measured in the NES. We chose these years as 1979 represents the start of the decline in the size of the public sector workforce through the 1980s and 1990s, and 1997 to coincide with our analysis of the Labour Force Survey below. Graphs showing the full time trends can be found in the Appendix (Figures A.5 and A.6). Table 3 compares the individual characteristics of public and private sector workers in 2012–13 (the most recent years of data) and 1997–98 (just before the public sector workforce began to expand through the late 1990s and 2000s). Appendix A shows the detailed changes for the intervening years (and just before, where data is available).

As can be seen, the majority of general government workers were female in 1979 and the workforce became slightly more female-orientated over time to 1997. The public sector as a whole was majority male in 1979 and became much more female over time to 1997. Comparing the two series implies that part of the reason for why there were more men in the public sector in 1979 was because public corporations were particularly staffed by men. The privatisation of public corporations since the 1980s has then made the overall public sector workforce more female over time.

From 1997 onwards, the public sector workforce gained a greater proportion of female workers. By 2012–13, around two thirds of the public workforce was female, slightly higher than in 1997–98, when it stood at 63% (according to the LFS). With women working in areas of the public sector that are relatively protected from spending cuts (see next sub-section), this is a trend that is likely to continue.

Looking at the private sector, we see a shift towards more women as a share of the private workforce between 1979 and 1997, likely to be the result of increased female labour supply over this period. However, there was little change in the proportion of female workers in the private sector between 1997 and 2012–13, remaining at around 40% of the private sector workforce.

Looking at the current age structure of the public and private workforces, we see that the public sector is significantly less likely to have both young and older people, but a higher proportion of people in their thirties, forties and fifties. In 2012–13, only 1% of public sector workers were under 20, compared with 4% of the private sector workforce and a slightly lower proportion of public sector workers are in their twenties than private sector workers. The proportion of both sectors in this age group has fallen since 1997–98. Looking back further in time to 1979, we see that the shift towards a lower proportion of young people in the public sector continues a longer run trend.

There is also a lower proportion of people who are aged 60 or over in the public sector than in the private sector. This might be partly because many public sector workers are members of a

final salary pension scheme that has a normal pensionable age of 60. The public sector also employs relatively more women, and women are more likely to retire at age 60 than men.²¹

Looking at trends over time, we see that the proportion of workers in their 50s and 60s gradually declined in both the public and private sectors between 1979 and the mid-1990s.²² These trends do not look that different across sectors, suggesting that the main drivers relate to the participation of older workers more generally. Since the mid-1990s, however, this trend has reversed, with gradually more workers in their 50s and 60s in the workforce.

Generally speaking, public sector workers have higher levels of education than their counterparts in the private sector. About 57% of workers in the public sector had some form of higher education qualification in 2012–13, compared with 37% of private sector workers. Looking at trends over time, both workforces have gradually become more educated, with a greater proportion of workers with some form of higher education in both sectors.

The public sector also has a disproportionately large number of people with postgraduate degrees (excluding PGCEs)²³. About 11% of public sector workers in 2012–13 had a postgraduate degree (excluding PGCEs), almost double the proportion of the private sector. This difference could reflect a number of factors worth investigating; e.g. increasing level of skills required by the public sector, a particular desire by public sector employers to hire staff with higher degrees or a low valuation of postgraduate degrees by the market.

Table 2 Characteristics of public and private sector workers, 1979 and 1997

	Private sector		General government		Public sector	
	1979 %	1997 %	1979 %	1997 %	1979 %	1997 %
<i>Sex</i>						
Male	65	58	41	36%	54%	38%
<i>Age</i>						
Under 20	10	4	4	1	5	1
20–29	23	24	21	16	21	17
30–39	21	27	23	29	22	29
40–49	20	23	23	32	23	31
50–59	19	17	22	19	23	19
60 and older	7	5	6	3	6	4

Source: Authors' calculations using the New Earnings Survey Panel Dataset, 1979 and 1997.

Note: Cell sizes are always above 200.

²¹ Evidence suggests this is related to their lower state pension age (see Cribb, Emmerson and Tetlow (2013), for more details).

²² As Blundell, Bozio and Laroque (2013) show, in the UK, employment rates at older ages fell sharply in the early 1980s, for men in particular, and since the mid-1990s (the late 1980s for women) have progressively increased again.

²³ We separate out the PGCE degree from other postgraduate degrees so that the number of people with higher degrees are not distorted by a degree that is only used as a route to teaching.

Table 3 Characteristics of public and private sector workers, 1997–98 and 2012–13

	Private sector		Public sector	
	1997–98 %	2012–13 %	1997–98 %	2012–13 %
<i>Share of workforce</i>				
<i>Sex</i>				
Male	60	59%	37%	34%
<i>Age</i>				
Under 20	7	4	1	1
20–29	23	22	17	15
30–39	26	22	29	22
40–49	22	24	30	30
50–59	17	19	19	25
60 and older	6	9	4	7
<i>Highest qualification</i>				
Higher Education	20	36	41	57
<i>Of which: postgraduate</i>	2	6	5	11
A level or equivalent	27	26	18	18
GCSE A*–C or equivalent	23	22	20	17
Other qualifications	15	10	12	5
No qualifications	15	7	10	3

Source: Authors' calculations using the Labour Force Survey, various years.

Notes: Higher Education includes degree or equivalent, and other forms of higher education. Postgraduate degrees do not include PGCE degrees.

The measures of public sector employment discussed in sections 3 and 4 are headcount measures - they simply measure the number of people working in the public sector. However, in terms of both the production of public services and the earnings of workers, the number of hours worked is more important than simply the number of people working. Therefore, another characteristic of interest that can be measured in the NES and LFS is the number of hours worked each week. As can be seen in Table 4(a), average hours worked were lower in the public sector (34.2) than in the private sector in 1979 (36.9), and a lower share worked full time in the public sector. Average hours were then even lower, if we simply focus on general government. Over the course of the 1980s, average hours then fell in both sectors, but by slightly more in the public sector. This is likely to be partly a result of general government making up a larger share of the public sector as many previously nationalised industries were privatised, but hours also fell slightly within the general government sector.

As can be seen from Table 4(b), average hours and the proportion of people in the public sector working full time were relatively constant through the 1990s and up to 2007–08. There was a fall in average hours worked in the private sector over the same period, but average hours remained notably lower in the public sector. Since the onset of the financial crisis, average hours and the proportion working full time has fallen sharply in the private sector, as has been documented elsewhere (e.g. Blundell, Crawford and Jin 2013). This could, in part, be a response by private firms to the financial crisis, in that they reduce the hours of working rather than implementing

redundancies. However, average hours worked have changed very little in the public sector over the same period. By the latest year, 2012–13, average hours remained lower on average in the public sector, but the difference between the sectors is much lower than in past decades as hours have fallen on average in the private sector (both before and during the financial crisis).

Table 4(a) Average hours and percentage working full time in public and private sectors, 1979–97

	Average basic hours per week			Percentage working full time		
	Private sector	Public sector	General government	Private sector %	Public sector %	General government %
1979	36.9	34.2	32.5	84	72	63
1990	36.0	32.4	31.7	80	67	63
1997	34.9	31.6	31.2	81	68	66

Source: Authors' calculations using the New Earnings Survey Panel Dataset, 1979, 1990 and 1997.

Notes: Cell sizes are always above 2000. Hours are basic working hours (excluding overtime) as reported by employers. Full-time work is defined by working 30 or more basic hours in a week.

Table 4(b) Average hours and percentage working full time in public and private sectors, 1994–95 to 2012–13

	Average usual hours per week		Percentage working full time	
	Private sector	Public sector	Private sector %	Public sector %
1994–95	37.7	33.6	78	73
1997–98	37.7	33.1	78	71
2007–08	36.4	33.1	78	72
2012–13	35.5	33.1	75	73

Source: Authors' calculations using the Labour Force Survey.

Notes: Hours are measured by hours of work in a usual week. Hours are hours in a usual week as reported by employees. Full-time work is defined by working 30 or more hours in a usual week.

Industrial structure

We now focus on the changing industrial structures of the public and private sector workforces. Table 5 compares the industrial structure of public and private sector workforces in 1997–98 and 2012–13.²⁴ In particular, it shows the share of both sectors made up by the three largest public sector industries (health and social work, education, public administration and Defence) and the four largest private sector industries (hotels, restaurants and retail; manufacturing; real

²⁴ The trends from 1994–95 are roughly linear. Results for each year from 1994–95 to 2012–13 can be found in the Appendix.

estate and business activities; financial intermediation). Longer time trends back to 1994–95 can be seen in Appendix Figure A.1.²⁵

Mirroring the analysis in section 3, from 1997–98 to 2012–13, the proportion of the public sector in health and education increased, making up around 62% of the public workforce in 2012–13. In contrast, the proportion in public administration and Defence fell. No other single industry makes up a large share of the public sector workforce. The industrial structure of the private sector is very different. Education is a relatively small, though growing proportion of the workforce (universities, independent schools and many nurseries are in the private sector). Health and social work has increased from 5.7% to 8.3% of the private workforce, partly reflecting the large role the private sector plays in residential social care.²⁶ The largest industries in the private sector include the service sectors in hotels, restaurants and retail sectors, real estate and business activities, and financial intermediation. The decline in the manufacturing workforce is clear to see, falling from 23.7% to 13.7% of the private sector workforce.

Table 5 Major industries within the public and private sector workforces, 1997–98 and 2012–13

	Private sector		Public sector	
	1997–98 %	2012–13 %	1997–98 %	2012–13 %
<i>Industry</i>				
Education	2	3	26	33
Health and social work	6	8	30	31
Public admin. and Defence	0	1	25	23
Hotels, restaurants and retail	26	24	1	1
Manufacturing	24	14	1	0
Financial intermediation	5	5	1	0
Real estate and business activities	12	17	3	2
Other	25	27	14	10

Source: Authors' calculations using the Labour Force Survey, various years.

Notes: Industries are defined by the Standard Industrial Classification system 1992.

That the industries of the public and private sectors are very different is unsurprising. It does, however, have an important possible consequence in the face of large cuts to the public sector workforce. Given the very different industries and skills possessed by public and private sector workers, one might question how easily workers will move from the public sector to the private sector. However, the private sector is strongly geared towards services and a large number of private sector industries are not listed here. Furthermore, some of the shift in employment away from public sector jobs could result from different initial occupational choices of young people faced with little or no hiring by public sector recruiters. Finally, given the relatively high

²⁵ The Labour Force Survey data must be used to undertake this analysis. Given self-reporting of the sector, this could lead to some differences with the ONS Public Employment Statistics seen in section 3. For example, the increase in the proportion of public sector workers in health and social work is not seen in the LFS data, whereas it is ONS data.

