

Public sector pay and employment: where are we now?

IFS Briefing Note BN263

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Executive summary

Employing public sector workers to help deliver public services is a major part of what government does. The number of workers employed by the government and how much they are paid matters not just for those individuals and their families, but also for the public finances and for the public services those employees help provide. In this briefing note, we examine how the scale and make-up of public sector employment has evolved over the last 20 years. We then compare public and private sector pay, and outline the consequences of pay restraint since 2010 for differences between pay in each sector. Finally, we consider differences in workplace pension enrolment and the generosity of employer contributions to pensions in the public and private sectors.

Key findings

- The government currently spends £190 billion per year (22% of total public spending) employing around 5.3 million people. The public sector workforce is now around 310,000 (5.5%) smaller than it was at the start of 2010.
- More than 6 in 10 public sector workers (some 3.2 million people) are employed in the NHS or the education sector. A further 2 in 10 (around 1 million people) are employed in public administration (the civil service and local government). The numbers employed in HM Forces and the police have fallen substantially since 2010. The government's promise to hire 20,000 extra police officers would return the number of officers to around its 2009–10 peak.
- Average earnings in both the public and private sectors remain below precrisis levels. Public sector earnings did not fall immediately during and after the Great Recession, but significant pay restraint after 2010 reduced average public sector earnings in 2014 Q2 to 4.7% below their level at the start of 2008. Public sector earnings have risen by around 2% in real terms since the end of 2017, but are not yet back to pre-crisis levels.
- The difference between public and private sector hourly pay has fallen to below pre-crisis levels, exacerbating problems with recruitment and retention. Pay restraint in the public sector has reduced the gap between public and private sector wages to the lowest level since the early 2000s. The publicprivate pay differential is not uniform across the country: public sector pay is lower relative to that in the private sector in London and the South East. This could lead to particularly acute shortages and recruitment challenges in those areas.
- Private sector pension enrolment has increased, and while public sector pensions have been cut they remain substantially more generous than those in the private sector. Public sector workers are both more likely to be enrolled in a pension scheme than their private sector counterparts, and more likely to receive generous employer pension contributions. In 2018 the vast majority (86%) of public sector workers received (implicit) employer pension contributions worth at least 10% of their earnings compared with only a small minority (10%) of private sector workers. This forms an important part of employee remuneration.

The government currently spends £190 billion per year employing around 5.3 million people – roughly 310,000 (5.5%) fewer than it did at the start of 2010

The UK government currently spends around £190 billion per year employing around 5.3 million people – accounting for 22% of all government spending. This includes not just those employed by central government, but also those employed in local government, schools, hospitals, prisons, and so on. Figure 1.1 shows that the number of public sector workers fell by around 420,000 between 2010Q1 and 2015Q3 – equivalent to a 7.5% reduction in the size of the public sector workforce. Public sector employment was then roughly constant between 2015 and 2017, before starting to rise. Since mid-2017, the size of the public sector workforce has increased by more than 100,000, which begins to reverse the substantial fall since 2010, though as we will show, part of this is due to a rise in civil service numbers associated with Brexit. At around 5.3 million, the public sector workforce is now around 310,000 (5.5%) smaller than it was at the start of 2010.

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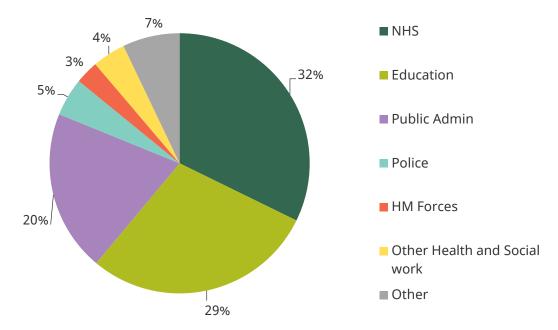
Figure 1.1. Public sector workforce headcount excluding nationalised corporations, millions, 2008 to 2019

Notes and sources: see end section.

More than 8 in 10 public sector workers are employed in three sectors: the NHS, education and public administration

Of the 5.3 million or so public sector workers, more than 80% (some 4.3 million workers) are employed in the NHS, education or public administration (which includes the civil service).

