

# Public sector pay in the UK

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## Preface

The Joseph Rowntree Foundation has supported this project as part of its programme of research and innovative development projects, which it hopes will be of value to policymakers, practitioners and service users. The facts presented and views expressed in this report are, however, those of the authors and not necessarily those of the Foundation. Neither are the views expressed necessarily those of the other individuals or institutions mentioned here, including the Institute for Fiscal Studies (IFS), which has no corporate view. Co-funding from the ESRC-funded Centre for the Microeconomic Analysis of Public Policy at IFS (grant number RES-544-28-0001) is also gratefully acknowledged.

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 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.

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# Executive Summary

## Average Pay in Public and Private Sectors

- In raw terms, pay levels are higher in the public sector than in the private sector. However, after accounting for differences in education, age and where workers live, the differences are much smaller. Among men, the average public sector pay differential in 2013–14 was close to zero, while among women it was around 8%.
- Since the onset of the financial crisis, public and private sector pay trends have been quite different. Between 2008 and 2010, public sector pay grew relative to that in the private sector, a change that was not the intended result of policy. Private sector pay grew by around 1% (much less than the 5% growth in Consumer Price Index inflation over this period), while public sector pay grew by 4.5% (just below inflation). Since 2010, private sector pay has grown more quickly than in the public sector (although both fell in real terms). As a result, the gap that opened up during the crisis is, in 2014–15, almost back to where it was before the crisis started.
- The Office for Budget Responsibility (OBR) forecasts that pay will continue to grow faster in the private sector than in the public sector over the next four years. If correct, this implies that the gap between public and private sector pay levels will fall back to levels last seen in the late 1990s and early 2000s, when there were recruitment and retention problems in parts of the public sector. OBR projections also imply further cuts to public sector employment levels, totalling one million between 2010–11 and 2018–19. Delivering both would involve substantial challenges to policymakers.

## Variation in the Public Pay Differential

- Public sector pay is more uniformly distributed than is private sector pay. Over the long run, this has been driven by rising pay levels at the top of the wage distribution in the private sector that were not matched in the public sector. The 90/50 and 95/50 ratios have risen substantially in the private sector over the last 30 years, but have barely changed at all in the public sector. The public sector differential is largest for low-educated men and negative for highly educated men. The differences for women are smaller.
- Recent policy decisions reinforce this compression. The £250 annual pay increase in 2011–12 and 2012–13 for public sector workers earning less than £21,000 per year meant that the real wages of lower paid public sector workers fell by less than those of low-paid private sector workers. The estimated public sector pay differential for lower percentiles of the pay distribution therefore rose by between 3 and 5 percentage points. It is not clear why the government chose to protect just low-paid public sector

workers. It could instead have chosen to offer wider protections to low-paid workers across both public and private sectors or it could have chosen to mitigate the impact of the pay squeeze on other public sector workers.

- There is also variation in the level of public sector differential across the UK. In general, the public sector differential is highest in Wales, Northern Ireland and the South West, and close to zero or negative in London and the South East. However, there is also considerable variation across men and women. For example, the differential is high for women in the northern regions of England, but close to zero for men in the same regions.
- Regional variation in the public sector pay differential could lead to unintended variation in the quality of public services. It could imply that some regions are paying more than they need in order to recruit and retain workers of a given quality. Introducing greater local variation in public sector pay is one way in which the public sector pay bill could be spent more efficiently and could reduce unintended variation in the quality of public services. However, there would be some practical considerations that would need to be overcome before introducing more local pay variation.

## **Early-Life Skills of Public and Private Sector Workers**

- We use the British Cohort Study to examine differences in the early-life skills of public and private sector workers, as measured by their cognitive and non-cognitive (social and emotional) skills at age 10. Evidence suggests that these skills are likely to persist into later life.
- Low-educated men working in the public sector have, on average, significantly higher measures of early-life cognitive and non-cognitive skills than those in the private sector, while the differences for women are much smaller. One way of explaining this is that the public sector pay differential is higher for low-educated men than other men, which attracts more highly skilled workers to join the public sector. Another explanation could be that the nature of public sector occupations may require higher skills amongst low-educated workers. However, it is not clear why low-educated men in the public sector need to be more highly skilled than their counterparts in the private sector, but with no need for such differences among women. Policymakers should therefore consider whether the present pay structures are well designed to attract workers with the desired skill levels.
- There is also evidence of higher average non-cognitive skills in the public sector, compared with the private sector, for highly educated women (at least in terms of non-cognitive skills measured early in life). One explanation for this is that the relatively high public pay differential for highly educated women encourages women with relatively high levels of non-cognitive skills to enter the public sector. However, the public-facing nature of many of the occupations undertaken by highly educated women may require and attract women with higher levels of socio-emotional skills.

# 1. Introduction

The public sector pay bill accounts for about half of all day-to-day government spending. Thus, cuts to the public sector pay bill unsurprisingly form an important component of the government's continuing efforts to cut spending on public services, in order to try to bring the public finances back into balance. To date, cuts to the public sector pay bill have been delivered through a combination of reductions to the size of the workforce and through a squeeze on pay per head. In a previous briefing note (Cribb, Disney and Sibieta, 2014), we analysed how workforce cuts were being delivered and how these compared with previous changes in the workforce. In this report, we focus on trends in public sector pay and compare these with what has been happening in the private sector.

The comparison with the private sector pay is an important one. In large part, and particularly in the long term, the ease with which the public sector can recruit and retain staff of the desired quality and motivation will depend on the comparability of the overall remuneration packages between the public and private sectors, with headline pay being one of the most significant components of those packages. Thus, we start by comparing the overall levels of pay across the public and private sectors. This shows that ongoing squeezes in public sector pay have led to falls in public sector pay per head relative to inflation as measured by the Consumer Price Index (CPI). However, this followed on from significant real-terms increases in public sector pay over the previous decade and steady increases in public sector pay per head during the financial crisis, during which time there were some significant real-terms falls in private sector pay per head. As a result, the difference in pay between the public and private sectors is now (in 2014–15) almost back where it was before the financial crisis hit. This creates significant challenges for policymakers, who seem likely to look for further cuts to the public sector pay bill after 2015–16, not least given that the fiscal forecasts imply that spending on public services is cut each year through to 2018–19.

When comparing pay levels, it is also important to account for the vast differences in the characteristics of the public sector and private sector workforces. As we showed in our previous report (Cribb, Disney and Sibieta, 2014), about two-thirds of the public sector workforce are female compared with 40% of the private sector workforce. The public sector workforce also contains a greater share of workers with higher education qualifications (57%) compared with the private sector workforce (36%). The public sector workforce is also older, on average. After accounting for such important differences, we find that women in the public sector were paid about 8 per cent more than women in the private sector in 2013–14, but the difference was close to zero for men. However, the trends over time are largely unaltered after accounting for the characteristics of the two workforces. The only exception is that the public sector pay differential has fallen slightly faster for men than it has for women since 2010.



Public sector pay increases are determined in a much more uniform manner compared with the private sector. This has been especially true in recent years, with public sector pay frozen for all but the lowest paid workers in 2011–12 and 2012–13, and 1% awards per year planned across most of the public sector in 2013–14, 2014–15 and 2015–16. If trends in private sector pay have varied significantly across different types of workers, then this might limit the ability of the public sector to attract and retain particular types of workers. For instance, if the returns to high levels of skill in the private sector have increased and if this is not reflected in the public sector, then the public sector could have difficulty recruiting and retaining highly skilled workers. In Chapter 3, we examine how differences in pay between public and private sectors vary across different types of worker, such as by age, by education, and whether workers work full-time or part-time.

Public sector pay levels are also more uniform across the country than levels of private sector pay. The government has previously announced an aspiration to reform public sector pay so that it more closely reflects pay in the local area for other workers. To date, few steps have been made to achieve this aspiration. Nevertheless, this could still represent a potential way for the current pay bill to be spent more efficiently and could reduce unintended variation in the quality of public services. Thus, we also examine how the gap in pay between the public and private sectors varies across regions and countries of the UK, in order to see whether the differences really are that significant.

There could also be wider differences in the skill levels of workers in the public and private sectors. These differences could have resulted from differences in the remuneration offered across sectors and could also affect our estimates of the true differences in pay across sectors. Most labour market surveys, unfortunately, do not contain direct measures of skills. However, these are available in the rich cohort studies datasets available in the UK. For instance, Nickell and Quintini (2002) have previously used such data to show that the cognitive ability of some public sector occupations has declined relative to the private sector for younger cohorts of workers. Building on this work, in Chapter 4, we set out the differences in the early-life skills of public and private sector workers, in terms of both cognitive skills and socio-emotional skills.

Although headline pay forms a significant element of total remuneration, it is not the only element and thus it only gives a partial picture of how total remuneration differs across public and private sectors. Another significant element of remuneration is the value of employer-provided pensions. In an accompanying briefing note (Cribb and Emmerson, 2014), we examine how the inclusion of the estimated accrual of rights to employer-provided pensions affects our estimates of the differences in remuneration across the public and private sectors.

## 2. Average Pay in the Public and Private Sectors

In this chapter, we analyse average pay levels in the public and private sectors over time. We start by providing some basic background on how overall pay levels have evolved in the public and private sectors over recent years. However, workers with different skills, experience and characteristics are rewarded different amounts in the labour market. It is therefore important to account for the differences in the characteristics of public and private sector workers, because, as shown in Cribb, Disney and Sibieta (2014), they are very different. Therefore, we show how our estimates of the difference in pay between the public and private sectors change as we account for the different characteristics of the respective workforces. Then, we show how this public–private differential (after controlling for differences in the composition of the workforce) changes over time. Finally, we examine the likely evolution of this differential going forwards and what challenges this provides for policymakers.

### 2.1 Background

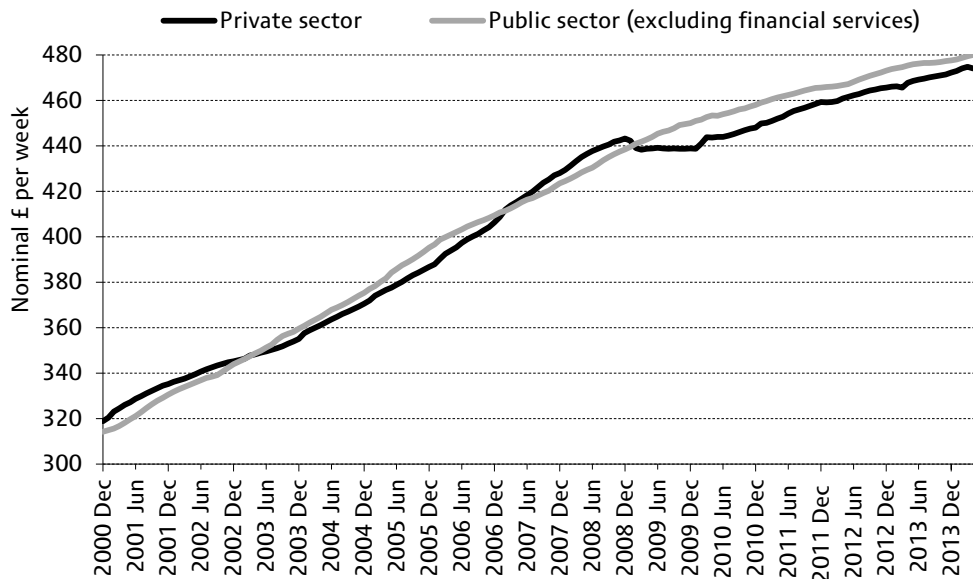
To provide some initial context, Figure 2.1 shows how average pay levels have evolved since 2000 in the public and private sectors, according to the average weekly earnings series of the Office for National Statistics (measured in cash terms). As we can see, average earnings in the public sector are currently slightly above those in the private sector. However, the two sectors have experienced quite different trends over time, particularly since the onset of the financial crisis in 2008.

Before the financial crisis, there was steady year-on-year growth in average pay levels in both the public and private sectors, with private pay levels slightly above those in the public sector in 2007.

After the start of the recession in 2008, average pay levels were largely frozen in the private sector with only 1% growth, in cash terms, in average pay between 2008 and 2010. This equated to a substantial cut, in real terms, in private sector pay, because total inflation between 2008 and 2010 was about 5% according to the CPI.

In the public sector, by contrast, average nominal pay continued to increase at a similar rate as it did before the crisis, increasing by 4.5% between 2008 and 2010. As a result, public sector pay increased relative to the private sector during the financial crisis. In large part, this reflects the fact that the pay of many public sector workers, including teachers, NHS workers and the police, was subject to three-year settlements from 2008 through to 2011. These settlements were made shortly after the 2007 Comprehensive Spending Review, before the recession happened and before it was known that private sector earnings would

Figure 2.1. Average weekly earnings in the public and private sectors 2000–14 (rolling 12-month averages)



Note: Measured as a 12-month rolling average of monthly (not seasonally adjusted) average weekly earnings. Includes bonuses.

Source: Authors' calculations using Office for National Statistics series KA4U for the public sector (excluding financial services) and series KA40 for the private sector, derived from the Monthly Wages and Salaries Survey (<http://www.ons.gov.uk/ons/rel/lms/labour-market-statistics/may-2014/dataset--earnings.html>).

stop growing. In most cases, these pay settlements were honoured. In this sense, the increase in public sector earnings relative to the private sector over the financial crisis was not the intended result of public policy. Indeed, groups not covered by three-year pay settlements (e.g. local government workers and senior administrators in central government) received much tighter settlements in 2009–10 than workers subject to three-year settlements. The three-year settlement for civil servants was abandoned in favour of a pay freeze for 2009–10.

Since the end of the financial crisis, private sector earnings have grown again, but only by a total of 5.3% in cash terms between 2010–11 and 2013–14.<sup>1</sup> Public sector earnings grew at the slightly slower pace of 4.1% over the same period. This has closed some, but not all, of the gap in the level of average pay between the public and private sectors that has opened up since the start of the financial crisis. However, in both the public and private sectors, these changes amount to significant real-terms falls in average earnings because prices rose over 8% according to the CPI inflation measure.

The slow growth in average public sector earnings since 2010 largely reflects the government's decision to freeze the level of public sector pay scales in 2011–12

<sup>1</sup> We compare the average over the 12 months ending March 2011 with the average over the 12 months ending March 2014.

and 2012–13 for all but the lowest-paid workers (those earning a full-time equivalent of £21,000 or less received a pay rise of £250 per year over the two years, which is an increase of at least 1.2% per year).<sup>2</sup> In both 2013–14 and 2014–15, the average increase was then constrained to 1% per year, which is due to be repeated in 2015–16.<sup>3</sup>

## **2.2 Estimating the differential in pay between the public and private sectors**

There are large differences in the make-up of the public and private sector workforces, with women and highly educated workers making up a larger share of the public sector, for example. Such differences mean that simply comparing the average pay of workers in the public and private sectors gives a false impression of the true differences in pay between the public and private sectors for similar workers. For instance, the fact that the public sector workforce contains relatively more workers with university degrees increases public sector pay relative to the private sector, but only because highly educated workers command higher pay levels, not because of any effect of working in the public sector.