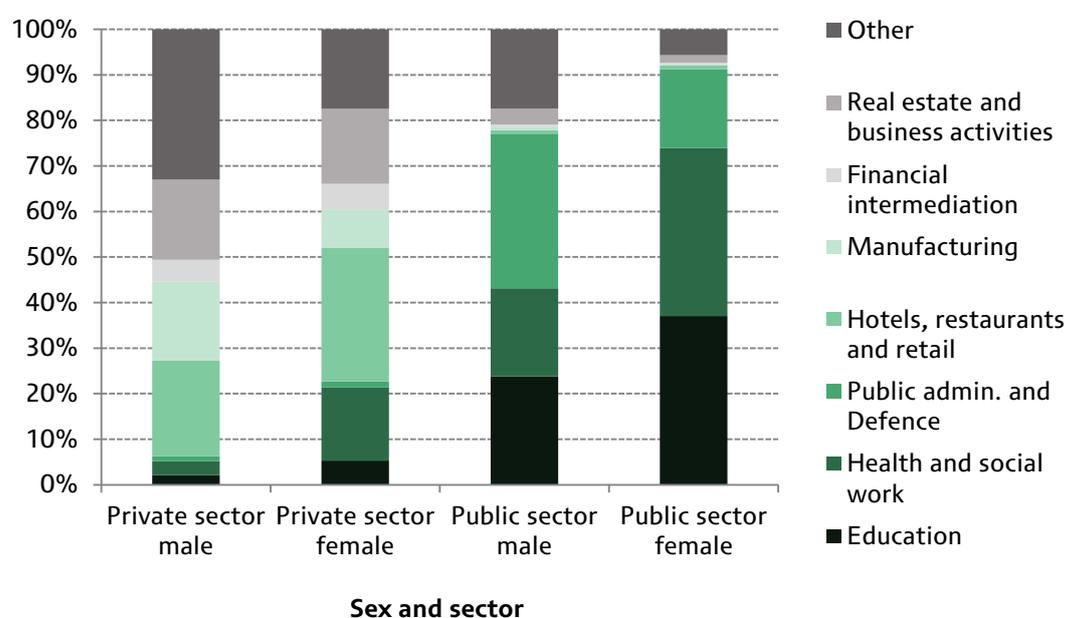
²⁶ It is to be remembered here that since GPs are self-employed, they are part of the private sector, even if they only see NHS patients.

education levels of public sector workers, movements of workers from the public to private sector could lead to a more educated and productive private workforce. Nevertheless, the magnitude of the cuts, together with the fact that the characteristics of the two workforces are quite different at present, does makes this shift look quite challenging.

Within each sector, men and women work in different industries. Figure 4 shows that, almost 75% of women in the public sector are in health or education, compared with just 43% of men. Men are more likely to be found in public administration and Defence. Men in the public sector therefore work disproportionately in those areas that are more likely to face larger spending cuts in the future, and potentially workforce cuts as a result. This suggests that the long-run trend towards larger shares of the public workforce being female will continue in the coming years.

If we look at the private sector, we see that 20% of women work in health or education, traditionally public sector industries. A further 30% of women work in hotels, restaurant and retail. Men, by contrast, are more likely to be found in manufacturing and other industries.

Figure 4 Industries for men and women in public and private sector workforces, 2012–13



Source: Authors' calculations using the Labour Force Survey, 2012Q2–2013Q1.

Notes: Industries are defined by the Standard Industrial Classification system, 1992.

Changes in the delivery of public services

In previous section, we examined changes in the size of the public workforce and the areas of the public sector that have become relatively larger or smaller. However, there have also been important changes in the way particular public services are delivered. For instance, there have been changes in the sorts of jobs undertaken in different sectors and the level of skill required in these jobs. The private sector is being increasingly relied on to deliver services previously provided by the public sector, for example as result of the outsourcing of particular services.

In this short section, we present initial descriptive evidence on the types of occupations employed by the public sector in the two areas of the public sector that have grown most over

recent decades (health and education) to see how the balance of different occupations has changed in these specific areas. We also document the growth of the private sector in two key areas of the health and education sectors that have seen some of the largest growth in terms of the degree of private sector delivery. To provide a more comprehensive picture, future work would need to examine the changes across other areas of the public sector (beyond health and education) and the delivery of public services by the private sector in other areas.

There are also other important changes occurring within the public sector that we do not consider here, such as the School Academies programme, the use of the private sector in treating NHS patients, and outsourcing that also changes the delivery of public services and the public sector workforce..

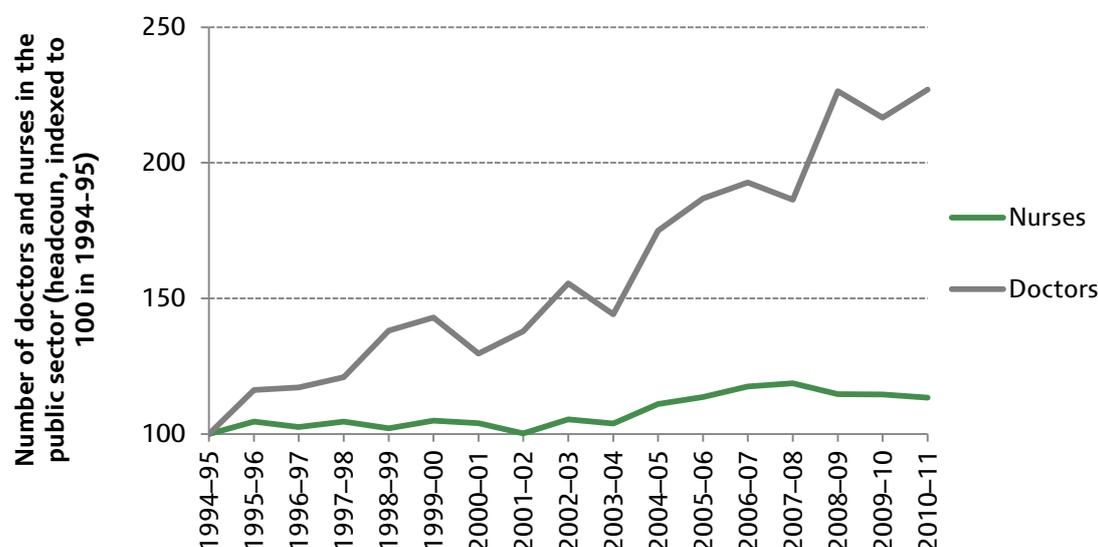
In particular, we examine the large public sector occupations, which are easy to define and whose large number means there are many of them sampled in survey data, such as the LFS.²⁷ We use the LFS to allow us to capture trends over time for the whole of the UK. Given the known over-reporting of workers in the public sector (Office for National Statistics 2005), we focus on trends over time rather than headcounts. Administrative data, which generally only covers England, and is often not consistent over time, can still be used to supplement this analysis by providing recent snapshots of the overall size of these occupations within the public sector. It is particularly instructive to examine the changes in the occupations of public sector workers in health and education, since their budgets and workforces increased quickly during the 2000s.

Figure 5 shows the number of doctors and nurses employed by the NHS relative to their level in 1994–95.²⁸ It shows that the number of both have gradually risen since the mid-1990s. The number of doctors increased quickly over the whole period, more than doubling from 1994–95 to 2010–11. For nurses, the story is very different. The number of nurses grew by less than 4% between 1994–95 and 2003–04, before increasing at a faster rate between 2003–04 and 2007–08. Over the whole time period studied, the headcount of public sector nurses increased by around 13%.

²⁷ We use Standard Occupation Classification codes from data in the LFS to count the number in each public sector occupation, weighted by LFS survey weights.

²⁸ Since GPs are self-employed (and therefore in the private sector), they should not be captured in this measure. However, given that the sector in the data is self-reported, to the extent that GPs misreport their sector and economic status, this could (incorrectly) include them as public sector workers.

Figure 5 Nurses and doctors in the public sector (headcount, indexed to 100 in 1994–95)



Source: Authors' calculations using the Labour Force Survey.

Although LFS data does not enable us to look at other NHS occupations for the whole UK, Department of Health data allows us to look at trends for England.²⁹ This confirms that the number of doctors (excluding GPs)³⁰ grew substantially between 2002 and 2010, growing from 70,000 to reach about 100,000 (on a full-time equivalent basis, FTE), or by about 43%. There was also large growth in the number of qualified scientific, therapeutic and technical staff (staff who hold qualified positions, such as radiographers and health care scientists), which grew from just under 100,000 in 2002 to just over 130,000 in 2010 on an FTE basis, or by about 33%. The number of 'NHS infrastructure support' staff, which includes central functions and managers, saw the next highest growth in percentage terms (growing by 28% between 2002 and 2010, from around 160,000 to around 200,000 on an FTE basis). There was slightly less growth in the number of 'support to clinical staff' (less-qualified positions), which grew from around 250,000 in 2002 to reach about 300,000 in 2010, growth of about 28%. Nurses saw the lowest growth in percentage terms (about 16% between 2002 and 2010), but this was from a much higher base and number from 280,000 to about 320,000 on an FTE basis. Therefore, it seems that the fastest increase since the mid 1990s was in the most qualified staff, doctors and other qualified staff, as well as central functions and managers. However, there were many more nurses and support staff in the early 2000s than doctors. Therefore, although there was smaller proportional growth in nurses and support staff, there was large growth in absolute terms. Indeed, the growth in nurses of 40,000 was larger in absolute terms than the growth in number of doctors (30,000).

Whereas the most qualified occupations in the NHS have seen the largest proportionate growth, this is not the case in schools. Figure 6 documents the number of primary and secondary school teachers in the public sector_ over time, together with the number of teaching assistants (as

²⁹ <http://www.hscic.gov.uk/catalogue/PUB10392>.

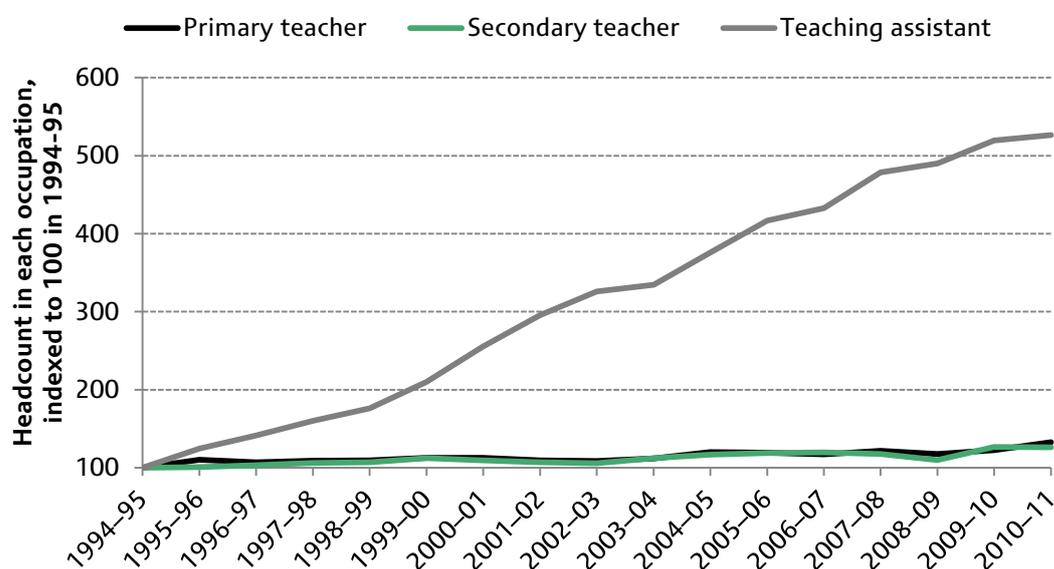
³⁰ There were 35,000 GPs in 2010 – although, as previously discussed, as self-employed workers they are not officially classified as public sector workers.

measured in the LFS). The numbers of primary and secondary school teachers have grown steadily over time, increasing by around 30% by 2010–11 compared with their 1994–95 levels for both primary and secondary teachers. Although this is significant growth, it is outstripped by the proportionate growth in the number of teaching assistants, which has grown by over 400% over the same period. According to Department for Education data for schools in England,³¹ there were 195,000 teaching assistants in state-funded schools in England in 2010, compared with 450,000 teachers (both figures based on an FTE basis). According to the same data, the number of teaching assistants has grown by about 150% over the 10 years between 2000 and 2010, while the number of support staff in schools in England doubled. However, both grew from relatively low bases.