Figure 1.2. Proportion of public sector workforce working in each area of the public sector, 2019Q2



Notes and sources: see end section.

The 1.69 million NHS employees form the largest part of the public sector workforce at 32%, and as shown in Figure 1.2, and this portion has been steadily rising over time. The next largest group are the 1.54 million employed in education¹ (29% of the total) and the 1.06 million employed in public administration, which makes up 20% of the workforce. Smaller public sector workforces include the police, HM Forces and those involved in public sector health and social work outside of the NHS.

Figure 1.3 shows how employment in the three largest areas (the NHS, education and public administration) has changed over the past 20 years.

¹ Note that the public sector education workforce does not include universities, which are not public sector institutions.

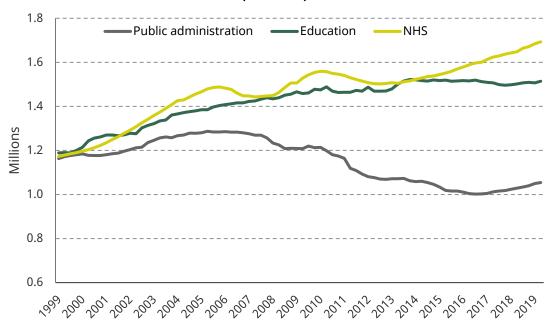


Figure 1.3. Number of people (headcount) working for public sector in NHS, Education and Public Administration, millions, 1999 to 2019

Employment in the NHS has been steadily rising since 2014, with the workforce increasing by around 160,000 over the five years to 2019 Q2. Although employment fell after 2010, it is now at record levels, far above its pre-crisis level and is on a clear upwards trajectory. With all parties pledging continuing increases in NHS spending, this trend is likely to continue. And as health spending grows to account for an ever-increasing share of overall government spending, it is likely that the share of the public sector workforce in the NHS – and with it the share of the *overall* workforce in the NHS – will also continue to increase in the years ahead.

One part of the health workforce not included in these figures is General Practitioners (GPs, the vast majority of whom are not employed by the NHS). After increasing steadily since the mid-2000s, the number of GPs in England has been broadly flat since 2015 – despite the government's aim to increase numbers by 5,000.² The number of GPs in England (in terms of headcount) over the past 15 years is shown in Figure 1.4. Previous work by IFS researchers has shown that after adjusting for the proportion who work part-time, the number of GPs per 1,000 people stayed remarkably flat between 1996 and 2016, while the number of hospital doctors increased considerably faster than the population.³

² Institute for Government, Performance Tracker 2019, General Practice, https://www.instituteforgovernment.org.uk/publication/performance-tracker-2019/general-practice ³ See Figure 2.6 in T. Lee and G. Stoye, 'What does the NHS spend its money on?', in A. Charlesworth and P. Johnson (eds), Securing the Future: Funding Health and Social Care to the 2030s, Institute for Fiscal Studies and Health Foundation Report, 2018, https://www.ifs.org.uk/publications/12994.

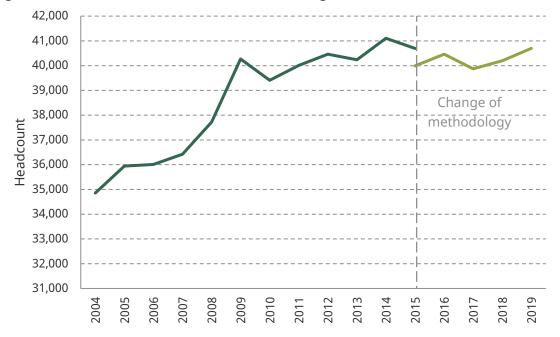


Figure 1.4. Number of General Practitioners in England, 2004 to 2019

NHS and education employment both grew by around a quarter between 1999 and 2014, from around 1.2 million to more than 1.5 million over that period. Since then, however, while NHS employment has continued to grow, the number of public sector workers in education has remained broadly flat.