In this section, therefore, we show how our estimates of the differences in pay between the public and private sectors change as we account for the different observed characteristics of the respective workforces. We largely use data from the quarterly Labour Force Survey (LFS) because this contains relatively rich background data on workers' characteristics, particularly with regard to levels of education.<sup>4,5</sup>

First, in Table 2.1, we show the estimated percentage difference in weekly earnings of men and women working in the public and private sectors, as well as for men and women combined. This is shown for the financial year 2013–14. Note that in this analysis and all that follows, we restrict our data to public and private sector employees aged between 20 and 59. As can be seen, weekly

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<sup>2</sup> This increase was only awarded to workers covered by PRBs, and so excluded the police and local government workers.

<sup>3</sup> It is important to note that some workers did not receive this. For example, NHS workers in England who receive an increase in pay due to an increase on an incremental scale did not receive a 1% increase in 2014–15.

<sup>4</sup> All the earnings and wages data are weighted by LFS income weights. Because there is a certain amount of measurement error, in both earnings and hours worked per week, we exclude the bottom 1% of wage earners in each year and those in the top 1% of each year if they have fewer than 10 hours worked per week.

<sup>5</sup> There are many sources of earnings data in the UK, each of which has its own advantages. The other dataset principally used for analysis of the public–private sector pay differential is the Annual Survey of Hours and Earnings (ASHE). For example, see the analysis by the Office for National Statistics ([http://www.ons.gov.uk/ons/dcp171776\\_261716.pdf](http://www.ons.gov.uk/ons/dcp171776_261716.pdf) and [http://www.ons.gov.uk/ons/dcp171776\\_355119.pdf](http://www.ons.gov.uk/ons/dcp171776_355119.pdf)).

Table 2.1. Raw public pay differential in hourly wages and weekly earnings, 2013–14

	Female	Male	All
Weekly earnings – raw differential	0.274*** (0.013)	0.084*** (0.011)	0.070*** (0.009)
Hourly wages – raw differential	0.257*** (0.009)	0.166*** (0.010)	0.157*** (0.007)

Note: Results are calculated from estimated coefficients (converted to percentages following Halverson and Palmquist, 1979) on a public sector indicator from a regression of (the natural logarithm of) pay on a public sector indicator. See note to Table 2.2 for details of how age, education, experience and region are measured. All standard errors are robust to heteroscedasticity. \*, \*\* and \*\*\* indicate statistical significance at the 10%, 5% and 1% levels, respectively.

Source: Authors' calculations using the LFS, 2013–14, weighted by LFS income weights.

earnings are currently higher in the public sector compared with the private sector, by about 7.0%. This is higher than the difference shown in Figure 2.1, which is likely to result from the fact that the estimates are based on different surveys.<sup>6</sup>

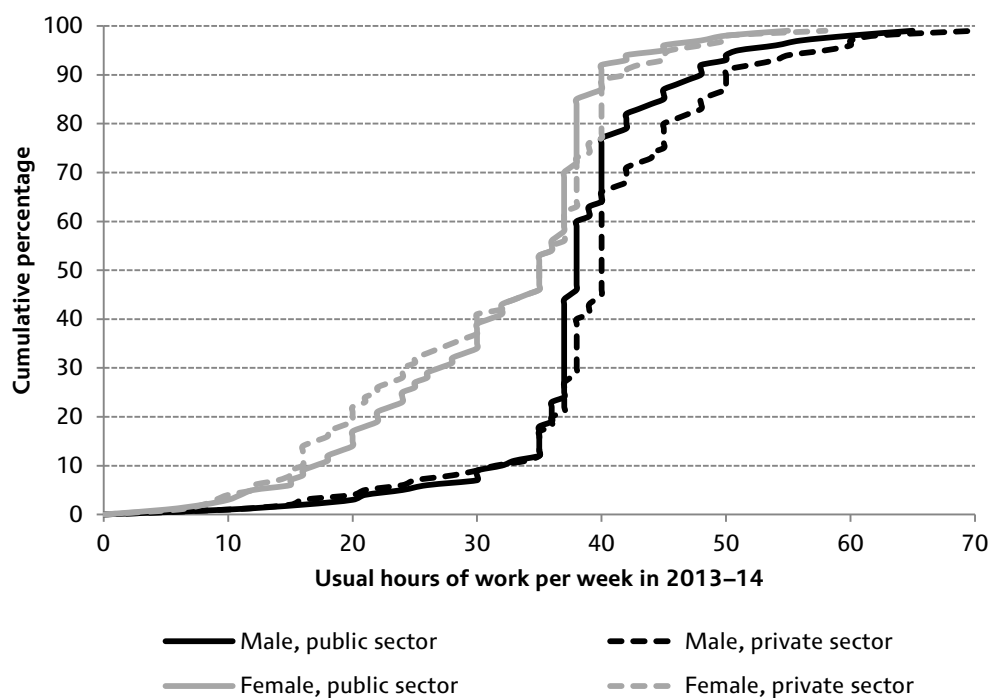
It is clear from Table 2.1 that the gap between public and private sector earnings is much larger for women (27.4%) than it is for men (8.4%). This is something we shall see throughout this report and thus we always seek to break our analysis down by sex where possible. Another key difference between the public and private sectors is the number of hours that individuals work. As can be seen in Figure 2.2, women in both the public and private sectors are equally likely to work part-time, with around one-third of women in both sectors working fewer than 30 hours a week, on average. However, men in the private sector are clearly more likely to work longer hours, on average, than men in the public sector. About a third of men in the private sector work longer than 40 hours a week, compared with about one-fifth of men in the public sector.

Such differences in hours will clearly affect our estimates of the differences in pay between the public and private sectors. However, this will be because of differences in hours<sup>7</sup> rather than because the public and private sectors choose to offer different pay levels per hour. If we focus on differences in hourly pay, we obtain slightly different estimates (also shown in Table 2.1). The estimates are higher for men when we look at hourly pay, reflecting the fact that men in the public sector work shorter hours, on average. The estimates are slightly lower for women when we look at hourly pay, but the change is relatively small, reflecting the fact that women in the public and private sectors work similar hours, on average. Nevertheless, it is clear that some of the differences in weekly earnings

<sup>6</sup> Whereas the Average Weekly Earnings series interviews firms and asks for the number of people they employ and the compensation paid to them, the LFS is an individual survey. This means that the LFS is likely to understate the earnings of very highly paid workers, who are very likely to be in private sector industries or occupations, such as finance and management of large businesses.

<sup>7</sup> Throughout this report, we measure hours using the usual hours in main job variable in the LFS.

Figure 2.2. Proportion of men and women working in the public sector who work fewer than a given number of hours (usual hours in main job)



Note: The figure includes only employees aged 20–59.

Source: Authors' calculations using the LFS, 2013–14.

simply reflect differences in hours.<sup>8</sup> As a result, we choose to focus on differences in hourly pay for the rest of this report.

There is also a wide range of other differences in the composition of the public and private sector workforces that are likely to affect our estimates of the pay differential between public and private sector workers. However, some caution is needed when deciding which differences to account for. Our interest lies in the effect on wages of being in the public sector, after controlling for fixed differences in human capital and skills when workers make their decision about which sector to join. Therefore, we clearly want to account for the ages and levels of education of individuals. However, controlling for some characteristics could bias our estimate of this public sector effect. First, there could be a bias if we control for the *mechanisms* that lead to differences in the wages of workers (e.g. we would not want to control for whether workers are members of a trade union or are subject to collective wage bargaining, because this is a key difference in wage setting that could produce a public sector effect). Second, we do not want to control for variables that represent *choices* that individuals could make in

<sup>8</sup> Cribb, Disney and Sibieta (2014) show that, in 2012–13, private sector workers worked an average of 35.5 hours per week, compared to 33.1 per week for the public sector. This means that private sector workers worked 7.3% more hours in total, although some of this difference is accounted for by the fact that the public sector has relatively more women, who, on average, work fewer hours than men.

response to the wage differential (i.e. we want to avoid any reverse causation bias). For example, we might not want to control for job tenure because, while it could be the case that job tenure increases wages (through increased productivity), it is also possible that higher pay increases job tenures because those who are paid more are less likely to move to a better paid job elsewhere.

In Table 2.2, we show how our estimates of the pay differential change as we account for different sets of characteristics (again for the latest financial year 2013–14 and separately by sex). Some of these factors are clearly fixed from the perspective of individuals (e.g. their age), whilst some could be argued to represent individual choices or mechanisms (e.g. job tenure). In what follows, we show how controlling for these different factors affects our estimates of the pay differential, and we then explain how the pay differential changes over time under a ‘preferred specification’.

Controlling for differences in age and region reduces the estimated differential to some degree, for both men and women. However, a much more substantial reduction occurs when we additionally control for the different levels of

Table 2.2. Estimated public–private sector hourly pay differential for different specifications, 2013–14

	Female	Male	All
Raw differential	0.257*** (0.009)	0.166*** (0.010)	0.157*** (0.007)
Control for age, age squared, region	0.226*** (0.009)	0.122*** (0.010)	0.183*** (0.006)
Main controls: age, age squared, region, education and experience	0.082*** (0.006)	–0.008 (0.008)	0.044*** (0.005)
Main controls plus <b>job tenure</b> (and job tenure squared)	0.044*** (0.006)	–0.037*** (0.008)	0.009* (0.005)
Main controls plus <b>occupation</b>	0.037*** (0.006)	–0.034*** (0.007)	0.006 (0.005)
Main controls plus <b>firm size</b>	0.024*** (0.007)	–0.064*** (0.007)	–0.014*** (0.005)

Note: Results are calculated from estimated coefficients on a public sector indicator (converted to percentages following Halverson and Palmquist, 1979) from OLS regressions. Raw differential (and all other specifications) include a dummy variable for each quarter of the year. Region is measured using dummies for 12 regions of the UK. Education and experience are measured by highest qualification (higher degree, degree, non-degree higher education qualification, A level (or equivalent), GCSE (or equivalent), any other qualification or no qualification). Experience is measured by age minus age of leaving education. Experience and experience squared are both interacted with a three-category qualification variable (indicating higher education, secondary education or other/no education). The final three rows of results include age, age squared, region, education and experience as well as the variable specified. Job tenure is measured in months of being in current job. Occupation is measured by the one-digit Standard Occupation Classification 2010 code. Firm size is controlled for using eight dummy variables for the size of the firm. For the results including both men and women (the ‘All’ column), all controls are interacted with a sex dummy variable. All standard errors are robust to heteroscedasticity. \*, \*\* and \*\*\* indicate statistical significance at the 10%, 5% and 1% levels, respectively.

Source: Authors’ calculations using the LFS, 2013–14, weighted by LFS income weights. See the LFS Documentation (<http://www.ons.gov.uk/ons/guide-method/method-quality/specific/labour-market/labour-market-statistics/index.html>) for more details on the firm size.

education of the public and private sector workforces. After controlling for education, the differential reduces to 8.2 percentage points for women and to -0.8 percentage points for men (which is not statistically significant from zero). This shows that a large part of the raw differential simply reflects the fact that public sector workers have higher levels of education, on average. It seems reasonably clear that age, sex, region and levels of education are unlikely to bias our estimates of the pay differential because they represent fixed characteristics of individuals when they enter the labour market (assuming they have already made the decision about which region to live in). As such, we want to control for these factors in estimating the pay differential.

The final three rows show how our estimates change as we additionally control for job tenure, occupational groupings and firm size (whilst also controlling for age, region, education and experience). Adding controls for job tenure further reduces the estimated gap, such that the gap now becomes negative and statistically significant for men. This results from the fact that there tend to be wage returns to longer job tenure and that public sector workers have longer job tenures, on average. Adding controls for broad occupational groupings has a similar effect on our estimates. Finally, adding controls for the size of firms has a slightly larger downward effect on the estimated size of the gap in pay between public and private sector workers. The direction of the change in the public pay differential, when controlling for job tenure, occupation or firm size, is similar to those results found by Blackaby et al. (2012).

However, we have some concerns regarding the potential for bias when controlling for job tenure, occupational groupings and firm size. Differences in the return to job tenure could be one mechanism behind the public sector effect and it is a choice individuals make, potentially in response to the pay differential. Occupation is also a choice that individuals make, potentially in response to pay differences. Firm size is, to some extent, a fixed characteristic of workplaces and there are reasons why firm size could affect workers' wages (e.g. if workers prefer smaller firms and need to be paid more in order to work for large organisations). However, a firm size effect could also be observed if larger firms are more likely to be unionised and subject to collective wage bargaining. Firm size could thus be capturing one of the mechanisms driving a public sector effect.

As a result of these concerns, for the rest of this report we focus on estimates of pay differential after controlling for differences in age, sex, education and region (the largely fixed set of characteristics when workers make their decision about which sector to join). However, focusing on this 'preferred specification' does not have a large effect on our conclusions regarding how the pay differential is changing over time, which is our main focus here. This is because worker and workplace characteristics are not currently changing at substantially different rates across the public and private sectors.

It is also important to note that there might be differences in non-pay elements of a worker's remuneration, such as the value of pensions, pay in kind and holiday rights, or differences in the risk to employment, income or pension wealth, or differences in the flexibility of working arrangements, which mean that total

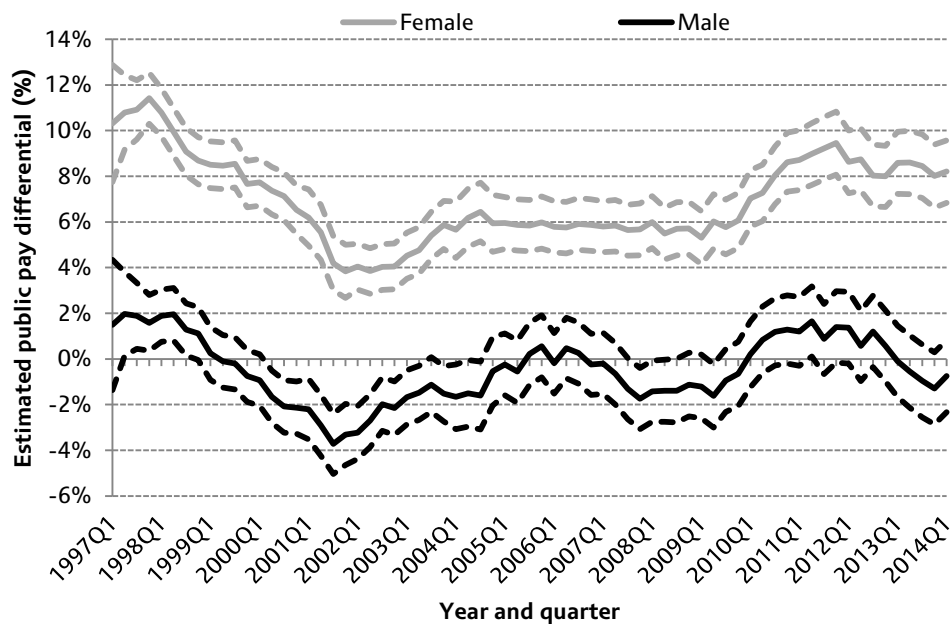


remuneration is more (or less) comparable than a difference in pay alone would suggest. This is an issue that is further investigated in an accompanying briefing note (Cribb and Emmerson, 2014), where we incorporate the estimated value of employers' contributions to workplace pensions into estimates of the public sector pay differential. However, it is still important to understand how the pay differential has changed over time, not least because, to the extent that non-pay differences between the public and private sectors are constant over time, changes in the estimated pay differential would reflect changes in the true public (or private) sector differential over time. It is also interesting to examine how the changes in the estimated differential reflect changes in policy and the workforce, and the extent to which changes in the differential affect the ability of the public and private sectors to recruit and retain staff of the desired quality.