As Figure 7 further shows, the educational background of teaching assistants is very different to that of teachers. In 2010–11, while 86% of primary school teachers and 91% of secondary school teachers have a degree or higher qualification, this only applies to 18% of teaching assistants. The majority (58%) have only at most A-levels or GCSEs. The impact of this rapid expansion in number on children’s educational outcomes remains uncertain.³²

Therefore, both the NHS and schools saw large increases in funding during the 2000s, but whereas the NHS saw faster growth in the numbers of highly qualified staff, schools saw faster growth in support staff and assistants. However, to some extent this represents schools catching up with the NHS as there were already significant numbers of assistants and support staff in the NHS in the early 2000s. The numbers of support staff and assistants in schools grew from a much lower base.

Figure 6 Primary and secondary school teachers and teaching assistants in the public sector (headcount, indexed to 1994–95)

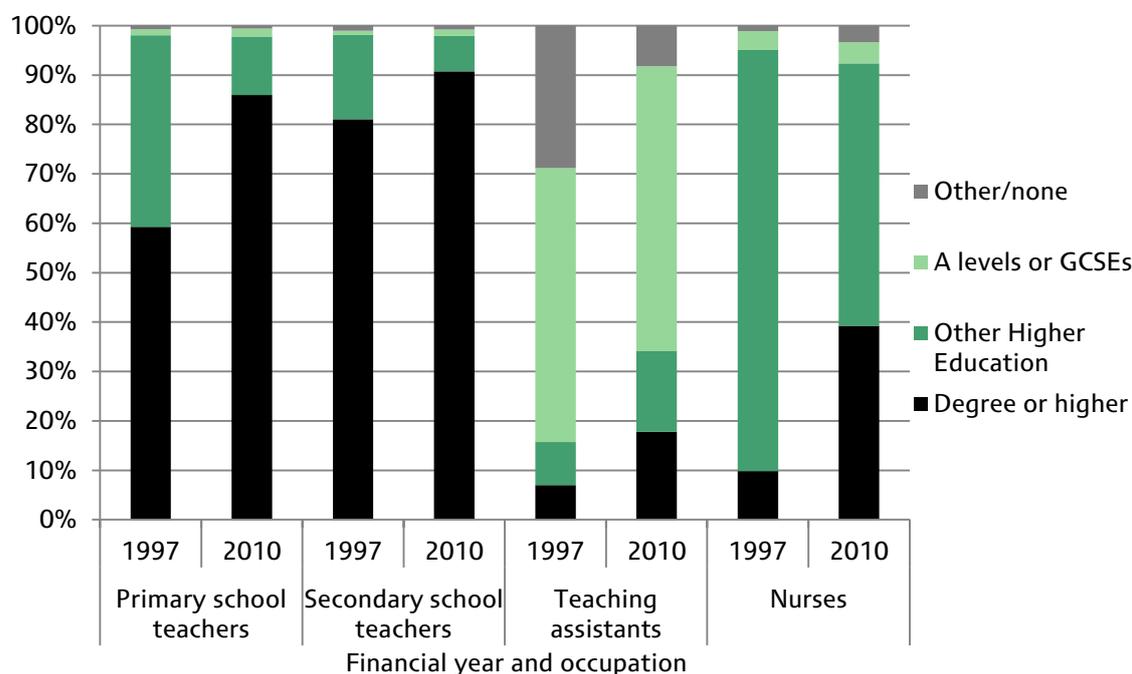


Source: Authors’ calculations using the Labour Force Survey.

³¹ <https://www.gov.uk/government/publications/school-workforce-in-england-november-2012>

³² Nicoletti and Rabe (2012) and Blatchford (2009) are two papers that examine this issue, but there is no consensus between them

Figure 7 Highest qualifications of teachers, teaching assistants and nurses, 1997–98 and 2010–11



Source: Authors' calculations using the Labour Force Survey.

However, the level of formal education of both teachers and teaching assistants in the public sector has risen over time (as can be seen in Figure 7). In particular amongst primary school teachers, where the percentage with a degree or higher increased from 59% to 86% from 1997–98 to 2010–11. To a similar extent, the level of formal qualifications held by nurses has also increased quickly. In 1997, only 10% of nurses in the public sector had a degree (most had a non-degree form of higher education) but, by 2010–11, this figure had risen to 39%. In 2013, all those training to be a nurse had to be on a degree course, so the proportion of nurses with a degree will continue to rise over time.³³ To some extent, the increase in degree level qualifications may partly reflect the relabeling of similar qualifications from other higher education to degree qualifications. For example, since polytechnics were converted into universities in 1992, nursing or teaching qualifications from former polytechnics would have become degree level qualifications.

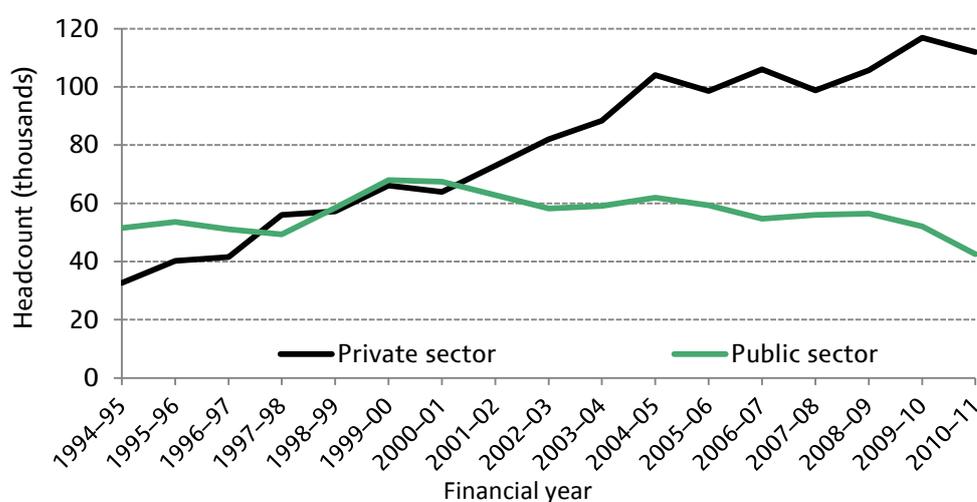
As was seen in Table 5, education and also health and social care have also been growing parts of the *private sector* over the last 15 years. This might be because individuals are demanding more education and health services over and above those provided through the state systems. Alternatively, it could be that, to a growing extent, the public sector might purchase health

³³ See http://webarchive.nationalarchives.gov.uk/+/www.dh.gov.uk/en/MediaCentre/Pressreleasesarchive/DH_108359 for more details.

services from the private sector, such as the use of private sector Independent Sector Treatment Centres for NHS patients.³⁴

Here, we examine the growth in private sector delivery within two specific areas: nursery education and social care. These areas can account for much of the growth in private sector delivery within education and health and social care. Figure 8 shows the number of public and private sector nursery workers (nursery nurses and nursery assistants) according to the Labour Force Survey. This shows that much of the expansion of the nursery sector from the early 2000s onwards can be accounted for by a greater reliance on private sector delivery – albeit often publicly financed.

Figure 8 Nursery nurses and assistants in the public and private sectors (headcount)



Source: Authors' calculations using the Labour Force Survey.

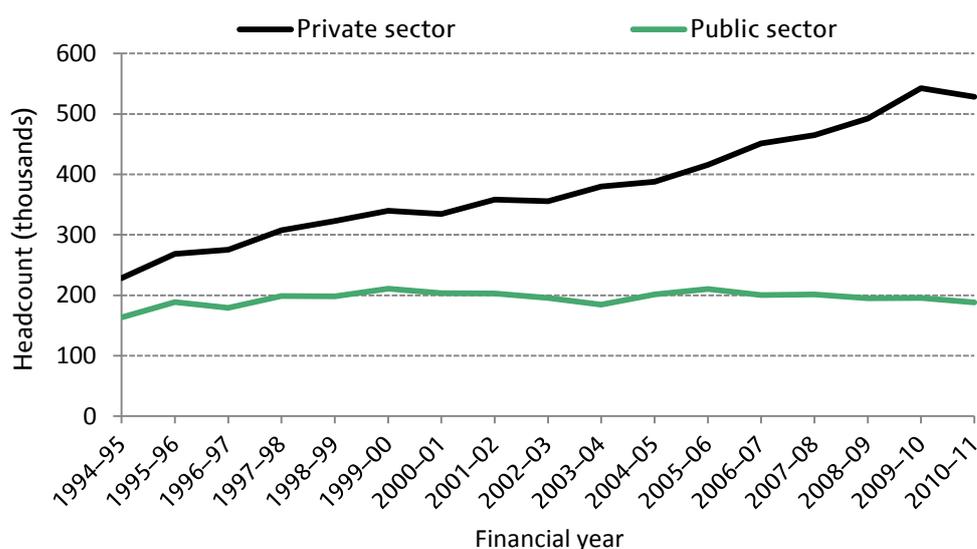
Notes: Nursery nurses and assistants care for children from birth up to seven years of age in day or residential nurseries, children's homes and maternity units.

The private sector also has an important role in personal care. Figure 9 shows the number of public and private sector care workers over time. The ageing population has clearly increased the demand for social care. Here, we see that increases in supply largely seem to result from increased private delivery of care. The number of private sector care workers increased substantially, with barely any growth in the public sector. It seems likely that this trend for a growing number of private sector care workers will continue.

There will be other areas of education and health where the private sector is increasingly responsible for delivery, such as the number of private tutors or workers in Independent Sector Treatment Centres, as well as across other areas of the public sector. We leave it to future work to provide a comprehensive picture of such patterns.

³⁴ Arora et al. (2013) show that in 2006/07, the NHS spent £5.6 billion (in 2011/12 prices) on care provided by non-NHS providers. By 2011/12 this had increased to £8.7 billion.

Figure 9: Care workers in the public and private sectors (headcount)



Source: Authors' calculations using the Labour Force Survey.

Notes: Care workers attend to the needs of the elderly or infirm, either at home in a residential care home.

5. Geographical variation in the public sector workforce

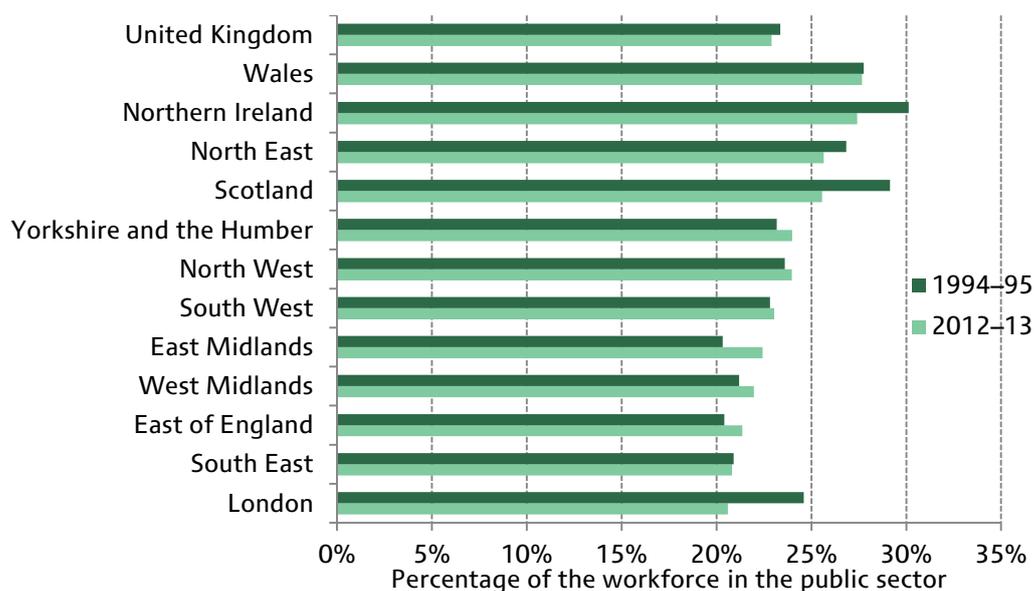
While previous sections have analysed the public sector workforce in the UK as a whole, here, we dig deeper to see where public sector jobs are located. There has been considerable interest in how the size of the public sector varies across regions. Emmerson and Jin (2012) showed that, in the two years to 2011Q1, there was considerable variation in the differentials between public and private sector pay in different regions. Moreover, the Chancellor of the Exchequer announced in the Autumn Statement 2011 that he would 'ask the Independent Pay Review Bodies to consider how public sector pay can be made more responsive to local labour markets'.