Figure 1.3 also illustrates the large fall in public administration employment over the past decade. Employment in this area (which includes the civil service and many local government employees) fell steadily by around 200,000 between 2010 and 2017, driven in large part by cuts to unprotected departments and local government. However, there has been a slight rise in public administration employment in this area since 2017, driven by civil service recruitment in the run up to Brexit (see Figure 1.5). Depending on the nature and timing of the UK's departure from the European Union, this trend may continue over the coming years. At the very least, with Chancellor Sajid Javid declaring that we have "turned the page on austerity", and announcing in the September Spending Round that no department will face a real cut between this year and next, we are unlikely to see any sharp reductions in the number of people employed in this area.

⁴ For a discussion, see Institute for Government, 'Whitehall Monitor 2019', https://www.instituteforgovernment.org.uk/publication/whitehall-monitor-2019/civil-service

⁵ HM Treasury, Spending Round 2019, https://www.gov.uk/government/publications/spending-round-2019-document

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Figure 1.5. Number of people (headcount) working for the Civil service, 1999 to 2019

The numbers employed in HM Forces and the police have fallen substantially since 2010, reflecting shifting priorities over time

Outside of the big three areas of employment, other smaller public sector workforces also saw substantial falls in employment in the years after 2010. For example, Figure 1.6 shows that the number of people employed by HM Forces has fallen by around a quarter since 2010, continuing a longer term trend dating back to at least the early 2000s.

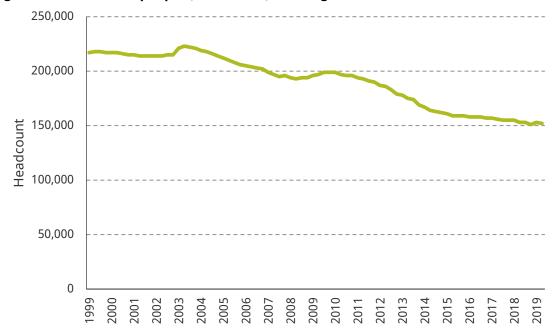


Figure 1.6. Number of people (headcount) working for HM Forces, 1999 to 2019

Notes and sources: see end section.

One area of particular interest, given recent policy announcements, is the police workforce. Between 2010–11 and 2018–19, there was a 19% real terms cut in total funding for the police in England and Wales.⁶ While police numbers were relatively protected from these cuts, they still fell, driven largely by the falling entry rate (recruitment) of new police officers (as police officers cannot be made redundant).⁷ There were more than 20,000 fewer police officers in England and Wales in 2018–19 than in 2009–10 (a reduction of 14.3%), as shown in Figure 1.7. The non-officer police staff (including police staff, police community support officers, designated officers and traffic wardens) also fell by more than 20,000 (21.7%) over that period.

During the Conservative leadership contest Boris Johnson pledged to hire 20,000 extra police officers by 2022, and in the 2019 Spending Round the Chancellor Sajid Javid, allocated additional funding to the Home Office towards this objective. This is double the additional number promised by the Labour party at the 2017 general election.⁸ An increase in police numbers on this scale would represent a marked break from the experience since Theresa May became Home Secretary in 2010 and, as shown in Figure

⁶ National Audit Office, *'Financial sustainability of police forces in England and Wales 2018*', 11 September 2018, https://www.nao.org.uk/report/financial-sustainability-of-police-forces-in-england-and-wales-2018/

⁷ R. Crawford, R. Disney and P. Simpson, 'Police officer retention in England and Wales', IFS Briefing Note BN191, January 2017, https://www.ifs.org.uk/publications/8824

⁸ https://labour.org.uk/manifesto/safer-communities/

1.7, would return the number of officers to around its 2009–10 peak. It is important to note that the number of non-officer police staff has fallen proportionally more since 2010 (21.7% vs. 14.3%) – perhaps in part because they can be made redundant, unlike police officers. Some commentators have questioned whether more 'bobbies on the beat' is the appropriate response to the challenges facing the police force, and whether it represents the best use of resources. In any case, an increase in the number of frontline staff may need to be coupled with an increase in support staff if they are to have maximal effect in tackling crime.