Therefore, we now consider how the differential has changed for men and women based on our 'preferred specification', (i.e. controlling for age, region and education levels; see the third row in Table 2.2). Figure 2.3 shows the estimated differential for men and women separately between 1997Q1 and 2013Q4, with the dashed lines representing 95% confidence intervals.

As was seen for average pay levels earlier in this chapter, we see that the public-private pay differential increased sharply after the onset of the financial crisis in 2008. However, since the start of the squeeze on public sector pay, these differentials have begun to fall back to pre-crisis levels. For men, the differential

Figure 2.3. Estimated public-private hourly pay differential over time



Note: The estimated public-private differential is estimated controlling for age, experience, qualifications and region, as in the third row of Table 2.2. Each sample is based on a four-quarter LFS sample, ending in the labelled year and quarter. The dashed lines represent 95% confidence intervals. Standards errors are robust to heteroscedasticity. Each data point is based on a four-quarter LFS sample, ending in the labelled quarter.

Source: Authors' calculations using LFS data, weighted by LFS income weights.

in 2013 was at a similar level to that seen before the financial crisis (i.e. close to zero) and similar to where it was throughout the 2000s. For women, the public-private pay differential in 2013 was still above its pre-crisis level, at around 8 percentage points compared with around 6 percentage points throughout the 2000s.

This result is driven by higher earnings growth for women in the public sector. As shown in Figure A.1 in the Appendix, mean hourly wages for women in the public sector rose by 14.5% in cash terms from 2007–08 to 2013–14, compared with 11.7% for women in the private sector. Men in both the public and private sectors saw earnings grow by around 11% over the same period. Most of the higher growth for women in the public sector occurred after 2009–10. One potential explanation for the higher growth seen for women in the public sector could be the fact that they were more likely to receive the £250 nominal increases in public sector pay for low-paid workers in 2011–12 and 2012–13, because they tend to work in lower-paying public sector occupations.

## **2.3 Future evolution of the public pay differential and its implications**

How are these differentials likely to evolve over 2014 and further into the future? To answer this question, in Figure 2.4 we show the raw level of the public-private differential for men and women combined. Then, we project how this raw differential will evolve, based on the most recent sets of forecasts for public and private sector earnings growth made by the Office for Budget Responsibility (OBR)<sup>9</sup> in March 2014 (which incorporate announcements on expected public sector pay awards up to 2015–16; OBR, 2014). These projections suggest an acceleration of the fall in public sector pay relative to private sector pay: the pay differential is predicted to return to its 2007–08 level (and the level seen in 2008–09) in early 2014, which is two years earlier than previously projected.<sup>10</sup> Furthermore, OBR projections imply that public sector pay is also set to grow less quickly than private sector pay in each of the years after 2013–14. This implies that by 2018–19, public sector pay is predicted to be 2.3 percentage points lower relative to private sector pay than it was before the crisis in 2007–08.

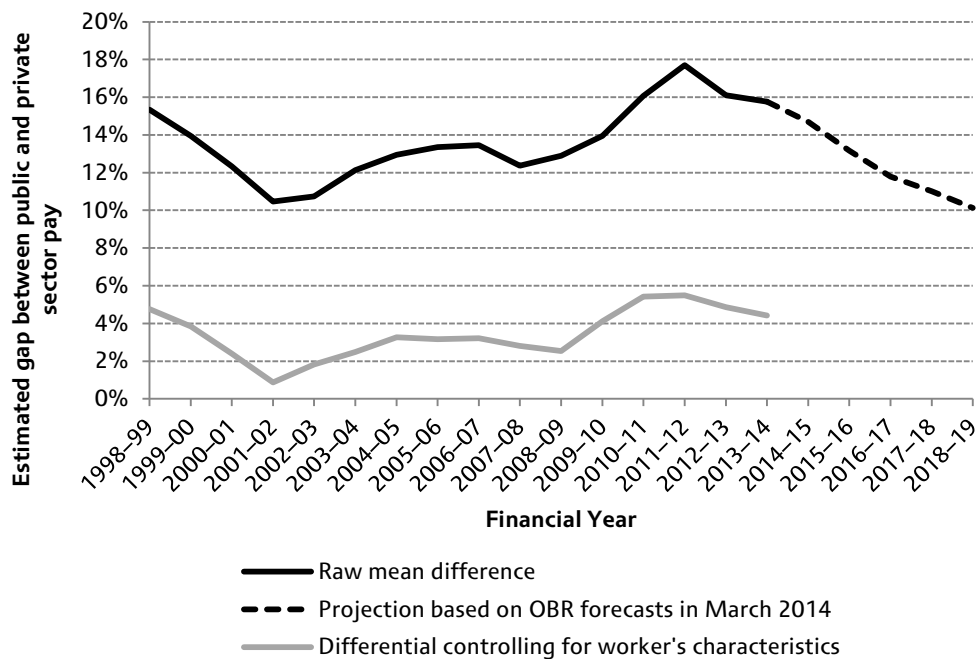
There is clearly a great deal of uncertainty around these projections. Private sector earnings growth is, in particular, difficult to forecast accurately. In recent years, actual growth in private sector earnings has turned out to be lower than expected by the OBR (among others). If this pattern continues, then the actual fall

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<sup>9</sup> Estimates of the future (raw) public-private pay differential use forecasts for: total employment, general government employment, average earnings and public sector pay in the OBR's *Economic and Fiscal Outlook*, March 2014. See OBR (2014) for more details of OBR forecasts.

<sup>10</sup> Previous projections for the public sector pay differential were made in June 2013, incorporating an estimate for the effect of the 2015–16 1% public sector pay award announced at Budget 2013 (Cribb, 2013).

Figure 2.4. Estimates of the public pay differential incorporating OBR forecasts for future earnings



Note: Projection based on authors' calculations using OBR (2014). Differential controlling for workers characteristics consists of the same variables as in row 3 of Table 2.2.  
 Source: Authors' calculations using the LFS, various years.

in the differential might turn out to be smaller than implied by current forecasts. However, there is no reason to believe that the current pattern will continue. Private sector earnings growth could turn out to be higher than currently expected by the OBR, particularly given the recent upturns in GDP and employment. If this were to be the case, then the pay differential could fall even more than implied by current forecasts.<sup>11</sup>

If, as these projections suggest, public sector pay falls by 5.6 percentage points relative to the private sector between 2013-14 and 2018-19, then the relative pay gap will be lower than its level in the early 2000s. This was a time when parts of the public sector had difficulties recruiting and retaining high-quality staff.<sup>12</sup> However, this was also a time when there was rising demand for public sector workers. Over the next few years, we instead expect the size of the public sector workforce to fall (with cuts of more than one million already planned between 2010-11 and 2018-19). The challenge for policymakers now is to manage a large

<sup>11</sup> There is particular uncertainty after 2015-16, not only because it is further away and so it is harder to forecast private sector earnings, but because the government has not announced specific public sector pay policy for after 2016-17 and beyond.

<sup>12</sup> For instance, the School Teachers Review Body report from 1999 notes that 'the balance of evidence suggests a continuing worsening in teacher supply ... [and] while we are reluctant to talk of a crisis, we are increasingly concerned that good quality graduates are not entering teaching in sufficient numbers to meet the future demands of schools.'

fall in the public sector workforce and a fall in public pay relative to the private sector, whilst also seeking to retain high-quality workers at the same time.

In making the trade-off between future workforce cuts and pay squeezes, both the government and Pay Review Bodies (PRBs) need to pay great attention to indicators of whether the public sector is facing any difficulties in recruiting and retaining high-quality staff, and to decide on settlements in light of any such evidence.

## **2.4 Conclusion**

In this chapter, we have sought to understand the differences in the average pay levels of public and private sector workers, and how these differences have changed over time. In raw terms, hourly pay is higher in the public sector. This partly reflects the fact that the public sector workforce includes a greater proportion of highly educated workers. After controlling for differences in education and other factors, the differences in the hourly pay of public and private sector workers are much smaller, on average, and larger for women than for men.

In terms of the changes over time, we find that, in the aftermath of the Great Recession, the estimated pay differential increased as private sector pay fell and then only grew relatively weakly, as public sector pay continued to grow (in cash terms). Since 2011, squeezes on public sector pay have reduced the premium such that by the end 2014–15, the estimated differential is likely to be close to its pre-crisis level. With the future path of public sector pay announced to 2015–16, the squeeze in public sector pay looks set to continue and it is therefore likely that public sector pay will fall relative to private sector pay and will fall below its pre-crisis level.

However, in this chapter, we have only investigated the differences in public and private sector pay on average. If the squeeze in public sector pay awards continues, it might be more important to work out whether parts of the public sector might face recruitment difficulties, and which parts these might be. Where, and for whom, these difficulties might occur could be partially determined by the differences in public and private sector pay for different types of workers (e.g. workers in different regions or with different levels of education). In the next chapter, we dig deeper into this, looking at variation in the public pay differential.

### 3. Variation in the Public Pay Differential

Average differences can hide a great deal of variation across different types of workers. As we shall show, the public sector wage distribution is more compressed than that of the private sector and has become more so over recent history. The pay differential also varies across different groups of workers and in different areas of the country. It is important to understand this variation. First, it shows us the sources of the average public pay differential. Secondly, if the public pay differential varies significantly for different groups of workers or in different areas of the country, this might affect the ability of the public sector to attract and retain particular groups of workers or workers in different areas of the country. This could, in turn, affect the quality of public services or the efficiency with which they are delivered. Variations in the pay differential could also have consequences for the private sector's ability to attract workers.

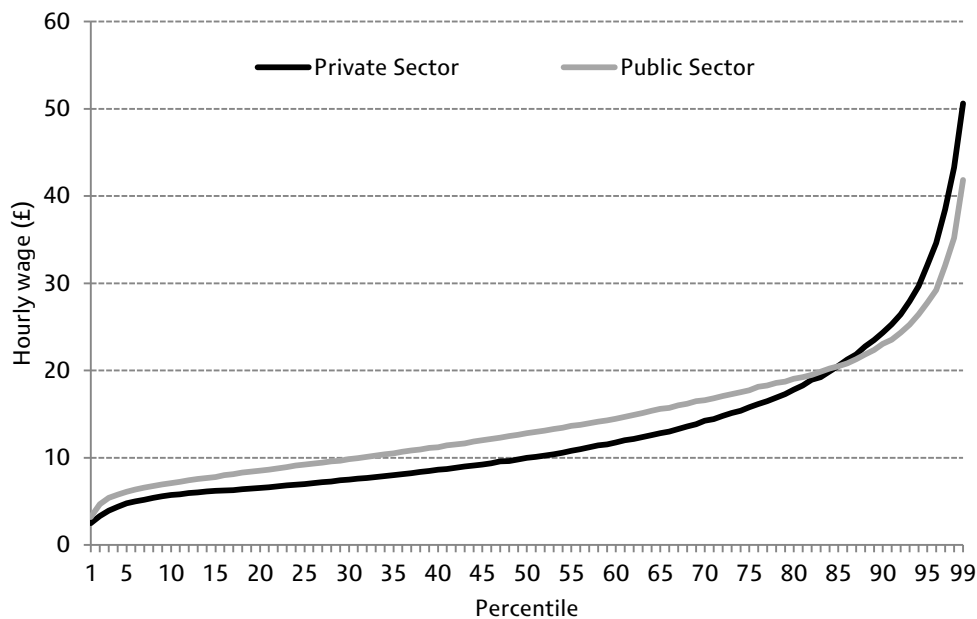
In this chapter, we start by looking at the overall level of variation in pay across the public and private sectors, the sources of this variation and how it has changed over time. We then examine how the differences in pay between public and private sectors vary across different types of workers, such as by age, by education, and whether workers work full-time or part-time. Finally, we examine how the gap in pay between the public and private sector pay varies across regions and nations of the UK.

#### 3.1 Variation across the wage distribution

The public sector wage distribution is more compressed relative to the private sector wage distribution. Figure 3.1 shows the distribution of wages for public and private sector workers in 2013–14. Average wages are clearly higher for public sector workers, which, as seen in the previous chapter, will partly reflect differences in the characteristics of public and private sector workers. What we now see, however, is that there is less variation in the wages of public sector workers compared with those in the private sector. Public sector wage levels are compressed into a narrower range than are private sector wages. As a result, the ratio of the 90th percentile to the 10th percentile in the public sector is about 3.2, whilst in the private sector it is 4.1. There are also very clear differences at the top of the distribution, with the level of the 95th to 99th percentiles being much higher in the private sector than in the public sector.

In the Appendix, we also show how these distributions vary by sex. The public sector wage distribution looks particularly compressed for men. For women, it is only at the very top of the public sector wage distribution (the 96th percentile) that the wage at the equivalent percentile of the private sector distribution is higher. However, for men, above the 82nd percentile of the public sector wage distribution, the wage is higher at the equivalent percentile of the private sector distribution.