The proportion of the workforce in the public sector varies across the country, and has changed over time. As Figure 10³⁵ shows, in 2012-13 Wales had the highest proportion of its workforce in the public sector (at 27.7%), and London (20.6%) had the lowest. As a rule of thumb, richer areas in the south of England have a lower proportion of their workers in the public sector. It is important to note that, although the size of the public sector differs across regions, all have between 20% and 28% of their workforce in the public sector.

The changes since the early 1990s are most striking for three regions: Northern Ireland, Scotland and London, each of which saw large reductions in the percentage of workforce in the public sector (2.7, 3.5 and 4.0 percentage points, respectively). On the other hand, the proportion of workers in the public sector increased in Yorkshire and the Humber, the North West, South West, East and West Midlands, and East of England.

³⁵ Office for National Statistics data on regional public sector employment is only available from 2008, which does not allow for longer-term comparisons. This means that we must use LFS data, which generally overestimates the number of public sector workers. As long as this overstatement is not different across regions and over time, we are still able to make meaningful comparisons.

Figure 10 Public/private composition of regional workforces, 1994–95 and 2012–13



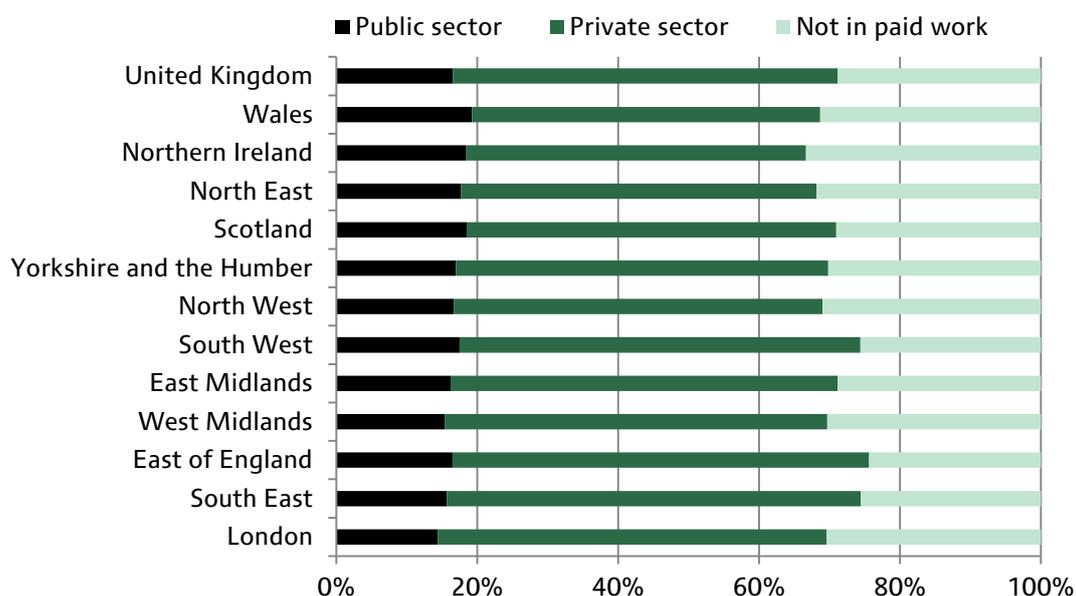
Source: Authors' calculations using the Labour Force Survey, various years.

One important source of differences in the relative size of the public workforce is the fact that the proportion of the population in employment differs across regions. Public sector employment could be spread out evenly across the regions according to population but, due to low levels of private sector employment, the proportion of the workforce in the public sector could be lower.

Figure 11 examines this possibility, splitting the working age population in each region into three groups: those not in paid work, those in the public sector and those in the private sector. On the whole, regions and countries where the public sector makes up a large share of the workforce are also areas with large public sectors as a share of the population. However, there is less variation in the size of the public workforce as a share of the overall working age population than as a share of those in work. For instance, the public sector in Wales accounts for 19% of the working-age population compared with 14% in London, whereas the public sector makes up 28% and 21% of their respective workforces.

Therefore, part of the reason for regional differences seen in Figure 10 reflects differences in levels of private sector employment. However, some of the variation does simply reflect that the public workforce varies as a share of the population.

Figure 11 Proportion of working age population in employment and each sector, 2012–13



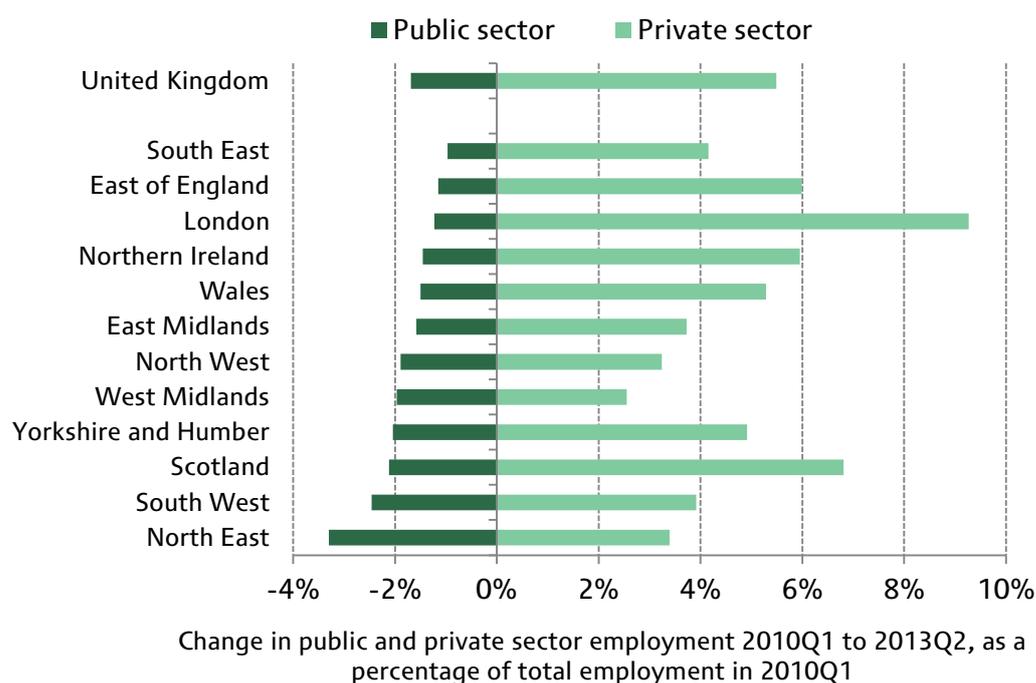
Source: Authors' calculations using the Labour Force Survey, various years.

Notes: Working-age population defined as all people aged 16 to 64 inclusive.

On top of the levels of public employment in each region, it is important to understand the recent changes in both public and private sector employment. In the economy as a whole, the private sector workforce is currently growing faster than the public workforce is shrinking. Here, we examine whether this is true across different regions and countries.

In Figure 12, we show the change in regional employment from 2010Q1 to 2013Q2, split between the public and private sectors, as a proportion of total employment in 2010Q1, just before the public spending cuts began to take effect. The first thing to notice is that public employment has fallen in all regions, and private sector employment has risen in all regions. Moreover, the growth in private sector employment has more than matched the fall in public sector employment in each region. However, beyond that, it is not the case that those regions with larger cuts to public employment are those with faster growth in private sector employment. London and Scotland stand out as those areas with the fastest private sector growth, while the North East and West Midlands face relatively large cuts to public employment and slower private employment growth. The extent to which private jobs in each region make up for the reductions in the public sector alongside the geographical mobility of the labour force will have an important effect on regional and overall unemployment rates in the future.

Figure 12 Change in regional employment since 2010Q1



Source: Authors' calculations using the ONS Public Sector Employment Statistics.

Notes: Excludes reclassification of Further Education and Sixth Form Colleges in England to the private sector, but includes the public sector financial corporations

Regions as defined above are very large areas and can themselves mask large differences; for example, between rural and urban areas. It is therefore important to look at the proportion of the labour force that works in smaller local areas. In order to do this, we need to use a larger dataset of employees, the Annual Survey of Hours and Earnings (ASHE).³⁶ Using this, we calculate the proportion of the workforce that is in the public sector in each 'work area'.³⁷ The local work areas are ranked from that with the lowest percentage of the workforce in the public sector to the highest and then the local work areas are split into 10 equal groups called 'deciles'. The top decile is that with the highest percentage of the workforce in the public sector, whereas the bottom decile has the lowest percentage of the workforce in the public sector. This is mapped in Figure 13.

It is important to note that a different sampling technique, different reporting of the public sector and the need to combine multiple years means that data based on ASHE will not be totally consistent with LFS or ONS Public Employment Statistics. Indeed, it is likely that ASHE will overstate the level of employment in the public sector in total. We therefore focus on the variation

³⁶ The advantage of this data, apart from its sample size, is the indicator of the public sector is based on the Inter-departmental Business Register, rather than being self-reported. However, it contains relatively few variables, its sampling technique means that low paid workers are underrepresented and it excludes Northern Ireland.

³⁷ The local 'work area' is a variable in ASHE that allows the consistent identification of local areas, splitting out some of the more significant urban areas from their rural surrounding counties. More details can be found at <http://www.esds.ac.uk/doc/6689/mrdoc/pdf/6689userguide.pdf>

across areas, rather than the precise levels. The most accurate estimate of the relative size of the public sector workforce across the country as a whole is likely to come from the ONS Public Sector Employment Statistics illustrated in section 2, which shows that about 20% of the workforce is currently employed in the public sector.