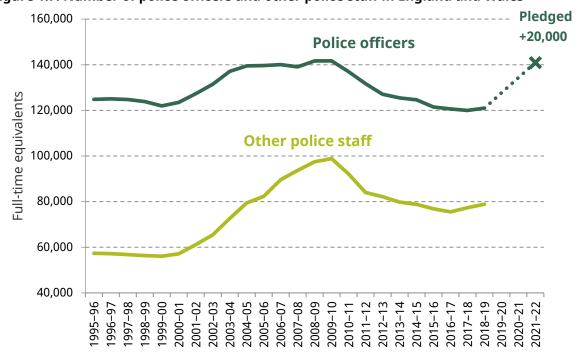


Figure 1.7. Number of police officers and other police staff in England and Wales

Notes and sources: see end section.

⁹ B. Guerin, 'More "bobbies on the beat" are unlikely to reduce crime', Institute for Government blog, 22 July 2019, https://www.instituteforgovernment.org.uk/blog/more-bobbies-beat-are-unlikely-reduce-crime

Average annual earnings in both the public and private sectors remain below pre-crisis levels

The government spent around £190 billion in 2018–19 on the wages of public sector employees – this includes employer pension contributions and National Insurance payments. The size of this pay bill means that even relatively small increases in the pay of these employees can mean large increases in costs for the public sector. As a rough rule of thumb, each 1% increase in the pay of public sector workers increases the public sector pay bill by around £2 billion. One important consideration for the government when making such decisions is wider trends in pay and earnings, and in particular how pay in the public sector compares to pay in the private sector.

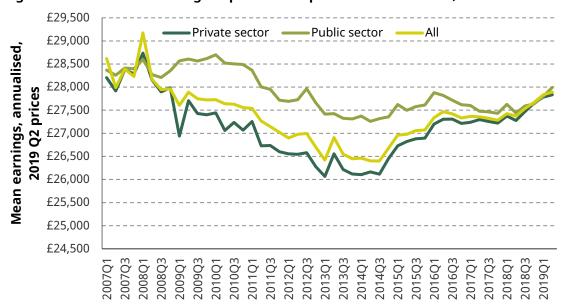


Figure 1.8. Real mean earnings of private and public sector workers, 2007 to 2019

Notes and sources: see end section.

Figure 1.8 shows how mean public and private sector earnings have performed since 2007, based on the ONS' Average Weekly Earnings series (though we have expressed pay as annual equivalents and have adjusted for inflation). 10 Although public sector earnings did not fall immediately during and after the Great Recession (as the then Labour Government largely honoured pay agreements made prior to the recession), by 2014Q2 mean public sector earnings were 4.7% below the 2008Q1 peak.

This was the result of significant pay restraint in the public sector following the formation of the coalition government in 2010. Public sector pay was frozen in cash terms for all but the lowest-earning employees in 2011–12 and 2012–13. Pay scales were then increased by 1% per year in the years that followed. Under plans announced at the Summer Budget 2015, public pay scales were to rise by 1% per year up to and including 2019–20. The pay cap was lifted in advance of that, however, with pay awards in excess of 1% for some

¹⁰ Note that this chart displays annual earnings (weekly earnings multiplied by 52), which reflects both hourly wages and weekly hours worked. We go on to compare hourly wages directly in the next section.

public sector workers (prison staff and police officers) announced in September 2017¹¹, followed by successive pay awards in excess of 1% in July 2018¹² and July 2019.¹³ Average (mean) earnings of public sector workers have risen by around 2% in real terms since the end of 2017 following these awards, and we might expect this trend of real rises in earnings to continue. Nonetheless, public sector earnings are today 2.5% lower, on average, than at the start of 2010.

In contrast to pay in the public sector, private sector earnings fell sharply following the recession, falling 3.3% between the third quarter of 2007 and the start of 2010, and by 8.0% by the third quarter of 2014 (its lowest point). This generated a significant gap between real private and public sector earnings, despite public sector pay restraint. However the private sector has seen stronger (relative to the last decade) earnings growth in recent years, rising by a total of 6.6% over the 5 years since 2014Q3.

Notably, both public and private sector earnings are still below their pre-crisis level in real terms, and well below what would have been expected prior to the recession.