Figure 3.1. Hourly wages at each percentile point, public and private sectors, 2013–14



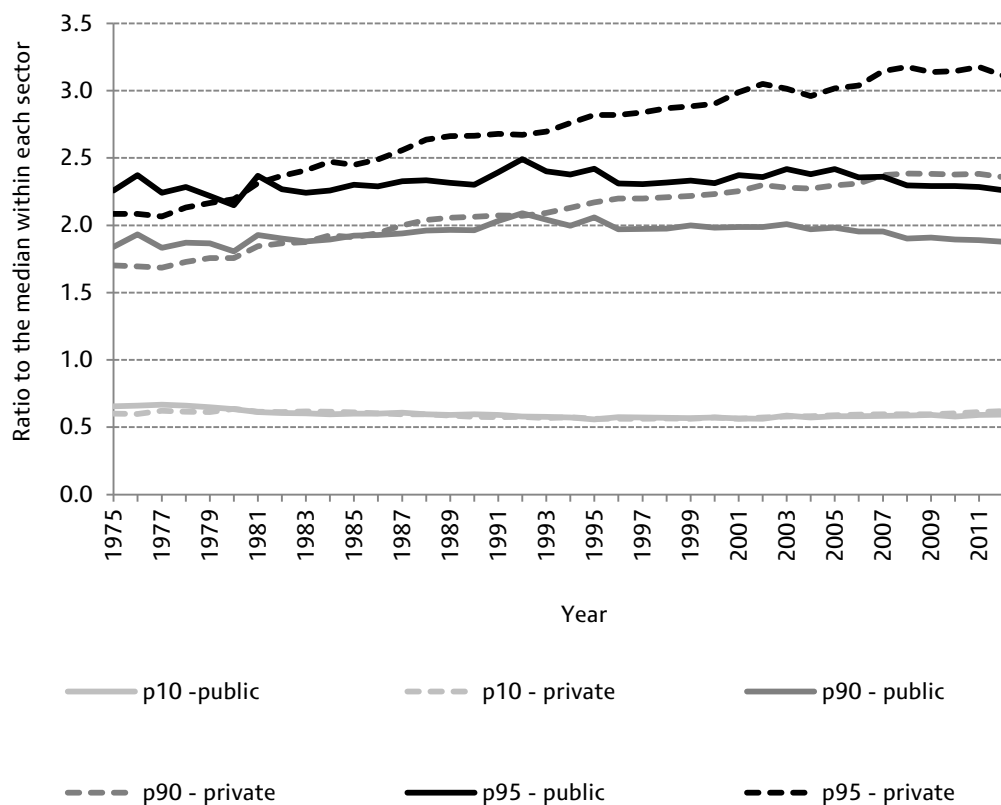
Source: Authors' calculations using the LFS, 2013–14.

What are the sources of these differences across the wage distribution and how have they changed over time? Figure 3.2 shows the levels of the 95th, 90th and 10th percentiles of the wage distribution within each sector relative to median wages within each sector back to 1975 (according to the New Earnings Survey Panel Dataset). For example, in 2011, the 10th percentile of public sector wages was about 0.6 times the level of the median in the public sector, which is actually very similar to same ratio in the private sector. Furthermore, both have changed little over time back to the mid-1970s (although not shown here, the same is true if we look at the ratio of the 25th percentile across sectors).

If we look at the upper half of the pay distributions, a different picture begins to emerge. The gap between the 90th percentile and the median has grown substantially in the private sector and much more than it has done in the public sector. In the late 1970s, the ratio of the 90th percentile wage to the median wage (90/50 ratio) was higher in the public sector than in the private sector. By the early 1990s, the 90/50 ratio was roughly similar in the public and private sectors at just under 2.1. By 2011, this 90/50 ratio had risen to 2.4 in the private sector but had fallen to 1.9 in the public sector.

The changes at the very top of the distribution are even more pronounced. In the private sector, the 95/50 ratio has grown from 2.1 in the late 1970s, to reach around 3.1 in the present day. In contrast, in the public sector, the 95/50 ratio has remained at around 2.3 over time, leaving a large difference relative to the private sector. Furthermore, as a result of these trends, the 90/50 ratio in the private sector is actually now above the 95/50 ratio in the public sector,

Figure 3.2. Public and private sector hourly wages at different percentile points relative to the contemporary median within each sector



Note: p10 refers to the 10th percentile, p25 to the 25th percentile, etc.  
 Source: Authors' calculations using the New Earnings Survey Panel Dataset, 1975–2011.

illustrating the extent to which the public sector wage distribution is compressed relative to the private sector.

Therefore, a large part of the long-run compression in wages in the public sector reflects lower top tail wage inequality compared with the private sector. Changes over time also reflect lower growth in top tail inequality stretching back to the mid-1970s. This could create problems for the public sector when seeking to recruit and retain the most highly skilled workers.

Before we move on to looking at more recent changes, it is useful to consider where some major public sector occupations fit into the overall wage distribution and how this pattern has changed over time. Table 3.1 shows the average (as described by the median) position of doctors, nurses, other health-care professionals, teachers, police and those in public administration in the overall wage distribution for selected years (1980, 1990, 2000 and 2010). For example, this shows that in 2010, the median doctor had a wage around the 96th percentile in the wage distribution whilst (on average) public administration officials were below the median in the overall wage distribution. It should be noted that the group of workers in public administration is likely to be very heterogeneous, including both senior civil servants and lower-skilled administrative positions. Between these extremes, we see that the median

Table 3.1. Median percentile of major public sector occupations in the overall hourly pay distribution, for selected years

Occupation	Median percentile in hourly pay distribution in:				Median hours of work per week (2010)
	1980	1990	2000	2010	
Doctors	95	95	95	96	40.0
Teachers	91	91	90	88	32.4
Police	83	83	84	79	40.0
NHS practices allied to medicine	65	71	74	78	37.5
Nurses	48	67	72	75	37.5
Public administration	55	48	47	46	36.9

Source: Authors' calculations using the New Earnings Survey Panel Dataset, for various years.

teacher was around the 88th percentile, followed by police at the 79th percentile, NHS practices allied to medicine (such as paramedics and speech and language therapists) around the 78th percentile and nurses around the 75th percentile.

For some occupations, their average position has not changed much over time. For instance, doctors have remained around the 95th percentile for a long period of time, whilst the position of teachers and police has fallen back slightly over time. However, they remain relatively high in the overall wage distribution. However, for nurses and other health-care professionals, there has been substantial change. In 1980, the median nurses' wage was around the median of the wage distribution. Since then, their relative position has risen substantially to reach around the 75th percentile in 2010. This is likely to be strongly connected to the higher levels of educational qualifications required over time for new nurses. The relative position of NHS practices allied to medicine has also improved, although not quite as dramatically. The average position of workers in public administration has fallen slightly over time, but has also been quite close to the overall median.

These patterns are, in general, preserved when looking at the average position of occupations in the weekly earnings distribution rather than the hourly pay. The equivalent results for Table 3.1, but looking at weekly earnings, can be found in Table A.1 in the Appendix. The main difference regards teachers. The median teacher is lower in the weekly earnings distribution than in the hourly pay distribution, with the median teacher at the 79th percentile of the weekly earnings distribution. As is shown in Table 3.1, the average hours worked per week for a teacher are lower than for other public sector occupations, presumably because of the longer holidays that teachers have. Therefore, fewer hours per week, on average, implies a lower position in the weekly earnings distribution than in the hourly pay distribution.



## 3.2 Changes since the financial crisis

We now look in more detail at the recent changes since the start of the financial crisis. Figure 3.3 shows the real (deflated by the CPI) cumulative change in hourly wages between 2007 and 2013 for public and private sector workers for each percentile point. There have been large falls in the real wages of private sector workers, in particular in the bottom half of the private sector wage distribution, where the cumulative falls have generally been between 6% and 8% over these six years. The top half of the private sector wage distribution has seen smaller total real falls, of between 3% and 5%.<sup>13</sup>

The change in the distribution of public sector wages is very different. Below the median, the real falls in public sector wages have been much smaller than those seen in the private sector. At the 25th percentile of the public sector wage distribution, the cumulative fall over the six years was only about 2%. Above the median, real falls in public sector wages have been larger than those seen in the private sector, with cumulative falls of 6% or more. The patterns for public and private sector workers across the distribution are thus quite different, with lower falls at the bottom of the wage distribution in the public sector and the opposite in the private sector. As a result, there has been a further compression in the wage distribution in the public sector relative to the private sector.<sup>14</sup>

As we saw in the previous chapter, there are substantial differences in the characteristics of public and private sector workers. It is therefore important to account for this when comparing the distribution of wages across the public and private sectors: given higher average levels of education in the public sector, at a given point of the public and private wage distributions (e.g. the 25th percentile), the public sector worker is likely to have a higher level of formal education. To account for this difference, we make use of a technique called quantile regression. This allows us to predict the percentiles of the wage distribution for individuals with a given set of characteristics. This can then be compared across public and private sectors to examine whether the relative compression in the public sector wage distribution remains after accounting for worker characteristics. We control for age, region, education and experience in the same way as is done in the ordinary least-squares (OLS) regression results reported in Chapter 2.

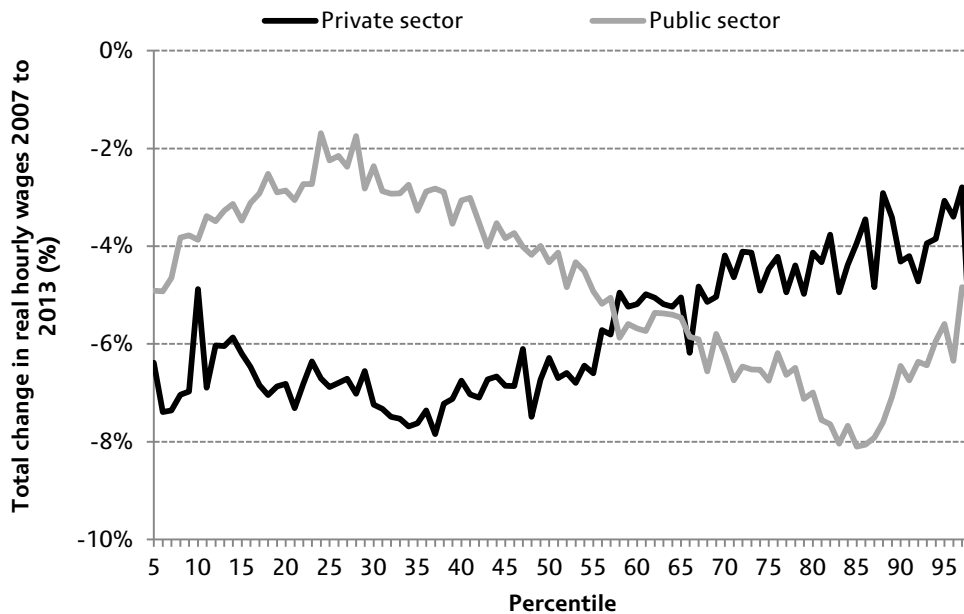
We carry out this analysis for women and men separately (Panels A and B of Figure 3.4, respectively), and for the years 2007–08 and 2013–14 in order to examine how the patterns have changed since the onset of the financial crisis. The difference between the predicted percentiles in the public and private sectors are shown by the solid black lines, with the dashed lines showing

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<sup>13</sup> A similar pattern has been seen using LFS and other data for real weekly earnings (e.g. Cribb et al., 2013, p. 43).

<sup>14</sup> Indeed, the 90/10 ratio in the public sector wage distribution fell from 3.3 to 3.2 from 2007 to 2013, while it was essentially unchanged in the private sector.

Figure 3.3. Real hourly wage growth by percentile point, in the public and private sectors, 2007–08 to 2013–14



Note: Hourly wages deflated by the CPI. Percentiles 1–4 and 99 are excluded because of relatively high levels of statistical uncertainty.

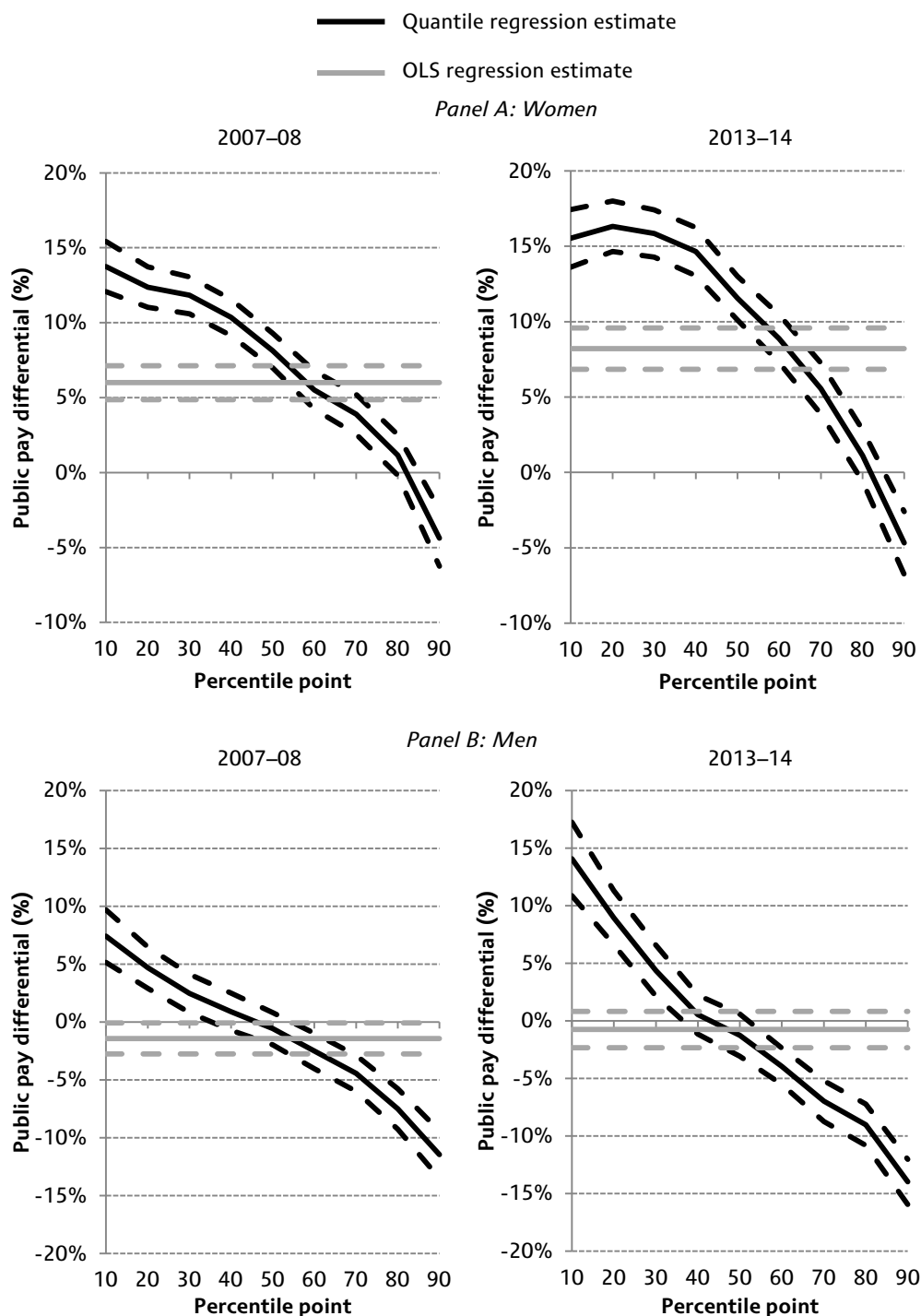
Source: Authors' calculations using the LFS, 2007 and 2013.

confidence intervals. The grey lines show the estimated mean differentials (estimated by OLS regression).