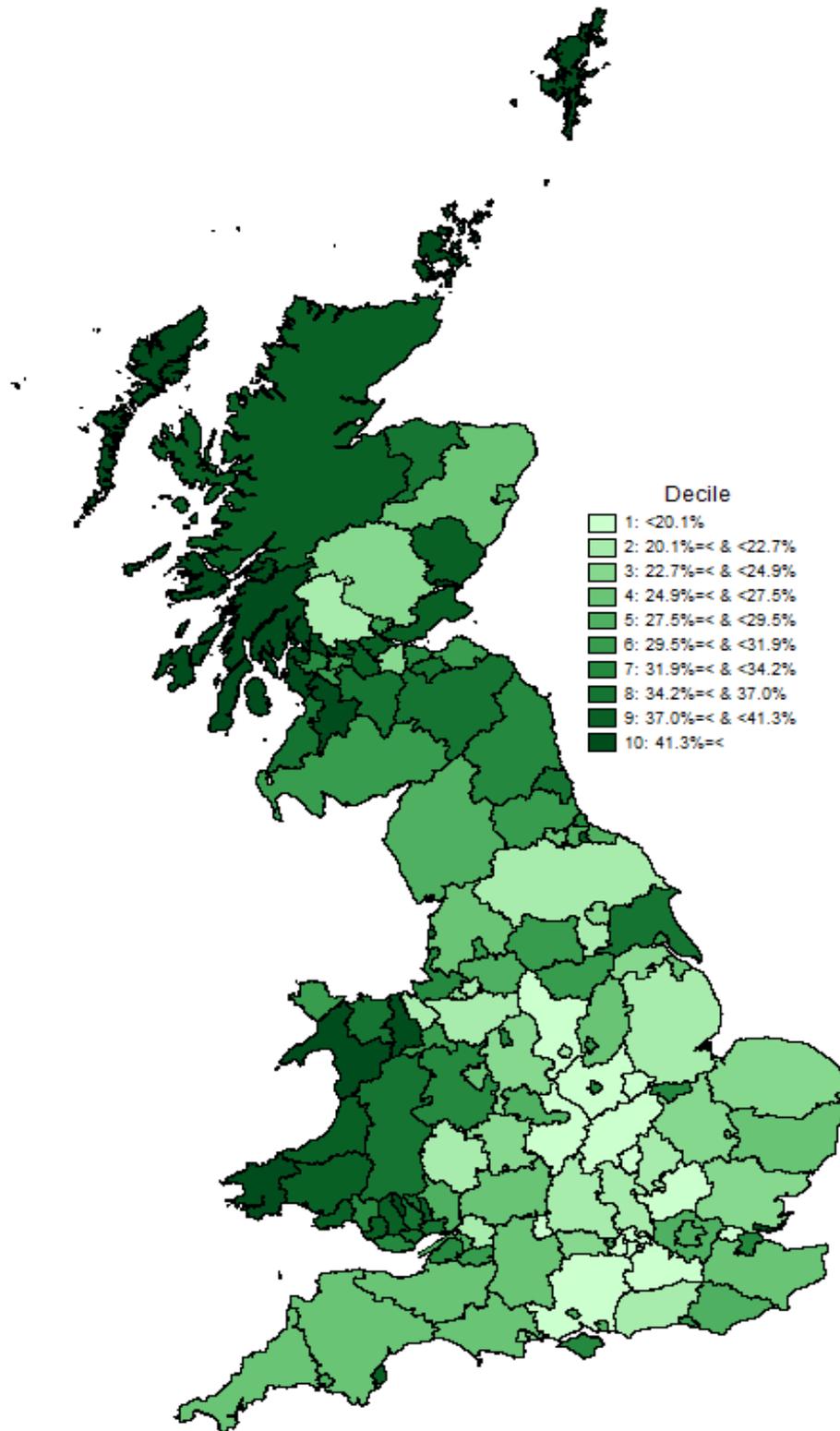
Mirroring the regional results in Figure 10, the areas comprising the largest proportion of the workforce are those in western Scotland and north and west Wales, such as North and East Ayrshire, the Scottish Islands, and Gwynedd, all with over 40% of the workforce in the public sector. Of the 28 work areas with the largest relative public sector workforce, only 3 of them are in England. On the other hand, English counties in the Midlands and south of England, such as Northamptonshire, Derbyshire, Hampshire, as well as the M4 corridor west of London (Windsor, Bracknell and Wokingham) are all in the bottom decile and have under 20% of the workforce in the public sector.

Moreover, this analysis allows us to pick out the differences within regions. Although regions are often used for analysis at a level less-aggregated than the UK as a whole, they combine very different areas. The industries and workforces within Scotland vary enormously from Edinburgh to Glasgow and from rural Highlands to areas dominated by oil and gas. In particular, this analysis allows us to disentangle urban areas from the rural areas surrounding them.

When we do this, we find significantly different patterns between England, Scotland and Wales. In Scotland and Wales, urban areas have similar, or even slightly lower, proportions of the workforce in the public sector. The workforce in Glasgow is slightly less public sector-oriented than the surrounding areas, while the cities of Cardiff, Swansea and Newport are less public sector-oriented than the more rural areas to the north and west (though all areas of Wales have quite a large share of the workforce in the public sector).

However, in England there is a clear pattern of urban areas having higher percentages of the workforce in the public sector. Quite why this pattern emerges is unclear at the moment. This is easy to see in Figure 13, with Leicester having a higher proportion of public sector workers than the rest of Leicestershire, the Medway towns more so than the rest of Kent. To some extent, the more rural districts in the North of England or Midlands, which have relatively smaller public sector workforces, could be those areas that are more affluent. Cheshire, which is more affluent than nearby Merseyside or greater Manchester, has a smaller public sector workforce, for example.

Figure 13 Percentage of local workforce in public sector (GB), deciles, 2010 to 2012



Source: Authors' calculations using the Annual Survey of Hours and Earnings, 2010–2012.

Note: Cell sizes are always above 150.

This data also allows us to compare the size of the public sector workforce across major metropolitan areas in the Britain. The workforce in Inner London is less public sector-oriented than average (23%), while the West Midlands (a metropolitan county) (29%) and Greater Manchester (29%) are just below the median of the areas studied. West Yorkshire (31%) is in the sixth decile, and Merseyside (34%) and Tyne and Wear (36%) are the large metropolitan areas of England with the largest size of the public sector workforce.

Given the increase in the public sector workforce that occurred from the late 1990s to the late 2000s, it is important to examine whether this change in the size of the public sector affected different parts of the country in different ways. The equivalent figure to Figure 13, but representing the local workforces in 1997 to 1999, is shown in Appendix Figure A7. Overall, the pattern is similar to that in 2010–12. The rural areas of Wales and Scotland have the largest public sectors, whereas the M4 corridor and rural parts of southern and central England have the smallest.

In total, we know that the public sector workforce has grown over this period. Comparing the figures for 2010–12 with that for 1997–99 allows us to show that the overall growth in the size of the public sector over the 2000s seems to have been largely driven by areas with already large public sector workforces becoming even larger. Areas with the smallest public sector saw little growth compared with those with larger public sectors. While the first decile (smallest public sector) covered areas with less than 20.1% of the workforce in the public sector in both 1997–99 and 2010–12, the top decile of areas in 1997–99 covered areas with more than 37.4%, compared with areas with more than 41.3% in 2010–12.

Most of the large metropolitan areas have seen increases in the proportion of workers in the public sector. The major exception is Glasgow, where the proportion working in the public sector fell by 4 percentage points to 30% over the period. This compares with a 1.1 percentage point rise in Merseyside, a 1.5 percentage point increase for Greater Manchester and a 1.9 percentage point rise for Inner London. The largest increases have been for Tyne and Wear and the West Midlands (4.1 and 4.7 percentage points, respectively).

It is important to think about reasons why public sector jobs might be spread out across the country. Much of the public sector provides service directly to the public, and therefore should be located roughly in proportion to the population. Schools and hospitals could be obvious examples of this (although the need for education and health services would differ regionally if some areas have a particularly large number of children or older people).³⁸

On the other hand, other public sector jobs (in particular, public administration and Defence roles) are not directly providing public services to the public. A government has greater discretion about where it places these roles. For some roles, agglomeration has substantial benefits; a large number of government departments located close to each in Whitehall – and close to policy-makers in Westminster – has some benefits. However, for military bases, and for large parts of public administration that need not be based in London, the government has freer choice as to where to locate them.

Given that schools and hospitals are less likely to face workforce cuts than other areas of the public sector due to ring-fencing on expenditure, and also the fact that they might be more evenly

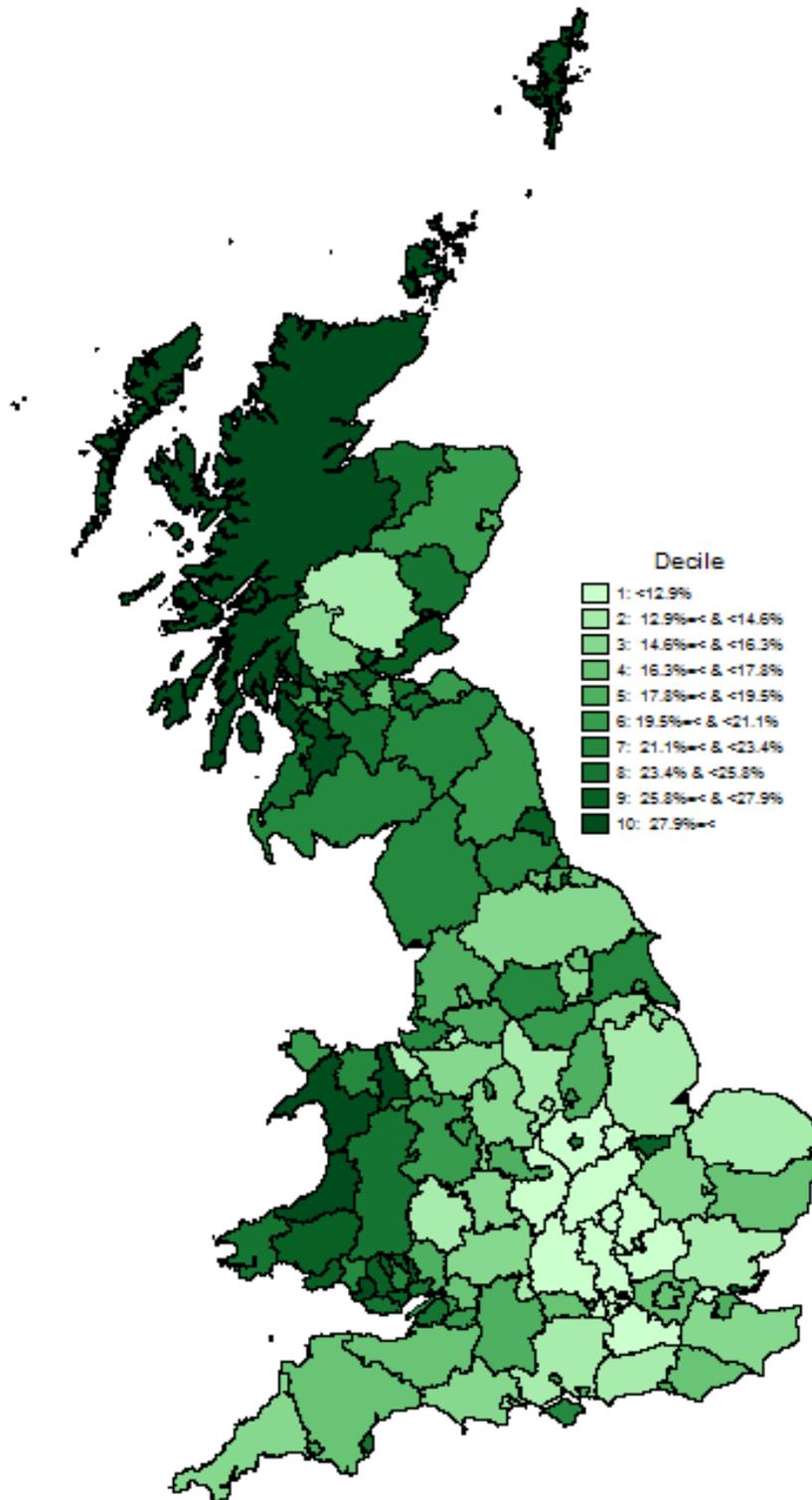
³⁸ There could be a need for other public services depending on other reasons. There might be a higher need for police in higher-crime urban areas than rural ones, and a greater need for Job Centre Plus staff in areas of high unemployment.

spread out across the country, we seek to define the proportion of the workforce that is in the public sector but not in a teaching or NHS occupation.³⁹ For this reason, we replicate the analysis shown in Figure 13, but exclude the NHS and teaching occupations from the public sector and look at the differences in the proportions working in this non-teaching/NHS part of the public sector. This is shown in Figure 14.

There are two major things to notice from this. First, the proportion of workers in this part of the public sector is much lower than the public sector as a whole, reflecting the size of the teaching and NHS workforces across the country. Second, the map is remarkably similar to that for the whole public sector. Those areas with a large public sector also tend to have a large non-NHS, non-teaching public workforce. Given that current and future spending cuts are likely to reduce these public sector jobs further, it seems that areas in Scotland (and, to a lesser extent, the North of England and urban areas of England) are likely to see the greatest reductions in employment due to the pattern of spending cuts pencilled in for 2015–16 and potentially beyond.