¹¹ 'Public sector pay awards confirmed for 2017/18', HM Government, 12 September 2017, https://www.gov.uk/government/news/public-sector-pay-awards-confirmed-for-201718

¹² 'Around one million public sector workers to get pay rise', HM Government, 24 July 2018, https://www.gov.uk/government/news/around-one-million-public-sector-workers-to-get-pay-rise

¹³ 'Almost a million public sector workers handed a second year of inflation-busting pay rises', HM Government, 22 July 2019, https://www.gov.uk/government/news/almost-a-million-public-sector-workers-handed-a-second-year-of-inflation-busting-pay-rises

The difference between public and private sector hourly pay has fallen to below pre-crisis levels, exacerbating problems with recruitment and retention

Private sector workers are more likely to work part-time than public sector workers, and public sector workers are also more likely to be highly educated professionals who command higher wages in the labour market. Public sector workers are also more likely to be women (who themselves are more likely than men to work part-time). To compare pay in the public and private sector, it is therefore advisable to compare *hourly* pay (rather than weekly or annual), and to control for differences in the types of workers in each sector. In Figure 1.9 we therefore use UK Labour Force Survey data to compare hourly pay, and control for observed differences in the characteristics of workers in each sector.

Figure 1.9 shows that average hourly pay in the public sector was around 10% higher than in the private sector in 2018, but that once you control for observed differences – such as age, education and experience – between the workers in each sector, the estimated differential is much smaller. It also shows that the gap between public and private sector workers widened in the aftermath of the recession, and that pay restraint in the public sector since then has narrowed this gap substantially.

Indeed, the last time the gap between public and private sector wages was so low was in the early 2000s, when there were acute shortages and recruitment challenges in some parts of the public sector. Some Pay Review Bodies are currently reporting recruitment and retention problems¹⁴ – problems that have been exacerbated by the falling public-private pay differential.

¹⁴ See, for example, School Teachers' Review Body, 2019 report,

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/819428/Sch ool_Teachers__Review_Body_29th_report_2019.pdf, and Prison Service Pay Review Body, 2019 Report on England and Wales,

 $https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/819442/PSPB_Annual_Report_2019_Accessible_1_.pdf$

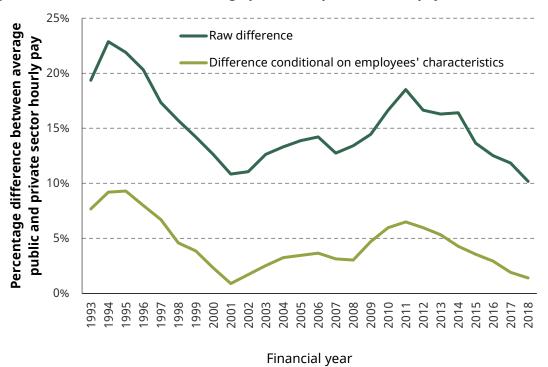


Figure 1.9. Difference between average public and private sector pay

This analysis has only considered the *average* pay in the public and private sector. However, there is considerably less inequality in pay in the public sector that in the private sector. This is partly as a result of many fewer people on very low pay in the public sector. Recent IFS research found that only 2% of public sector workers are paid the minimum wage in 2019, compared to 9% of private sector workers.¹⁵

It is also because the highest salaries in the public sector are substantially below those paid in the private sector. In 2014, IFS research found that at the 99th percentile of the distribution – that is the pay of someone who earns more than 99% of people but less than 1% of people –, hourly pay was 20% higher in the private than the public sector. ¹⁶ Moreover, those with the very highest pay (with remuneration in the hundreds of thousands of pounds or more) are almost exclusively in private sector industries such as financial services, law, and business.