The fact that the public sector differential in the predicted percentiles is lower for higher percentiles shows that, conditional on worker characteristics, the wage distribution is still compressed in the public sector compared with the private sector. This holds across men and women, and was true in both 2007–08 and 2013–14.

The shape of the public sector wage differential, conditional on worker characteristics, has changed since the onset of the financial crisis. This is largely because the pay differential at the bottom of the wage distribution has grown over time. In 2007–08, the pay differential at the bottom of the distribution was around 12–14% for women and 5–7% for men. By 2013–14, these figures had reached around 15–16% for women and 9–14% for men. The differentials in the middle of the income distribution increased slightly for women and not at all for men. Conversely, we see the opposite towards the top of the distribution, where for men the differential at the 90th percentile became more negative, going from -11.4% in 2007–08 to -14.0% in 2013–14, although no such fall was observed for women.

Figure 3.4. Quantile regression estimates of public pay differential for women and men, 2007–08 and 2013–14



Note: Results are calculated from estimated coefficients (converted to percentages following Halverson and Palmquist, 1979) on a public sector indicator from OLS regression and quantile regressions. Each quantile regression line shows the effect of being in the public sector from quantile regressions (at nine percentile points (10,20,...,90)) of (log) hourly wage on a public sector indicator and a vector of controls (age, education, experience, region) as set out in the third row of Table 2.2. The coefficients are estimated using simultaneous quantile regressions, allowing for correlation in the errors across the quantiles. Standard errors are calculated by bootstrapping 1000 times. The OLS line is the equivalent from an OLS regression on the same variables, and the standard errors are robust to heteroscedasticity. The dashed lines provide the 95% confidence intervals.

Source: Authors' calculations using the LFS, 2007–08 and 2012–13.

The fact that the public pay differential increased at the bottom of the distribution while it became smaller (more negative) at the top of the distribution (at least for men) implies that there has been a further compression of the public sector wage distribution relative to the private sector. The most likely driving force is the recent protections offered to low-paid public sector workers. In 2011–12 and 2012–13, public sector workers earning under £21,000 (full-time equivalent) per year (who were covered by PRBs) received pay increases of £250 per year.<sup>15</sup> At the same time, low-paid private sector workers saw large real-terms falls in their wages. As a result, the public pay differential for low-paid workers further increased.

Clearly, the government was keen to offer some protection for low-paid workers and to mitigate the effect of squeezes on public sector workers. However, other policies, such as changes to the tax and benefit system,<sup>16</sup> could have allowed the government to offer protections to both public and private sector workers. Alternatively, they could have sought to mitigate job reductions in parts of the public sector that have seen relatively sharp decreases in headcount, or lessened the squeezes on those with average or higher incomes in the public sector.<sup>17</sup>

### **3.3 Differences by worker characteristics**

Having examined the overall differences in pay variation across public and private sectors, we now examine the differences across different types of workers. Given the importance of education and skills for determining wages and worker productivity, we start by examining differences by education group. We then examine differences across other groups of workers later in this section.

Figure 3.5 shows trends in the level of public–private sector pay differential over time amongst workers with high (the highest qualification is at least a degree or other higher education), medium (at most A-level qualification or equivalent) and low (at most a GCSE-level qualification or equivalent) levels of education. This is done separately for men (Panel A) and women (Panel B).

For men, the picture is relatively clear. The public pay differential is highest for those with low levels of education and lowest for those with high levels of education. Indeed, it is negative for men with high levels of education.

This pattern has also not changed that much over recent years for men. All education groups experienced a rise in the public sector pay differential since the

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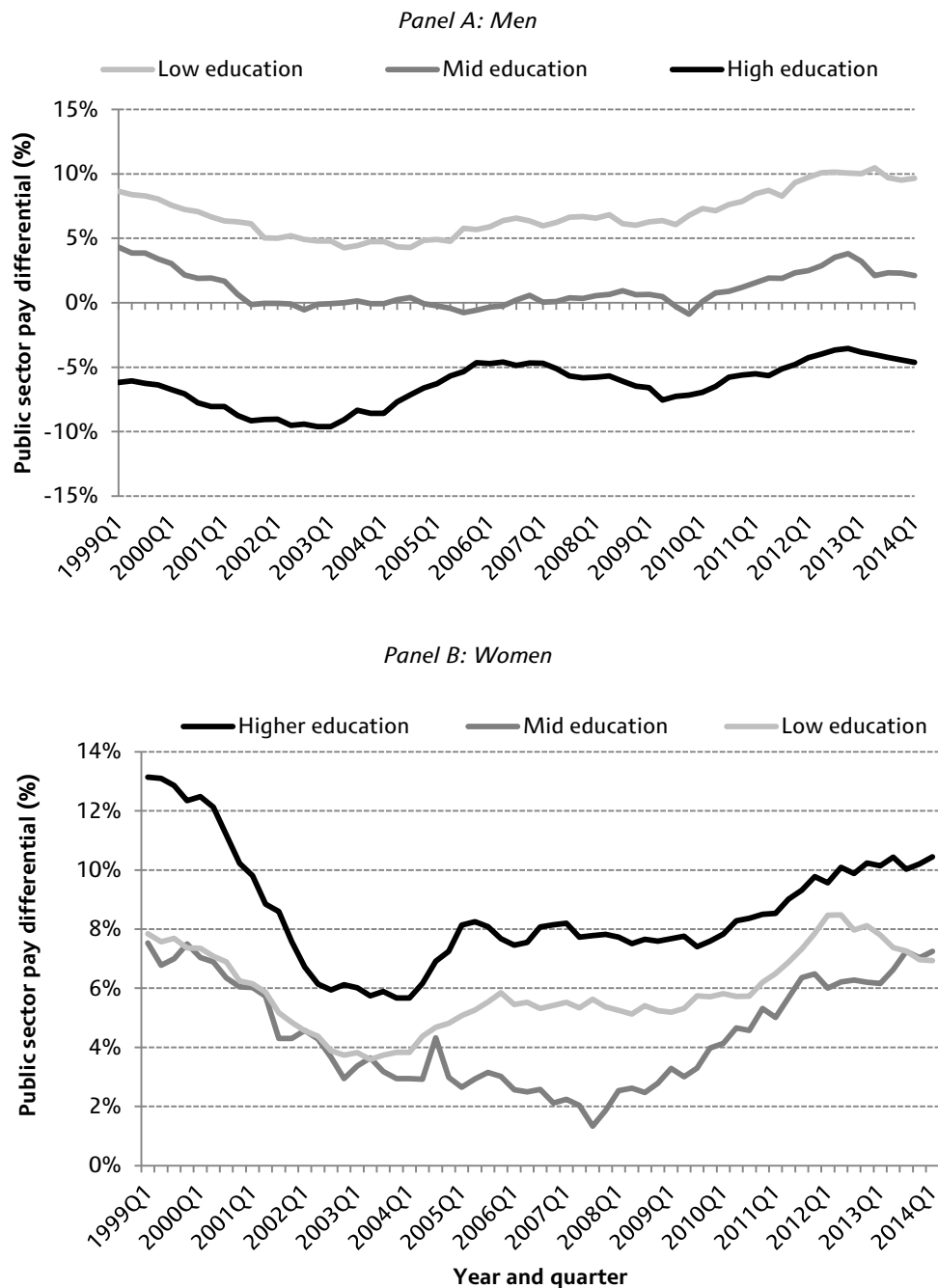
<sup>15</sup> A similar policy occurred in 2014–15 for NHS workers in Scotland. NHS staff earning under £21,000 received an increase higher than 1%, such that they saw a £300 cash increase compared to 2013–14. For more details on this policy, see <http://news.scotland.gov.uk/News/NHS-Scotland-pay-rise-a57.aspx>.

<sup>16</sup> Policies aimed at helping low-paid workers are examined Hood, Joyce and Phillips (2014) ([http://www.ifs.org.uk/budgets/gb2014/gb2014\\_ch7.pdf](http://www.ifs.org.uk/budgets/gb2014/gb2014_ch7.pdf)).

<sup>17</sup> See Cribb, Disney and Sibieta (2014) for greater detail in the size and scope of the reduction to the public sector workforce.

start of the financial crisis. Looking further back in time, one difference that does emerge is that the public sector pay differential increased noticeably more for highly educated men than for the other education groups in the early 2000s. This means that highly educated men in the public sector saw their wages rise by more than did highly educated men in the private sector over this time.

Figure 3.5. Public pay differential over time by education group



Note: Results are calculated from estimated coefficients (converted to percentages following Halverson and Palmquist, 1979) on a public sector indicator from a regression of log hourly wages on a public sector indicator, as well as age, experience, education (more finely defined), region and time, as set out in Table 2.2. Each sample is based on a 12 quarter LFS sample, ending in the labelled year and quarter.

Source: Authors' calculation using the LFS, for various years.

For women, the public sector pay differential is positive for all education groups and there is less variation than there was for men across education groups. However, in contrast to the picture for men, it is largest for the high education group.<sup>18</sup> The public sector pay differential is then of a slightly lower value for women with medium and low levels of education. In terms of the trends over time, all education groups experienced a rise in the differential since the start of the financial crisis. However, it was women with medium levels of education that seemed to experience the fastest rise in the differential over time, with the differential growing from 2% to 7% between early 2007 and 2013 for this group.

We now turn to differences in the public pay differential across other groups of workers. Table 3.2 shows how the estimated public sector pay differential varies across age groups and whether workers work part-time or full-time

Across age groups, we see a U-shaped pattern. The differential is highest for young men and women in their 20s and then declines for older groups of workers in their 30s and 40s. This is consistent with faster earnings growth for young adults in their 20s in the private sector, compared with the public sector, and slower pay growth for those in their 50s in the private sector than in the public sector (Crawford, Emmerson and Tetlow, 2010).

These patterns imply that young workers could be highly attracted to the public sector, although this attraction could decline as workers grow older, given that pay growth seems to be higher in the private sector. Other research (e.g. Card and DiNardo, 2002; Katz, Loveman and Blanchflower, 1995) has suggested that the wage returns to experience have been increasing over time, with younger workers in recent cohorts starting on lower wages and then seeing faster increases over time. The patterns we observe here give some suggestion that these patterns might not be fully reflected in public sector wages.

Finally, we also see differences in the pay differential depending on whether workers work full-time or part-time. Amongst women, the differential is slightly higher for those working part-time than for those working full-time. This could reflect the types of job that tend to be undertaken on a part-time basis. It is not *a priori* clear why the public sector wage differential is higher for women working part-time than for women working full-time. However, it is interesting because, as Blundell et al. (2013) show, experience in part-time employment leads to very low returns for women (compared with full-time work) and the penalty to part-time work is particularly high for more educated women. It could be that differences in the aspects of working in the public sector (such as the particular set of skills required or greater flexibility in maternity arrangements) lessen this penalty for part-time work. More research is needed in this area.

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<sup>18</sup> Other research has found higher differentials for highly educated women working in the public sector; when looking at the total reward to working in the private or public sector, Danzer and Dolton (2012) find a significant benefit for highly educated women for working in the public sector.

Table 3.2. Public pay differential for different age groups and for full-time and part-time workers, 2013–14

	Female	Male
Age group		
Aged 20–29	0.163*** (0.016)	0.058*** (0.020)
Aged 30–39	0.090*** (0.014)	-0.021 (0.015)
Aged 40–49	0.009 (0.012)	-0.031** (0.015)
Aged 50–59	0.113*** (0.013)	-0.006 (0.016)
Hours of work		
Full-time	0.068*** (0.009)	-0.015* (0.008)
Part-time	0.110*** (0.012)	0.171*** (0.048)

Note: Full-time is defined by working 30 or more hours in a usual week. The estimated public–private differential is estimated controlling for age, experience, qualifications and region, as in the third row of Table 2.2. Standard errors are reported in parentheses and are robust to heteroscedasticity. \*, \*\* and \*\*\* indicate statistical significance at the 10%, 5% and 1% levels, respectively.

Source: Authors' calculations using the LFS, 2013–14.

### 3.4 Differences by area

In the 2011 Autumn Statement (HM Government, 2011), the Chancellor asked four PRBs to consider making pay more responsive to local labour markets. In his letters to the four PRBs (covering the NHS, teachers, prison officers and certain senior staff in the public sector in England), the Chancellor argued that substantial variation in public–private pay differentials across regions might harm private sector businesses, which have to compete with higher wages.<sup>19</sup> He also argued that the variation in relative pay might lead to unequal quality of services across regions, and a smaller number of jobs than is potentially affordable for any given level of expenditure.

Reports from the PRBs considering the evidence for more local variation in public sector pay were published in late 2012. The NHS PRB welcomed the idea of market-facing pay to 'support the recruitment and retention of good quality staff' and thought it could be achieved within the current Agenda for Change structure.<sup>20</sup> The School Teachers PRB recommended greater flexibilities for individual schools, but thought additional local variation would 'risk introducing

<sup>19</sup> Letters from the Chancellor to the PRBs can be found at <http://www.ome.uk.com/Article/Detail.aspx?ArticleUid=dfd0267d-9c7d-421b-80ba-71db9232f4b9>.

<sup>20</sup> NHS PRB on market-facing Pay, 2012 ([https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/253926/22159\\_Cm\\_8501\\_AccessibleLR\\_1\\_.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/253926/22159_Cm_8501_AccessibleLR_1_.pdf)).

significant complexities'.<sup>21</sup> The Prison Service PRB recommended giving existing reforms 'time to bed in' before introducing further local variation.<sup>22</sup> The Review Body on Senior Salaries concluded that there was no need for any further local pay flexibility for very senior managers in the NHS because there was a national labour market for such managers.<sup>23</sup> However, they did recommend that the government collect more data to enable them to evaluate the case in more detail than is currently possible.

The government then chose to maintain national pay agreements in the NHS, prison service and civil service in England. For teachers, the government chose to give more flexibility to individual schools in England. Under this new system, there are national minimum and maximum values for teacher salaries (which are higher in the London and fringe areas). Schools are then expected to set teachers' pay within this range, based on their own assessment of teachers' performances. This is not strictly speaking market-facing variation, but does offer schools more flexibility to respond to local conditions.

Nevertheless, greater local or market-facing pay scales could still represent a potential way for the current public pay bill to be spent more efficiently and could reduce any unintended variation in public service quality. Thus, we update previous analysis conducted by IFS researchers (Emmerson and Jin, 2012) by examining how the gap in pay between the public and private sectors varies across regions and countries of the UK. We also consider the potential advantages and disadvantages facing policymakers when considering whether or not to introduce greater local variation in public sector pay.