³⁹ School-teaching professions include teachers in primary and secondary schools, special needs schools and comprise teachers and teaching assistants. NHS occupations include medical practitioners (doctors) and dentists, nurses and other occupations allied to medicine such as radiographers, paramedics and physiotherapists.

Figure 14 Percentage of local workforce in public sector excluding school teaching or NHS occupations, deciles, 2010 to 2012



Source: Authors' calculations using the weighted Annual Survey of Hours and Earnings.

Notes: Averages over years 2010–12. Cell sizes are always above 150.

6. Conclusion

This briefing note has sought to combine various different data sources to provide, for the first time, a consistent picture on how the size and composition of the workforce has changed over the past 50 years. This has confirmed that the public sector workforce has changed greatly over the last 50 years, both in terms of its overall size and its structure. Throughout the 1960s and 1970s, the public workforce expanded, before falling back during the 1980s as privatisation of state-owned industries led to large falls. General government employment then fell by about 350,000 over the first seven years of the 1990s. This period was the only sustained period during which general government fell in the last 50 years prior to the current round of workforce cuts. The public sector workforce then began to expand again from the late 1990s throughout the 2000s. Since 2010, it has begun to fall as workforce cuts have begun to take effect.

Within the public sector, the most important long-run trend is the increasing dominance of the education and NHS workforces. This has resulted from two key historical trends. First, when the public workforce was increasing in the 1960s, 1970s and 2000s, this was largely driven by the NHS and education. Second, the NHS and education workforces have been relatively protected when other public sector jobs have been cut, such as during the early 1990s. As a result of these two factors, the NHS and education workforces have increased from 23% of the public sector workforce in 1961 to 42% in 1991 and then to around 57% in 2013.

Looking forwards, the OBR forecast that the level of general government employment will fall by over 1 million as a result of planned cuts to public spending between 2010–11 and 2018–19. If delivered, the size of these workforce cuts would be almost three times as large as those delivered in the early 1990s, and unprecedented in at least the last 50 years. With schools and NHS spending relatively protected from spending cuts, these workforce cuts are likely to be focused on other areas of spending.

The effect of these workforce cuts on individuals' welfare and on the labour market will depend on the ease with which former public sector workers can move to the private sector, both in the country as a whole and within individual regions, as well as the extent to which reductions in the size of the workforce are driven by job losses. The scale of the cuts and the fact that the characteristics of the two workforces are quite different at present makes this shift look quite challenging. Furthermore, there are quite large differences across regions and smaller areas of the country in terms of their dependence on the public sector as a source of employment, with Wales having the largest public sector and London the smallest. However, the public sector is currently expanding at a faster rate than the public sector is shrinking across every region of the UK.

This initial descriptive piece forms part of a larger project. In future work, we plan to undertake further analysis of the differences in earnings between the public and private sectors, including incorporating further aspects of remuneration (such as pension arrangements) and examining the heterogeneity across different types of workers. This should help us to understand the difference in earnings across sectors in more detail, as well as the extent to which both the ongoing squeezes and the current structure of public sector pay help or hinder the ability of the public sector to recruit and retain high-quality workers. Furthermore, it will be important to understand in greater depth the extent to which particular public services are now being delivered by workers in the private sector.

Appendix

Figure A.1(a) Industries of the private sector workforce, 1994–95 to 2012–13

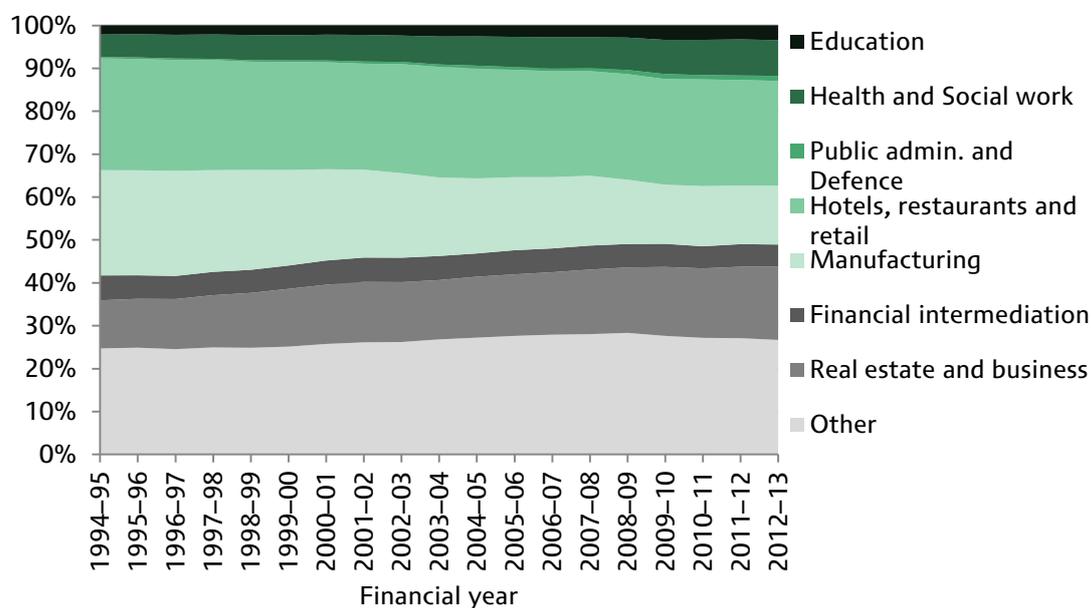
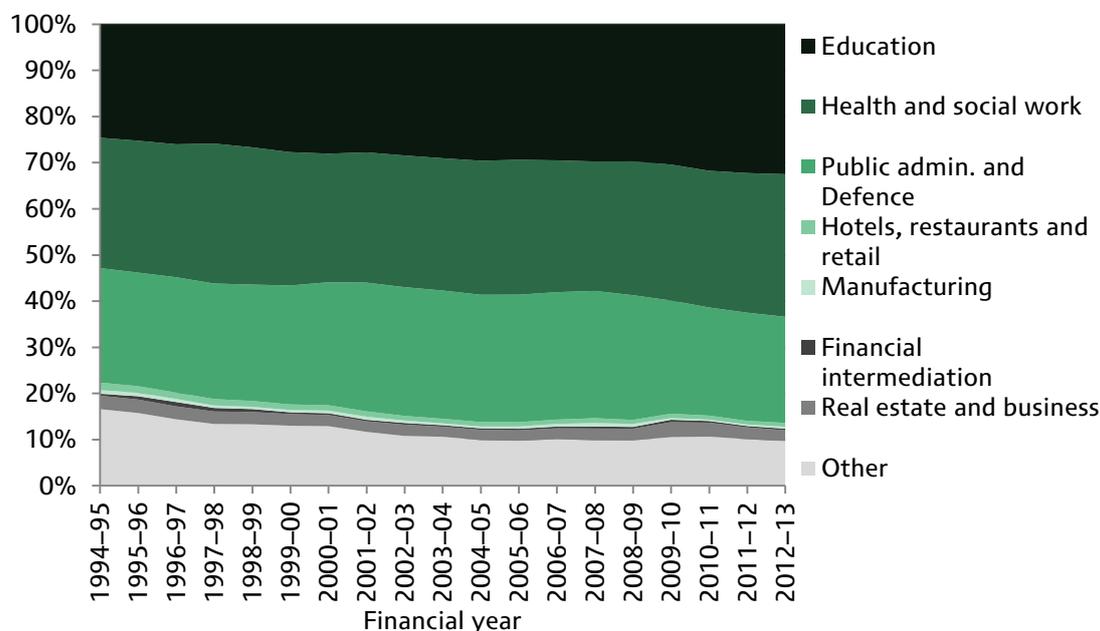


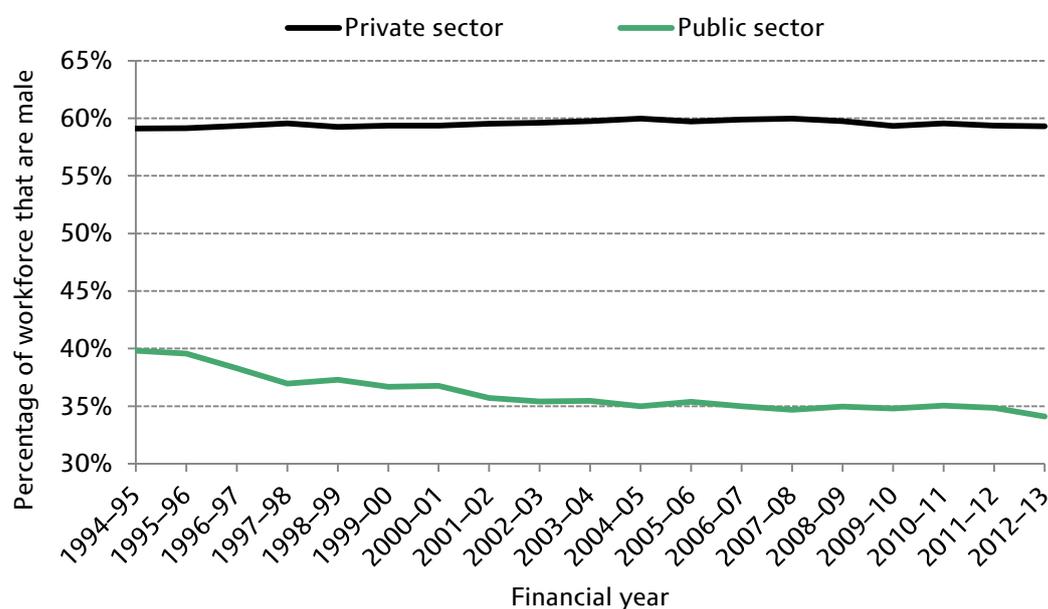
Figure A.1(b) Industries of the public sector workforce, 1994–95 to 2012–13



Source: Authors' calculations using the Labour Force Survey, various years.

Notes: Industries are defined by the Standard Industrial Classification system, 1992.

Figure A.2 Proportions of public and private sector workforce that are male, 1994–95 to 2012–13



Source: Authors' calculations using the Labour Force Survey, various years.

Figure A.3(a) Highest educational qualifications of the private sector workers, 1996–97 to 2012–13