Cribb, Joyce and Xu (2019), The future path of minimum wages, IFS Briefing Note BN260, https://www.ifs.org.uk/uploads/BN260-the-future-path-of-minimum-wages.pdf
Cribb, Emmerson and Sibieta (2014), Public Sector pay in the UK, IFS Report R97, https://www.ifs.org.uk/uploads/publications/comms/r97.pdf

The public-private pay differential is substantially lower in London and the South East

Most public sector pay scales are set nationally, with only limited local or regional variation. Private sector pay, on the other hand, does vary substantially across the country. The public-private pay differential is therefore not uniform across the UK. Figure 1.10 breaks down differences in hourly public and private sector pay by region and nation of the UK, comparing differences before the recession to those today. Differences in the relativities between public and private pay across the country may be considered inefficient (if they do not induce higher quality public sector workers in parts of the country where wages are high relative to the private sector) or unfair (if they do), or both.

Public sector pay is lower relative to that in the private sector in London and the South-East than in other parts of the country. The East of England region has also seen a notable change in relative pay since the mid-2000s: it used to have high public sector pay relative to private sector pay, but that is no longer the case, likely driven by stronger private sector wage growth. Lower relative public sector pay in these regions has been linked to lower-quality public services (specifically schools and hospitals). This suggests that recruitment issues may be concentrated in the South and East of England, where public sector pay is lowest relative to pay in the private sector.

¹⁷ See C. Propper and J. Van Reenwn, 'Can pay regulation kill? Panel data evidence on the effect of labor markets on hospital performance', *Journal of Political Economy*, 2010, 118, 222-73 and J. Britton and C. Propper, 'Teacher pay and school productivity: exploiting wage regulation', *Journal of Public Economics*, 2016, 133, 75-89.

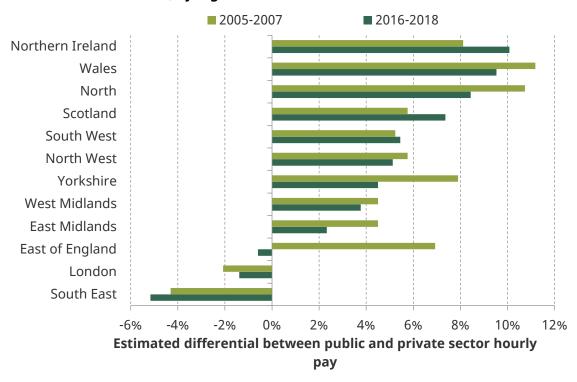


Figure 1.10. Differential between public and private sector hourly pay controlling for workers' characteristics, by region and nation of the UK

Private sector pension enrolment has increased, but public sector pensions remain substantially more generous

In addition to wages and salaries, workers receive additional forms of payment from their employers. The most significant and widespread of these is the provision of employer contributions to workplace pensions.

Public sector workers are much more likely than private sector workers to be enrolled in a pension. This is true despite the gradual introduction (since October 2012) of automatic enrolment into workplace pensions, which has considerably increased pension participation among private sector workers. Figure 1.11 shows, for example, that only 32% of private sector employees were enrolled in a workplace pension in April 2012, compared with 83% in the public sector. By April 2018 this gap had narrowed considerably, with 90% enrolment in the public sector and 71.5% in the private sector.

Public sector workers are also more likely to receive more generous pensions than their private sector counterparts, with the public sector still offering defined benefit pensions (something not available to the vast majority of private sector employees). In 2018, the vast majority (86%) of public sector workers received (implicit) employer pension contributions worth at least 10% of their earnings compared with only a small minority (10%) of private sector workers. Almost a quarter of public sector employees (23%) received employer pension contributions worth at least 20% of their earnings; this compared to just 2% of private sector employees.

Figure 1.12 and Figure 1.13 show that this gap has actually been widening over time, despite reforms by the coalition government which reduced the value of public sector pensions, in particular through a reduction in indexation of benefits (from RPI to CPI) and through an increase in the age at which most public sector employees can received an unreduced pension (known as the normal pension age, which is now linked to the state pension age for most public sector employees).

Given that a significant portion of remuneration comes in the form of pension promises, and this is particularly the case for public sector workers, average salary figures may understate public sector remuneration relative to that in the private sector. Cribb and Emmerson (2016) used data from 2012 and found that including the value of workplace pensions increased the public sector pay differential by 12 percentage points. The effect of including pension promises is likely to be smaller in recent years (indeed it was estimated to have fallen from 18 percentage points in 2007), due to a convergence in pension membership rates and an increase in the prevalence of pension contributions made by private sector employers.