Figure 3.6 compares average hourly wages among full-time male workers by sector, in each region. The darker bars illustrate the variation of private sector wages across regions, showing especially high wages in London. Excluding London, there is much less regional variation in public sector wages (shown as the lighter bars) than in the private sector. As a result, in London, average hourly wages for full-time men working in the public sector are 6% lower than those of men working in the private sector. In contrast, in the North East and in Wales, they are over 30% higher in the public sector than in the private sector.

Some of this regional variation could be driven by differences in the composition of the workforces across sectors. In particular, there are large educational differences across the private sector workforces in different regions of the UK. As

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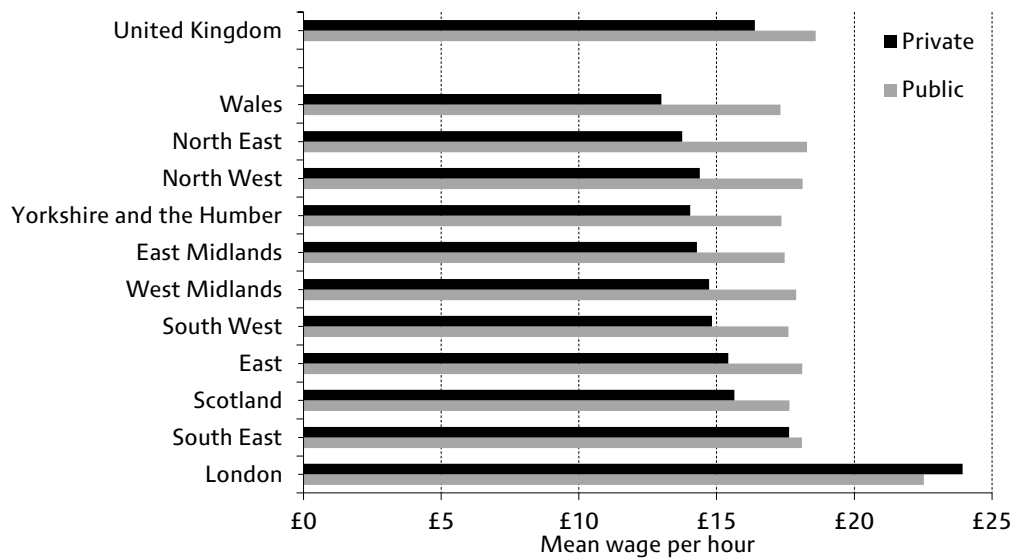
<sup>21</sup> School Teachers PRB Report, 2012 (<http://private.ome.uk.com/Document/Default.aspx?DocumentUid=43FDC317-C06A-4ADB-BE64-18284961FA6B>).

<sup>22</sup> Prison Service PRB Report, 2012 (<http://private.ome.uk.com/Document/Default.aspx?DocumentUid=F65CBC50-F693-492F-A30E-B2547004D743>).

<sup>23</sup> Review Body on Senior Salaries, 2012 (<http://private.ome.uk.com/Document/Default.aspx?DocumentUid=1B4D3585-D09F-497D-903B-3E90705AECDA>).



Figure 3.6. Average hourly wages among men working full-time, by region, 2013



Note: Regions ranked by the percentage difference in mean public and private sector hourly wages. Northern Ireland is not included as part of the ASHE data.

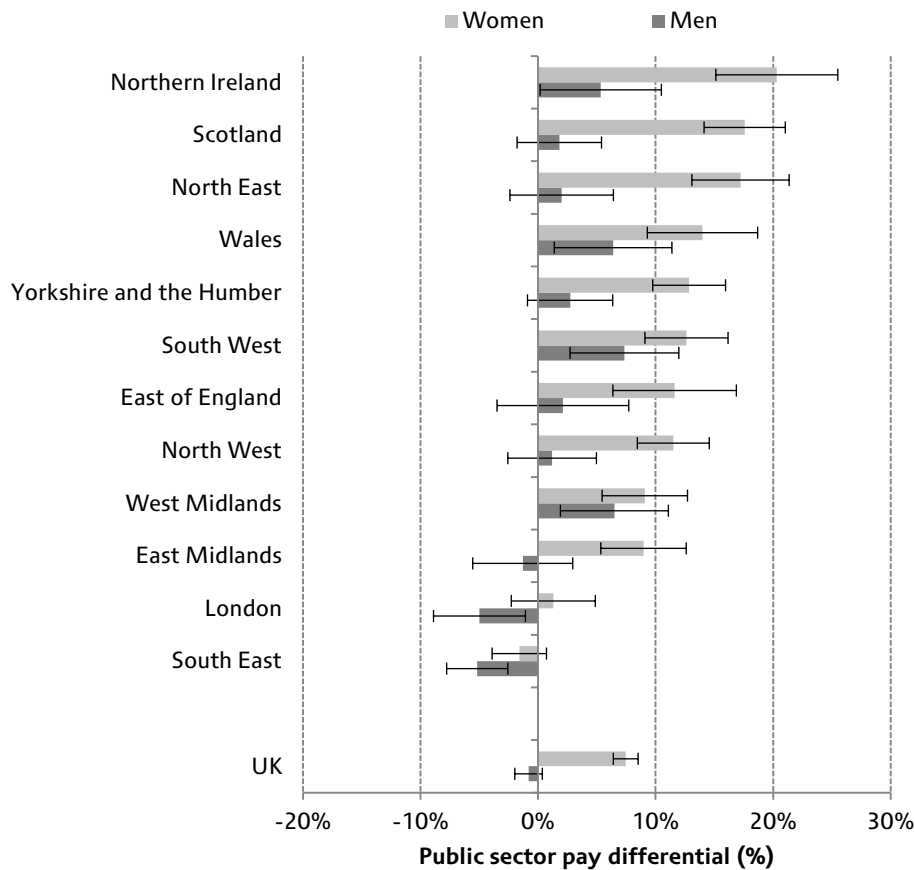
Source: Table 25.5a of the 2013 ASHE (<http://www.ons.gov.uk/ons/rel/ashe/annual-survey-of-hours-and-earnings/2013-provisional-results/2013-provisional-table-25.zip>).

shown in Table A.2 in the Appendix, only 29.2% of men working in the private sector in the North East have a higher education qualification, compared with 58.5% of men in the private sector in London. The differences across region in the public sector are much more limited; the lowest proportion of men who have a higher education qualification is in the West Midlands, at 56.3%, and the highest is London with 66.6%. These patterns are similar for women.

It is therefore important to control for the differential compositions of the workforces across the country. Figure 3.7 shows the estimated public sector premium by region, after controlling for age, education and qualifications, for men and women separately. There is clearly still significant variation in the estimated pay premium across regions, and the regional patterns are different for men and women.

Men working in the South East and London have a significant negative public sector pay differential. In Scotland, the North East, the East Midlands, Yorkshire and the Humber, East of England and the North West, the estimated male differentials are around 3% or smaller, and not statistically different from zero (95% confidence intervals are shown on the graph). The South West has the highest male public sector pay differential, of around 7%, followed by the West Midlands, Wales and Northern Ireland (who have estimated differentials between 5% and 7%). For women, the pay differential is estimated to be close to zero in London and the South East, and not statistically different from zero. The regions with the highest female public sector pay differential are, in descending order, Northern Ireland, Scotland, the North East, Wales, Yorkshire and the Humber, the South West, East of England, the North West, the West Midlands and the East Midlands.

Figure 3.7. Estimated average public sector hourly pay premium by region, 2011–12 to 2013–14



Note: As for Table 2.2. Regions ranked according to the estimated differential for women. Standard errors are robust to heteroscedasticity and the 95% confidence intervals are indicated by the error bars. Estimated differentials control for education, age and qualifications. Source: Authors' calculations using the LFS, 2011–2014.

For both sexes, the public sector pay differential is high in Wales, Northern Ireland and the South West, but close to zero or negative in London and the South East. In most other regions, the estimated differential varies considerably by sex.

The above results confirm our previous analysis, showing that there is indeed substantial variation in the public sector pay differential premium across regions. However, the advantages and potential disadvantages need to be weighed up before introducing greater local variation.

The advantages of making public sector pay variable across the country depend on the extent that different regional public pay differentials affect the public sector workforce and the quality of public service. There is some evidence suggesting that this is indeed the case. Propper and Van Reenen (2010) find that as private sector wage opportunities for nurses increase, hospital death rates also tend to rise. Similarly, Britton and Propper (2014) find that GCSE results decline as private sector wage opportunities for teachers improve. In both cases, the

authors find that the negative effect of paying below the market rate on the quality of public service is larger than the positive effect of paying above the market rate, although both effects exist. Making public sector pay more variable across the country could therefore reduce unintended inequalities in the quality of public service, and could lead to efficiency gains in the provision of public services.

However, there is other evidence suggesting that the quality of the public sector workforce is perhaps not responsive to different pay differentials, at least at the margin (Greaves and Sibieta, 2014). In this case, different public sector pay differentials across the country are unlikely to lead to differences in the provision of public services. However, there could still be efficiency gains from focusing any squeeze on public sector pay on those parts of the country where the public sector differential is greater.

The size of these benefits then needs to be weighed up against the potential costs. First, the introduction of greater local variation would inevitably introduce more complexity into the system, as was acknowledged in all of the PRB reports. Localised pay could be implemented in a variety of ways. The degree of local variation could be determined either centrally or through greater local determination of wages by individual public sector organisations (e.g. to some extent, the latter is already happening in schools in England). Furthermore, the funding systems for public sector organisations would need to be changed to reflect the local determination of wages. This is not an insurmountable barrier, particularly as many funding systems already have components to reflect the differential cost of employing staff across the country (e.g. the area cost adjustment in the local government funding formula). However, further local variation in pay would necessitate further local variation in funding (e.g. allocating less funding to areas with high public sector pay differentials).

Secondly, if there is greater local determination of wages, this could conceivably lead to upward pressure on wages. Currently, wages are determined centrally as a result of bargaining between public sector organisations and representatives of workers. However, if there is more local determination of wages, then bargaining might instead take place at the local level between individual public sector organisations and trade unions. If the latter are more organised and experienced in wage bargaining, then wages could, in principle, be pushed up by allowing local determination.

Thirdly, one further potential cost of greater local variation in pay is the perception that workers doing the same job are being paid different amounts depending on where they live. However, such differences already exist, with workers in London paid more to reflect the higher cost of living in the capital. Furthermore, there are potentially important consequences if public sector workers are not paid in line with local variations in private sector wages. The regional variation in the public sector pay differential could imply that some regions are able to attract higher-quality public sector workers, whilst others are not, leading to unintended variation in the quality of public services. It could imply that some regions are paying more than they need in order to recruit and

retain workers of a given quality. Therefore, the introduction of greater local variation could improve efficiency and/or allow for greater equity in the quality of public services across regions.

Therefore, before introducing greater local variation in public sector pay, policymakers need to consider the size of the potential benefits versus the additional costs and changes such a system would imply. Either way, more evidence is clearly needed to help determine the size of any potential benefits from greater local variation in public sector pay. For instance, useful evidence could come from the greater flexibilities in teacher pay (introduced from September 2013).

### **3.5 Conclusion**

Whereas Chapter 2 focused on the average differences in public sector pay, in this analysis, we have gone further, examining the variation in public pay and the differences in the public sector pay differential for different groups. There is less variation in wages in the public sector than in the private sector. A large part of the long-run compression in wages in the public sector reflects lower top tail wage inequality compared with the private sector. Changes over time also reflect lower growth in top tail inequality stretching back to the mid-1970s. Recent policy decisions have reinforced this compression by increasing the pay of low-paid public sector workers relative to those in the private sector. We also find that lower-educated men have a higher public pay differential than highly educated men, who have a significantly negative differential.

The effects of this compression in wages in the public sector relative to the private sector are somewhat unclear. Evidence from the United States (e.g. Borjas, 2002) suggests that compression in the wages of public sector workers might have made it more difficult to recruit and retain highly skilled workers. The effects will depend, to some extent, on how transferable skills are from the private sector to the public sector; those with more transferable skills (e.g. good managers) might decide to work in the private sector for higher pay. The effects will also depend on the extent to which future salaries determine people's initial occupational choices. For example, if potential medical students decide to become lawyers or managers or to work in finance because of higher potential salaries than doctors, then the public sector might increasingly struggle to attract the best talent to fill demanding roles.

Nickell and Quintini (2002) also find that declines in relative public sector wages over time have been correlated with reductions in the average ability levels of public sector workers. Unfortunately, however, there is little evidence when looking at the effects of the public-private pay differential for low-wage or low-skilled workers. In the next chapter, we add to this evidence base by comparing the early-life skills of public and private sector workers with different characteristics. We find that low-educated public sector workers seem to have higher early-life skill levels than those in the private sector, which is particularly so for men. If this is caused by the higher public sector pay differential that we

see for this group, then a further increase in the public sector pay differential for this group of workers (as seen since the financial crisis) might make it even harder for the private sector to attract low-educated workers with the necessary skills.

There are also important geographical variations in the estimated public sector pay differential. In general, the public sector differential is highest in Wales, Northern Ireland and the South West, and close to zero or negative in London and the South East. However, there is also considerable variation across men and women. For example, the differential is high for women in the northern regions of England, but close to zero for men in the same regions.

On its own, however, this empirical evidence does not necessarily imply that the public sector should adopt the pay levels and structures seen in the private sector. The appropriate response will depend on the extent to which these differentials affect the ability of the public sector to recruit and retain staff of the desired quality, and the extent to which this has knock-on effects for the quality of public services and the efficiency with which they can be delivered. To the extent that the quality of public services is affected by differences in the public pay differential, allowing greater geographical variation in public sector pay could reduce unintended inequalities in public services and could potentially lead to efficiency gains in the provision of public services. Alternatively, if public sector quality is not, at the margin, affected by the public sector differential, this might suggest that having larger public sector pay differentials in some parts of the country is not the best use of taxpayers' money.

Policymakers should assess empirical evidence on these margins when assessing the case for greater flexibility and heterogeneity in public sector pay levels. In the next chapter, we seek to add to this evidence base by examining the differences in direct measures of skill levels across public and private sector workers, and the extent to which differences across groups of workers correlate with the pay differentials we have seen in this chapter.

## 4. Early-Life Skills of Public and Private Sector Workers

In the preceding chapters, we have focused on the level of the public sector pay differential, and how this varies across different parts of the workforce. One criticism of the approach taken in these chapters is that, while we are able to control for some important determinants of the skills (and pay) in the labour market, such as whether or not workers have a degree, we are not able to control for finer differences in the skills of individuals in the public and private sectors. In this chapter, we use richer data to look in more detail at the differences in the skills possessed by workers in the public and private sectors.