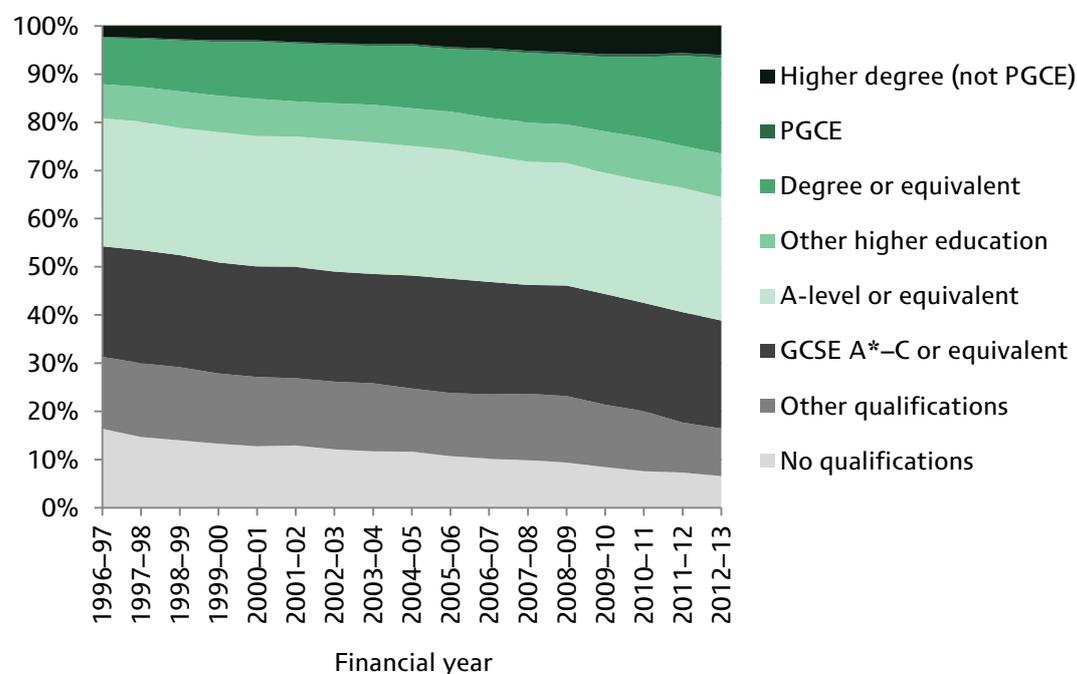
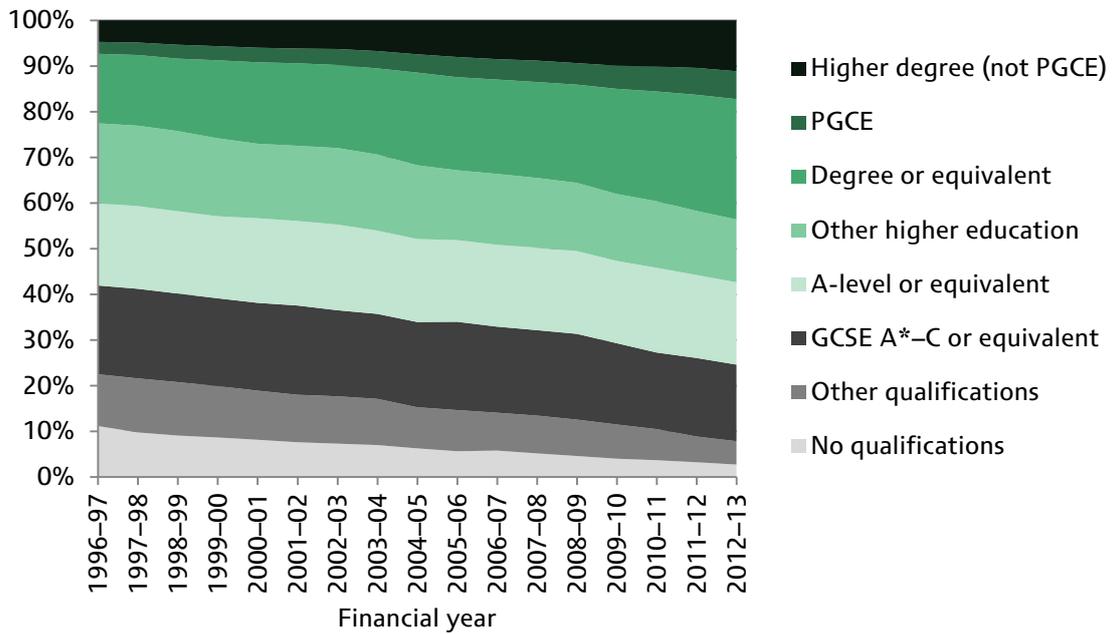


Figure A.3(b) Highest educational qualifications of the public sector workers, 1996–97 to 2012–13



Source: Authors' calculations using the Labour Force Survey, various years.

Figure A.4(a) Age composition of private sector workers, 1994–95 to 2012–13

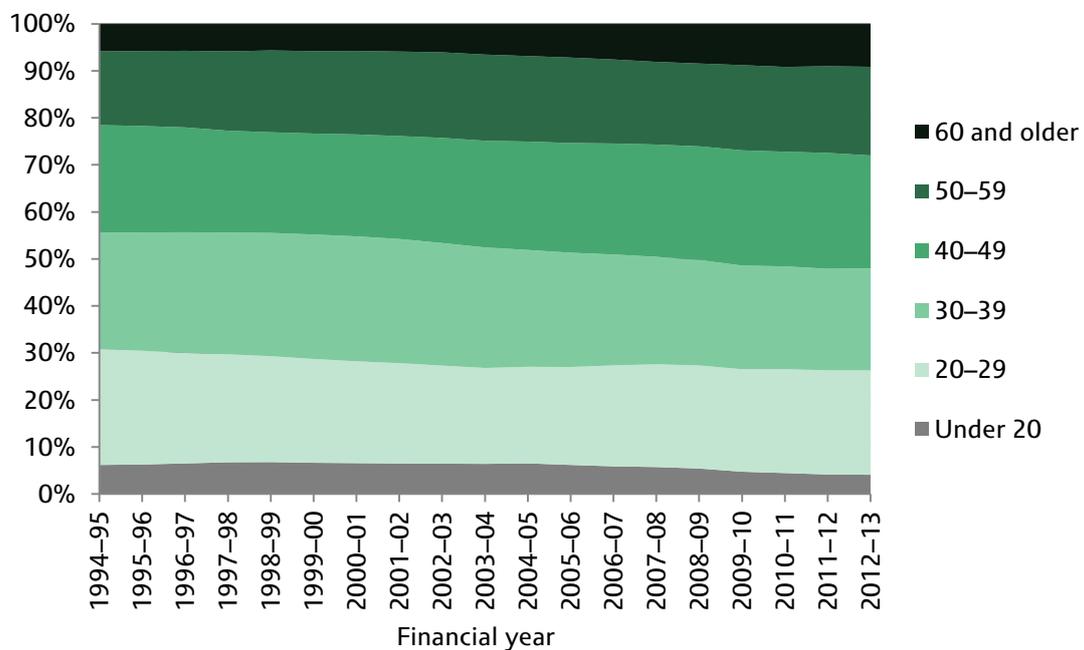
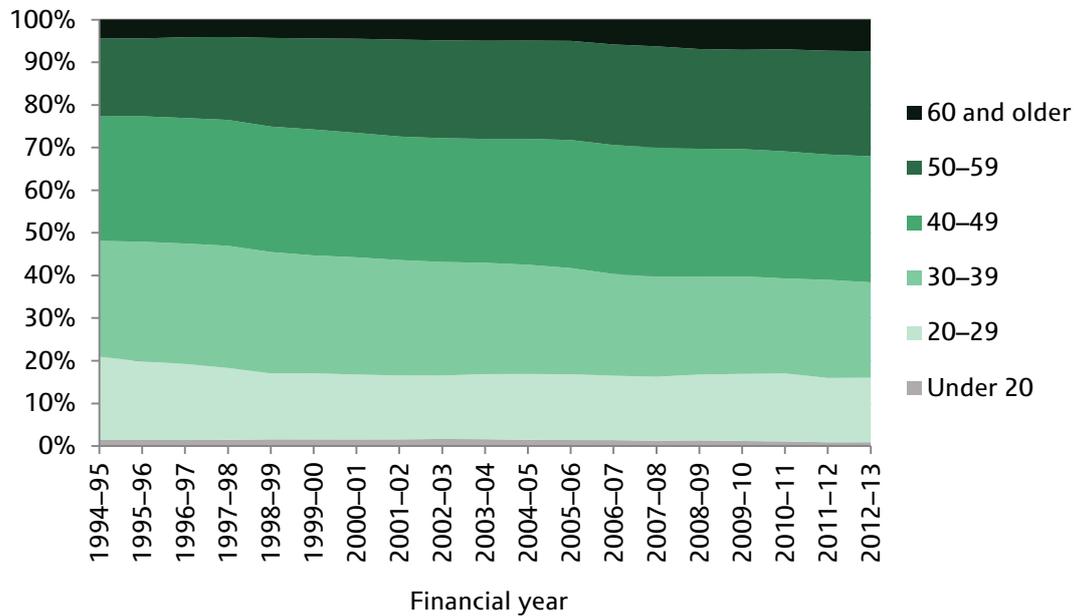
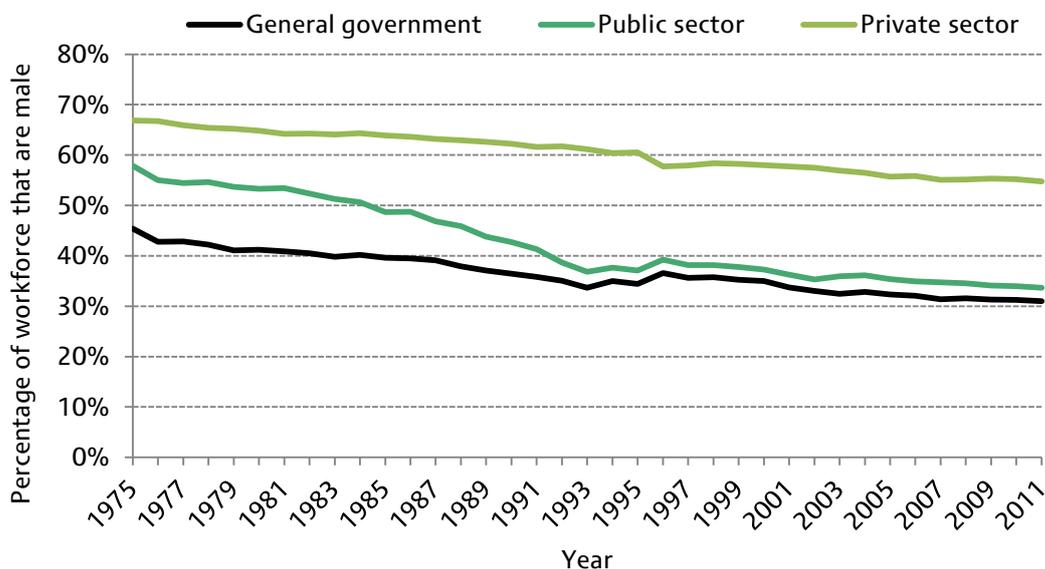


Figure A.4(b) Age composition of public sector workers, 1994–95 to 2012–13



Source: Authors' calculations using the Labour Force Survey, various years.

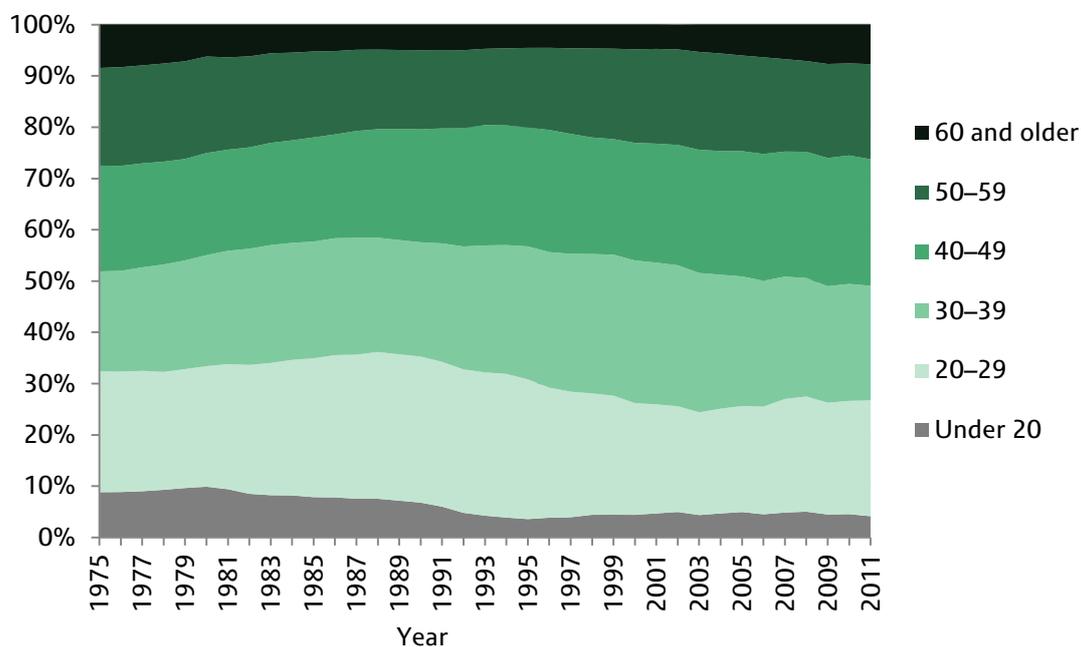
Figure A.5 Proportions of public and private sector workforces that are male, 1975–2011



Source: Authors' calculations using the New Earnings Survey Panel Dataset, 1975 to 2011.