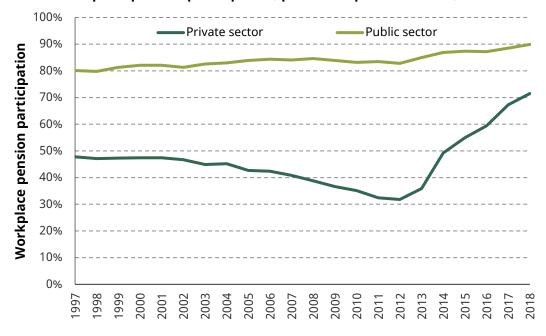


Figure 1.11. Workplace pension participation, public and private sectors, 1997 to 2018

Notes and sources: see end section.

¹⁸ J. Cribb and C. Emmerson, 'Workplace pensions and remuneration on the public and private sectors in the UK', *National Institute Economic Review*, 2016, 237, R30-7

Figure 1.12. Proportion of employees with employer pension contributions of 10% of earnings or more $\,$

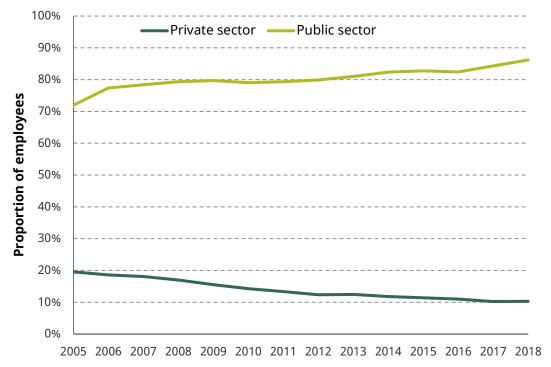
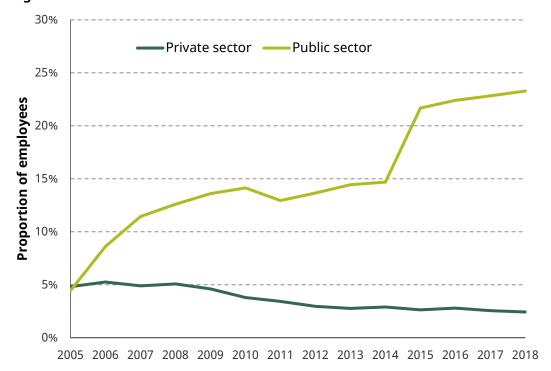


Figure 1.13. Proportion of employees with employer pension contributions of 20% of earnings or more



Source: Authors' calculations using ONS ASHE Pension Tables P10.1a (2005 to 2018)

Summary

Employing and paying public sector employees is a major part of what government does. 5.3 million people are currently employed by the government, at an annual cost of around £190 billion – equivalent to 22% of total government spending. The number of public sector employees and how much they are paid matters not just for those individuals and their families, but also for the public finances and for the public services those employees provide.

The number of people employed by the government has fallen by around 310,000 (5.5%) since the start of 2010, with particularly notable reductions in employment in public administration, HM Forces and the police. At the same time, pay restraint in the public sector under the coalition and Conservative governments has reduced average public sector earnings by around 2.5% since 2010. One justification for this pay restraint – alongside the wider arguments made for reductions in public spending – was that falls in private sector earnings during and after the recession opened up an unintended and therefore unwarranted gap between public and private sector pay. But the difference between average pay in each sector has now fallen to below pre-crisis levels, exacerbating issues with recruitment and retention reported by multiple Pay Review Bodies.

That said, in some parts of country especially, public sector workers are still paid significantly more than apparently similar private sector workers.

A significant portion of workers' remuneration comes in the form of employer pension contributions. This is particularly true for public sector workers. Employees in the public sector are both more likely to be enrolled in a pension scheme than their private sector counterparts (despite the introduction of automatic enrolment in 2012), and – despite some cuts to generosity of public sector pensions – much more likely to receive generous employer pension contributions. Indeed, the gap between public and private sector pension generosity has grown substantially over time as the defined benefit schemes have effectively ceased to exist in most of the private sector. It is important to take this into account, alongside pay differentials.