This is important for two reasons. First, the level of pay in the public sector relative to the private sector might determine whether highly skilled people are likely to enter each sector. For example, Nickell and Quintini (2002) use test scores in two British cohorts born in 1958 and 1970, and argue that the decline in public sector pay relative to private sector pay from the late 1970s to the late 1980s led to a reduction in the average ability or early-life skills of men entering the public sector in non-manual occupations. We build on the analysis of Nickell and Quintini (2002) by using a clearer definition of public sector occupations, looking at non-cognitive (or socio-emotional) skills in addition to cognitive skills in early life. We also look at differences by education group for men and women and compare these with our previous estimates of the public sector pay differential.

Secondly, large differences in the underlying skills of workers in the public and private sectors would imply that the estimates of a public sector pay differential are biased in a known way. If, conditional on education, experience and other observed variables, public sector workers are more (unobservably) highly skilled, the estimates would imply that the estimates in Chapters 2 and 3 are overestimates of a 'true' differential.<sup>24</sup> Indeed, Blackaby et al. (2014) find that after controlling for quality of work and required skill levels, estimates of the public sector pay differential tend to fall as the public sector generally requires higher levels of skills.

### 4.1 Measuring early-life skills of public and private sector workers

In this chapter, we focus on measures of both cognitive and non-cognitive skills in childhood, which tend not to be available in most surveys of workers, such as the LFS. We use data from the British Cohort Study (BCS) 1970, which is a

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<sup>24</sup> This possibility is one reason why our focus is, in particular, on how the estimated differential changes over time, because, as long as these unobservable skills were not also changing over time, this would allow us to interpret a change in the estimated differential as a change in the true differential.

longitudinal study of the cohort of individuals born in Britain in one week of April 1970.<sup>25</sup> Each individual was interviewed at various points during childhood and adulthood. Importantly, at age 10, the 'cohort members' (as the individuals in the study are known) sat a series of tests of cognitive ability, measuring maths and literacy scores, as well as a general 'ability' test, called the British Ability Scale.<sup>26</sup> They were also asked a series of questions that measure some non-cognitive skills, specifically a measure of the 'locus of control' (which determines the extent to which an individual believes they have control over their future or destiny) and a measure of self-esteem.<sup>27</sup> We measure each of the five dimensions of skills that we observe by calculating the standardised score for each measure of skills, where the mean score is standardised to zero and the standard deviation to one. The fact that we are able to observe an array of early-life skills is important because different dimensions of skills might be of greater relevance in different occupations.

Although we only look at early-life measures of skills, there are strong reasons to believe these skills persist into adulthood and are thus important for understanding later-life differences in skills. There is a large body of literature showing that, across developed countries, cognitive and non-cognitive skills at younger ages are important determinants of earnings in later life (see, for example, Heckman et al., 2006; Lindqvist and Vestman, 2011; and references therein). Previous work also investigates the effect of more specific cognitive skills, focusing in particular on literacy and numeracy scores, which suggests that each of these are important drivers of later-life economic outcomes (e.g. Green and Riddell, 2003; Joensen and Nielsen, 2009; Hanushek et al., 2013). Evidence for the UK also suggests that the specific skills measured in the BCS at age 10 are predictive of later-life earnings; see Crawford and Cribb (2013) for maths and literacy, and Carneiro, Crawford and Goodman (2007) for non-cognitive skills.

In order to see whether these early-life skills differ across public and private sector workers, we use data from the 2008 wave of the BCS. In this wave, we observe (for each individual who is in work) whether they are in the public sector or the private sector, as well as their hours and earnings.<sup>28</sup> The recent data

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<sup>25</sup> This is a similar approach to Nickell and Quintini (2002), who use maths and reading test scores at age 10/11 in the BCS and the National Child Development Study, a similar study of a cohort of children born in 1958 to assess the quality of workers entering the public and private sectors.

<sup>26</sup> These tests are respectively known as the Friendly maths test, the Edinburgh reading test and the British Ability Scale. Detailed information on the questions in these tests is available at <http://www.cls.ioe.ac.uk/page.aspx?&sitesectionid=807&sitesectiontitle=Questionnaires>.

<sup>27</sup> These are, respectively, measured by the CARALOC and LAWSEQ questions. The questions in these tests are available at <http://www.cls.ioe.ac.uk/shared/get-file.ashx?id=291&itemtype=document>. More information on the self-esteem (LAWSEQ) scale is available in Lawrence (1981). For more details on the CARALOC scale, see Gale, Batty and Deary (2008).

<sup>28</sup> The measure of public sector is self-reported and is therefore potentially subject to some measurement error. However, 30% of the cohort who are employees are defined as being in the public sector in the BCS 2008, which is very similar to the proportion of those aged 38 in the public sector, as observed in the 2008 LFS. Our use of a reported sector differs from Nickell and Quintini (2002), who defined public sector as being one of a large number of public sector dominated occupations (such as teachers and nurses), although this approach both includes some

mean that we are able to investigate the distribution of skills (as measured in early life) in the public and private sectors as was seen only a few years ago, although it is restricted to people aged 38 in 2008 who were born in the UK, not the whole workforce.

## **4.2 Differences in skills in the public and private sectors**

In this section, we compare the early-life skills of workers in the public and private sectors.<sup>29</sup> Figure 4.1 compares the distribution of the general ability score, the British Ability Scale, for private and public sector workers in 2008, as well as people not in paid work at that time. We have divided the general ability score distribution into five quintiles of the distribution. In the absence of differences between the groups (and without attrition from the survey), we would expect there to be one-fifth of each group in each quintile of the earnings distribution.

In reality, we see that employees in both the public and private sectors are more likely to be in the upper quintiles of the general ability distribution and less likely to be in the lower quintiles, compared with individuals who are not in paid work. Moreover, public sector employees at age 38 are more likely to be in the upper quintiles of the age-10 ability distribution (with 27% of them in the highest quintile, and 52% in the top two quintiles) compared with the private sector, where 23% are in the top quintile and 46% in the top two quintiles.

A similar pattern can be seen when we examine non-cognitive skills (using locus of control as an example in Figure 4.2). People not in paid work are disproportionately likely to have low locus of control scores compared to people in work. Furthermore, 26% of public sector workers are in the highest locus of control quintile, and 58% are in the top two quintiles, whereas for private sector workers, 22% are in the top quintile and 44% are in the top two quintiles.<sup>30</sup>

While this shows the distribution of two particular skills, there are important compositional differences between the public and private sectors; for example, women make up 66% of the public sector workforce in 2012–13 and only 41% of the private sector workforce (Cribb, Disney and Sibieta, 2014). If there are systematic differences in the skills of men and women, then the averages across

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private sector employees as public sector (such as teachers in private schools) and misses some smaller public sector occupations.

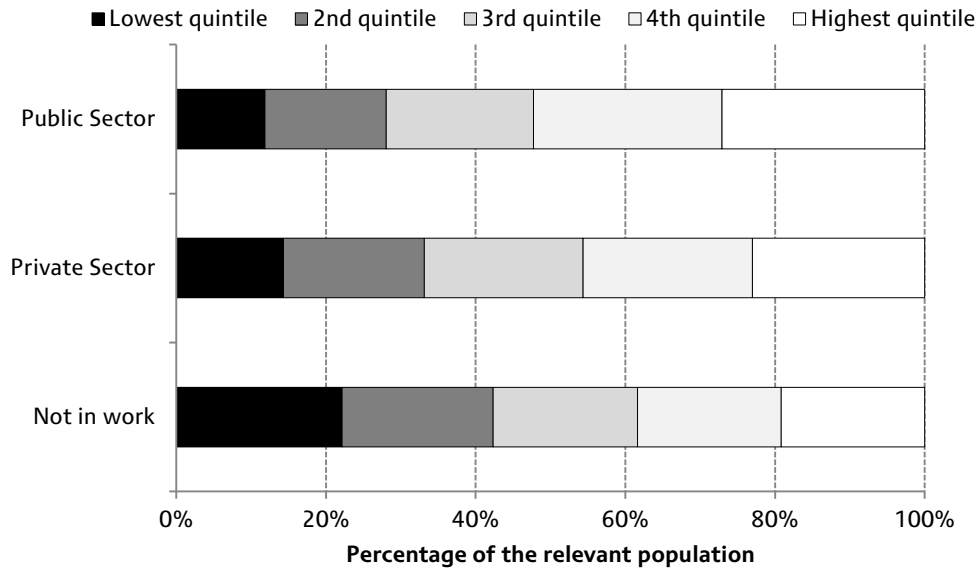
<sup>29</sup> We focus on employees and therefore do not look at self-employed people; this is consistent with most analyses of the public and private sectors, including the preceding and following chapters in this report.

<sup>30</sup> Given the results in Chapter 3, which showed that the public sector wage distribution was compressed (particularly at the top), compared to the private sector wage distribution, it would be interesting to see whether this means that the public sector fails to attract the most skilled workers. Unfortunately, although there is a transmission of skills from early to later life, because skills are measured (unavoidably) with some error, these measures are unable to detect the very top percentiles of the adult skills distribution.



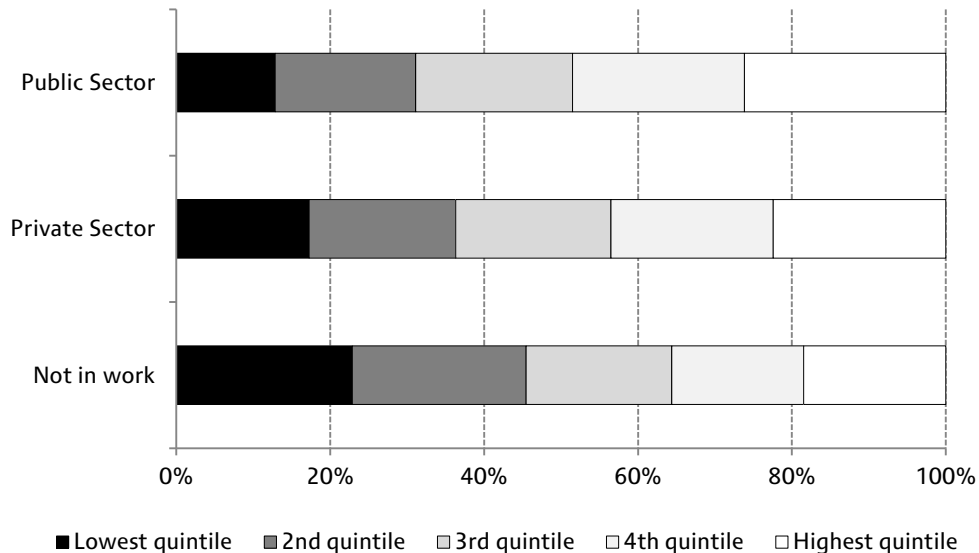
all workers might give a misleading picture. Moreover, we know that the public sector pay differential varies systematically between women and men; Table 3.2 showed that the estimated public sector wage differential for women in their 30s was 8.1% compared to -1.3% for men.

Figure 4.1. Percentage in each quintile of the British Ability Scale distribution at age 10, by economic status and sector at age 38



Note: Private sector only includes employees, not self-employed individuals.  
Source: Authors' calculations using the 1980 and 2008 waves of the BCS.

Figure 4.2. Percentage in each quintile of the locus of control distribution at age 10, by economic status and sector at age 38



Note: Private sector only includes employees, not self-employed individuals.  
Source: Authors' calculations using the 1980 and 2008 waves of the BCS.

An extension of the argument by Nickell and Quintini (2002) would imply that, because the estimated public sector pay differential is higher for women than for men, the public sector might find it relatively easier to hire highly skilled women rather than men. Another key difference between the public and private sectors is that the public sector workforce has higher levels of educational qualifications, on average. This will undoubtedly affect the differences in skill levels across the two sectors. Furthermore, we saw earlier that the public sector pay differential varied across education groups, and did so differently for men and women. The public sector pay differential tends to be higher for low-educated men than higher-educated men (for whom it is significantly negative). It is then somewhat higher for higher-educated women than lower-educated women, although the differences by education group amongst women are relatively small.

Therefore, in Table 4.1, we split men and women into three groups by education: high education (highest qualification is a higher education qualification), medium education (highest qualification is an A-level or equivalent) and low education (at most GCSE level education). We then estimate the average percentile difference in the early-life skill measure within each of the six groups, controlling within the broad educational groups for whether they have certain qualifications.<sup>31</sup> A positive difference, of 0.1, for example, implies that the mean skill level in the public sector is 0.1 standard deviations higher than in the private sector for men or women with a particular education level.<sup>32</sup>

The results in Table 4.1 show that there are stark differences across education groups. The main results that stand out are those for low-educated workers. Low-educated male public sector workers have cognitive skills significantly higher than those in the private sector: an average of 0.166 standard deviations points higher on the mathematics score, 0.302 standard deviations higher on the literacy score and 0.223 standard deviations higher on the general ability score (all statistically significant, at least at the 5% level). They also have, on average, 0.162 standard deviations higher locus of control compared to low-educated men in the private sector. This is interesting because, of all men, it is the low-educated men who have the highest public sector pay differential.

Public sector low-educated women also have higher British Ability Scale scores (0.084 standard deviations), and there is some evidence of higher literacy scores (only significant at the 10% level). However, the differences here are clearly

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<sup>31</sup> Within the low-educated group, we control for whether they have a level 2 qualification under the original National Qualification Framework (equivalent to a GCSE grade A\*–C), a level 1 qualification (equivalent to a GCSE grade D–G) or no qualification. Within the medium education group, all individuals have a level 3 (A-level equivalent) qualification. Within the high-educated group, we control for whether they have a postgraduate level qualification. See <http://ofqual.gov.uk/qualifications-and-assessments/qualification-frameworks/levels-of-qualifications/> for more details on the original National Qualifications Framework.

<sup>32</sup> The results in Tables 4.1 and 4.2 are robust to defining the cognitive and non-cognitive skill scores in different ways (e.g. looking at the average difference in the percentile point of the score distribution).