Notes: General government excludes public sector corporations. Cell sizes are always above 200.

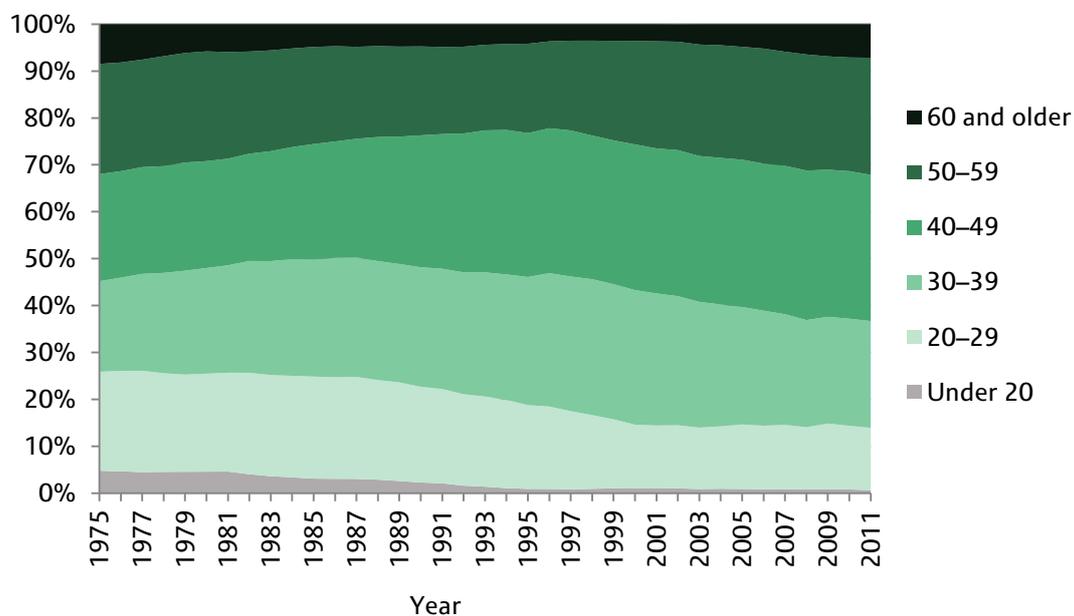
Figure A.6a Age composition of private sector workers, 1975–2011



Source: Authors' calculations using the New Earnings Survey Panel Dataset, 1975 to 2011.

Note: Cell sizes are always above 200.

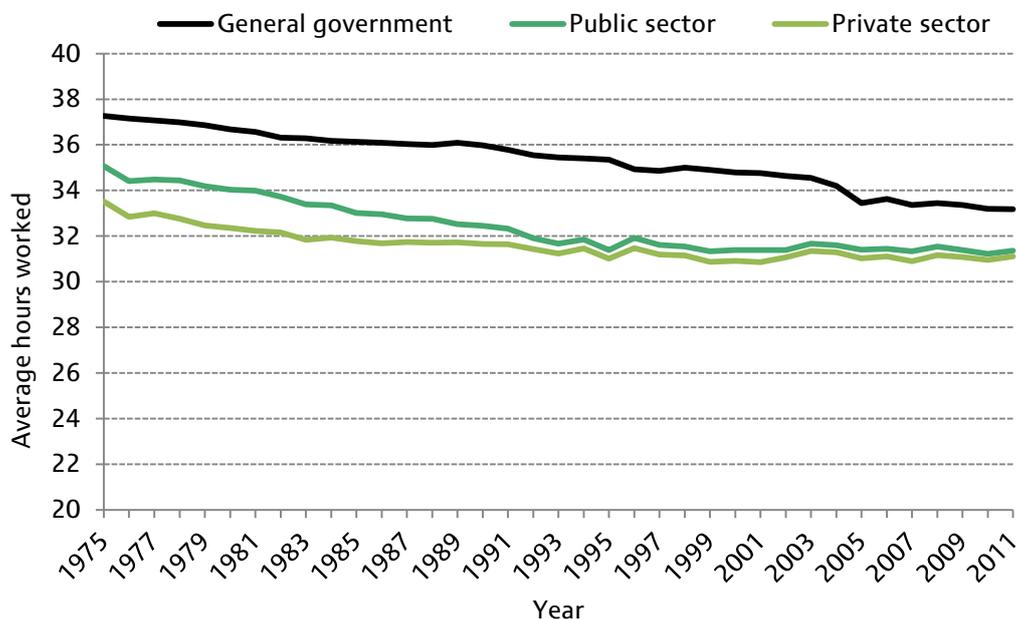
Figure A.6b Age composition of public sector workers, 1975–2011



Source: Authors' calculations using the New Earnings Survey Panel Dataset, 1975 to 2011.

Note: Cell sizes are always above 200.

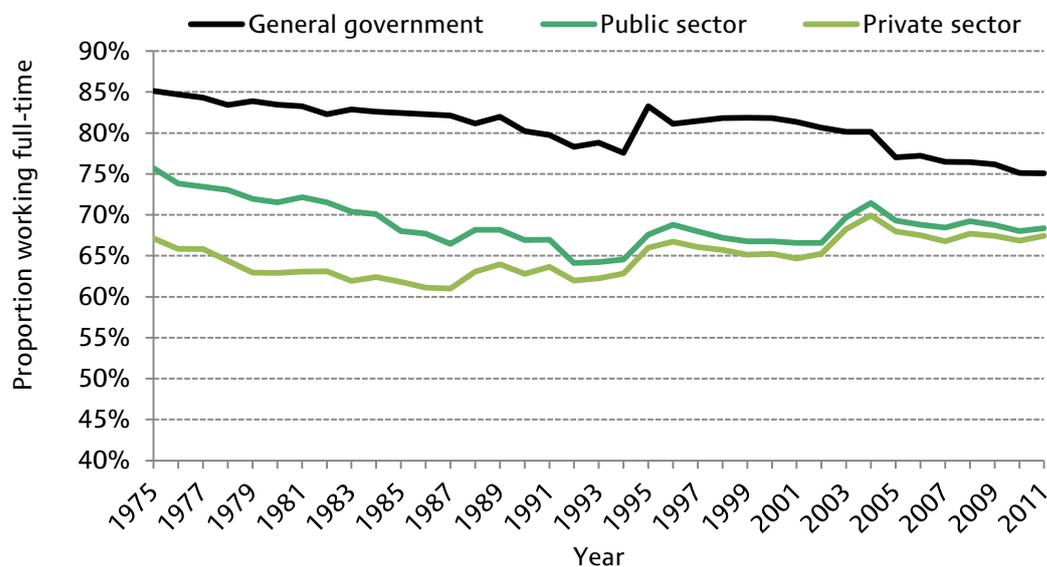
Figure A.7 Average hours worked by sector, 1975–2011



Source: Authors' calculations using the New Earnings Survey Panel Dataset, 1975 to 2011.

Notes: General government excludes public sector corporations. Cell sizes are always above 2000. Hours are basic working hours (excluding overtime) as reported by employers.

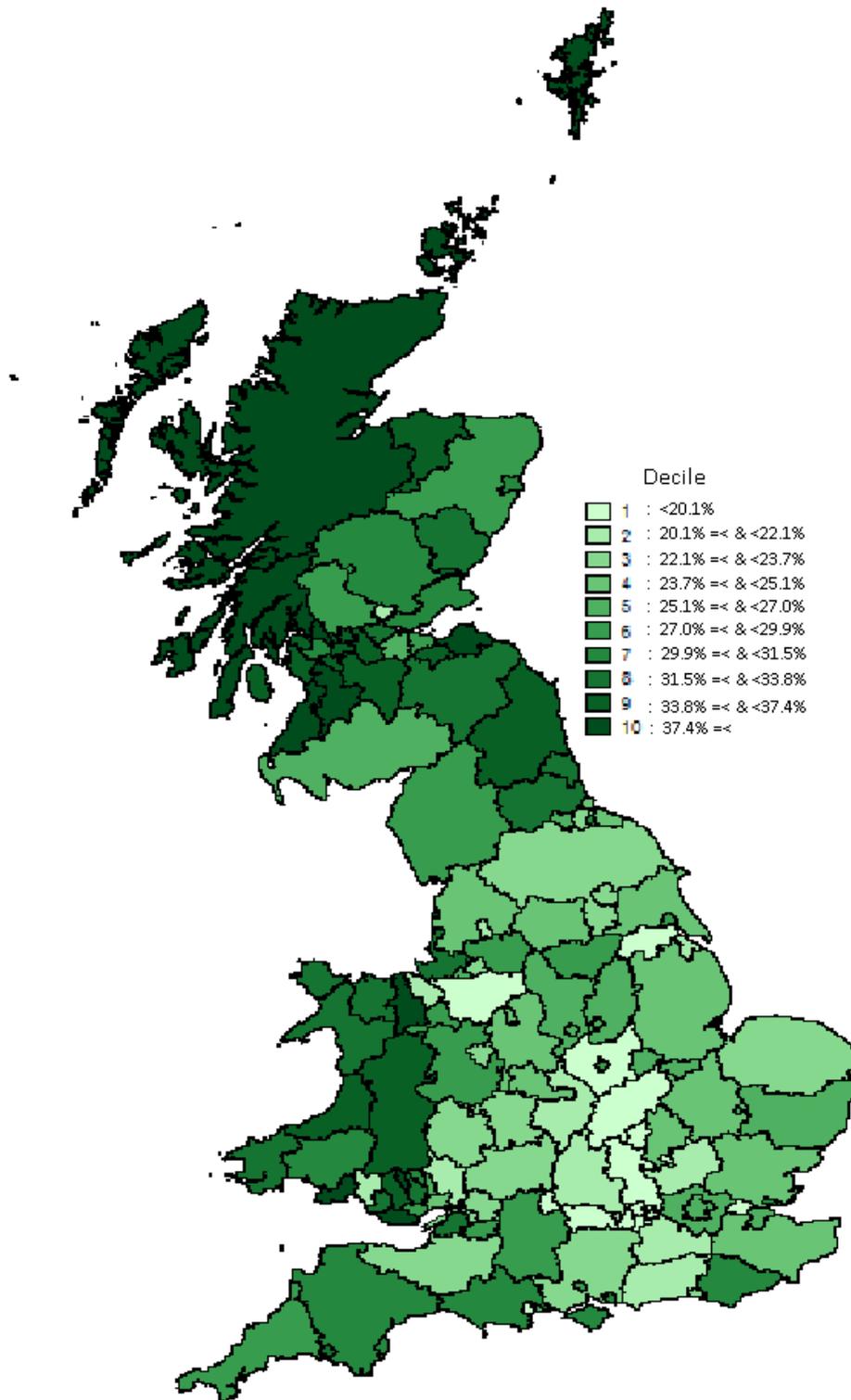
Figure A.8 Proportion working full-time by sector, 1975–2011



Source: Authors' calculations using the New Earnings Survey Panel Dataset, 1975 to 2011.

Notes: General government excludes public sector corporations. Cell sizes are always above 2000. Full-time work is defined by working 30 or more basic hours in a week

Figure A.9 Percentage of local workforce in public sector (Great Britain), deciles, 1997 to 1999



Source: Authors' calculations using the Annual Survey of Hours and Earnings, 1997 to 1999.

Note: Cell sizes are always above 150.

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