The public sector pay cap has now been lifted, and no department is facing a real-terms cut to its day-to-day budget between this year and next. We might therefore expect both public employment and pay to increase in the coming years – or at the very least not to fall. Instead, the next government may need to consider how funding and pay increases should be best targeted to tackle issues with recruitment and retention, and to improve the quality of public services.

Notes and sources

Figure 1.1

Note: Public sector headcount excluding nationalised corporations is also known as general government employment. 196,000 employees of Sixth Form Colleges and FE Colleges in England removed before 2012Q1, to make the series comparable over time.

Source: Authors' calculations using the ONS Public sector employment statistics.

Figure 1.2

Note: Public sector employment excludes nationalised corporations (also known as general government employment). Headcount not full-time equivalent.

Source: Authors' calculations using the ONS public sector employment statistics, Tables 1 and 2.

Figure 1.3

Note: Education series has 196,000 employees of Sixth Form Colleges and FE Colleges in England removed before 2012Q1, to make the series comparable over time.

Source: Authors' calculations using the ONS public sector employment statistics, Table 2.

Figure 1.4

Note: Figures shown are for headcount, not full time equivalent. A change of methodology in data collection in 2015 means that data is not consistent over the whole period. All figures refer to GPs (excluding Locums) and show the number of GPs in the September of the year in question, except for 2019, for which the March figure is shown.

Source: Pre-2015 GP figures from NHS Digital, General and Personal Medical Services, England - 2004–2014, as at 30 September (https://digital.nhs.uk/data-and-information/publications/statistical/general-and-personal-medical-services/2004-2014-as-at-30-september), and NHS Digital, General and Personal Medical Services, England - 2005–2015, as at 30 September (https://digital.nhs.uk/data-and-information/publications/statistical/general-and-personal-medical-services/2005-2015-as-at-30-september-provisional-experimental-statistics). Post-2015 figures are for September of each year, taken from General Practice Workforce, Final 31 March 2019, experimental statistics (https://digital.nhs.uk/data-and-information/publications/statistical/general-and-personal-medical-services/final-31-march-2019-experimental-statistics).

Figure 1.5

Note: Figures exclude Northern Ireland Civil Service and denote headcount, not full time equivalent.

Source: ONS public sector employment statistics.

Figure 1.6

Source: Authors' calculations using the ONS public sector employment statistics, Table 2.

Figure 1.7

Note: Figures refer to the total number of full-time equivalent workers employed at the end of each financial year (31 March) and exclude those on career breaks or maternity/paternity leave. Other police staff includes general police staff, police community support officers, designated officers and traffic wardens.

Source: Table S1 of Home Office, 'Police workforce, England and Wales: 31 March 2019', July 2019, https://www.gov.uk/government/statistics/police-workforce-england-and-wales-31-march-2019

Figure 1.8

Note: Public sector excludes nationalised financial corporations.

Source: Inflation adjusted for using CPIH index (ONS series L522). Earnings data from Average Weekly Earnings ONS series KAC4, KAD8, KAB9.

Figure 1.9

Notes: Estimated using Labour Force Survey data. Difference controlling for workers characteristics controls for differences in age, education, experience and region, all interacted with sex. Following same methodology as in Cribb, Emmerson and Sibieta (2014).

Figure 1.10

Note: A positive difference means that public sector pay is higher than private sector pay on average. Difference controlling for workers' characteristics controls for differences in age, sex, experience and education. Years are pooled together to ensure adequate sample size. Years are financial years.

Source: Authors' calculations using the Labour Force Survey.

Figure 1.11

Source: ONS ASHE Pension Tables P2.1a (2011 to 2018) and Cribb and Emmerson (2016) calculations using ASHE microdata (1997 to 2010). Data measured in April of each year.

Figure 1.12

Source: Authors' calculations using ONS ASHE Pension Tables P10.1a (2005 to 2018). Data measured in April of each year.

Figure 1.13

Source: Authors' calculations using ONS ASHE Pension Tables P10.1a (2005 to 2018)