Table 4.1. Estimated mean difference in standardised measures of skills distributions, by education group

Education	Women			Men		
	High	Medium	Low	High	Medium	Low
Mathematics	0.054 (0.060) 691	-0.003 (0.075) 490	0.034 (0.050) 1,205	0.042 (0.076) 720	-0.162 (0.099) 518	0.166** (0.080) 1,029
Literacy	0.019 (0.060) 695	-0.040 (0.073) 491	0.099* (0.050) 1,204	0.062 (0.073) 720	-0.033 (0.091) 515	0.302*** (0.077) 1,030
British Ability Scale	0.055 (0.050) 694	0.074 (0.059) 490	0.084** (0.038) 1,194	-0.001 (0.063) 717	-0.060 (0.076) 515	0.223*** (0.056) 1,021
Locus of control	0.166** (0.070) 748	0.009 (0.079) 523	0.090 (0.055) 1,288	0.050 (0.072) 772	0.113 (0.100) 568	0.162** (0.075) 1,098
Self-esteem	0.148** (0.074) 748	0.020 (0.087) 524	0.033 (0.060) 1,292	0.065 (0.073) 772	0.056 (0.101) 570	0.087 (0.075) 1,103

Note: The average difference is estimated by an OLS regression of the skill measure on a public sector indicator and more detailed indicators for what levels of qualifications individuals have. Within the low-educated group, we control for whether they have a level 2 qualification under the original National Qualification Framework (equivalent to a GCSE grade A\*–C), a level 1 qualification (equivalent to a GCSE grade D–G) or no qualification. Within the medium education group, all individuals have a level 3 (A-level equivalent) qualification. Within the high-educated group, we control for whether they have a postgraduate level qualification. Robust standard errors are displayed in parentheses. \*, \*\* and \*\*\* indicate statistical significance at the 10%, 5% and 1% levels, respectively. The number of observations in a cell is displayed below the standard errors.

Source: Authors' calculations using the BCS.

much smaller than they are for men. Amongst the medium education group, there are no significant differences for either men or women.

In the high education group, we see that highly educated women in the public sector have significantly higher non-cognitive skills (as measured early in life) than those in the private sector: 0.166 standard deviations higher for locus of control and 0.148 standard deviations higher for self-esteem. One interpretation of this could be that the relatively high public sector pay differential for women encourages women with higher levels of non-cognitive skills to enter the public sector.<sup>33</sup> However, it might also be that highly educated women in the public sector tend to work in occupations that require and attract workers with higher levels of non-cognitive skills, such as public-facing occupations in teaching and medicine. Amongst men, we see no significant differences in skills amongst the

<sup>33</sup> Although a number of these results are statistically significant from zero at below the 5% or 1% levels, we should remain somewhat cautious as to the exact magnitudes in the differences in skills between the public and private sectors. This is because relatively low sample sizes mean that the mean differences are estimated relatively imprecisely.

high-education group, despite the negative public sector pay differential for this group.

### **4.3 Conclusion**

In this chapter, we have used data from the BCS to investigate the extent to which early-life skills vary across public and private sector workers. This is informative because most evidence suggests that early-life differences in skills tend to persist into adulthood.

Whilst, on average, public sector workers have higher levels of cognitive and non-cognitive skills than those in the private sector, systematic differences in skills, particularly between education groups, and the different composition of the public and private sectors explain much of this. However, low-educated men who work in the public sector have significantly higher measures of cognitive and non-cognitive skills than those in the private sector, while there is some evidence for (smaller) differences in cognitive skills for low-educated women. There is also evidence of higher non-cognitive skills in the public sector than the private sector for highly educated women.

One way of interpreting these results is that the high public sector pay differential for low-educated men (which is higher than for highly educated men or low-educated women) encourages low-educated men with relatively higher cognitive ability to join the public sector. At the same time, the relatively high public sector differential for high-educated women might encourage women with relatively high levels of non-cognitive skills to enter the public sector.

Of course, it might be that the nature of public sector occupations requires higher skills amongst low-educated workers. However, it is not clear why low-educated men in the public sector need to be more highly skilled than their counterparts in the private sector, but there is no need for any differences amongst women. Moreover, paying a high pay premium to low-educated workers comes at a cost, both to the Exchequer and to the private sector, who might find it harder to employ low-educated but relatively skilled men, as suggested by our estimates. Policymakers should thus be aware of the effect that current pay policy has on the skills of workers attracted to the public sector, and should consider whether this is indeed the most appropriate mix of skills to deliver public services in an efficient manner.

## 5. Conclusion

In raw terms, pay levels are higher in the public sector than in the private sector. However, a large part of this difference reflects the different characteristics and skills of the two workforces. After accounting for differences in education, age and where workers live, the differences are much smaller. Among men, there is no evidence of a differential across public and private sectors in terms of hourly pay, while there is evidence of a positive public sector pay differential among women.

Since the onset of the financial crisis, trends in public and private sector pay have been quite different. Between 2007 and 2010, public sector pay increased relative to the private sector. This does not appear to be the intended result of pre-crisis policy, but the downward pressure on private sector wages due to the recession and the continuation of many public sector pay deals agreed before the crisis. Since 2010, private sector pay has grown more quickly than public sector pay (although both have had relatively slow growth in historical terms). As a result, the gap that opened up during the crisis is, in 2014–15, almost back to where it was in 2007–08 before the crisis started.

To date, the fact that policy was essentially closing this gap might have made squeezes on public sector pay less difficult to implement. This is unlikely to be the case over the next parliament. If OBR projections are correct, then the gap between public and private sector pay levels is likely to fall back to levels last seen in the late 1990s and early 2000s, when there were clear recruitment and retentions problems in parts of the public sector. However, the early 2000s was also a period of increased demand for public services. The current challenge for policymakers will not only be to make both further workforce cuts and further squeezes on pay, but also at the same time not to lose the workers that they most wish to retain.

We have also shown that public sector pay is more uniformly distributed than private sector pay. Over the long run, this has been driven by rising pay levels at the top of the wage distribution in the private sector that were not matched in the public sector. The public sector differential is largest for low-educated men and negative for highly educated men, although the differences for women are smaller. Recent policy decisions to protect low-paid public sector workers also reinforce this compression

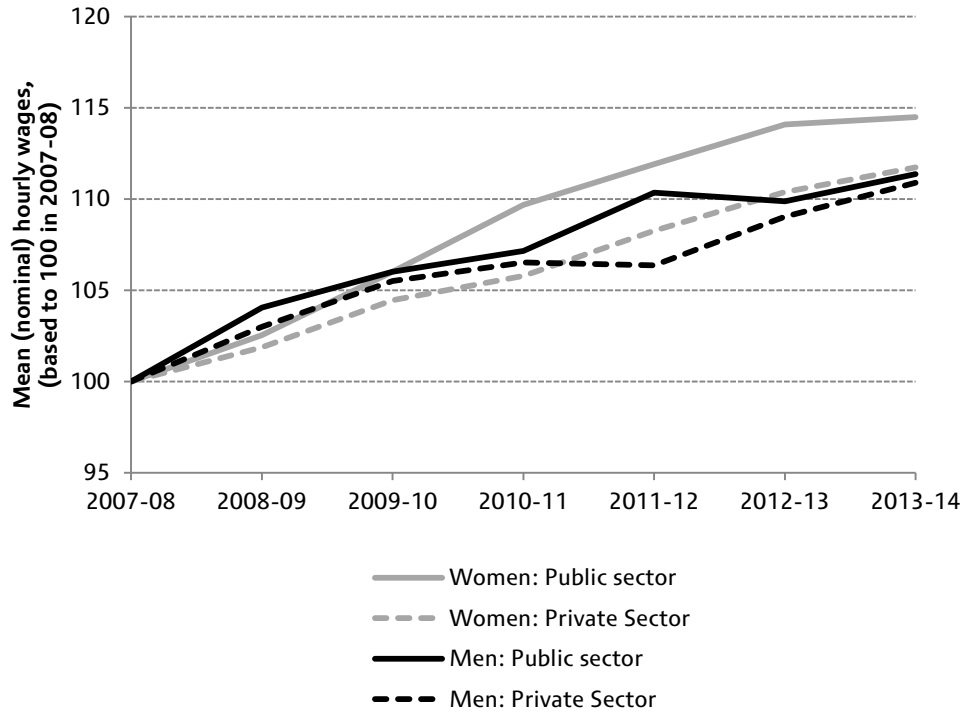
There is also variation in the level of the public sector differential across the UK. In general, the public sector differential is highest in Wales, Northern Ireland and the South West, and close to zero or negative in London and the South East. However, there is also considerable variation across men and women. For example, the differential is high for women in the northern regions of England, but close to zero for men in the same regions.

What are the implications of these findings for policymakers? In an ideal world, public sector pay levels would be set across different types of workers and areas of the country in order to recruit and retain staff of the desired quality and motivation. Paying more than necessary offers poor value for taxpayers, but offering less might mean a lower quality of public services. Unfortunately, insufficient data are collected in order to determine the precise effects of pay levels, making the job of policymakers harder. However, some evidence does exist to suggest that the present system of public sector pay is too uniform relative to the private sector and the potential problems this causes. In this report, we have added to this evidence. Our results suggest that the high levels of the public sector pay premium for low-educated men are allowing the public sector to attract men with higher skill levels. It might be the case that low-educated men need to be more highly skilled in public sector occupations than in the private sector. However, it is not clear why this would be the case for men but not for women. It is important for policymakers to consider carefully whether the current system of pay is really set at levels to attract workers of the desired quality while minimising the cost to the taxpayer.

In the case of regional variation in the public sector pay differential, there are some practical considerations that would need to be overcome (e.g. who sets the pay levels and how funding systems need to respond). However, the introduction of greater local variation and flexibility in public sector pay is one way in which the public sector pay bill could potentially be spent more efficiently and could reduce unintended variation in the quality of public services. Furthermore, if the government were to collect better data on recruitment and retention and to share this widely with PRBs and analysts and researchers inside and outside government (e.g. unfilled vacancies, number of applicants per vacancy, whether applicants are of high enough quality), then policymakers would be in a stronger position to understand the effects of the current system and to set pay levels at a local level in line with the desired quality of public services, while keeping an appropriate eye on value for money for the taxpayer.

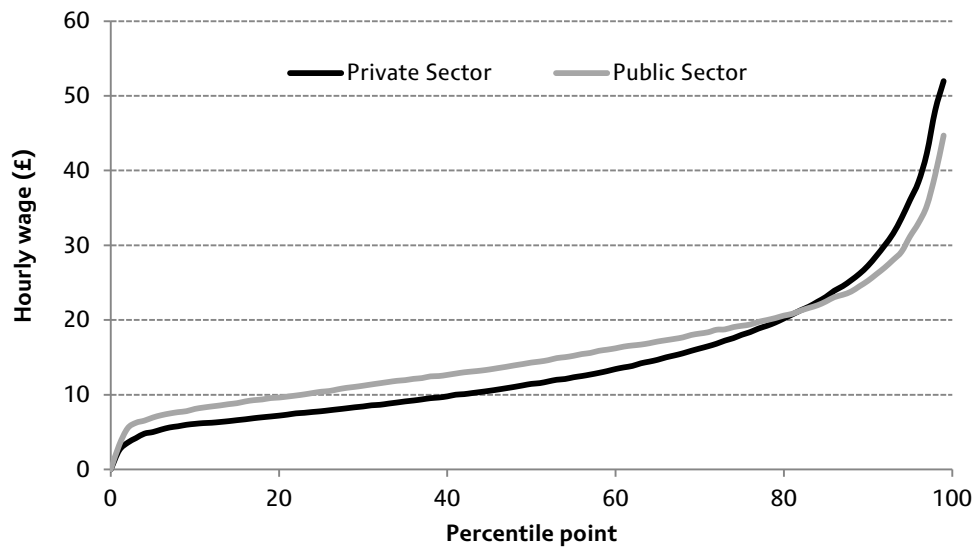
## Appendix: Supplementary Tables and Figures

Figure A.1. Trends in (nominal) mean hourly wages since 2007–08, by sex and sector



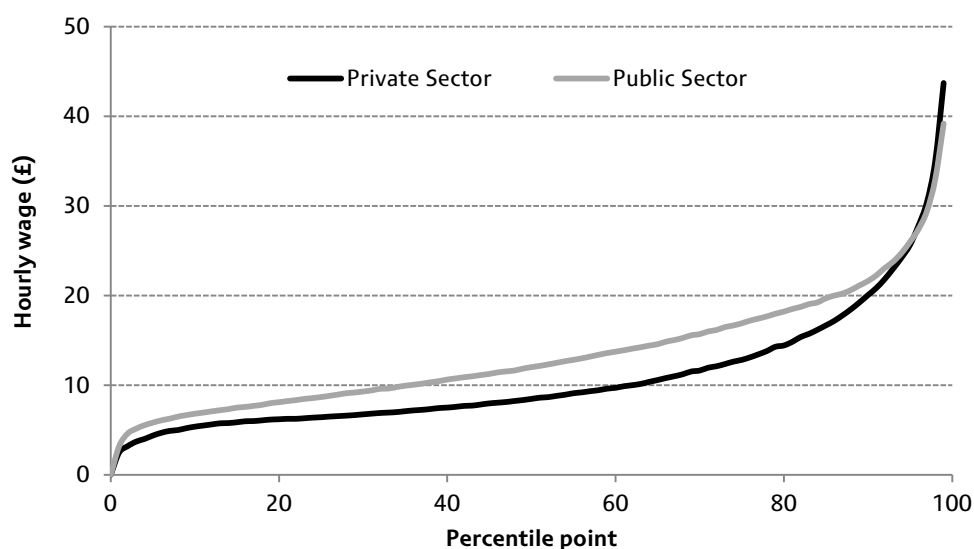
Source: Authors' calculations using the LFS, various years.

Figure A.2a. Male hourly wages at each percentile point, public and private sector, 2013–14



Source: Authors' calculations using the LFS, 2013–14.

Figure A.2b. Female hourly wages at each percentile point, public and private sectors, 2013–14



Source: Authors' calculations using the LFS, 2013–14.

Table A.1. Median percentile of major public sector occupations in the overall weekly earnings distribution, selected years

Occupation	Median percentile in weekly earnings distribution in:			
	1980	1990	2000	2010
Doctors	93	94	96	97
Teachers	66	75	78	79
Police	82	82	84	85
NHS practices allied to medicine	35	50	59	71
Nurses	33	49	62	69
Public administration	45	41	41	43

Source: Authors' calculations using the New Earnings Survey Panel Dataset, various years.



Table A.2. Percentage of workers in each region with a higher education qualification, by sex and sector, 2011–12 to 2013–14

Region	Female		Male	
	Private sector	Public sector	Private sector	Public sector
North East	27.6%	54.5%	29.2%	57.0%
Yorkshire and the Humber	29.9%	56.7%	31.5%	59.2%
East Midlands	30.7%	57.7%	32.6%	61.6%
East of England	32.0%	56.6%	37.1%	57.5%
London	59.2%	67.3%	58.5%	66.6%
South East	38.0%	62.2%	41.7%	59.1%
South West	34.0%	60.7%	36.1%	60.1%
West Midlands	30.1%	57.1%	31.6%	56.3%
North West	30.3%	58.5%	34.1%	60.0%
Wales	32.5%	56.6%	31.5%	56.8%
Scotland	43.9%	67.1%	43.2%	60.1%
Northern Ireland	33.1%	53.6%	34.7%	56.5%

Source: Authors' calculations using the LFS, 2011–12 to 2013–14.

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